

# Breaux Act

## Coastal Wetlands Planning, Protection and Restoration Act



### Technical Committee Meeting

December 6, 2006

Baton Rouge, Louisiana

# BREAUX ACT

## COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

### TECHNICAL COMMITTEE MEETING

#### AGENDA

December 6, 2006 9:30 a.m.

**Location:**

LA Department of Wildlife and Fisheries  
Louisiana Room  
2000 Quail Dr.  
Baton Rouge, La.

**Documentation of Task Force and Technical Committee meetings may be found at:**

[http://www.mvn.usace.army.mil/pd/cwppra\\_mission.htm](http://www.mvn.usace.army.mil/pd/cwppra_mission.htm)

or

<http://lacoast.gov/reports/program/index.asp>

#### Tab Number

#### Agenda Item

- 1. Report: Status of Breaux Act Program and Project Funds (LeBlanc) 9:30 a.m. to 9:40 a.m.** Ms. LeBlanc will discuss the construction program and the status of the CWPPRA accounts, to aid the Technical Committee in making today's funding decisions.
- 2. Decision: Request for Additional Phase II Increment 1 Funding for the West Lake Boudreaux Project (TE-46) (Clark) 9:40 a.m. to 9:50 a.m.** The Technical Committee will consider the request by the FWS and DNR for additional funding for the West Lake Boudreaux Project due to the increased costs of rock and hydraulic dredging after the 2005 hurricanes. Phase II Increment 1 funding in the amount of \$14.6 million was approved by the Task Force on February 8, 2006. It is anticipated that additional Phase II Increment 1 funding in the amount of \$1,916,859 is needed because rock and hydraulic dredging costs have increased as a result of the 2005 hurricanes.
- 3. Decision: Request Additional Phase II Increment 1 Construction Funds for the Lake Borgne Shoreline Protection Project (PO-30) (Parrish) 9:50 a.m. to 10:00 a.m.** The Lake Borgne Shoreline Protection Project received Phase II Increment 1 funding in the amount of \$16.6 million from the CWPPRA Task Force on February 8, 2006. EPA and LDNR final project review efforts prior to bid solicitation (anticipated in early 2007) indicate pre-Katrina/Rita cost estimates for the authorized project should be made consistent with post-hurricane material costs and recent project awards. In order to avoid likely construction bid overruns in 2007, EPA is seeking an increase in Phase II Increment 1 funding in the amount of \$6,925,824.

**4. Decision: Request for Phase II Authorization and Approval of Phase II Increment 1 Funding (O&M only) for the "Lake Borgne Segment" of the Lake Borgne/MRGO Shoreline Protection Project (PO-32) (Podany) 10:00 a.m. to 10:20 a.m.** The 3rd Emergency Supplemental Appropriations Act provided funds for construction of shoreline protection in the area of the MRGO. A portion of these funds are being utilized to build the Lake Borgne segment of the PO-32 CWPPRA project. A contract for this work was awarded by the Corps of Engineers in September 2006 and construction is scheduled to begin in January 2007. The work is being completed using designs and NEPA documents completed under CWPPRA Phase I. The project will build 18,820 feet of rock dike to protect 93 acres of marsh along the southern shoreline of Lake Borgne between Doullut's Canal and Jahncke's Ditch. The Corps is requesting Phase II authorization and Phase II Increment 1 funding (O&M only) for the Lake Borgne segment of the PO-32 project. Increment 1 cost, not including initial construction, is \$9,159,788 (fully funded). The 20-year O&M cost is \$13,799,013. It is proposed that the required O&M funds be provided by CWPPRA to maintain the project under the same procedures identified for CWPPRA projects constructed with CIAP funds.

**5. Decision: Request for Phase II Authorization and Approval of Phase II Increment 1 Funding (Podany) 10:20 a.m. to 11:40 a.m.** The Technical Committee will consider requests for Phase II authorization and approval of Phase II Increment 1 funding of projects on PPLs 9 through 15, for recommendation to the Task Force. Due to limited funding, the Technical Committee will recommend a list of projects to the Task Force for Phase II authorization and Increment 1 funding within available program construction funding limits. Each project listed in the below table will be discussed individually by its sponsoring agency, Technical Committee members, and the general public in the following format:

- a. Agency presentation on individual projects (5 minutes max)
- b. Technical Committee questions and comments on individual projects
- c. Public comments on individual projects (Comments should be limited to 1-2 minutes)

Following presentations and discussion on individual projects, the Technical Committee will rank all projects to aid in deciding which to recommend to the Task Force for Phase II authorization and approval of Increment 1 funding.

Agency	Project No.	PPL	Project Name	Construction Start Date	Phase II Total Cost	Phase II Incr. 1 Funding Request	Acres Benefitted Over 20 Years	Prioritization Score	30% Design Review Meeting Date	95% Design Review Meeting Date
NRCS	BA-27c(3)	9	Barataria Basin Landbridge, Phase 3 - CU 7	Aug-07	\$25,765,121	\$21,538,790	180	45.55	20 Aug 03 (A)	2 Sep 04 (A)
NMFS	AT-04	9	Castille Pass Channel Sediment Delivery	Jun-07	\$29,045,754	\$18,933,969	577	59.50	20 Jan 04 (A)	13 Oct 05 (A)
FWS	BA-36	11	Dedicated Dredging on Barataria Basin Landbridge - Fill Site 1	Aug-07	\$15,378,401	\$15,231,142	242	56.00	17 Dec 03 (A)	29 Jul 04 (A)
NMFS	BA-30	9	East Grand Terre Island Restoration	Aug-07	\$34,393,708	\$33,881,341	335	60.00	26 May 05 (A)	30 Nov 05 (A)
COE	TV-11b	9	Freshwater Bayou Bank Stab-Belle Isle Canal-Lock	Apr-07	\$28,571,202	\$25,676,625	241	39.50	27 Jun 02 (A)	22 Jan 04 (A)
NRCS	TE-43	10	GIWW Bank Restoration of Critical Areas in Terrebonne - Segments 1, 2, 6	Aug-07	\$15,968,228	\$13,175,993	132	40.25	21 Jan 03 (A)	26 Aug 04 (A)
FWS	PO-33	13	Goose Point/Point Platte Marsh Creation	Jun-07	\$19,137,181	\$18,989,923	436	53.00	20 Jul 06 (A)	8 Nov 06 (A)
COE	ME-21	11	Grand Lake Shoreline Protection - with Tebo Point	Aug-07	\$23,068,344	\$20,331,947	540	61.25	11 May 04 (A)	16 Aug 04 (A)
COE	PO-32b	12	Lake Borgne & MRGO Shoreline Prot - MRGO Segment**	Apr-07	\$34,637,092	\$31,924,591	173	36.50	11 Aug 04 (A)	29 Mar 05 (A)
NMFS	ME-18	10	Rockefeller Refuge	Jun-07	\$10,544,865	\$10,544,865	N/A	NA	28 Sep 04 (A)	20 Sep 05 (A)
EPA	TE-47	11	Ship Shoal: Whiskey West Flank Restoration	May-07	\$49,183,319	\$48,901,961	195	60.00	5 Oct 04 (A)	28 Sep 05 (A)
NRCS	TE-39	9	South Lake DeCade - CU 1	Aug-07	\$3,171,215	\$2,221,045	202	74.95	19 Jul 04 (A)	2 Sep 04 (A)

**6. Discussion/Decision: Transitioning Projects to Other Authorities (LeBlanc) 11:40**

**a.m. to 11:50 a.m.** The P&E Subcommittee will give a report to the Technical Committee on the process to transition projects to other authorities. Unanswered questions related to the transfer process will be discussed. The Technical Committee will be asked to approve the transfer process, as recommended by the P&E Subcommittee.

**7. Discussion: Funding of Environmental Impact Statements (EIS)/National Environmental Policy Act (NEPA) for Transferable CWPPRA Projects (Clark) 11:50**

**a.m. to 12:00 p.m.** The Technical Committee will discuss issue of the CWPPRA Program funding all, part, or none of EIS/NEPA development for projects that maybe be potentially transferred to other authorities. The results of this discussion will be reported back to the Task Force.

**8. Discussion: Status of Unconstructed Projects (Podany) 12:00 p.m. to 12:10 p.m.**

As directed by the Task Force, the Technical Committee will discuss the status of unconstructed CWPPRA projects which may be experiencing project delays. The discussions will include individual project delays and potential solutions. The results of this discussion will be reported back to the Task Force.

**9. Discussion: Long-Term O&M of CWPPRA Projects Including a Breakdown of O&M by Project Type (Podany) 12:10 p.m. to 12:20 p.m.** As directed by the Task Force, the Technical Committee will discuss the funding of long-term O&M of CWPPRA projects. This discussion will include issues such as increases in O&M cost over time, breakdown of O&M cost by project type, and the cost/benefit of continuing O&M activities. The results of this discussion will be reported back to the Task Force.

**10. Discussion: Coastwide Reference Monitoring System (CRMS)-Wetlands Monitoring (Podany) 12:20 p.m. to 12:30 p.m.** The Technical Committee will discuss the status and funding of the CRMS program to get a better understanding of the yearly funding requirements and program efforts.

**11. Additional Agenda Items (Podany) 12:30 p.m. to 12:35 p.m.**

**12. Announcement: Priority Project List 17 Regional Planning Team Meetings (LeBlanc) 12:35 p.m. to 12:40 p.m.**

January 9, 2007	Region IV Planning Team Meeting (Rockefeller Refuge)
January 10, 2007	Region III Planning Team Meeting (Morgan City)
January 11, 2007	Regions I and II Planning Team Meetings (New Orleans)
February 7, 2007	Coast-wide RPT Voting Meeting (Baton Rouge)

**13. Date of Upcoming Task Force Meeting (LeBlanc) 12:40 p.m. to 12:45 p.m.** The next Task Force meeting will be held January 31, 2007 at the LA Department of Wildlife and Fisheries in Baton Rouge, LA.

**14. Scheduled Dates of Future Program Meetings (LeBlanc) 12:45 p.m. to 12:50 p.m.**

<b>2007</b>			
January 9, 2007	10:00 a.m.	RPT Region IV	Rockefeller Refuge
January 10, 2007	9:00 a.m.	RPT Region III	Morgan City
January 11, 2007	9:00 a.m.	RPT Region II	New Orleans
January 11, 2007	1:00 p.m.	RPT Region I	New Orleans
January 31, 2007	9:30 a.m.	Task Force	Baton Rouge
February 7, 2007	9:30 a.m.	Coast-wide RPT Voting	Baton Rouge
March 14, 2007	9:30 a.m.	Technical Committee	New Orleans
April 11, 2007	9:30 a.m.	Task Force	Lafayette
June 13, 2007	9:30 a.m.	Technical Committee	Baton Rouge
July 11, 2007	9:30 a.m.	Task Force	New Orleans
August 29, 2007	7:00 p.m.	PPL17 Public Meeting	Abbeville
August 30, 2007	7:00 p.m.	PPL17 Public Meeting	New Orleans
September 12, 2007	9:30 a.m.	Technical Committee	New Orleans
October 17, 2007	9:30 a.m.	Task Force	New Orleans
December 5, 2007	9:30 a.m.	Technical Committee	Baton Rouge
<b>2008</b>			
January 30, 2008	9:30 a.m.	Task Force	Baton Rouge

**Adjourn**

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**REPORT: STATUS OF BREAUX ACT PROGRAM AND PROJECT FUNDS**

Potential Construction Program Funding Requests for 6 Dec 06 Technical Committee Meeting					12/1/2006
	Total Request	TC?	Fed	Non-Fed	TC recommendation
<b>Funds Available:</b>					
Funds Available, 1 Dec 06 (including FY07 allocation)			\$55,305,846	\$9,759,855	
<b>Total</b>	<b>\$65,065,701</b>		<b>\$55,305,846</b>	<b>\$9,759,855</b>	
<b>Agenda Item 1: Status of Breaux Act Funds</b>					
Column left blank in case TC wants to "set aside" funds for construction cost increases			\$0	\$0	\$0
<b>Total</b>	<b>\$0</b>		<b>\$0</b>	<b>\$0</b>	
<b>Agenda Item 2: Request for Additional Phase II Increment 1 Funds</b>					
W Lake Boudreaux (TE-46)	\$1,916,859		\$1,629,330	\$287,529	\$0
<b>Total</b>	<b>\$1,916,859</b>		<b>\$1,629,330</b>	<b>\$287,529</b>	
<b>Agenda Item 3: Request for Additional Phase II Increment 1 Funds</b>					
Lake Borgne (PO-30)	\$6,925,824		\$5,886,950	\$1,038,874	\$0
<b>Total</b>	<b>\$6,925,824</b>		<b>\$5,886,950</b>	<b>\$1,038,874</b>	
<b>Agenda Item 4: Request for Phase II Authorization and Phase II Increment 1 Funding (O&amp;M only)</b>					
"Lake Borgne Segment" of MRGO/Lake Borgne SP (PO-32)	\$9,159,788		\$7,785,820	\$1,373,968	\$0
<b>Total</b>	<b>\$9,159,788</b>		<b>\$7,785,820</b>	<b>\$1,373,968</b>	
<b>Agenda Item 5: Request for Phase II Authorization and Phase II Increment 1 Funding</b>					
Barataria Basin LB, Phase 3, CU 7	\$21,538,790		\$18,307,972	\$3,230,819	\$0
Castille Pass Sediment Delivery	\$18,933,969		\$16,093,874	\$2,840,095	\$0
Dedicated Dredging on Barataria Basin Landbridge - Fill Site 1	\$15,231,142		\$12,946,471	\$2,284,671	\$0
East Grand Terre Island Restoration	\$33,881,341		\$28,799,140	\$5,082,201	\$0
Freshwater Bayou Bank Stabilization - Belle Isle Canal - Lock	\$25,676,625		\$21,825,131	\$3,851,494	\$0
GIWW Bank Restoration in Critical Areas in Terrebonne (Segments 1,2,6)	\$13,175,993		\$11,199,594	\$1,976,399	\$0
Goose Point/Point Platte Marsh Creation	\$18,989,923		\$16,141,435	\$2,848,488	\$0
Grand Lake Shoreline Protection - with Tebo Point	\$20,331,947		\$17,282,155	\$3,049,792	\$0
Lake Borgne & MRGO Shoreline Protection - MRGO Segment	\$31,924,591		\$27,135,902	\$4,788,689	\$0
Rockefeller Refuge	\$10,544,865		\$8,963,135	\$1,581,730	\$0
Ship Shoal: Whiskey West Flank Restoration	\$48,901,961		\$41,566,667	\$7,335,294	\$0
South Lake DeCade - CU1	\$2,221,045		\$1,887,888	\$333,157	\$0
<b>Total</b>	<b>\$261,352,192</b>		<b>\$222,149,363</b>	<b>\$39,202,829</b>	
<b>December 2006/January 2007 Approvals</b>					
	<b>\$279,354,663</b>				<b>\$0</b>
<b>Available Funds Surplus/Shortage</b>					
					<b>\$65,065,701</b>

**Non-Cash Flow (PPL 1 thru 8)**

Brown Lake  
Sabine Cycle 2  
Penchant Basin  
Grand Bayou  
Lake Boudreaux  
West Point a la Hache

**Scheduled Const Start**

Feb 2007  
Jun 2007  
Feb 2008  
Mar 2008  
May 2008  
Unscheduled

**Cash Flow Projects With Approved Phase II**

Lake Borgne SP  
Periodic Intro Demo  
Terrebonne Bay Demo  
Pass Chaland to Grand Bayou  
West Lake Boudreaux  
Barataria Barrier Island, CU 2  
North Lake Mechant, CU 2

**Scheduled Const Start**

Feb 2007      Revised estimate being prepared  
Apr 2007  
Apr 2007  
Apr 2007  
Apr 2007      Revised estimate being prepared  
??????  
??????



## Creel, Travis J MVN-Contractor

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**From:** LeBlanc, Julie Z MVN  
**Sent:** Wednesday, November 29, 2006 7:12 PM  
**To:** 'Daniel Llewellyn'; Parrish.Sharon@epamail.epa.gov; Richard Hartman; britt.paul@la.usda.gov; darryl\_clark@fws.gov; Gerry Duszynski; Podany, Thomas J MVN; Constance, Troy G MVN  
**Cc:** Charles Killebrew; Chris Knotts; Kirk Rhinehart; David Fruge; Chris Williams; Luke Le Bas; Deetra Washington; David Burkholder; Browning, Gay B MVN; Goodman, Melanie L MVN; Petitbon, John B MVN; Amelia\_vincent@ursCorp.com; betty.jones@la.usda.gov; Billy Hicks; britt.paul@la.usda.gov; charles.Killebrew@LA.GOV; cheryl.walters@la.usda.gov; chrisk@dnr.state.la.us; comvss@lsu.edu; daniel.llewellyn@la.gov; darryl\_clark@fws.gov; deetra.washington@gov.state.la.us; diane.smith@la.gov; edh@dnr.state.la.us; erik.zobrist@noaa.gov; Gay Browning; gerryd@dnr.state.la.us; Gregory Breerwood; gsteyer@usgs.gov; Hennington, Susan M MVN; honorab@dnr.state.la.us; jimmy\_johnston@usgs.gov; John Petitbon; john.jurgensen@la.usda.gov; jonathan.porthouse@la.gov; Karim Belhadjali [karimb@dnr.state.la.us]; kevin\_roy@fws.gov; kirk.rhinehart@la.gov; kirkr@dnr.state.la.us; Lachney, Fay V MVN; Landers.Timothy@epamail.epa.gov; parrish.sharon@epa.gov; pat.forbes@GOV.STATE.LA.US; quin.kinler@la.usda.gov; rachel.sweeney@noaa.gov; randyh@dnr.state.la.us; richard.hartman@noaa.gov; rickr@dnr.state.la.us; russell\_watson@fws.gov; scott\_wilson@usgs.gov; Suzanne Hawes; Taylor.Patricia-A@epamail.epa.gov; Thomas Podany; tom\_denes@URSCorp.com; Travis Creel; Unger, Audrey C MVN-Contractor; finley\_h@wlf.state.la.us; Gary Rauber; Gregory Miller; jonathanp@dnr.state.la.us; Melanie Goodman; ruiz\_mj@wlf.state.la.us; Gay Browning; Melanie Goodman; Troy Constance; Wanda Martinez  
**Subject:** RE: Additional Item for Technical Committee Agenda (UNCLASSIFIED)  
**Attachments:** Projects-scheduled-for-construction-28Nov06.doc



Projects-scheduled-  
for-constru...

Classification: UNCLASSIFIED

Caveats: NONE

Dan, all:

The Corps agrees with LDNR's concern.

Gay has put together a list of projects that are either: (1) non-cash flow projects that have approved funding, or (2) cash flow projects that have approved Phase II funding. These projects have not yet begun construction and scheduled construction start dates are shown. These projects may potentially require additional funds because of increases in construction costs post-K and post-R.

The Corps agrees that this item can be discussed further under Agenda Item 1 - Status of Breaux Act Program and Project Funds.

Travis: Please include this information in the binder under Tab 1.

Julie Z. LeBlanc  
U. S. Army Corps of Engineers  
(504) 862-1597

-----Original Message-----

From: Daniel Llewellyn [mailto:DanielL@dnr.state.la.us]  
Sent: Wednesday, November 29, 2006 4:44 PM  
To: LeBlanc, Julie Z MVN; Parrish.Sharon@epamail.epa.gov; Richard Hartman; britt.paul@la.usda.gov; darryl\_clark@fws.gov; Gerry Duszynski; Podany, Thomas J MVN; Constance, Troy G MVN

Cc: Charles Killebrew; Chris Knotts; Kirk Rhinehart; David Fruge; Chris Williams; Luke Le Bas; Deetra Washington; David Burkholder  
Subject: RE: Additional Item for Technical Committee Agenda

The CWPRA community realizes that construction costs have increased due to the 2005 hurricanes. At next week's Technical Committee meeting, two projects are on the agenda to request additional construction funding. DNR is concerned that there are other projects that have Phase 2 approval, but have not yet been put out for bid, that will probably require additional construction funding during 2007, e.g. North Lake Mechant and Pelican Island. It would be beneficial for the Tech Committee to know how much the increases may be (at least ballpark estimates) before decisions are made on the Phase 2 requests in agenda item 4. The Tech Committee may want to consider setting aside a sufficient amount during agenda item 1. Feed the children we have before birthing more, as it were.

Classification: UNCLASSIFIED  
Caveats: NONE

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**DECISION: REQUEST FOR ADDITIONAL PHASE II INCREMENT 1 FUNDING  
FOR THE WEST LAKE BOUDREAUX PROJECT (TE-46)**

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

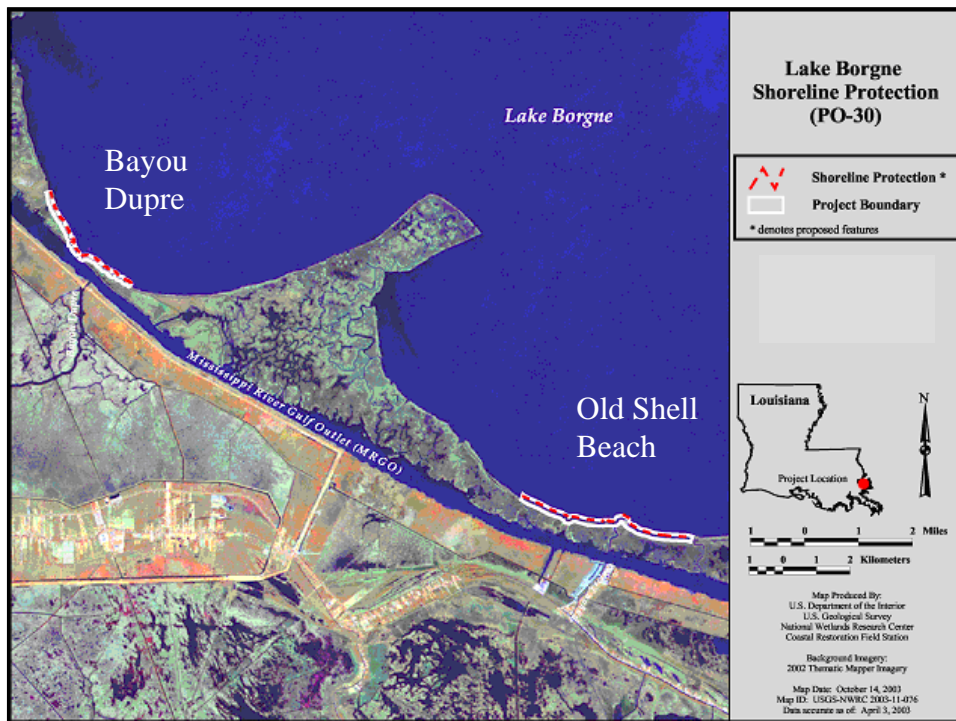
**DECISION: REQUEST ADDITIONAL PHASE II INCREMENT 1 CONSTRUCTION FUNDS FOR THE LAKE BORGNE SHORELINE PROTECTION PROJECT (PO-30)**

# Lake Borgne Shoreline Protection

Bayou Dupre and Shell Beach, St. Bernard Parish

## Project Goals:

- Prevent/reduce Lake Borgne shoreline retreat adjacent to Old Shell Beach/Bayou Dupre
- Mitigate further joining of the lake and MRGO
- Reestablishing a sustainable lake rim; and,
- Preventing or reducing conversion of emergent marsh to open water.



## Lake Borgne Shoreline Protection Project (PO-30) - Status

- May to September dredging window
- Project not constructed in 2006 due to oyster issues
  - oyster policy has now been finalized by State
  - no longer presents an issue for construction
- LDNR ready to advertise early 2007
- Task Force approved \$16,622,590 Phase II funds February 8, 2006
  - based upon pre-hurricane material costs
- Material costs have nearly doubled in the past year
- Additional funds (\$6,925,825) requested to avoid overbid

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

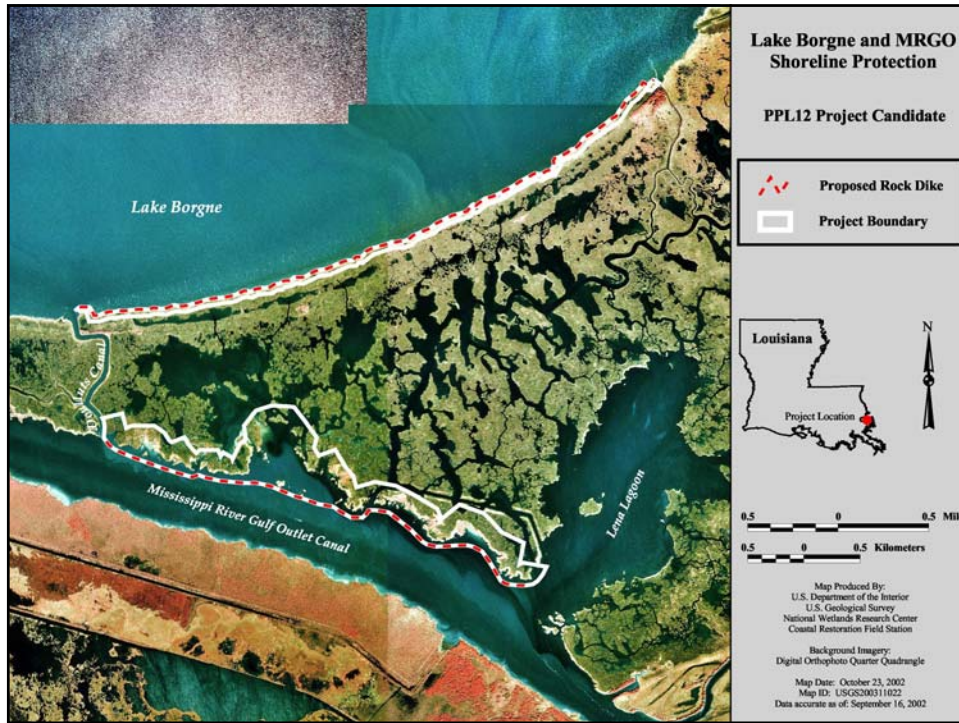
**DECISION: REQUEST FOR PHASE II AUTHORIZATION AND APPROVAL OF  
PHASE II INCREMENT 1 FUNDING (O&M ONLY) FOR THE "LAKE BORGNE  
SEGMENT" OF THE LAKE BORGNE/MRGO SHORELINE PROTECTION  
PROJECT (PO-32)**



## Project Background

- Authorized in January 2003 by Breaux Act (CWPPRA) Task Force on PPL12
- Originally two segments totaling ~32,750 linear feet of rock dike to stop shoreline erosion along the southern shoreline of Lake Borgne and the north bank of the Mississippi River Gulf Outlet
- Task Force directed that the projects be designed as separable reaches in Phase I
- USACE building Lake Borgne segment with hurricane recovery funds Congress provided in the 3<sup>rd</sup> Supplemental





## Wetlands Loss Problems

- The shoreline of Lake Borgne is eroding
- Annual rate of erosion is ~ -10ft/yr
- Mainly due to wind driven waves associated with winter frontal passage and tropical storms and hurricanes
- Project area fell directly in Hurricane Katrina's eye-path

## Benefits and Costs

### Lake Borgne segment

- 18,820 ft offshore breakwater at +5.0 ft high crown
- Protects 93 acres of lake shoreline brackish marsh
- Construction contract awarded by USACE in September 2006 to build the reach for \$12.6 million
- Bid package utilized CWPPRA-developed plans and specifications, NEPA compliance and real estate plan
- Construction completion scheduled for March 2007 (first project built in basin since hurricane)

## Request for O&M

- Propose use of “CIAP-style” procedures
- Seeking increment 1 funding for first three years of O&M
- Estimated cost for 3yrs is \$9,159,788
- Allows CWPPRA to “purchase” or “preserve” project benefits for only the cost of O&M

# *Questions*



Doullut's Canal  
St. Bernard Parish, LA

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**DECISION: REQUEST FOR PHASE II AUTHORIZATION AND APPROVAL OF  
PHASE II INCREMENT 1 FUNDING**

**CWPPRA, Phase II Approval Requests for December 2006/January 2007**

Updated: 1 Dec 06

Agency	Proj No.	PPL	Project	Construction Start	Phase II Total Estimate	Phase II Incr 1 Funding Rqst	Acres Benefited 20 Years	Prioritization Score	30% Design Review Meeting Date	95% Design Review Meeting Date
NRCS	BA-27c(3)	9	Barataria Basin Landbridge, Phase 3 - CU 7	Aug-07	\$25,765,121	\$21,538,790	180	45.55	20 Aug 03 (A)	2 Sep 04 (A)
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					\$288,864,430	\$261,352,192				

\*\* Lake Borgne segment of the Lake Borgne & MRGO Shoreline Protection Project constructed under Corps MRGO O&M funding

(A) = Actual Date  
(S) = Scheduled/Announced Date  
(T) = Tentative Date (not yet announced)

**CWPPRA - Prioritization Scores for Projects Not Funded for Construction**

Dated: December 1, 2006

Prepared for December 6, 2006 Technical Committee Meeting

Project Name	Project Number	Region	PPL	Lead Agency	Project Type	(2) Total Acres Benefited	(1) Current Estimate	Cost Per Acre (\$/acre)	Prioritization Scores for each Criteria & Corresponding Weight								Total Weighted Score 100%	
									Cost Effective 20%	Area of Need 15%	Implementability 15%	Certainty of Benefits 10%	Sustainability 10%	HGM Riverine Input 10%	HGM Sediment Input 10%	HGM Structure and Function 10%		
Benneys Bay Sediment Diversion	MR-13	2	10	COE	RD	5,706	\$39,295,672	\$6,887	10	5	10	9	10	10	10	10	10	91.50
Delta-Building Diversion North of Fort St. Philip	BS-10	2	10	COE	RD	501	\$6,008,486	\$11,993	10	4.4	10	9	10	10	10	5	85.60	
South Lake DeCade Freshwater Introduction - CU #1	TE-39	3	9	NRCS	SP	202	\$3,841,826	\$19,019	10	9.3	10	8	8	0	0	10	74.95	
Small Freshwater Diversion to the NW Barataria Basin	BA-34	2	10	EPA	RD	941	\$13,340,508	\$14,177	10	7.5	10	9	8	4	5	0	72.25	
Spanish Pass Diversion	MR-14	2	13	COE	SD	433	\$13,927,800	\$32,166	7.5	5	4	9	10	10	10	0	67.50	
Opportunistic Use of Bonnet Carre Spillway	PO-26	1	9	COE	RD	177	\$1,084,080	\$6,125	10	4	10	9	10	4	0	0	64.00	
Penchant Basin Natural Resources Plan-Increment 1	TE-34	3	6	NRCS	HR	1,155	\$13,250,937	\$11,473	10	5.9	10	2	10	7	0	0	62.85	
River Reintroduction into Maurepas Swamp	PO-29	1	11	EPA	RD	5,438	\$6,469,628	\$10,384	10	5	4	9	8	7	5	0	62.50	
Grand Lake Shoreline Protection - with Tebo Point	ME-21	4	11	COE	SP	540	\$24,117,374	\$44,662	5	7.5	10	10	10	0	0	5	61.25	
Avoca Island Diversion & Land Building	TE-49	3	12	COE	RD	143	\$18,823,322	\$131,632	1	8	10	9	6	7	10	0	61.00	
Ship Shoal: Whiskey Island West Flank Restoration	TE-47	3	11	EPA	BI	195	\$52,925,372	\$271,412	1	10	10	7	1	0	10	10	60.00	
East Grand Terre Island Restoration	BA-30	2	9	NMFS	BI	335	\$36,705,731	\$109,569	1	10	10	7	6	0	5	10	60.00	
Castille Pass Channel Sediment Delivery	AT-04	3	9	NMFS	RD	577	\$30,892,080	\$53,539	5	1	10	8	10	10	0	5	59.50	
Sabine Refuge Marsh Creation - Cycle 5	CS-28	4	8	COE	MC	168	\$2,133,439	\$12,699	10	5	10	7	8	0	0	0	57.50	
Dedicated Dredging on Barataria Basin Landbridge-Fill Site 1	BA-36	2	11	FWS	MC	242	\$15,842,343	\$65,464	2.5	10	10	7	4	0	0	10	56.00	
Riverine Sand Mining/Scofield Island Restoration	BA-40	2	14	NMFS	BI	234	\$44,545,000	\$190,363	1	10	10	7	1	0	5	10	55.00	
Brown Lake Hydrologic Restoration	CS-09a	4	2	NRCS	HR	282	\$3,154,472	\$11,186	10	5	7	5.1	8	3	0	0	54.10	
Goose Point/Point Platte Marsh Creation	PO-33	1	13	FWS	MC	436	\$20,867,777	\$47,862	5	4	10	7	10	0	0	5	53.00	
Sabine Refuge Marsh Creation - Cycle 4	CS-28	4	8	COE	MC	163	\$3,630,831	\$22,275	7.5	5	10	7	8	0	0	0	52.50	
White Ditch Resurrection and Outfall Management	BS-12	2	14	NRCS	RD	189	\$14,845,000	\$78,545	2.5	3	10	9	10	4	5	0	52.50	
Mississippi River Sediment Trap	MR-12	2	11	COE	MC	1,190	\$52,180,839	\$43,849	5	5	10	7	2	0	10	0	51.50	
Whiskey Island Backbarrier Marsh Creation	TE-50	3	13	EPA	BI	272	\$21,786,300	\$80,097	1	10	7	7	1	0	5	10	50.50	
South Shore of The Pen Shoreline Protection and Marsh Creation	BA-41	2	14	NRCS	SP/MC	116	\$17,514,000	\$150,983	1	7.9	10	7.4	4	0	0	10	50.25	
South Grand Cheniere Hydrologic Restoration	ME-20	4	11	FWS	HR	440	\$19,930,316	\$45,296	5	5	10	6.7	8	3	0	0	50.20	
South Lake DeCade Freshwater Introduction - CU #2	TE-39	3	9	NRCS	FD	40	\$1,532,400	\$38,310	7.5	5	7	5	10	2	0	0	50.00	
Pass Chalant to Grand Bayou Pass Barrier Shoreline Restoration	BA-35	2	11	NMFS	BI	262	\$30,217,567	\$115,334	1	9.3	7	7	1.4	0	5	10	49.85	
Lake Boudreaux Freshwater Introduction	TE-32a	3	6	FWS	FD	603	\$14,450,063	\$23,964	7.5	7.5	7	5	6	2	0	0	49.75	
Bayou Dupont Sediment Delivery System	BA-39	2	12	EPA	MC	400	\$24,386,990	\$60,967	2.5	10	7	7	2	0	10	0	49.50	
Rockefeller Refuge Gulf Shoreline Stabilization (original)	ME-18	4	10	NMFS	SP	920	\$49,929,888	\$54,272	5	7.5	10	6	2	0	0	5	49.25	
Barataria Basin Landbridge - Phase 3 - CU 7	BA-27c	2	9	NRCS	SP	180	\$26,387,255	\$146,596	1	5.7	10	8	2	0	0	10	45.55	
Little Pecan Bayou Control Structure	ME-17	4	9	NRCS	HR	144	\$14,285,943	\$99,208	1	4	10	6	10	6	0	0	45.00	
Lake Borgne and MRGO Shore Protection-Lake Borgne	PO-32a	1	12	COE	SP	93	\$17,108,507	\$183,962	1	4	10	8	8	0	0	5	44.00	
Lake Borgne and MRGO Shore Protection	PO-32	1	12	COE	SP	266	\$39,157,710	\$147,209	1	4.7	10	8	6	0	0	5	43.05	
Bayou Sale Ridge Protection	TV-20	3	13	NRCS	SP	329	\$32,103,000	\$97,578	1	3	10	7.7	8	0	0	5	42.20	
Lake Borgne Shoreline Protection	PO-30	1	10	EPA	SP	165	\$18,707,551	\$113,379	1	5	10	8	4	0	0	5	41.50	
Grand Bayou Hydrologic Restoration	TE-10	3	5	FWS	HR	199	\$8,209,722	\$41,255	5	5.4	7	2	8	2	0	0	40.60	
GIWW Bank Restoration of Critical Areas in Terrebonne-Segments 1, 2, 6	TE-43	3	10	NRCS	SP	132	\$17,704,211	\$134,123	1	7.5	10	8	4	0	0	0	40.25	
Freshwater Bayou Bank Stabilization - Belle Isle Canal to Lock	TV-11b	3	9	COE	SP	241	\$30,070,170	\$124,772	1	3	10	10	8	0	0	0	39.50	
Lake Borgne & MRGO Shoreline Protection-MRGO segment	PO-32b	1	12	COE	SP	173	\$35,985,438	\$208,008	1	5	10	8	4	0	0	0	36.50	
East Marsh Island Marsh Creation	TV-21	3	14	NRCS	MC	189	\$16,824,700	\$89,020	1	1	10	7	10	0	0	0	35.50	
Weeks Bay/Commercial Canal/GIWW SP	TV-19	3	9	COE	SP	278	\$30,027,305	\$108,012	1	4	4	7.2	4	0	0	5	30.20	
Rockefeller Refuge Gulf Shoreline Stabilization - CU1 (see note #7 below)	ME-18	4	10	NMFS	SP		\$12,953,343											

BA-27c(3)- Barataria Basin Landbridge, Phase 3 - CU 7

*Coastal Wetlands Planning,  
Protection and Restoration Act*



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

**PHASE II APPROVAL OF  
CU7**

*CWPPRA Technical Committee Meeting  
December 6, 2006*

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

**Project Location:** Region 2, Barataria Basin, Lafourche Parish, west bank of Bayou Perot and north shore of Little Lake.

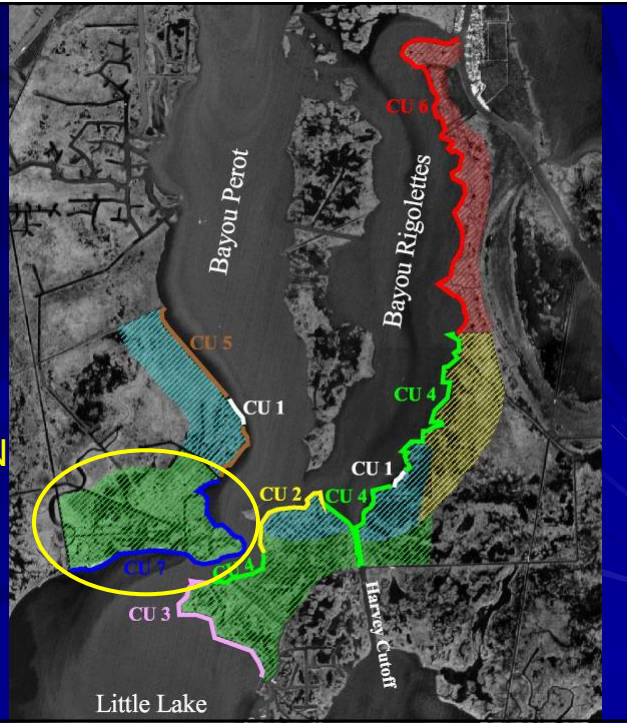
**Problem:** Shoreline erosion rates in this area vary from 5 to 30 feet per year. (Some areas lost about 75 feet as a result of 2005 storms.)

**Goal:** Reduce or eliminate shoreline erosion for about 22,800 feet along west bank of B. Perot and north shore of Little Lake.



**BARATARIA  
LANDBRIDGE  
SHORELINE  
PROTECTION**

**ALL PHASES  
AND  
CONSTRUCTION  
UNITS**



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



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

**Project Features**

22,800 feet of rock dike / revetment along the along the west bank of Bayou Perot and the north shore of Little Lake.

Dike and revetment will have an elevation of 3.5 feet NAVD88, a top width of 4 feet, and side slopes of 3:1.

Five site-specific organism/drainage openings, ranging from 20 to 50 feet .

Beneficial Use of dredge material could result in creation of 38 acres of marsh.

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

**Benefits and Cost**

Total Area Benefited:	961 Acres
Net Acres after 20 years:	180 Acres
Prioritization Score:	45.55 Pts.
Fully Funded Phase II Total:	\$25,860,920
Fully Funded Phase II Increment 1:	\$21,538790

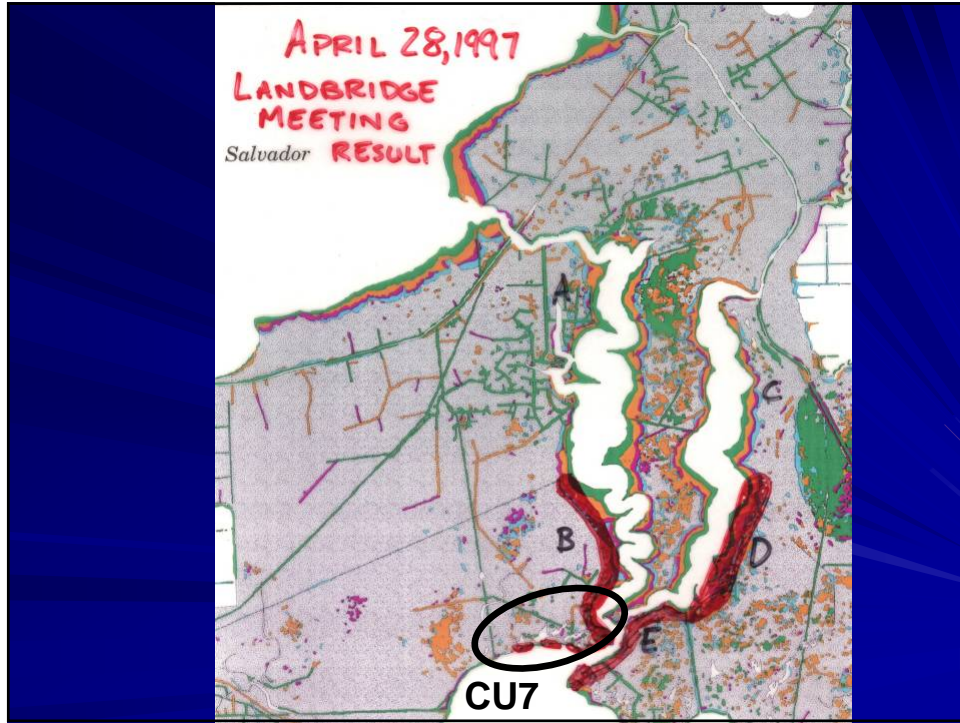
**BARATARIA LANDBRIDGE PHASES 1, 2, 3, & 4  
(BA-27, BA-27c, BA-27d)**

Project Phase	Original Estimate	Current Estimate	Percent vs. Original
Phase 1 & 2 (BA-27) (CU1 + CU2 + part CU4 + CU5) 40,250 Feet	17,515,020	30,881,349	176%
Phase 3 (BA-27c) (CU3+part CU4 + CU7) 43,400 Feet	20,745,106	39,814,779	192%
Phase 4 (BA-27d) (CU6) 31,120 Feet	36,541,413	22,787,951	62%
TOTAL All Phases 114,770 Feet	74,801,539	93,484,079	125%

**BARATARIA LANDBRIDGE PHASES 1, 2, 3, & 4  
(BA-27, BA-27c, BA-27d)**

Year of Request	Phase II Total	Phase II Increment I
2004	\$14.7 M	\$12.1 M
2005	\$18.8 M	\$15.7 M
2006	\$25.9 M	\$21.5 M

While waiting for Phase II approval, the project cost has gone up by about 77%.



# America's Wetland


## Louisiana's Vanishing Coast

Photographs by BEVIL KNAPP Text by MIKE DUNNE

...one in a few lifetimes what nature built, continues to  
 ...al loss in the delta plain of Louisiana (from the Mis-  
 ...million feet) was about seven square miles per year to  
 ...bout fifteen square miles per year. During the 1970s  
 ...nally began to erode; the landscape, the loss rate in-  
 ...thirty-nine square miles per year. It is now down to  
 ...about 260 square miles per year, according to the U.S. Geological Survey. The re-  
 ...duction is because the land most costly lost to erosion is now gone.

If nothing is done to reverse or control the current trend, by the year 2050,  
 ...one-third of the entire coast of Louisiana will be lost. Can the nation afford such a  
 ...loss?


Dick Garber wades through  
 ...ball region, one of the places  
 ...the help keep the marsh to-  
 ...gether, as Dick Garber follows,  
 ...back on from the Depart-  
 ...ment of Agriculture's Natural  
 ...Resource Conservation Ser-  
 ...vice and are working to  
 ...reverse much of the  
 ...loss of Lake Charles with a  
 ...new, the plan is to build  
 ...to new levee systems.



**Coastal Wetlands Planning,  
Protection and Restoration Act (CWPPRA):**  
A Response to Louisiana's Land Loss

A Report by the Louisiana Coastal Wetlands  
Conservation and Restoration Task Force  
17APRIL2008


**CASE STUDY:** The Barataria Basin Landbridge is sinking and subject to erosion from nearby lakes and bayous -- a situation that threatens the communities of Barataria and Lafitte and also the west bank areas of New Orleans. Numerous oil and gas wells, pipelines, and storage facilities are also at risk. To address the problem, the CWPPRA Task Force approved a series of 12 projects costing over \$253 million. Projects in areas needing more immediate attention were approved first. When complete, the projects will strengthen the landbridge by re-establishing or protecting 5,400 acres and enhancing 27,500 acres.



CWPPRA Projects Supporting Barataria Basin Landbridge

**WATER MARKS**  
Louisiana Coastal Wetlands Planning, Protection and Restoration News

**Rebuilding Coastal Louisiana**  
Planning for the Next 100 Years



The Authority to Shape Louisiana's Future  
An Interview with CPRA Chairperson Sidney Coffey  
Synergy Among CWPPRA Projects Shores Up the Coast  
Congress to the Corps: Plan for Category 5

[www.lacoast.gov](http://www.lacoast.gov)

WATER MARKS November 2006 Number 32

**Agency Cooperation Creates Restoration Results**  
**Synergy Among CWPPRA Projects Shores Up the Coast**

A dozen miles of wetland separate the freshwater marshes of the northern Barataria Basin from the salty Barataria Bay.

each rebuilding or protecting a different piece of the landbridge. "When completed, these 12

**Barataria Basin Landbridge**



## Why Fund This Project Now?

- Consensus derived project
- Very high erosion rate
- Ready for construction for 3 years
- Funding delay has already raised the cost by 77%
- Part of widely touted Barataria Basin Landbridge

America's Wetland Book

CWPPRA Education Document

December 2006 Watermarks

United States Department of Agriculture



Natural Resources Conservation Service  
3737 Government Street  
Alexandria, Louisiana 71302

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November 27, 2006

Mr. Troy Constance, Acting Chairman  
CWPPRA Technical Committee  
U.S. Army Corps of Engineers  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Dear Mr. Constance:

RE: Barataria Basin Landbridge Shoreline Protection Project Phase 3 (BA-27c)  
Phase Two Authorization Request for Construction Unit 7

By this letter, the Natural Resources Conservation Service and the Louisiana Department of Natural Resources request Phase Two Authorization for the Barataria Basin Landbridge Shoreline Protection Project Phase 3 (BA-27c) Construction Unit 7, consisting of 22,811 feet of rock shoreline protection located on the north shore of Little Lake and the west bank of Bayou Perot in Lafourche Parish, Louisiana.

Pursuant to Revision 11.0 of the CWPPRA Standard Operating Procedures Appendix C, a document entitled "Information Required in Phase Two Authorization Request" is provided as Attachment A.

Pursuant to Revision 11.0 of the CWPPRA Standard Operating Procedures Appendix C, Section 6.j.(2), a project estimate and spending schedule based on the 5 budget subcategories is provided as Attachment B.

If you or any members of the Planning and Evaluation Subcommittee, Technical Committee or Task Force have any questions regarding this matter, please call Quin Kinler (225) 382-2047.

Sincerely,

Britt Paul  
Assistant State Conservationist/Water Resources

cc (via email only):

Greg Breerwood, Chairman, Technical Committee  
Gerry Duszynski, DNR Technical Committee Member

Mr. Troy Constance

November 27, 2006

Page 2

Darryl Clark, USFWS Technical Committee Member  
Rick Hartman, NMFS Technical Committee Member  
Sharon Parrish, EPA, Technical Committee Member  
Julie LeBlanc, P&E Subcommittee Chair  
Dan Llewellyn, DNR P&E Subcommittee Member  
Kevin Roy, USFWS P&E Subcommittee Member  
Rachel Sweeney, NMFS P&E Subcommittee Member  
Tim Landers, EPA P&E Subcommittee Member  
John Jurgensen, NRCS P&E Subcommittee Member  
Deetra Washington, GOCA  
Travis Creel, USCOE Contractor  
Quin Kinler, Project Manager, NRCS  
Ismail Merhi, Project Manager, LDNR  
Michael Trusclair, District Conservationist, NRCS  
Rachel Manuel, Design Engineer, NRCS  
Ronnie Faulkner, Design Engineer, NRCS  
Randolph Joseph, Jr., ASTC/FO, NRCS



**Information Required for Phase Two Authorization Request**

**Barataria Basin Landbridge Shoreline Protection Project Phase 3 (BA-27c)  
Construction Unit 7**

November 27, 2006

***Description of Phase One Project***

The Barataria Basin Landbridge Shoreline Protection Project Phase 3 (BA-27c) as selected for Phase One consisted of 9,000 feet of shoreline protection along the north shore of Little Lake; 11,000 feet along the west bank of Bayou Perot; 6,000 feet along the northeast shore of Little Lake; 9,600 feet along the east bank of Bayou Perot; 2,700 feet along the west bank of Harvey Cutoff, and 2,700 feet along the east bank of Harvey Cutoff, for a total of 41,000 feet of shoreline protection. See Figure 1. The project was envisioned to include one or more of the following techniques: a) foreshore rock dike using a construction technique where the underlying organic substrate is displaced, b) foreshore rock dike using a construction technique which attempts to retain and compact the underlying organic substrate, c) foreshore rock dike with a lightweight core material, d) rock revetment, e) steel sheetpile structure, f) concrete sheetpile structure, and/or g) PVC sheetpile structure. The objective of the project was to reduce or eliminate shoreline erosion for those areas referenced above. Secondary benefits were envisioned to include maintenance, and increase extent, of submerged aquatic vegetation on the protected side of project features, where such features form protected coves. The WVA predicted that the project would prevent the loss of 264 acres of intermediate and brackish marsh and produce 101 Average Annual Habitat Units. At the time of Phase One approval, the cost estimate was as follows:

Phase One Engineering & Design	692,131
Phase One Easements & Land Rights	76,563
Phase One S&A	254,946
Phase One Monitoring	16,955
Total Phase One	1,040,595
Phase Two Construction (includes S&H)	13,860,064
Phase Two Monitoring	76,943
Phase Two O&M	5,748,325
Phase Two Other	19,179
Total Phase Two	19,704,511
Total Fully Funded Cost	20,745,106

## ***Overview of Phase One Tasks, Process and Issues***

### Environmental Compliance Tasks.

The Barataria Basin Landbridge Shoreline Protection Project Phases 1, 2, and 3 (BA-27) Environmental Assessment was completed in February 2000. A Finding of No Significant Impact was published in the Federal Register on February 17, 2000.

The Section 404 permit was issued on December 10, 2002, with revised drawings being approved on February 26, 2004. CZM Consistency Determination was granted December 30, 2003. Water Quality Certification was granted January 30, 2004.

The Ecological Review for the entire Barataria Basin Landbridge Shoreline Protection Project was completed in August 2004. The reach of shoreline included in CU7 is addressed in the section referred to as CU5 because the previously defined CU5 has been split into two parts; part was approved for Phase Two funding as “CU5” and part has been redefined as “CU7”.

### Engineering Tasks.

The results of the Engineering Tasks are presented in the July 2004 Design Report for Barataria Basin Landbridge Shoreline Protection Project, Construction Unit 5 which can be found at: [ftp://ftp.dnr.state.la.us/pub/CED Project Management/NRCS/BA-27-CU7 BLB/Phase2Request TC2006-12-06](ftp://ftp.dnr.state.la.us/pub/CED%20Project%20Management/NRCS/BA-27-CU7%20BLB/Phase2Request%20TC2006-12-06).

This design report covers the shoreline protection reach that has been already been approved for Phase Two funding as Construction Unit 5 (13,780 feet of concrete pile and panel wall) and the shoreline protection reach that is now referred to as Construction Unit 7 (22,811 feet of rock shoreline protection). Only two elements presented in the 2004 Design Report associated with the rock shoreline protection (now CU7) have changed: 1) the engineer’s estimate has been updated; and 2) for the beneficial use areas, the maximum elevation of dredged material placement has been revised from +1.0 to +2.0 feet NAVD88.

### Landrights Tasks.

By letter to Don Gohmert of NRCS, dated January 11, 2006, LDNR has certified that landrights are complete for CU7 (copy enclosed).

## ***Description of the Phase Two Candidate Project***

The subject Phase Two Authorization Request is limited to about 22,811 feet of shoreline protection along the along the west bank of Bayou Perot and the northern shoreline of Little Lake. See Figure 2. The shoreline protection will consist of a rock dike and rock revetment, with an elevation of 3.5 feet NAVD88, a top width of 4 feet, and side slopes of 3:1. The dike

and revetment will be constructed of COE R-400 (rock specification) and will be underlain with a geotextile cloth. Five site-specific organism/drainage openings, ranging from 20 to 50 feet in width, will be incorporated; the openings will have a sill elevation of 2 feet below average tide. Approximately 36,500 feet of construction access channel, with a bottom elevation of -5.5 feet NAVD88 and bottom width of 80 feet, may be excavated. As available containment volume in existing ponds permit, excavated material will be used beneficially -- dredged material shall be placed in three shallow ponds along the north shore of Little Lake to a maximum elevation of +2.0 feet NAVD88; as much as 38 acres of marsh could be created.

The current fully-funded cost estimate for Phase II Total of the BA-27c Construction Unit 7 is \$25,860,920. However, because Monitoring and COE Management were approved in full when Construction Unit 3 was approved, the requested Phase II amount for BA-27c CU7 is \$25,765,121. The current fully-funded cost estimate for Phase II, Increment 1 of the BA-27c Construction Unit 7 is \$21,538,790.

There has been no significant change in project scope warranting revisions to the BA-27c project boundary, map, benefits, or fact sheets for the project as a whole. However, for the CU7 portion of BA-27c, the benefits include 180 net acres over 20 years. A "Prioritization Fact Sheet" for the CU5 portion of BA-27c was prepared, and it yielded a total prioritization score of 45.55.

### ***Checklist of Phase Two Requirements***

- A. List of Project Goals and Objectives. The objective of the BA-27c Construction Unit 7 is to reduce or eliminate shoreline erosion for approximately 22,811 feet of shoreline along the along the west bank of Bayou Perot and the northern shoreline of Little Lake.
- B. Cost Sharing Agreement for Phase One. The Cost Sharing Agreement for Phase One of the Barataria Landbridge Shoreline Protection Phase 3 Project (BA-27c) was executed between DNR and NRCS on July 25, 2000.
- C. Landrights Notification. By letter to Don Gohmert of NRCS, dated January 11, 2006, LDNR has certified that landrights are complete for CU7 (copy enclosed).
- D. Favorable Preliminary Design Review. A favorable 30% Design Review for the work contained in this Construction Unit was conducted on August 20, 2003, and a summary of that review was distributed to the Technical Committee on October 14, 2003.
- E. Final Project Design Review. The 95% design review was conducted on September 2, 2004, with favorable results. A summary of that review, dated October 14, 2004, has been distributed to the Technical Committee.
- F. Environmental Assessment. The Barataria Basin Landbridge Shoreline Protection Project Phases 1, 2, and 3 (BA-27) Environmental Assessment was completed in February 2000. Copies of the Environmental Assessment and FONSI have been provided to the Technical Committee.
- G. Findings of Ecological Review. The Ecological Review for the entire Barataria Basin Landbridge Shoreline Protection Project (Phases 1, 2, 3, and 4) was completed in August 2004. The reach of shoreline included in CU7 is addressed in the section referred to as CU5 because the previously defined CU5 was split into two parts; part was approved for Phase Two funding as "CU5" and part has been redefined as "CU7". The Ecological Review

recommended continued progress toward construction authorization pending a favorable 95% Design Review.

- H. Application / Public Notice for Permits. The Section 404 permit was issued on December 10, 2002, with revised drawings being approved on February 26, 2004. CZM Consistency Determination was granted December 30, 2003. Water Quality Certification was granted January 30, 2004.
- I. HTRW Assessment. NRCS procedures do not call for an HTRW assessment on this project.
- J. Section 303e Approval. Section 303e approval was granted by the Corps Real Estate Division on October 21, 2002.
- K. Overgrazing Determination. NRCS has determined that overgrazing is not, and is not anticipated to be, a problem in the project area.
- L. Revised fully funded cost estimate, generated by the Economic Work Group, is \$26,387,255. The revised fully funded cost estimate for Phase II is \$25,860,920. The required spreadsheet is enclosed.
- N. Wetland Value Assessment. The Wetland Value Assessment was completed in August 1999, and all Task Force agencies were provided a copy. A revised Wetland Value Assessment will not be performed because no significant change in project scope had occurred.
- M. Prioritization Criteria ranking score. The Prioritization Fact Sheet was updated November 22, 2006, and provided to the Engineering and Environmental Work Groups.

Criteria	Score	Weight Factor	Contribution to Total Score
Cost Effectiveness	1	2	2
Area of Need, High Loss Area	5.7	1.5	8.55
Implementability	10	1.5	15
Certainty of Benefits	8	1	8
Sustainability of Benefits	2	1	2
Increasing riverine input	0	1	0
Increased sediment input	0	1	0
Maintaining landscape features	10	1	10
<b>TOTAL SCORE</b>			<b>45.55</b>

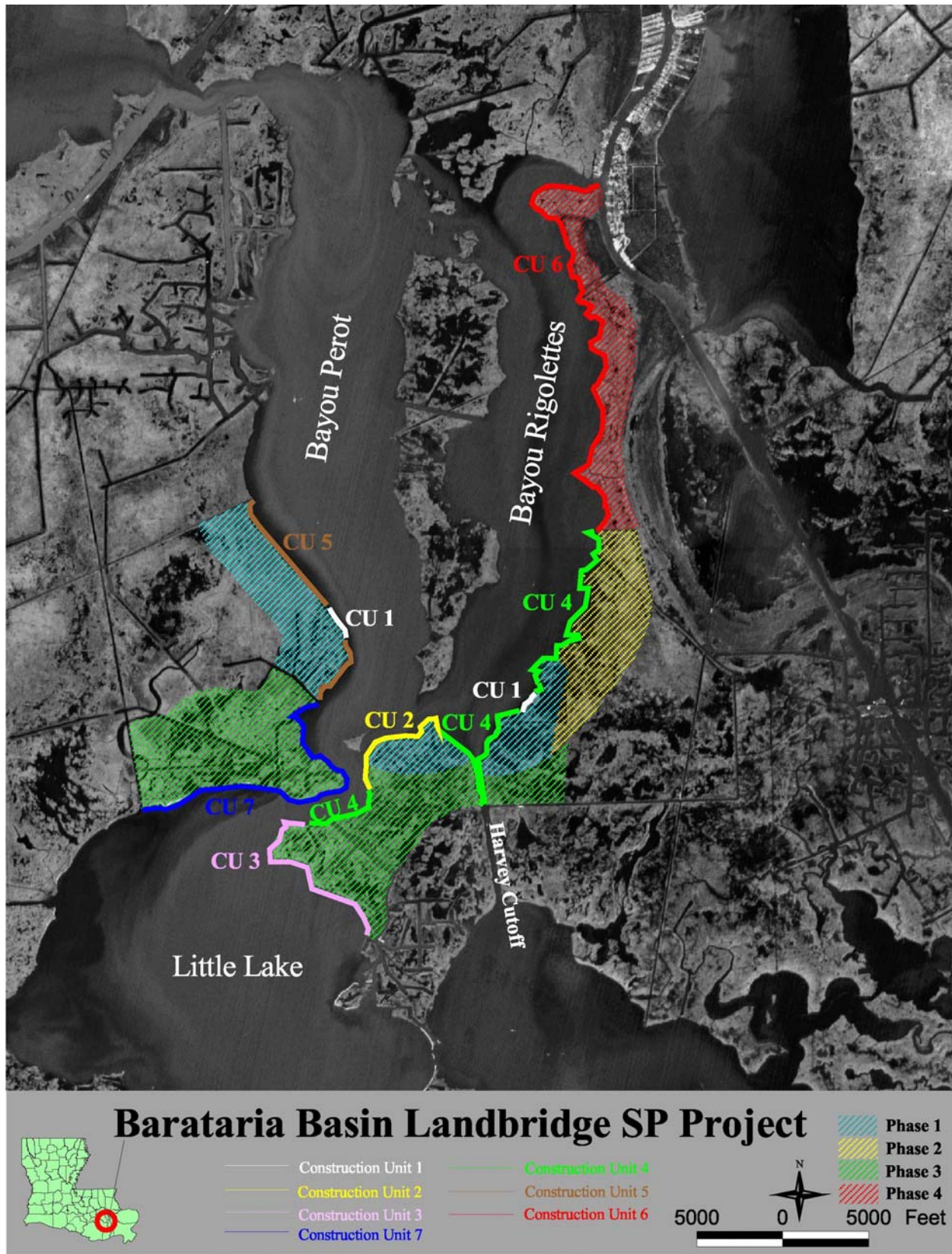


Figure 1. Map illustrating the juxtaposition of Barataria Basin Landbridge Shoreline Protection Project Phases and Construction Units.



Figure 2. Map of Barataria Basin Landbridge Shoreline Protection Project Phase 3 Construction Unit 7, Lafourche Parish.

# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

SCOTT A. ANGELLE  
SECRETARY

DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT  
January 11, 2006

Mr. Donald Gohmert, State Conservationist  
U. S. Natural Resources Conservation Service  
3737 Government Street  
Alexandria, LA 71302

RE: Barataria Basin LandBridge Shoreline Protection Project BA-27 CU5&7  
Assignment of Temporary Easement, Servitude and Right-of-Way Agreements and  
Pipeline Right of Way Access Agreement  
Landrights Certification

Dear Mr. Gohmert:

Enclosed are four (4) originals of the Assignment of Temporary Easement, Servitude and Right-of-Way Agreements and the Pipeline Right-of-Way Access Agreement (Assignment) from the Louisiana Department of Natural Resources (DNR) to the U.S. Natural Resources Conservation Service (NRCS). The Assignment transfers rights and obligations acquired by DNR from Chevron Pipeline Company (CPL) in a Pipeline Right-of-Way Access Agreement and Delta Farms, et al., the William Mason Heirs Committee, Goodrich Petroleum Company, L.L.C., Karen Majoria Gervais, Carolyn Coulon Goodrow, and Robert A. Matherne, et al. all in Temporary Easement, Servitude and Right-of-Way Agreements, hereinafter collectively called the "Agreements." Letters of No Objection were taken with Tennessee Gas Pipeline and Enbridge Pipeline. Please execute the four (4) originals, have them notarized in front of two (2) witnesses and return them in the enclosed envelope. The Assignment will be recorded in the public records of Lafourche and Jefferson Parishes, Louisiana, a certified copy of which will be forwarded to you. The rights assigned pertain to Construction Units 5 and 7.

Through a legal services contract, DNR obtained a Preliminary Ownership Report with Surface Use Reports for the Delta Farms, et al. property. Title Reports with Surface Use Reports were obtained for the William Mason Heirs Committee, Goodrich Petroleum Company, L.L.C., Karen Majoria Gervais, Carolyn Coulon Goodrow, and Robert A. Matherne, et al. Said Reports support DNR's assumption that Delta Farms, et al., the William Mason Heirs, Goodrich Petroleum Company, L.L.C., Karen Majoria Gervais, Carolyn Coulon Goodrow, and Robert A. Matherne, et al. are the true owners of the subject lands, from whom DNR obtained the appropriate agreements. Based on the Surface Use Reports, DNR was able to determine that there are three pipeline Rights-of-Way in or adjacent to the project area, CPL, Tennessee Gas Pipeline and Enbridge Pipeline as previously referenced, from whom DNR obtained the appropriate agreements.

COASTAL RESTORATION DIVISION  
P. O. BOX 44027 • BATON ROUGE, LA 70804-4027 • 617 N. THIRD STREET • 10TH FLOOR • BATON ROUGE, LA 70802  
PHONE (225) 342-7308 • FAX (225) 342-9417 • WEB <http://www.dnr.state.la.us>  
AN EQUAL OPPORTUNITY EMPLOYER

The Agreements with CPL, Delta Farms, et al., the William Mason Heirs Committee, Goodrich Petroleum Company, L.L.C., Karen Majoria Gervais, Carolyn Coulon Goodrow, and Robert A. Matherne, et al., and the Assignment to NRCS, are legal instruments which provide the rights to construct, maintain, rehabilitate and monitor the project features for the life of the project, and have been executed in accordance with Article III of the project cost share agreements dated Phases 1 and 2 (BA-27): July 16, 1999, Amended October 4, 2002; Phase 3 (BA-27c): July 25, 1999, Amended February 26, 2002, Amended April 17, 2003; Amended July 23, 2003.

Your execution in the space provided below will confirm your understanding of the above described assumption(s) and complete the landrights for Construction Unit 5 and 7 of this project.

If we can be of further assistance to you, please do not hesitate to contact Ms. Joyce M. Montgomery, at (225) 342-5068. Thank you for your cooperation in our coastal restoration efforts.

Sincerely,



William K. Rhinehart  
Administrator

Received, Reviewed, and Acknowledged this 2<sup>nd</sup> day of March 2006.

U.S. Natural Resources Conservation Service

By: Donald W. Gohmert

Title: State Conservationist

c (w/enclosure):      Quin Kinler, NRCS, Baton Rouge  
                                 Ismail Mehri, CED Project Manager  
                                 Melissa Hymel, CRD Monitoring Manager  
                                 Joyce M. Montgomery, CRD Land Specialist



AT-04 - Castille Pass Channel Sediment Delivery

**CWPPRA**  
**Castille Pass Sediment Delivery**  
**(AT-04)**  
**Phase II Request**

**Technical Committee Meeting**

December 6, 2006

Baton Rouge, LA

**Project Overview**

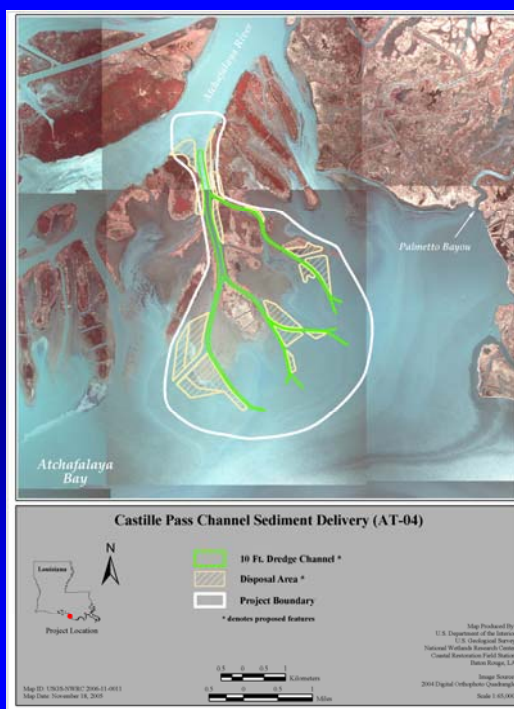
**Project Location:** Region 3 , Atchafalaya Basin, St. Mary Parish, Atchafalaya Delta.

**Problem:** Dredged spoil placement has restricted natural flow to the eastern delta which has substantially reduced natural marsh creation

**Goals:**

- Increase riverine flow into the eastern delta into Fourleague bay to promote natural marsh creation
- Initially create 150 acres of marsh (PPL9)
- Create 220 acres of marsh through maintenance activities (PPL9)

## Project Map



## Project Features Overview

- Hydraulically dredge 2.1 million cubic yards of material from Castille, East and Natal Passes to an elevation of -10.0 NAVD.
- Construct over 25,000 liner feet of containment dikes to varying elevations and widths.
- Initially create over 570 acres of intertidal marsh varying in elevation from +2.5 to +3.0 NAVD.

## Project Benefits & Costs

- **Dredging activities will initially create over 500 acres of marsh with an additional 100+ acres created from maintenance events over 20 years. Anticipated long term (20yr) accretion from increased sediment transport to the project area will create approximately 200 acres**
- **The Total Fully Funded Cost is \$30,892,080  
(Dec. 2005 = \$19,657,695)**
- **The Total Fully Funded Cost is has not changed significantly from what was originally projected while increasing created acres by 60%**
- **The Prioritization Score is: 59.5**

## Project Comparison/Contrast

The Present vs. PPL 9

### Authorized Project – PPL 9

- Create a 10 ft deep, 400 ft wide channel 5 miles long extending southerly into Fourleague Bay.
- 150 acres created from initial construction
- 220 acres created from maintenance activities

### Currently Proposed Project

- Dredge and extend Castille, East and Natal Channels, including bifurcation channels, in varying widths to elevation -10 NAVD.
- 500+ acres created from initial construction
- 100+ acres created from maintenance activities

**Questions?**



**UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE  
SEFC/Estuarine Habitat & Coastal Fisheries Center  
846 Cajundome Boulevard  
Lafayette, Louisiana 70506

November 22, 2005

Mr. Tom Podany (Chairman)  
CWPPRA Technical Committee  
Assistant Chief of Planning, Programs and Projects Management  
U.S. Army Engineer District, New Orleans  
P.O. Box 60267  
New Orleans, LA 70160-0267

Dear Mr. Podany,

As the lead federal agency for the Castille Pass Sediment Delivery project authorized by the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Task Force on the 9<sup>th</sup> Project Priority List, the National Marine Fisheries Service (NMFS) is requesting, in accordance with CWPPRA's Standard Operating Procedure (SOP), approval to proceed with construction of this project.

At the Phase I approval meeting in January 2000 the project design consisted of dredging Castille Pass 400 feet wide by 10 feet deep (NGVD) extending it eastward towards Fourleague Bay ending near South Point for a total length of approximately 25,000 feet. This channel would have bifurcated several times to provide water and sediment delivery through four channels that were to be 160 feet wide by 10 feet deep totaling 21,500 feet. As designed, this effort was calculated to create 150 acres initially, and 370 acres after 20 years. As presented at the 95% design meeting, the project will now consist of improving four areas of the East Pass Delta Channel. The entrance to East Pass will be widened and the bottom ramped up to enhance diversion of fresh water and sediments from the Atchafalaya River into East Pass. The existing East Pass channel will be widened and deepened from the entrance to the Castille Pass bifurcation. The dredged material will be placed to create new emergent marsh. The existing Natal Channel branch channel will be extended and diked to direct the channel flows toward the southeast into bay bottoms to extend the Delta Lobe building process. The existing Castille Pass branch channel will be extended southeastward into the bay with diking placed to extend the Delta Lobe and build new marsh acreage. Extending the southeast branch exit channel toward the southeast will also reconfigure the mouth of East Pass. A complete dike will be placed along the southwestern channel bank to redirect flows into the shallow bay bottom to create a still-water cove area enhancing sediment deposition, eventually leading to the creation of emergent marsh in the newly created bay between Castille Pass and the East Pass extension. As presented, the proposed project is expected to create 570 acres of marsh initially, and an additional 150 acres after 20 years.





**UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE  
SEFC/Estuarine Habitat & Coastal Fisheries Center  
646 Cajundome Boulevard  
Lafayette, Louisiana 70508

Attached please find the statement of local sponsor concurrence for construction approval request and brief description of the status of compliance with the various SOP requirements for construction approval. Please do not hesitate to contact me at 301-713-0174 if you have any questions regarding this matter.

Sincerely,

Erik Zobrist, Ph. D.  
NMFS Program Manager

cc:

Julie Z. LeBlanc, USACE  
Sharon Parrish, EPA  
Wes McQuiddy, EPA  
Britt Paul, NRCS  
John Jurgensen, NRCS  
Richard Hartman, NMFS  
Rachel Sweeney, NMFS  
Gerry M. Duszynski, DNR  
Daniel Llewellyn, DNR  
Maury Chatellier, DNR  
Darryl Clark, USFWS  
Kevin Roy, USFWS  
Project File  
NMFS, Galveston  
Erik Zobrist, NMFS





**UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE  
SEFC/Estuarine Habitat & Coastal Fisheries Center  
648 Cajundome Boulevard  
Lafayette, Louisiana 70508

DECEMBER 1, 2006

**Mr. Tom Podany (Chairman)**  
**CWPPRA Technical Committee**  
**Assistant Chief of Planning, Programs and Projects Management**  
**U.S. Army Engineer District, New Orleans**  
**P.O. Box 60267**  
**New Orleans, LA 70160-0267**

**Subject: Second Phase II Authorization Request for the Castille Pass Sediment Delivery (AT-04).**

**Dear Mr. Podany,**

**As the lead federal agency for the Castille Pass Sediment Delivery (AT-04) project the National Marine Fisheries Service (NMFS) hereby submit a second request for phase II authorization, in accordance with the CWPPRA Project Standard Operating Procedures (SOP) Manual. The initial request from the December 2005 Phase II request process is attached.**

**1.) Description of Phase I Project**

**A description of the Castille Pass Sediment Delivery Project candidate project as selected for Phase I authorization is found in Enclosure 1. Enclosure 1 contains the original Fact Sheet and map depicting the project boundary and project features. It includes a description of the conceptual features of the project as authorized for Phase I, a summary of the benefits attributed to the Phase I project and project budget information as estimated at the time of Phase I authorization.**

**2.) Overview of Phase I Tasks, Process and Issues**

**After receiving Phase I approval in January 2000, the project team was assembled with representatives from the NOAA and the LDNR. Contracts were awarded to prepare a hydrographic model. Engineering and design was contracted to BCG. A 30% design review meeting was held on January 20, 2005, which resulted in a letter November 21, 2005 from the LDNR concurring to proceed with final design. During design, issues incurred were concerns about hydrologic and sedimentation for navigation canals, concern over dredge disposal areas, retention dike materials, and blocking water flow. Minor changes were made for East Pass, Natal Pass and Castille Pass alignments. Changes were made to the East Pass extension channel length, width, diking lengths and elevations and alignments prior to the 95% design meeting. The design revision considers only cast earthen dike construction for the channel and disposal area configurations. Because hydrologic modeling indicated no changes in the East Pass**





flows, stages, sediment transport, or coves with or without a dam across the Southwest Branch at the mouth of East Pass, the dam was removed from the project. All NEPA documentation was completed and circulated November 23, 2005 resulting in a final Environmental Assessment and a Finding of No Significant Impact (FONSI). The plans and Specifications were prepared and the design report finalized. The LDNR confirm landrights with the state were completed in a letter dated December 11, 2005. The LDNR prepared the Ecological Review. A 95% design meeting was held October 13, 2005. No comments were made at the meeting, therefore no changes were made to the design.

### 3.) Description of the Phase II Candidate Project

A. Enclosure 3-A contains the current Fact Sheet and map depicting the project boundary and project features. It includes a detailed description of the features of the project, a summary of the benefits and project budget information.

B. The project features have not changed since the 95% design meeting of October 13, 2005 where no comments were made or received. A revised WVA was prepared to incorporate the changes in benefits that occurred from changes made prior to the 95% design meeting.

C. A table containing the current project cost estimates is provided in enclosure 3-C.

### 4.) Checklist of phase II requirements

#### A. List of Goals and Strategies

- Facilitate natural sub-delta formation in the shallow water areas between East Pass and Four League Bay to build approximately 556 acres of land over the 20-year project life.
- Create approximately 570 acres of emergent land suitable for establishment of marsh plant vegetation over the 20-year project life using dredged material.
- As a result of these goals, approximately 2,121 acres of marsh will exist in the project area at the end of the 20-year project life representing an approximate net gain of 556 acres of marsh.

#### B. Cost Sharing Statement

A cost sharing agreement was signed for Phase I costs October, 2000.

#### C. Notification that landrights are finalized.

Landrights were secured prior to December 10, 2004 from the Louisiana Department of Wildlife and Fisheries (enclosure 4-C).

#### D. A favorable Preliminary Design Review

A preliminary Design Review was held January 20, 2005. Comments are discussed above in item #2 and #3, and are detailed in the 95% report. The LDNR letter of concurrence is included as enclosure 4-D.

#### E. Final Project Design Review

A favorable 95% design meeting was held October 13, 2005. No comments were made at the meeting, therefore no changes were made to the design.

**F. Draft EA**

A draft EA was circulated November 23, 2005 concluding in a FONSI (enclosure 4-F).

**G. Written summary of Ecological Review**

**Castille Pass Channel Sediment Delivery (AT-04)  
Ecological Review Summary  
September 2005**

**Summary/Conclusions**

The following four types of marshlands are expected to be created within the Castille Pass Channel Sediment Delivery project area:

1. Uplands - having an elevation greater than +3.0 feet NAVD-88.
2. Shrub/Scrub marsh - having an elevation range from +2.0 feet to +3.0 feet NAVD-88.
3. Intertidal marsh - having an elevation range from +0.75 feet to +2.0 feet NAVD-88.
4. Subaqueous marsh - having elevations at less than +0.75 feet NAVD-88.

The planned project diking will be mostly upland acreage with some shrub/scrub acreage along their slopes. The resulting elevation of the hydraulic material in the DAs post-shrinkage (20% anticipated in the first year) will be between +0.75 feet NAVD-88 to +2.0 feet NAVD-88, thereby falling in the intertidal marsh category. This approximates the Penland et al. (1996) conclusion that the maximum elevation for the establishment of intertidal marsh vegetation is +2.0 feet NGVD (~MSL) which can be interpolated as corresponding to +1.8 feet NAVD-88 using USACE CORPSCON for Windows, Version 5.11.08. The projected accretion within the three cove areas will be classified as subaqueous marsh.

This project is to be constructed in a river-mouth which may be classified as a dynamic area and as such, the impacting conditions (wind, wave, rain, and flow) will cause the channels, diking, and disposal areas to be in states of flux undergoing continuous changes. Thus, to sustain the integrity and effectiveness of this project, maintenance of project features will be required on average of every 6 years with dredging to re-establish dikes and dredging of shoals within the channels. This recommendation is based upon the observations made of the channel shoaling on the Big Island Mining (AT-03) project, which showed that a shoaling of channel bottoms to elevation from -3.0 feet to -5.0 feet NAVD-88 has occurred in six years (BCG 2005).

**Recommendations**

Based on the evaluation of available ecological, geophysical, and engineering information, in addition to the investigation of similar restoration projects, the proposed strategies of the Castille Pass Channel Sediment Delivery (AT-04) project will likely achieve the desired ecological goals. It is recommended that this project progress toward construction authorization pending a favorable 95% Design Review.

**H. Application for or Issuance of Public Notices for Permits**

Submitted to the U.S. Army Corps of Engineers November 7, 2005.

**I. HTRW**

HTRW is not required for the project location.

**J. Section 303**

Section 303E approval was received July 12, 2005 from the Corps (enclosure 4-I).

**K. Overgrazing**

A favorable overgrazing determination was received June 9, 2005 (enclosure 4-K).

**L. Fully funded cost**

A revised fully-funded cost estimate of Phase II activities or economic analyses, based on the current Project design has been included as enclosure 3-C and summarized directly below.

1.) The specific Phase II funding request (construction cost estimate and three years of O&M) is \$20,780,294.

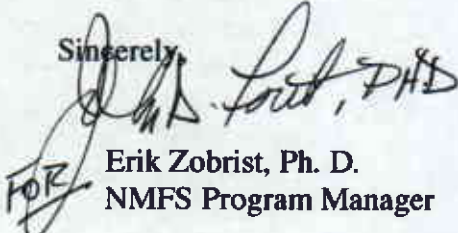
2.) The fully-funded 20-year cost estimate is \$30,892,080.

**M. WVA**

A revision to the 1999 WVA was Re-drafted November 2, 2005 and accepted after revision by the Environmental Work Group (enclosure 4-M). In summary, the project area would contain 965 acres of emergent marsh after 20 years providing a net increase of 407 acres. The average annual habitat unit is 256 and the estimated annual cost \$7992.

**N. Prioritization**

	Cost Effectiveness	Area of Need	Implementability	Certainty of Benefits	Sustainability	HGM Riverine Input	HGM Sediment Input	HGM Strucute And Function
Score	10	0	10.5	7.6	10	7	0	5
Total	50.1							

Sincerely,  
  
FOR Erik Zobrist, Ph. D.  
NMFS Program Manager



# ENCLOSURE

1



# Castille Pass Channel Sediment Delivery (AT-04)

## Project Status

**Approved Date:** 2000      **Project Area:** 5,051 acres  
**Approved Funds:** \$1.9 M      **Total Est. Cost:** \$31.1 M  
**Net Benefit After 20 Years:** 589 acres  
**Status:** Engineering and Design  
**Project Type:** Water Diversion

## Location

Castille Pass is located off of East Pass in the Atchafalaya Delta in St. Mary Parish, Louisiana.

## Problems

Growth of the lower Atchafalaya Delta has been reduced as a result of maintenance of the Atchafalaya River navigation channel. Delta development in the shallow waters of Atchafalaya Bay is dependent on distributary flows and the diversion of sediments into overbank areas through crevasse (an opening within a levee) channels.

The open crevasse channels are frequently short-lived because sediment accumulation within the channels decreases flow efficiency. Also, maintenance dredging, the placement of material dredged from the navigation channel has an effect on riverflow efficiency. As riverflow through a crevasse channel is reduced, the amount of sediment that can be deposited in the delta is likewise reduced, resulting in decreased marsh development.



This restoration technique is an example of what is proposed in the Castille Pass.

## Restoration Strategy

The Castille Pass project will re-establish the sedimentation processes that lead to subdelta development in this area of the Atchafalaya Delta. This project consists of dredging and extending Castille Pass to promote subdelta development. Castille Pass would be dredged, extending it towards Fourleague Bay and ending near South Point. This channel will provide water and sediment through distributary channels to the area among several U.S. Army Corps of Engineers' beneficial use disposal islands located on the east side of the Atchafalaya River. Excavated sediment would be placed to create delta lobes between the confluence of the main and distributary channels. Approximately 150 acres of marsh would be created from the initial construction of the Castille Pass and distributary channels.

Scheduled maintenance activities are expected to create another 73 acres of marsh.

## Progress to Date

The cooperative agreement was awarded September 29, 2000. Hydrodynamic modeling and engineering and design are underway.

This project is listed on Priority Project List 9.

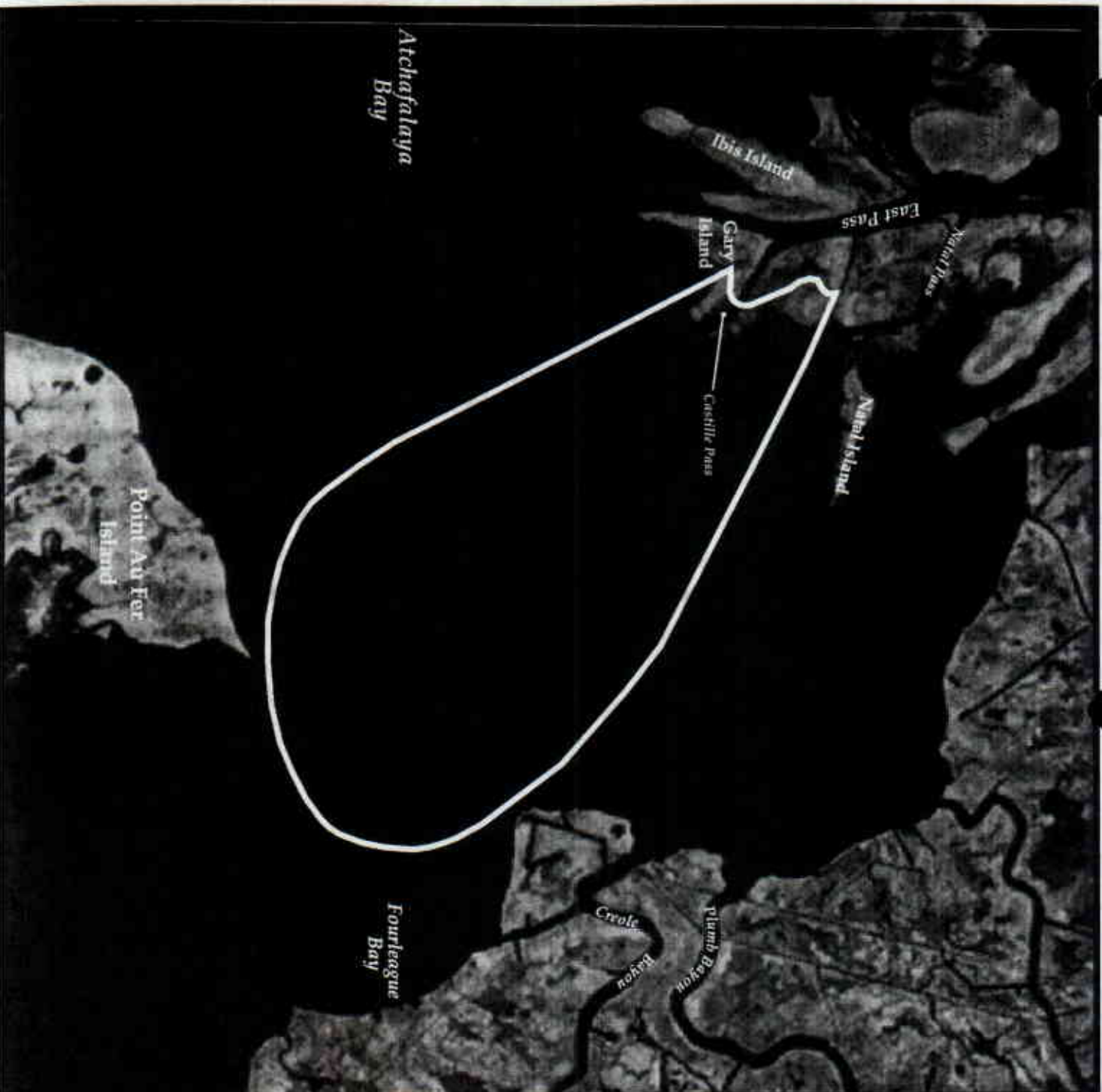
For more project information, please contact:



**Federal Sponsor:**  
National Marine Fisheries Service  
Baton Rouge, LA  
(225) 389-0508



**Local Sponsor:**  
Louisiana Department of Natural Resources  
Baton Rouge, LA  
(225) 342-7308



**Castille Pass Channel  
Sediment Delivery  
(AT-04)**

 Project Boundary

**USGS**  
science for a changing world



Louisiana

Project Location



N



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

Background Imagery:  
2002 Thematic Mapper Imagery

Map Date: October 16, 2003  
Map ID: USGS-NWRC/2003-11-040  
Data accurate as of: April 18, 2003

ENCLOSURE

3-A

## FACT SHEET

revised 12-4-06

**Project Name and Number:** Castille pass Channel Sediment Delivery (AT-04)  
(Project Priority List 9)

**Problem:** Spoil dredged from the Atchafalaya River Channel has been placed east of the channel, thus restricting riverine flow into shallow water areas east of the channel, which has substantially reduced natural marsh creation. Without riverine replenishment, subsidence and wave erosion will increase deltaic marsh loss.

**Goals :** Increase the conveyance of silt laden river flows via East Pass and Castille Pass in the eastern area of the Atchafalaya Bay.

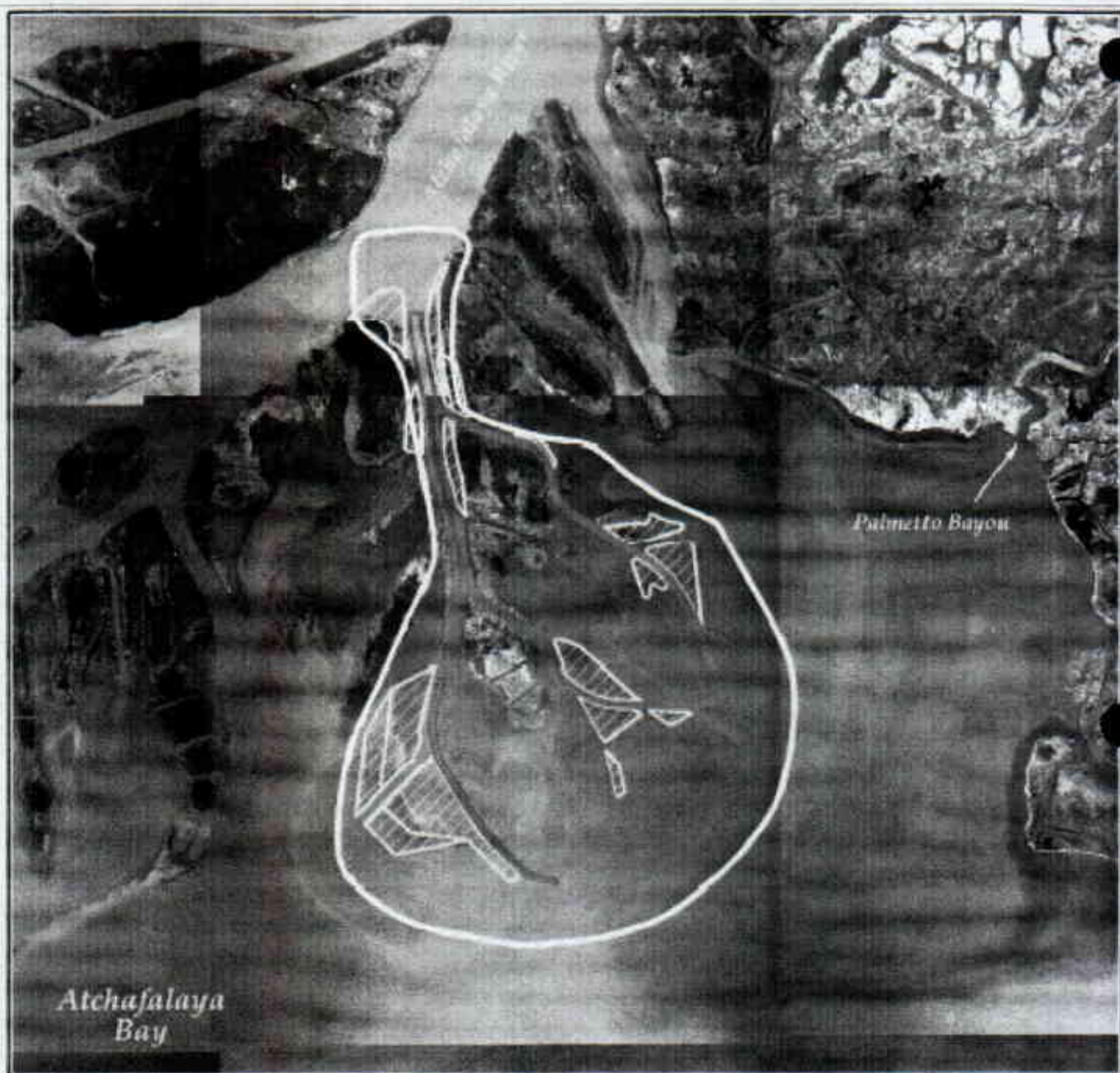
**Project Status:** The project has completed design and is requesting construction approval.

**Proposed Solution:** The entrance to East Pass will be widened and the bottom ramped up to enhance diversion of fresh water and sediments from the Atchafalaya River into East Pass. The existing East Pass channel will be widened and deepened from the entrance to the Castille Pass bifurcation. The dredged material will be placed to create new emergent marsh. The existing Natal Pass branch channel will be extended and diked to direct the channel flows toward the southeast into bay bottoms to extend the Delta Lobe building process. The existing Castille Pass branch channel will be extended southeastward into the bay with diking placed to extend the Delta Lobe and build new marsh acreage. The mouth of East Pass will also be reconfigured by extending the southeast branch exit channel toward the southeast. A complete dike will be placed along the southwestern channel bank to redirect flows into the shallow bay bottom to create a still-water cove area enhancing sediment deposition, eventually leading to the creation of emergent marsh in the newly created bay between Castille Pass and the East Pass extension.

**Issues:** One pipeline passes through the channel alignment, which will be avoided during construction.

**Estimated Costs and Benefits:** Fully funded the cost is estimated to be \$30,892,080, which will create over 960 acres of wetland over 20-years.





### Castille Pass Channel Sediment Delivery (AT-04)



-  10 Ft. Dredge Channel \*
-  Disposal Area \*
-  Project Boundary

\* denotes proposed features



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

Image Source:  
 2004 Digital Orthophoto Quarter Sheet

Scale 1:68,000

ENCLOSURE

3-C

ENCLOSURE

4-C

# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

SCOTT A. ANGELLE  
SECRETARY

## DEPARTMENT OF NATURAL RESOURCES OFFICE OF COASTAL RESTORATION AND MANAGEMENT

December 10, 2004

Dr. Erik Zobrist  
U.S. Department of Commerce  
National Marine Fisheries Service  
Restoration Center, 7<sup>th</sup> Floor, Room 7120  
Silver Spring, MD 20910

Re: Castille Pass Sediment Delivery Project AT-04  
St. Mary Parish, Louisiana  
Letter Agreement  
Louisiana Department of Wildlife and Fisheries

Dear Dr. Zobrist:

Enclosed for your records is a copy of a certified original of the above referenced agreement between the Louisiana Department of Wildlife and Fisheries and the Department of Natural Resources. A fully executed original has also been recorded by the Clerk of Court of St. Mary Parish, Louisiana.

If I can be of any further assistance, please do not hesitate to contact me or Mr. V. J. Marretta in the CRD Land Section (225) 342-5260. Thank you for your cooperation in our coastal restoration efforts.

Sincerely,

A handwritten signature in black ink, appearing to read "WKR/VJM".

William K. Rhinehart  
Administrator

WKR/VJM

Attachment

c(with attachment): John Foret, NMFS Project Manager, Lafayette  
Maury Chatellier, CED Project Manager  
V. J. Marretta, Land Specialist III

AT-04\DWF letter agreement NMFS-DWF-KL final transmittal.wpd

# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
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SCOTT A. ANGELLE  
SECRETARY

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# State of Louisiana



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St. Mary Parish, Louisiana  
Letter Agreement  
Louisiana Department of Wildlife and Fisheries

Dear Dr. Zobrist:

Enclosed for your records is a copy of a certified original of the above referenced agreement between the Louisiana Department of Wildlife and Fisheries and the Department of Natural Resources. A fully executed original has also been recorded by the Clerk of Court of St. Mary Parish, Louisiana.

If I can be of any further assistance, please do not hesitate to contact me or Mr. V. J. Marretta in the CRD Land Section (225) 342-5260. Thank you for your cooperation in our coastal restoration efforts.

Sincerely,

A handwritten signature in black ink, appearing to read "William K. Rhinehart".

William K. Rhinehart  
Administrator

WKR/VJM

Attachment

c(with attachment): John Foret, NMFS Project Manager, Lafayette  
Maury Chatellier, CED Project Manager  
V. J. Marretta, Land Specialist III

AT-04\DWF letter agreement NMFS-DWF-KL final transmittal.wpd



ENCLOSURE

4-D

# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

SCOTT A. ANGELLE  
SECRETARY

DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

November 21, 2005

Dr. John Foret  
National Marine Fisheries Service  
Estuarine Habitats and Coastal Fisheries Center  
646 Cajundome Blvd., Rm. 175  
Lafayette, LA 70506

RE: 95% Design Review for Castille Pass Sediment Delivery  
Statement of Local Sponsor Concurrence

Dear Dr. Foret:

The 95% Design Review Conference was held on October 13<sup>th</sup>, 2005 for the Castille Pass Sediment Delivery project. Based on our review of the project information compiled to date, and, in response to your letter of support for the project, we, as local sponsor, concur with the 95% Design Package. LDNR recommends that Phase II funds be requested from the CWPPRA Task Force at the next available opportunity.

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. We also request that our project manager, Maury Chatellier, be copied on that and other correspondence concerning this project.

Please do not hesitate to contact me if I may be of any assistance.

Sincerely,

A handwritten signature in cursive script, appearing to read "Christopher P. Knotts".

Christopher P. Knotts, P.E.  
Director

cc: William K. Rhinehart, CRD Administrator  
John Hodnett, P.E., Engineer Manager  
Luke E. LeBas, P.E., Engineer Manager  
Maury Chatellier, P.E., Project Manager

ENCLOSURE

4-F

### **Finding of No Significant Impact For Implementation of the Castille Pass Sediment Delivery Project**

National Oceanic and Atmospheric Administration Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others as described in the attached Environmental Assessment (EA) for this project. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?

No. Short-term, adverse impacts would occur during the construction as described in section 5.2.2 of the attached Environmental Assessment (EA). However, post-construction increases in quantity of the marsh would offset these impacts.

In the long term, the proposed action would increase the quality of essential fish habitat.

2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

No. With the proposed action, the natural deltaic process that builds productive habitat would be assisted. An increase in marsh, and increase in shallow open water would result. See sections 5.1 and 5.2 of the attached EA.

3) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

No. The proposed project area is remote. The impact to human health would be negligible. Temporary adverse impacts would result from the noise and exhaust of construction equipment. See sections 5.1.3 and 5.3.5 of the attached EA.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

No. Direct impacts to threatened and endangered species would be confined to the short-term displacement of species during construction activities. The net result would be an increase in coastal wetland habitats available to these species. See section 5.2.5 of the attached EA.

5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

No. The proposed action would not be expected to adversely affect economic resources. Marshes created would provide forage, nursery, and grow-out sites for a variety of commercially and recreationally important fisheries species. During the period of construction, a small increase in employment of dredge operators, crew members, and other construction-related technicians would occur. See section 5.3.2 of the attached EA.

6) Are the effects on the quality of the human environment likely to be highly controversial?

No. The intent of the proposed project is to promote delta growth along the Louisiana coast, which will improve the human environment. The project was proposed with public input through the annual process of the CWPPRA program to develop a project priority list. See section 1.0 of the attached EA.

7) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas?

No. The proposed action is expected to improve the quality and quantity of wetlands. Some existing submerged aquatic vegetation, marsh and water bottom habitats designated as EFH would be dredged or filled with the proposed action. Impacts to EFH are expected to be more than offset by the increase in acreage of those categories of EFH most supportive of marine fishery resources, as described in Chapter 5 of the attached EA.

8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

No. The proposed action is similar to previous actions and involves known and avoidable risks, as described in section 1.3 of the attached EA.

9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

No. The proposed action would have individually insignificant adverse impacts and cumulatively insignificant adverse impacts. The proposed action is expected to protect ecologically important areas in combination with other state restoration efforts. See section 5.5 of the attached EA.

10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

No. Creating emergent marsh would benefit the infrastructure in the project area by providing protection to a gas pipeline, as described in section 5.3.

11) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

No. The proposed action would not introduce or spread nonindigenous species. The action would increase the ability of the area to support indigenous species by protecting natural habitat, as described in section 5.0 of the attached EA.

12) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

No. The proposed action is independent of future actions, is similar in context to other delta restoration activities in coastal Louisiana, and would not be precedent setting.

13) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?


No. The proposed action was discussed with appropriate congressional, Federal, state, and local agencies and other interested parties, as discussed in section 1.0 and 5.0 of the attached EA.

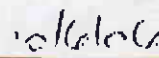
14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

No. Cumulative impacts were considered and no adverse impacts are expected to either target or non-target species. The long-term impact would be beneficial as described in section 5.2 and 5.5.

#### DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment prepared for the implementation of the Castille Pass Sediment Delivery Project, it is hereby determined that the proposed action will not significantly impact the quality of the human environment as described above and in the Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

  
Assistant Administrator for Fisheries, NOAA  
William T. Hogarth, PhD.

  
Date



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
1315 East-West Highway  
Silver Spring, Maryland 20910  
THE DIRECTOR

MEMORANDUM FOR: Rodney F. Weiher, Ph.D.  
Chief Economist, NOAA Program Planning and Integration

FROM: William T. Hogarth, Ph.D. *William T. Hogarth*  
Assistant Administrator for Fisheries

SUBJECT: Finding of No Significant Impact (FONSI) for the Castille Pass  
Sediment Delivery Project, St. Mary Parish, Louisiana

Based on the subject Environmental Assessment, I have determined that no significant environmental impacts will result from the proposed action. I request your concurrence in this determination by signing below. Please return this memorandum for our files.

1. I concur. *R. Weiher* *10/16/06*  
Date

2. I do not concur. \_\_\_\_\_  
Date

Attachments

THE ASSISTANT ADMINISTRATOR  
FOR FISHERIES





UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
PROGRAM PLANNING AND INTEGRATION  
Silver Spring, Maryland 20910

OCT 16 2006

TO ALL INTERESTED GOVERNMENT AGENCIES AND PUBLIC GROUPS:

Under the National Environmental Policy Act, an Environmental Assessment (EA) has been performed on the following action:

TITLE: Castille Pass Sediment Delivery Project

LOCATION: St. Mary Parish, Louisiana

SUMMARY: The Castille Pass Sediment Delivery Project (CWPPRA Project No. AT-04), is funded under the Coastal Wetlands Planning, Protection, and Restoration Act or CWPPRA (16 U.S.C. §§ 777c, 3951-3956). The U.S. Department of Commerce, represented by the National Marine Fisheries Service, is one of five Federal agencies (i.e., the CWPPRA Task Force) responsible for coordinating projects to restore and prevent the loss of coastal wetlands in Louisiana. The other members of the Task Force are: the U.S. Army Corps of Engineers; the U.S. Environmental Protection Agency; the U.S. Department of Interior, represented by the U.S. Fish and Wildlife Service; the U.S. Department of Agriculture, represented by the Natural Resource Conservation Service; and the State of Louisiana. Thus far, over 140 projects have been authorized by the Task Force. As stipulated by CWPPRA, all projects are funded through a grant or cost-share agreement between the sponsoring Federal agency and the Louisiana Department of Natural Resources. A Programmatic Environmental Impact Statement addressing the Louisiana Coastal Wetlands Restoration Plan was prepared by the CWPPRA Task Force and a Record of Decision to proceed with the plan was signed March 18, 1994.

The major goal of CWPPRA is to restore and prevent the loss of coastal wetlands in Louisiana. The Castille Pass Sediment Delivery Project would use dedicated dredged materials to create over 577 acres of wetlands with additional accretion of acres expected after twenty years. The project will improve the quality of Essential Fish Habitat (EFH) by conversion of 523 acres of water bottom and 54 acres of submersed aquatic vegetation to wetlands. Short-term impacts related to construction are considered temporary or reversible. This conclusion is based on a comprehensive review of literature, site-specific data, and project-specific engineering reports related to biological, physical and cultural resources. The





natural resource benefits anticipated from implementing this project would enhance and sustain wetland, dune, and swale habitat within the project area. The maintenance of fisheries habitat is expected to have long-term beneficial impacts on the local economy, as it relates to recreational and commercial fishing. All together, these project features will increase the value of the area for local fisheries and are expected to enhance and sustain the area's diverse ecosystem.

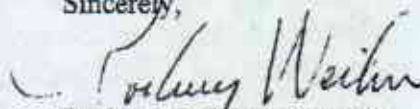
**RESPONSIBLE****OFFICIAL:**

William T. Hogarth, Ph.D.  
Assistant Administrator for Fisheries  
National Marine Fisheries Service  
1315 East-West Highway  
Silver Spring, Maryland 20910  
301/713-2239

The environmental review process led us to conclude that this action will not have a significant effect on the human environment. Therefore, an environmental impact statement will not be prepared. A copy of the finding of no significant impact (FONSI) including the supporting EA is enclosed for your information.

Although NOAA is not soliciting comments on this completed EA/FONSI we will consider any comments submitted that would assist in preparing future NEPA documents. Please submit any written comments to the responsible official named above.

Sincerely,



Rodney F. Weiher, Ph.D.  
NOAA NEPA Coordinator

Enclosure

**ENCLOSURE**

**4-J**

REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

JUL 12 2005

Office of Counsel

Erik C. Zobrist, Ph.D.  
CWPPRA Program Officer  
National Oceanic and Atmospheric Administration  
1315 East West Highway, Room 15219  
Silver Spring, MD 20910-6233

Dear Dr. Zobrist:

We have reviewed your request for Section 303(e) approval for the ~~Castille~~ Pass Sediment Delivery Project (AT-04), Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA).

Our Office of Counsel has examined the May 12, 2005, package for this project. The package includes a letter of no objection from the State Land Office and a letter agreement between the Louisiana Department of Natural Resources (DNR) and the Louisiana Department of Wildlife and Fisheries (DWF) as well as the Application for the Department of the Army Permit to the Department of Natural Resources (DNR) Coastal Management Division.

Please be advised that prior to construction of the project, appropriate land rights, subject to such terms and conditions as necessary to ensure that wetlands restored, enhanced or managed through this project will be administered for the long-term conservation of the lands and waters and the dependent fish and wildlife populations, must be acquired from all persons or entities with ownership or other property interests of affected land, including oyster leaseholders whose leases will be adversely affected by the project.

The project map indicates that there are pipelines within the project boundary. If any existing pipeline or utility will be adversely affected by the project, requiring any relocation, alteration, or lowering of the pipeline, the appropriate land rights must be acquired from the owners of such facilities, including the subordination of their rights, title, and interests in their facilities to the interests necessary for the construction, operation and maintenance of the CWPPRA project.

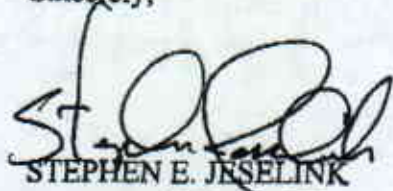
Additionally, please note that the letter agreement includes an indemnification clause. This indemnification responsibility cannot be passed on to the United States, including The National Oceanic and Atmospheric Administration or any other federal agency. Therefore, by accepting this indemnification clause, DNR is accepting all associated risks.

Furthermore, please note that the letter agreement is subject to a lease contract between the State of Louisiana and the Department of Wildlife and Fisheries dated January 16, 2003. If the provisions of the lease interfere with the objectives of the project, this lease must be released prior to the construction of the project.

We further note that the letter agreement sets forth a 20-year term commencing November 22, 2004. If it is deemed necessary to extend either of these terms in order to meet the long-term conservation objectives, you will need to coordinate such extension with DNR.

We also have considered the determination that overgrazing does not occur on the project lands or lands affected thereby. If overgrazing should occur in the future, a grazing plan must be established for the project.

Accordingly, by the authority delegated to me by the Secretary of the Army, and given compliance with the provisions set forth above, I approve the project in accordance with Section 303(e) of CWPPRA.

Sincerely,  
  
STEPHEN E. JESELINK  
Lieutenant Colonel, EN  
Commanding

**Copies Furnished:**

Mr. Gerry Duszynski  
Acting Assistant Secretary, Coastal Restoration Division  
Louisiana Department of Natural Resources  
Post Office Box 44027  
Baton Rouge, LA 70804

ENCLOSURE

4-K

United States Department of Agriculture



Natural Resources Conservation Service  
3737 Government Street  
Alexandria, LA 71302

June 9, 2004


Mr. John D. Foret  
National Oceanic and Atmospheric Administration  
Estuarine Habitats & Coastal Fisheries Center  
646 Cajundome Boulevard  
Lafayette, Louisiana 70508

Dear Mr. Foret:

RE: Castille Pass Channel Sediment Delivery (AT-04)

I am in receipt of your request for an overgrazing determination for the Castille Pass Channel Sediment Delivery (AT-04). I contacted our local district conservationist and our state resource conservationist to discuss the grazing in the project area. Currently, livestock are not grazing in the area, nor do we see a potential for grazing once the project is installed. Therefore, it is our opinion that overgrazing is not a problem in this project area. If you have any questions, please let me know.

Sincerely,

  
W. Britt Paul  
Assistant State Conservationist  
for Water Resources and Rural Development

cc: Randolph Joseph, Area Conservationist, NRCS, Lafayette, Louisiana  
Terrell Rabalais, District Conservationist, NRCS, Franklin, Louisiana  
John Jurgensen, Civil Engineer, NRCS, Alexandria, Louisiana

WBP/gb

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

An Equal Opportunity Provider and Employer

ENCLOSURE

4-M

# Project Information Sheet Format for Wetland Value Assessment

Re-draft November 2, 2005

Revision to the 1999 WVA Information Sheet

**Project Name:** Castille Pass Channel Sediment Delivery At-04

**Project Type(s):** Sediment Delivery and Marsh Creation via dedicated dredging.

## **Sponsoring Agency:**

Project Manager: John Foret, National Marine Fisheries Service

Project Manager: Maury Chatellier, Louisiana Department of Natural Resources

Preparer of Information sheet: Patrick Williams, National Marine Fisheries Service,  
Environmental and Engineering Workgroup Representative

**Project Area:** Total acreage = 5368; See USGS data for acreage by habitat type broken down into emergent wetlands and open water. See Figure 1 for project feature and boundary map.

**Problem:** Subaerial wetland development from accretion is being hindered by subsidence, wind erosion, distribution of sediment conveyance through the Lower Atchafalaya River delta, and herbivory. Subsidence rates are estimated to be 1.1 - 2.0 ft/century for the Atchafalaya Marshes Mapping Unit (Coast 2050). Both waterfowl and nutria affect vegetation developing and persisting in the delta (Evers et al. 1998).

**Goals:** Adapted from the draft Ecological Review (Cowan and Balkum 2004):

- Facilitate natural sub-delta formation in the shallow water areas between East Pass and Fourleague Bay to build approximately 577 acres of land over the 20-year project life.
- Create approximately 570 acres of emergent land suitable for establishment of marsh plant vegetation over the 20-year project life using dredged material.
- As a result of these goals, approximately 2,121 acres of marsh will exist in the project area at the end of the 20-year project life representing an approximate net gain of 577 acres of marsh.

## **Project Features:**

Three design alternatives were evaluated in addition to the no action condition. Alternative 3 (Alt 3) was selected as the preferred alternative for advanced design. The following changes were made since the 30% design report:

1. Reconfigure channel diking to utilize only cast dredged materials
2. Increase the top elevation of diking to eliminate overtopping during headwater flood conditions
3. Rerun the LDNR hydrodynamic model to determine the new flows, stages and sediment transport predictions for the revised project design – results only available as applied and reported in the 95% Design Report
4. Compare model runs for changes in flows and sediment transport for the East Pass improvements with and without a closure dam placed across the Southwest Branch channel at the mouth of East Pass.



The 95% design consists of the following:

1. Dike Designs

Type A – along existing and new channel alignments dredged to a -10-ft contour; 90-ft offset for stability; constructed with a barge mounted dredge

Type B – (small) perimeter dike in shallow water; constructed with a marsh buggy backhoe

Type C – permanent off main channel dike constructed in deeper water; constructed six to eight feet high with a barge mounted dredge.

2. East Pass Entrance Improvement

Entrance to be widened into a ramped transition channel to enhance sediment diversion into East Pass (presently narrow “V” shaped channel). Dimensions include an 800-ft wide bottom beginning at the 15-ft contour in the Atchafalaya River transitioning to a 400-ft wide bottom at -10-ft within 2,000 ft along the centerline. (no change since 30% design)

Disposal Area

DA-E1: Type A dike (+4 ft elevation) front dike with a Type B rear dike; create 48.5 acres at  $\pm 2.5$  ft.

3. East Pass Channel Enlargement

Enlarge East pass to 400-ft wide at -10-ft for approximately 9,670 ft between the entrance channel improvement and the exiting confluence with Castille Pass. Downstream of the confluence, East Pass would be dredged 200-ft wide to -10-ft for 6,400 ft.

Disposal Areas

DA-E2 – DA-E5 – placement to  $\pm 2.5$  ft behind the front dikes and will slope to an elevation of +1.0 at the rear dikes.

DA-E-7 and DA-E8 – contingency disposal areas

4. East Pass Channel Extension

The extension will consist of extending the eastern branch channel approximately 6,400 ft to form East Pass Cove. This will include a 200-ft wide channel at -10-ft for 1,930 ft into Atchafalaya Bay where it will be reduced to -150 ft for 4,4000 ft.

Disposal Areas

DA-E6 (shape has been changed since the 30% meeting) – Type A front dike with a gap just north of DA-E5 for flushing; Type C rear dike; placement to  $\pm 2.5$  ft behind the front dikes and will slope to an elevation of +1.0 at the rear dikes.

5. Natal Channel Improvements

Post 30% design, channel improvements to Natal Channel were included based on the amount of its previous shoaling. A 150-ft wide channel at -10 ft for a distance of 8,680 ft would be dredged from East Pass extending beyond a Trunkline Pipeline. The distance of the channel improvements has been increased since the 30% design to enable delivery of sediment further into the target area and provide more protection for the Natal Cove.

Disposal Areas

DA-N1 – DA-N5 - placement to  $\pm 2.5$  ft behind the front dikes and will slope to an elevation of +1.0 at the rear dikes. DA-N4 also functions as a closure dam to the open waterway north of Teal Island to redirect flow towards the southeast alignment of the improved Natal Channel and towards the project target area of Natal Cove.

6. Castille Pass Channel Improvements

Consists of constructing a 200-ft wide -10 ft channel from the confluence of East Pass for approximately 5,248 ft with a bifurcation at the mouth. The eastern bifurcation channel, C1, would extend into the bay 5,278 ft with two secondary bifurcation channels C-6 (800 ft) and C-5 (2,000 ft). The southern bifurcation channel, C-2, would extend 5,204 ft ending with two secondary bifurcation channels, C-3 (1,500 ft) and C-4 (800 ft). C-1 and C-2 would be 100 ft wide and -10 ft deep and the four secondary bifurcation channels would be 75-ft wide and -10 ft deep.

Disposal Areas

Disposal areas have continuous dikes except the noted gaps. Dikes would be Type A, B, or C as shown on the 95% drawings.

7. Operations and Maintenance

At the time of drafting this document, assumed three maintenance events at TY6, TY12, and TY18.

Figure 1. Project boundary and 30% feature map (boundary slightly cropped). An official USGS project boundary map is pending. SEE SEPARATE EMAIL

Figure 2. 95% Design feature map SEE SEPARATE EMAIL

Existing and constructed projects are located adjacent and within the proposed project. These include AT-02, Atchafalaya Sediment Delivery (ASD), and AT-03, Big Island Mining. AT-04, would greatly expand the AT-02 project by including work to Natal Pass. Other work in the vicinity includes the ongoing Corps of Engineers maintenance dredging of the Atchafalaya River (Bay and Bar Channel) and beneficial use disposal. Corps activities within the revised project boundary include the extension of Gary, Ibis, and Natal Islands. Each of those islands are being constructed to +4.0 NAVD88 300 ft wide. The order in which these are extended is presently up to the contractor's discretion. The project would provide synergistic wetland effects with AT-02 and the Corps' beneficial use disposal. There is some concern by the Corps that the project may affect the availability of long term disposal options. NMFS and LDNR continue to coordinate with the Corps Operations Division on this matter.

**Monitoring Information:**

The majority of the below monitoring data was obtained from Cowan and Balkum (2004).

Sediment Delivery

- S Atchafalaya Sediment Delivery - suggest that sediment delivery in the delta should be able to offset subsidence if the channel is maintained (Raynie and Visser 2002).
- S Emergent land being created at a rate of +78.4 acres/year, which is twice the rate of pre-project conditions (1988 - 2001). The duration of a growth rate is uncertain based on when constructed distributary channels silt in (Cowan and Balkum 2004).

River Transport

- S sediment carried by river dominated by silt-clay fractions and concentrations increase in a non-linear fashion with regard to discharge (Cowan and Balkum 2004)

Marsh Creation

target elevations -

Cowan and Balkum (2004) discuss the particular importance in target elevations in controlling the variability in vegetation associations in deltas.

BUMP Monitoring - consequences of a +4 ft NAVD88  
unconfined elevation created predominantly forested wetlands and  
shrub/scrub and little intertidal marsh

- optimal elevation for intertidal marsh +1.56 ft to +2.0 ft MSL

Atchafalaya Sediment Delivery, AT-02 (Raynie and Visser 2002)

- S Natal disposal areas were mapped as-built and three growing seasons following construction - flat (0.165 - 0.525 ft decrease) and fresh marsh (0.51 - 1.43 ft; 0.1 - 0.34 ft decrease) decreased in elevation over 2 years
- S predominant vegetation is willows and not the desired intertidal vegetation although willow communities are common at the heads of delta islands.
- S incorrect elevations built in one of three disposal areas - insufficient supervision and inspection

Lake Chapeau, TE-26

- S failed to meet the final target elevations with portions of the fill areas subsiding/dewatering below the average water level. Issues associated with achieving the initial fill elevation and constructing and maintaining sufficient containment dikes were encountered. The project created elevations conducive to establishment of saline marsh instead of brackish marsh vegetation and created less acreage than intended.

BUMP - (UNO 2003)

- S measured the growth in the delta with and without corps disposal to date. Time series of data analyzed and method of analysis differ from that of the USGS.

## V1 - Emergent Vegetation

### Historical and present vegetative community

The project area historically has consisted of prograding deltaic habitat. Dominant vegetation includes delta duck potato, bulltongue, bullwhip, cutgrass, cattail, alligatorweed, and Olney's three-square. Submerged aquatic vegetation includes water star grass, longleaf pondweed, curly pondweed, and water celery.

### Soil types in the project area

### Modeling Conducted

Hydrodynamic modeling was conducted by Louisiana State University (LSU) using the TABS-MD finite-element model. The Surface-water Modeling Software was used to model the bay and the RMA2 software was used for East Pass. To make predictions of the sediment transport within the East Pass delta lobe, LSU used the SED2D-WES software (Brown Cunningham and Gannuch 2003). The no-action and three design alternatives were fully modeled with other alternatives also being assessed. Results were provided to the design firm, BCG, for additional runs and feature specific assessments. Modeling indicated:

Base (no action): approximately 7% of Atchafalaya River flow at East Pass is currently diverted down East Pass.

Alt3: Increasing from approximately 7% of river flow to 10% would be diverted down East Pass resulting in an approximate 40% increase for flow and the channel enlargements, extensions, and disposal areas as configured (as modeled) would improve the hydraulic efficiency over the existing channel regime of East Pass. The diverted amount from the Atchafalaya River was the maximum diversion amount by requested by the NOD, as AT-03 (Big Island Mining) was used as a precedent. Further modeling indicated that the increase to 10% would not add an appreciable amount of shoaling in the Federal navigation channel.

Deposition of silt was modeled during a 370 hr simulation for SED-2D Model Sediment Reporting Areas (SRA) near channels (adapted from Mashriqui et al. 2004). See Figure 2 for the SRA and Table 1 (in the V1 Section) for silt projections. The 30% design report (BCG 2003) indicates the modeling results suggest better trapping efficiency of suspended silt in the project area under FWP based on predictions at specific nodes. However, sand are not expected to be conveyed in greater amounts FWP than FWOP other than directly by dedicated dredging and disposal. BCG took this modeling information, overlaid the project features, then took a percent of SRAs to come up with the sedimentation rates for portions of the project area designated as the East Pass, Castille and Natal coves (0.0815"/month, 0.01772"/month, 0.0823"/month, respectively) to project accretion benefits Future With Project. Siltation was estimated to occur during four months of the years (i.e., average annual flood months per year). BCG assumed 50% retainage, which could be a conservative estimate (i.e. safety factor) because LSU's model already takes into account the percent silts/clays leaving a particular cove area. The BCG



## FWOP

## Assumptions:

## Original WVA

1. EnvWG assumed 10% trapping efficiency
2. The Castille Pass project area was estimated to be 1/3 the size of the Atchafalaya Sediment Delivery project where annual net gain from accretion had been monitored. An updated figure for 1998 - 2001 shows a 26.1 ac/yr growth which result in 8.6 ac/yr growth for the Castille Pass project. The boundary has been revised for Castille Pass, but we still estimate it to be 1/3 that of the ASD project area.

## Proposed Revised WVA

1. Accretion rate: adjusted the USGS water loss rate by treating the land created by the Corps during the 88-2000 time period as "water" (Approximately 32 acres for Natal Island as measured on 2003 infrared as compared against 2002 UNO imagery). This would result in 403 acres of gain FWOP and therefore more net gain FWP from accretion (330 ac net FWP-FWOP).
2. Based on a July 30, 2004 meeting with the Corps Operations Division and the Louisiana Department of Wildlife and Fisheries, a projected 20-year expansion of the Corps disposal areas was included for Natal and Gary Islands within the CWPPRA project boundary. Based on Corps design dimensions (300-ft wide crown @ +4.5 MLG), assumed 100% of the crown would be marsh (Gary Island Extension = 4000 ft x 300 ft wide .28 ac; Natal Island = 900 ft x 200 ft = 6 ac). Additional area will be included under V4 FWOP. Assumed all this acreage is created by TY10.
3. **Note:** Output from modeling conducted was not prepared/provided for FWOP conditions.

TY0 The 2000 USGS acreage was rolled forward to 2005 using the -0.48%/yr water loss rate (see Appendix Table 1). Additionally, the amount of 2005 water was reduced by the amount of Gary Island acreage created by the Corps in 2002. Gary Island was measured to be 131 acres by cross referencing Figure 3 in UNO 2003 and digitally planimetry the footprint on the 2003 aerial infrared of the project area. Therefore, subtracted 131 ac in 2003 (i.e., 4267 - 131 = 4136 see loss spreadsheet)

Water: 4226 ac  
 Marsh: 1142 ac (21%)  
 Total: 5368 ac

TY1 Water: 4206 ac applied one year of change at -0.48%/yr  
 Marsh: 1162 ac (22%)

TY10 Water: 4013 ac 4047 projected at -0.48%/yr minus 34 acres created by the Corps  
 Marsh: 1355 ac (25%) manually inserted 4013 into loss spreadsheet TY20 Water:  
 3824 ac

Marsh: 1544 ac (29%)

FWP

Note: Project is being designed and specified to be built and paid on the volume cut and not volume in place for the disposal areas.

Assumptions:

- Marsh creation via dedicated dredging: Based on the 95% Design Report, 570 acres created from initial construction dredging. Maintenance dredging to occur at TY6, 12, and 18 during which approximately 106 acres of marsh would be created with the dredged sediment. It is not known how much would be created with each individual event; therefore, it is assumed to be 35 acres/event.

No planting is proposed, but because it is fresh marsh in the delta, a high rate of colonization is expected. Propose 10% at TY1 and 100% at TY3. *No losses were assumed to the created marsh due to the potential to allow thin layer disposal on previously created marsh with each maintenance event or wetland loss is expected within the project area with subsidence and wave erosion, but the gain outweighs these losses. Note: no settlement curve analysis of the marsh creation areas were conducted.*

- Accretion in Cove Areas:

See Section 5.4 Emergent Marsh Accretion of the 95% Design Report and above summary of modeling conducted (*only available for FWP*).

Castille Pass Sediment Delivery Cove Areas - 20 Year Accretion Predictions.

ITEM	EAST PASS	CASTILLE PASS	NATAL CHANNEL
AREA	683 AC	227 AC	416 AC
Revised Model Graph Run	0.0815"/month	0.01772"/month	0.0823"/month
Deposition			
Monthly	7,484 CY	542 CY	4,603 CY
Annually	29,935 CY	2,161 CY	18,412 CY
20-year	598,700 CY	43,220 CY	368,240 CY
Depth	3.26"	0.71"	3.3"
Model Predicted Sediment Delivery Volume that Accretes	50%	50%	50%

3. See Appendix Table 2 of the 95% Design Report. Stipulates 75.4 ac of dike construction.

Project area: 5368 ac

TY1

Water: 3581 ac

4226 ac (TY0 water acres) - 570 ac - 75 ac of dikes (assumed to be shrub/scrub or upland)

Marsh: 1225 ac/23%

(10%)(570 ac created) + 0% accretion credit in East Pass, Castille Pass, and Natal Channel Coves + 1,168 existing = 1225 ac

TY3

Water: 3581 ac

4226 ac (TY0 water acres) - 570 ac - 75 ac of dikes (assumed to be shrub/scrub or upland)

Marsh: 1783 ac/32%

(570 ac created)(100% vegetated) + 0% accretion + 1,168 existing = 1783 ac

TY6 *1<sup>st</sup> maintenance event*

Assumed insufficient accretion until TY6 in the Natal, Castille and East Pass coves to enable the establishment of marsh.

Water: 3470 ac      4226 - 570 - 75 - 35 - 76 (accretion ac) = 3470

Marsh: 1817 ac/34%

(570 ac created)(100% vegetated) + (5% accretion)(683 ac) + (0%)(227 ac) + (10% accretion)(416 ac) + (10%)(35 ac created from maintenance dredging) + 1168 existing = 1817 ac

TY9

Water: 3422 ac

4226 - 570 - 75(85% for gapping) - 35 - 135 (accretion) = 3422

Marsh: 1908 ac/36%

(570 ac created) + (35 ac created) + (10%)(683 ac) + (2%)(227 ac) + (15%)(416 ac) + 1168 existing = 1908 ac

TY12 *2<sup>nd</sup> maintenance event*

Water: 3353 ac

4226 - 570 - 75(85% for gapping) - 70 - 169 (accretion) = 3353

Marsh: 1962 ac/37%

(570 ac created) + (35 ac) + (10%)(35 ac) + (15%)(683 ac) + (2%)(227) + (15%)(416 ac) + 1168 existing = 1946 ac

TY15

Water: 3303 ac

4226 - 570 - 75(85% for gapping) - 70 - 219 (accretion) = 3303

Marsh: 2057 ac/38%

(570 ac initially created) + (70 ac MD created) + (20%)(683 ac) + (5%)(227 ac) + (17%)(416 ac) + 1168 existing = 2027 ac

TY18 *3<sup>rd</sup> maintenance event*

Water: 3216 ac

4226 - 570 - 75(85% for gapping) - 106 - 270 (accretion) = 3216



Marsh: 2081 ac/39%

(570 ac initially created) + (70 ac MD created) + (10%)(35 ac) + (25%)(683 ac) + (7%)(227 ac) + (20%)416 ac + 1168 existing = 2081 ac

TY20

Water: 3209 ac       $4226 - 570 - 75(85\% \text{ for gapping}) - 106 - 277 \text{ (accretion)} = 3209$

Marsh: 2121 ac/40%

(570 ac initially created) + (106 ac MD created) + (25%)(683 ac) + (10%)(227 ac) + (20%)416 ac + 1168 ac = 2121 ac

## V2 - Submerged Aquatic Vegetation

There tends to be a substantial amount of annual variability of SAV cover in the project area. With the revised boundary, approximately 1653 acres (~39% of the water area) is in the photic zone and is less than -1.5 ft deep and could support SAV. Based on GIS interpretation of the SAV cover in the 2003 imagery, survey data, and observations by agency staff during 2004 and 2005 site inspections and waterfowl season, we estimate approximately 20% cover.

FWOP

Original WVA: TY1 1%; TY20 3% (different project boundary)

Proposed

TY0 20%

TY1 20%

TY10 30%

TY20 30%

SAV should increase as delta progrades, but some will be filled with the extension of the Corps' disposal areas.

FWP

Original WVA: TY3%; TY20 17%

Proposed

TY1 22%

$840 \text{ ac} - 0.39 \text{ ac (SAV dredged)} - 54.2 \text{ (SAV filled within the disposal areas)} = 785 \text{ ac} / 3581 \text{ ac} = 22\%$

TY3 25%

TY6 35%

Assumed an increase in SAV to a maximum of 40%, but reduced in % cover with each maintenance event due to construction activities.

TY9 40%

TY12 35%

TY15 40%

TY18 35%

TY20 40%

**V3 - Interspersion**

Original VVA: all Class 1 and 4 FWOP and FWP

## FWOP

TY0	15% Class 1; 85% Class 4	21% marsh
TY1	15% Class 1; 85% Class 4	22% marsh
TY10	20% Class 1; 80% Class 4	25% marsh
TY20	25% Class 1; 75% Class 4	29% marsh

## FWP

TY1	30% Class 1; 70% Class 4	32% land	(does not include dike acres)
TY3	30% Class 1; 70% Class 4	32% land	
TY6	30% Class 1; 70% Class 4	34% land	
TY9	35% Class 1; 65% Class 4	36% land	
TY12	35% Class 1; 65% Class 4	37% land	
TY15	35% Class 1; 65% Class 4	38% land	
TY18	35% Class 1; 65% Class 4	39% land	
TY20	37% Class 1; 63% Class 4	40% land	

**V4 - Shallow Open Water Habitat**

Based on phase 1 surveys and site knowledge by sponsoring staff, acreage for open water < 1.5' is approximately 1653 acres as depicted on the "Bath pw edit.jpg" file (SEPARATE EMAIL).

Note that bathymetry data was not available for all portions of the project area. Some areas adjacent to existing marsh were not included to minimize the amount of GIS drafting time.

Based on some areas not being included outside the bathymetry data while some areas were based on site knowledge, this should be a reasonable estimate.

$$\text{TY0} \quad 30\% \quad 1653/5368 = 31\%$$

## FWOP

TY1 30%

TY10 35%

TY20 40% staff with specific knowledge of the site changes over time suggested 30%, 15%, 60% would be <1.5 ft deep in the East Pass, Castille Pass, and Natal Channel Coves Areas, respectively.

## FWP

TY1 30%  $1653 - 570$  (assume TY1 land created all in water <1.5 ft) =  $1083/3581 = 30\%$

TY3 30%

TY6 30%  $1653 - 570 - 50 = 1033/3470 = 30\%$ ; however six years of accretion

Refer to Assumption 2 FWP under V1: 3.26" East Pass Cove, 0.71" Castille Pass Cove, 3.3" Natal Channel Cove FWP TY 20 net accretion

TY9 30%  
 TY12 35%  $1653 - 570 - 100 = 983/3353 = 29\%$   
 TY15 35%  
 TY18 35%  $1653 - 570 - 150 = 933/3216 = 29\%$   
 TY20 40% staff guesstimated that  $(60\%)(683) + (15\%)(227) + (20\%)(416) = 527/3315 = 16\%$   
 would be shallow in the coves. However, this overlaps with some of the original  
 shallow acreage of 1653.

### V5 - Salinity

No hydraulic analysis or otherwise was conducted on project affects on salinity. Propose the same salinity values as the phase 0 WVA based primarily on personal communication with Gary Holm (LSU Coastal Ecology Institute) and the similarities in the project boundaries.

FWOP 3  
 FWP 2.5

### V6 - Fish Access

TY0 1  
 FWOP  
 TY1 - TY20 1

FWP

Fishery access and use is a function of hydroperiod (Rozas 1995). The created elevation after compaction determines the hydroperiod. Based on personal communication with Dr. Bruce Thompson (LSU, Coastal Fisheries Institute), fish use of the habitats in the delta created by CWPPRA and the Corps is dependent on habitat heterogeneity including depth and duration of flooding, proximity to foraging habitat, cover (water depth or vegetation) for avoidance of predation, and susceptibility to temperature extremes. His observations are based on fisheries research in the delta from 1983 to present.

Assumptions:

- 20-ft wide gaps to 0.0 ft NAVD88 will be constructed by degrading the containment dike in strategic locations (e.g., at least every 1,000 ft) upon demobilization.
- However, the disposal area design section consists of extending approximately 100 ft from the channel side dikes at + 2.5 ft NAVD88 then sloping down based on its natural angle of repose. The channel side length of all the disposal areas were measured from the plan view using a digital planimeter and determined to be approximately 45,200 linear feet. Therefore, assumed all channel side portions of all disposal areas were constructed at TY1  $(45,200)(100 \text{ ft})/43560 \text{ sq ft} = .104 \text{ ac}$  would be supratidal or not supportive of a hydroperiod to allow fish use of the surface area. Disposal area DA-E1 will be supratidal as will the containment dikes.

104 ac + DA-E1 = 48.5 acres of shrub/scrub + 75 ac dikes = 228 ac

3. Interior or backside low level training dikes would be constructed initially and with each maintenance event. Assumed these would be breach manually or by erosion by the time of contractor demobilization.

TY1 228 ac / 5368 = 4.2%  
 $(4.2\%)(0.0001) + (95.7\%)(1) = 0.957$

TY3 0.957

TY6 0.957

TY9 0.979

$(2.1\%)(0.0001) + (97.8\%)(1) = 0.979$

Assume 50% of the supratidal acreage persists throughout the remainder of the project life in the absence of settlement curves and based on the performance of other creation sites in the delta

TY12 0.979

TY15 0.979

TY18 0.979

TY20 0.979

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## Appendix

Appendix Table 1. Castille Pass Sediment Delivery FWOP change projections.

Total Acres		2000 Water Acres		TY0 Marsh Acres		
5,368		4462		906		
FWOP						
YR	TY	Loss Rate (water)	Water (acres)	% Water	Land (acres)	% Land
2000		-0.0048	4462.00	83%	906	17%
2001		-0.0048	4440.58	83%	927	17%
2002		-0.0048	4419.27	82%	949	18%
2003		-0.0048	4267.06	79%	1,101	21%
2004		-0.0048	4246.57	79%	1,121	21%
2005	0	-0.0048	4226.19	79%	1,142	21%
2006	1	-0.0048	4205.90	78%	1,162	22%
2007	2	-0.0048	4185.72	78%	1,182	22%
2008	3	-0.0048	4165.62	78%	1,202	22%
2009	4	-0.0048	4145.63	77%	1,222	23%
2010	5	-0.0048	4125.73	77%	1,242	23%
2011	6	-0.0048	4105.93	76%	1,262	24%
2012	7	-0.0048	4086.22	76%	1,282	24%
2013	8	-0.0048	4066.60	76%	1,301	24%
2014	9	-0.0048	4047.08	75%	1,321	25%
2015	10	-0.0048	4013.00	75%	1,355	25%
2016	11	-0.0048	3993.74	74%	1,374	26%
2017	12	-0.0048	3974.57	74%	1,393	26%
2018	13	-0.0048	3955.49	74%	1,413	26%
2019	14	-0.0048	3936.50	73%	1,431	27%
2020	15	-0.0048	3917.61	73%	1,450	27%
2021	16	-0.0048	3898.80	73%	1,469	27%
2022	17	-0.0048	3880.09	72%	1,488	28%
2023	18	-0.0048	3861.46	72%	1,507	28%
2024	19	-0.0048	3842.93	72%	1,525	28%
2025	20	-0.0048	3824.48	71%	1,544	29%
			3856.97			

BA-36 - Dedicated Dredging on Barataria Basin Landbridge

# Dedicated Dredging on the Barataria Basin Landbridge BA-36



## Project Overview

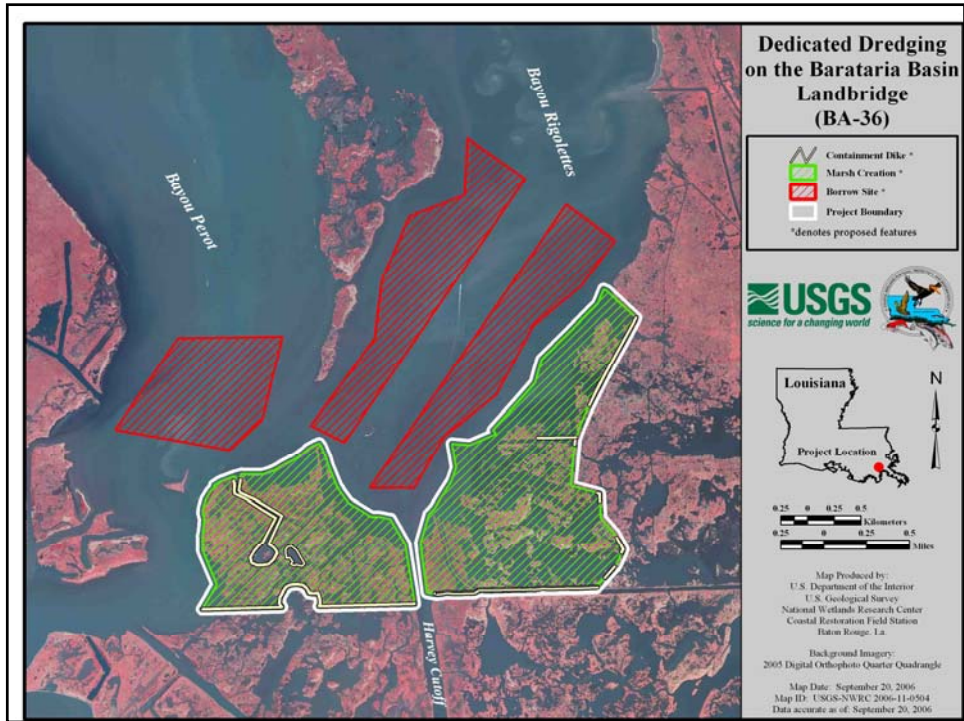
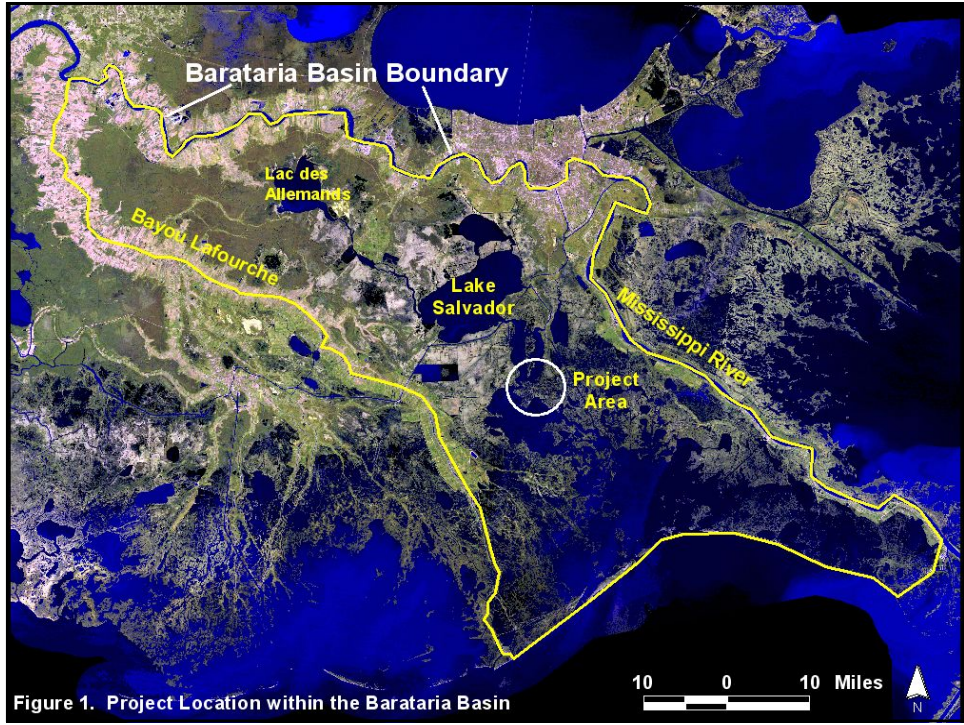
**Location:** Region 2, Barataria Basin, Jefferson Parish - 25 miles south of New Orleans and 6 miles south of Barataria/Lafitte

**Problem:** Over 25% of the wetlands in this mapping unit have been lost since 1932; loss rate exceeds -2.0%/yr in project area; subsidence, ponding, and shoreline erosion are the primary causes of loss

**Goals:**

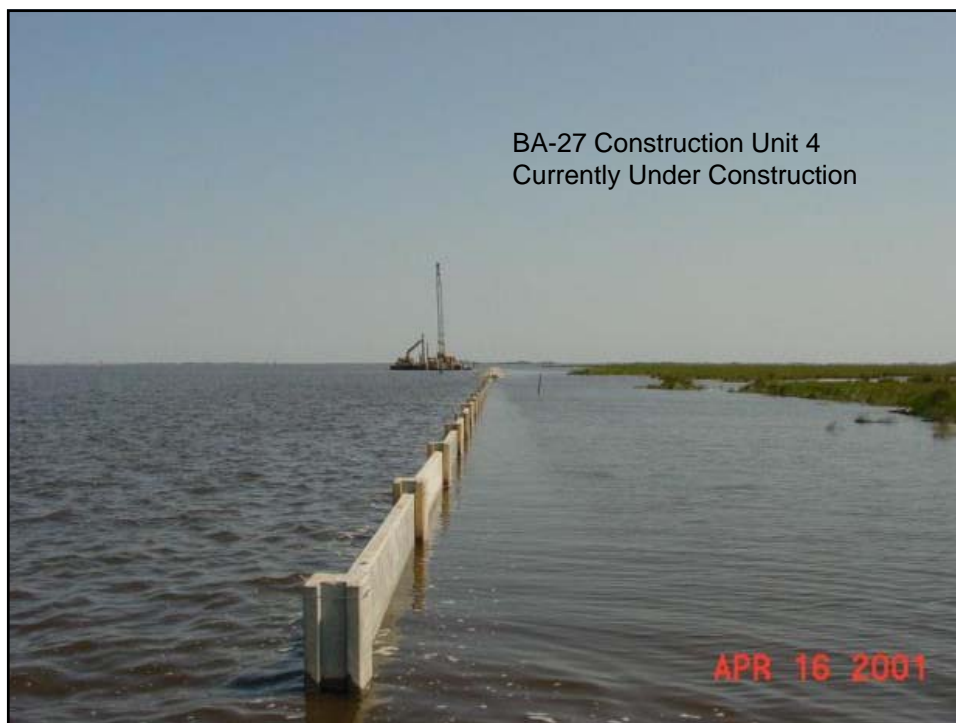
- 1) Re-create 504 acres of marsh in open water and degraded marsh habitats
- 2) Maintain 242 net acres at the end of the project life





## Project Features Overview

- 504 acres of marsh creation/nourishment; Target height of fill material is +2.5-ft NAVD88
- Containment dikes constructed to +4.0-ft NAVD88 with a 4-ft crown width and 1(V):4(H) side slopes
- Borrow sites in Bayous Perot and Rigolettes dredged to a maximum bottom elevation of -10-ft NAVD88





## Project Benefits and Costs

- In total, the project will benefit 504 acres of marsh and open water habitats; 242 net acres of marsh at the end of the 20-year project life
- Wetland Value Assessment – 135 net Average Annual Habitat Units
- The Fully-Funded Cost is: \$15,842,343  
Phase 2 Request is: \$15,231,142
- The Prioritization Score is: 56

## Why Should We Fund This Project Now?

- Restores one of the most deteriorated areas on the Barataria Basin Landbridge
- Shoreline protection (BA-27) will protect marsh in the project area from shoreline erosion; however, interior marsh will continue to deteriorate from subsidence
- Only 6 miles from unprotected communities of Lafitte and Barataria; Only 20 miles from New Orleans Westbank
- Continues commitment to protect the Barataria Basin Landbridge; 1 of 12 projects which work synergistically to provide landscape-level benefits

## Questions?

Dedicated Dredging on the Barataria  
Basin Landbridge  
BA-36





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

646 Cajundome Blvd.

Suite 400

Lafayette, Louisiana 70506

November 28, 2006

Mr. Troy Constance, Acting Chairman  
CWPPRA Technical Committee  
U.S. Army Corps of Engineers, New Orleans District  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Dear Mr. Constance:

The U.S. Fish and Wildlife Service and Louisiana Department of Natural Resources would like to submit the Dedicated Dredging on the Barataria Basin Landbridge Project (BA-36) for Phase 2 approval. That project was approved for Phase 1 funding by the CWPPRA Task Force as part of the 11<sup>th</sup> Priority Project List. It should be noted that this request is only for a portion (Fill Site 1) of the total project. The enclosed packet includes all information required for a Phase 2 authorization request, per Section 6.j. of the CWPPRA Standard Operating Procedures manual. This Phase 2 authorization request is also being sent electronically to all CWPPRA Technical Committee and Planning and Evaluation Subcommittee members.

If you have any questions regarding this submittal, please contact Mr. Kevin Roy of this office at (337) 291-3120.

Sincerely,

/s/Russell C. Watson  
Supervisor  
Louisiana Field Office

Enclosures

# **Phase II Authorization Request**

## **Dedicated Dredging on the Barataria Basin Landbridge**

### **BA-36**

#### **Description of Phase I Project**

The BA-36 Project was approved for Phase I funding on the 11<sup>th</sup> Priority Project List. At the time of Phase I authorization, project features included:

- 1) Hydraulic dredging in Bayous Perot and Rigolettes to create 780 acres of marsh and nourish 502 acres of existing marsh. The target elevation for the fill material was +2.3 ft NGVD;
- 2) Shoreline protection features associated with the Barataria Basin Landbridge Shoreline Protection Project (BA-27) would be used for containment along the shorelines of Bayous Perot and Rigolettes;
- 3) Earthen containment would be used around the remainder of the project perimeter where fragmented marsh does not allow adequate containment. Depending on soil stability, containment dikes would be breached upon demobilization;
- 4) Upon demobilization, the marsh platform would be aurally seeded with a mixture of browntop millet, Japanese millet and/or other species to jumpstart vegetative colonization;
- 5) Tidal channels would be dredged after construction to allow tidal exchange to interior ponds.

Specific goals of the project were to: 1) create 780 acres of emergent marsh through the deposition of dredged material into open water areas and 2) nourish/enhance 502 acres of emergent marsh by adding a layer of sediment to the marsh surface.

The Wetland Value Assessment conducted for the Phase I project estimated a benefited area of 1,282 acres and the net creation/restoration of 564 acres of marsh at the end of the project life.

At the time of Phase I approval, the fully-funded project cost was \$29,692,820. That figure included \$2,294,410 for Phase I and \$27,398,410 for Phase II. The cost breakdown for Phases I and II is presented in the following table.

<b>Task Name</b>	<b>Phase I Costs</b>	<b>Phase II Costs</b>
Engineering and Design	\$1,485,284	
Land Rights	\$10,640	
DNR Administration	\$413,347	\$443,188
FWS Administration	\$360,149	\$386,150
Monitoring	\$22,572	\$178,456
Corps Project Management	\$2,418	\$23,863
Construction		\$20,581,719
Contingency		\$5,145,430
Supervision and Inspection		\$511,064
Operations and Maintenance		\$128,540
<b>Total</b>	<b>\$2,294,410</b>	<b>\$27,398,410</b>

## **Overview of Phase I Tasks, Process and Issues**

The following tasks were completed during Phase I:

- 1) Interagency kickoff meeting and field trip
- 2) Final Cost Share Agreement executed between FWS and DNR
- 3) Preliminary landrights
- 4) Elevation surveys for the borrow areas, fill sites, and containment sites
- 5) Magnetometer survey
- 6) Geotechnical investigation of the borrow and fill sites
- 7) 30% design review
- 8) 95% design review
- 9) Ecological Review
- 10) Final Environmental Assessment
- 11) Final construction cost estimate
- 12) Corps Section 404 permit
- 13) Overgrazing determination
- 14) Cultural resources clearance
- 15) HTRW assessment
- 16) Section 303e approval

### Engineering and Design Tasks

In order to facilitate the design of the borrow and fill areas, a hydrographic and topographic survey was performed in April and May, 2003 by SJB Group, Inc. and Coastal Engineering Consultants. A magnetometer survey was performed in April and May, 2003 by SJB Group, Inc. and Alpine Ocean Seismic Survey in order to locate existing pipelines and obstructions.

A total of 19 subsurface borings were drilled within the project area by Soil Testing Engineers, Inc. in April 2003. Existing data was also utilized from 14 subsurface borings by Dames and Moore, Inc. in 1999 and six subsurface borings by Soil Testing Engineers, Inc. in 2000. The soil samples were tested in the laboratory for classification, strength, and compressibility. Settlement consolidation, cut to fill ratios, and dewatering time were estimated for the proposed dikes and hydraulic fill. A cost-benefit analysis was performed on final fill elevations of +1.5, +2.0, +2.5, +3.0, and +3.5 ft NAVD88 (all following elevations in NAVD88) using the geotechnical analysis. Slope stability analyses were also performed for the proposed containment dikes.

Design meetings were held at the 30% (December 17, 2003) and 95% (July 29, 2004) levels.

#### Landrights, Cultural Resources, Environmental Compliance and Other Tasks

Preliminary landrights work has proceeded smoothly and no problems are anticipated in acquiring final landrights.

Two cultural resource sites are located within the project area. However, neither site is eligible for the National Register of Historic Places. The Louisiana Department of Culture, Recreation and Tourism and the Chitimacha Tribe of Louisiana have indicated no objections to project implementation.

The Corps of Engineers Section 404 permit was issued on April 6, 2005. The Louisiana Department of Natural Resources-Coastal Management Division has determined that the project is consistent with the Louisiana Coastal Resources Program and water quality certification has been issued by the Louisiana Department of Environmental Quality.

An overgrazing determination provided by the Natural Resources Conservation Service indicated that overgrazing is not a problem in the project area. An HTRW assessment conducted by the Lafayette Field Office of the U.S. Fish and Wildlife Service indicated that no HTRW materials should be encountered during project implementation.

A final Ecological Review is available and a final Environmental Assessment was issued on November 16, 2005.

#### **Description of the Phase II Candidate Project**

The BA-36 project has been previously submitted for Phase 2 funding in January 2005 and January 2006. Since that time, the Coastal Impact Assistance Program (CIAP) was authorized by Congress in 2005 and will provide an estimated \$540 million in federal funding to Louisiana and its coastal parishes during fiscal years 2007 through 2010. To obtain CIAP funds, the state must submit an acceptable Plan



of project proposals to the Secretary of the Interior. The Plan will identify projects to be supported with the funds that will go to the state and the coastal parishes at a 65/35 percent cost ratio.

A portion (Fill Site 2) of the BA-36 project was submitted by Jefferson Parish for inclusion within the State's Plan. Although the State's Plan has not yet been released, all indications are that this portion of the BA-36 project will be included in the Plan and eventually constructed with CIAP funds.

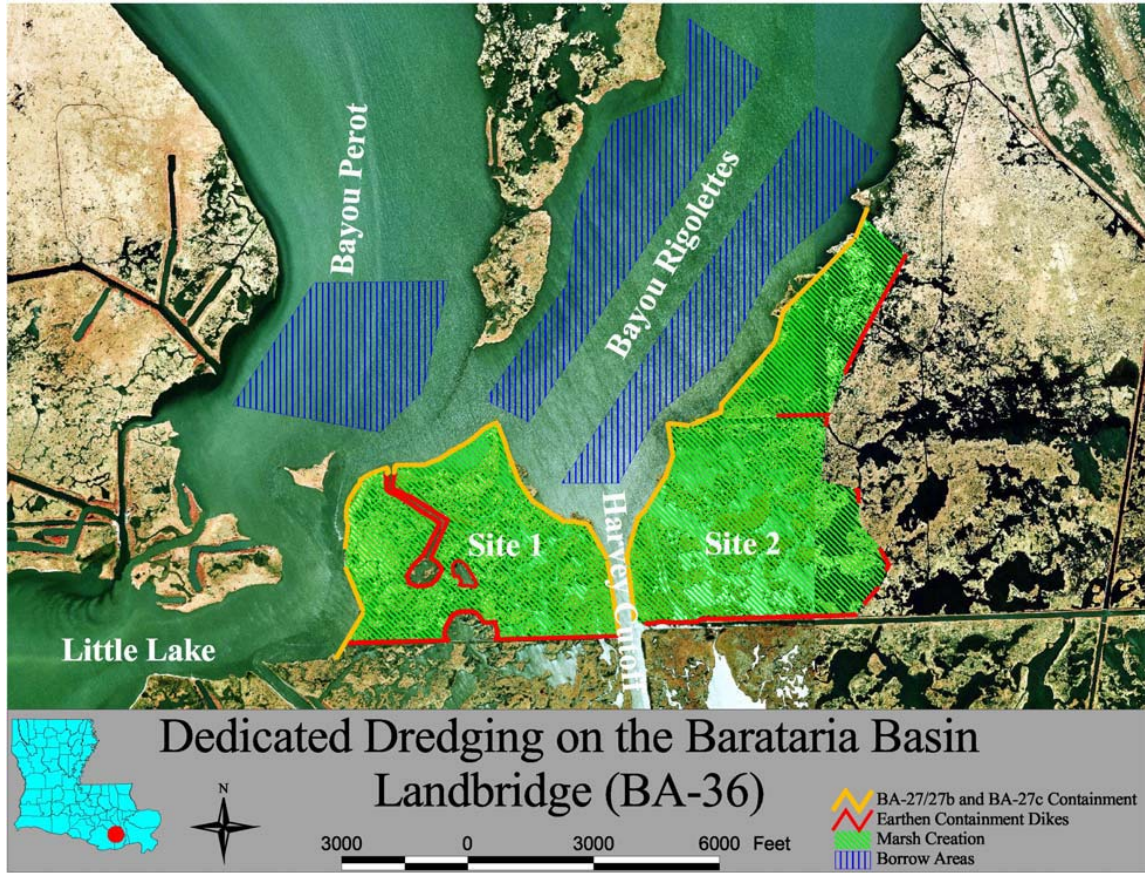
**Therefore, this Phase 2 request is only for construction of Fill Site 1 of the BA-36 project. The project sponsors (USFWS and LDNR) are hopeful that the full project will be constructed using funding from both the CWPPRA and CIAP programs.**

### Project Features

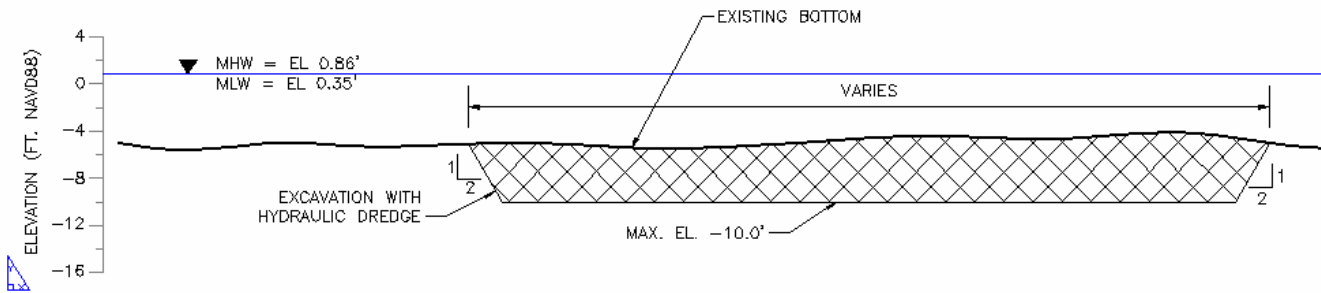
Three areas within Bayous Perot and Rigolettes were investigated as potential sources of earthen material to create marsh in Fill Sites 1 and 2 (Figure 1). The volume required for marsh creation and the cut to fill ratio regulated the size and shape of the borrow sites. The delineation of the 3 borrow sites was expanded to the greatest extent possible given the geographical (existing marsh) and structural constraints (pipelines) in order to reduce the effective depth of cut. Minimizing the depth of cut also minimizes the change in hydraulic gradient caused by dredging. As a result of calculations, a maximum depth of cut from an average mud level elevation of -6.0 ft to elevation -10.0 ft will achieve the required volume. The typical cross section detail is shown in Figure 2.

Fill Sites 1 (Figure 1) is comprised of mostly broken marsh and open water covering approximately 504 acres. A cost-benefit analysis was performed on final fill elevations of +1.5, +2.0, +2.5, +3.0, and +3.5 ft. Given a project design life of 20 years and an existing average marsh elevation of +1.0 ft, a target elevation of +2.5 ft was selected (Figure 3). Two construction lifts are proposed to enhance consolidation through improved dewatering and placement. The initial lift will be placed above mean high water at elevation +1.0 ft and must remain dewatered for a minimum of 30 days before more fill is added. The final lift will be placed to achieve the target elevation of +2.5 ft.

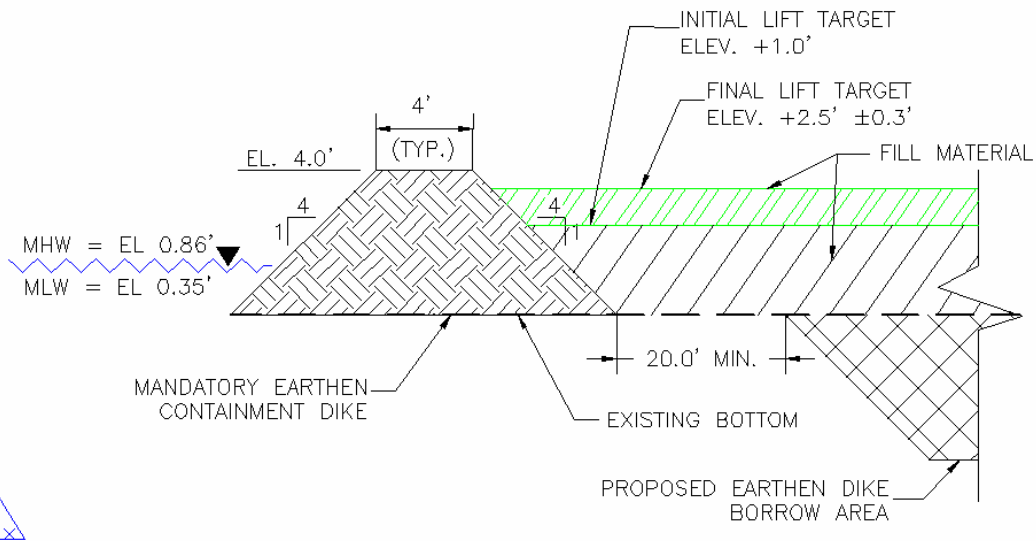
In order to properly contain and dewater fill material, mandatory containment dikes are included in the design. Given a target fill elevation of +2.5 ft, the crown height of the containment dikes is set at +4.0 ft with side slopes of 4:1 (Figure 3). The containment dikes will tie into the NRCS rock dikes and concrete panels by overlapping the existing structures.



**Figure 1 – Locations of Borrow and Fill Sites**

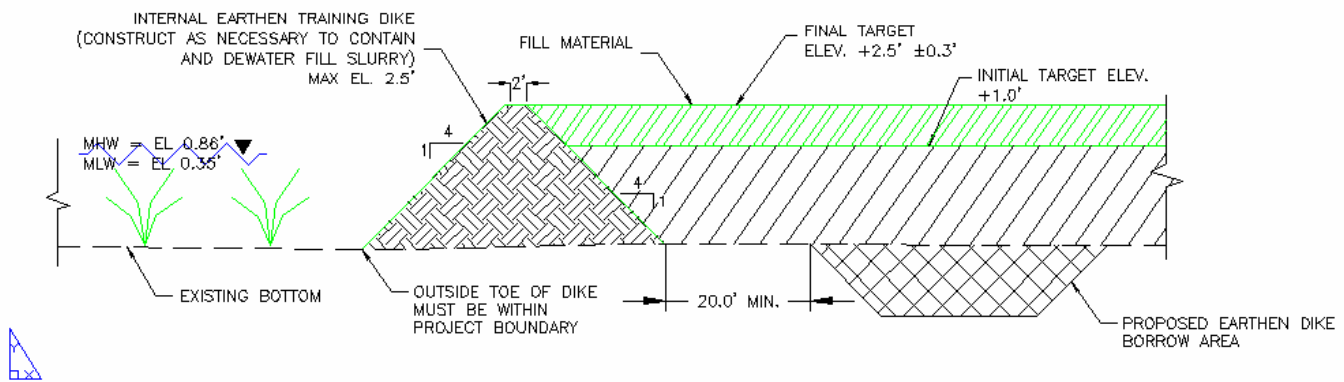


**Figure 2 – Typical Cross Section of Borrow Areas**



**Figure 3 – Typical Cross Section of Mandatory Earthen Containment Dikes**

Internal earthen training dikes will be used in conjunction with the other containment structures to create containment cells in order to properly maintain and dewater the fill material. The training dikes will have 4:1 side slopes with a 2 ft wide crown set at the same target elevation as the fill (+2.5 ft) to ensure proper containment height and eliminate the need for future degrading (Figure 4). The location and alignment of the training dikes will be determined in the field by the construction contractor and pre-approved by the construction inspector.



**Figure 4 – Typical Cross Section of Internal Earthen Training Dikes**

Three existing ponds and one canal within Fill Site 1 (Figure 1) will remain in their existing condition as requested by the landowner. Mandatory earthen containment dikes will be constructed around the perimeters of the ponds and canal.

Updated Assessment of Benefits

A revised Wetland Value Assessment for the full project was prepared and reviewed by the Environmental Work Group. The total project area decreased from 1,282 acres to 1,245 acres. Total net acres protected/created/restored by the project increased from 564 acres (Phase 1 project) to 605 acres (Phase 2 project). Net Average Annual Habitat Units decreased from 339 to 337.

**Benefits for constructing Fill Site 1 consist of 242 total net acres protected/created/restored over the project life. Net Average Annual Habitat Units total 135.**

#### Modifications to the Phase 1 Project

Final design features are essentially unchanged from the original Phase 1 project. The following changes are noteworthy: 1) additional containment dikes have been added at the landowner's request to retain three ponds in Fill Site 1, 2) additional containment dikes have been added at the landowner's request in Fill Site 2 along the southern boundary to prevent the filling of a small trenasse used for boat access to hunting sites, 3) marsh nourishment has been omitted as a project feature and fill heights (+2.5 ft) are the same throughout the project area, 4) aerial seeding of vegetation has been omitted as a project feature, 5) dredging of tidal access channels omitted, and 6) containment dikes have been added around the entire perimeter of the project area so that shoreline protection features of the BA-27 project are no longer being used for containment of dredged material.

#### Current Cost Estimate

The revised fully-funded cost for Fill Site 1 prepared by the CWPPRA Economics Work Group is **\$15,842,343**.

## **Checklist of Phase Two Requirements**

### **A. List of Project Goals and Strategies.**

The goals of the project are to: 1) create 504 acres of emergent marsh through the deposition of dredged material into open water and fragmented marsh and 2) provide a net benefit of 242 acres of marsh at the end of the 20-year project life.

### **B. A Statement that the Cost Sharing Agreement between the Lead Agency and the Local Sponsor has been executed for Phase I.**

A Cost Share Agreement between the U.S. Fish and Wildlife Service and Louisiana Department of Natural Resources was executed on April 3, 2002. A draft amendment, authorizing construction, operation, maintenance, and monitoring, to the Cost Share Agreement has been prepared.

### **C. Notification from the State or the Corps that landrights will be finalized in a short period of**

**time after Phase 2 approval.**

FWS has received verbal notification from DNR that landrights will be finalized in a relatively short time after Phase 2 approval.

**D. A favorable Preliminary Design Review (30% Design Level). The Preliminary Design shall include completion of surveys, borings, geotechnical investigations, data analysis review, hydrologic data collection and analysis, modeling (if necessary), and development of preliminary designs.**

A 30% design meeting was held on December 17, 2003, and resulted in favorable reviews of the project design with minor modifications. DNR and FWS agreed on the project design and to proceed with project implementation.

**E. Final Project Design Review (95% Design Level). Upon completion of a favorable review of the preliminary design, the Project plans and specifications shall be developed and formalized to incorporate elements from the Preliminary Design and the Preliminary Design Review. Final Project Design Review (95%) must be successfully completed prior to seeking Technical Committee approval.**

A 95% design meeting was held on July 29, 2004, and resulted in favorable reviews of the project design with minor modifications. DNR and FWS agreed on the project design and to proceed with project implementation.

**F. A draft of the Environmental Assessment, as required under the National Environmental Policy Act must be submitted thirty days before the request for Phase 2 approval.**

A final EA was issued on November 16, 2005.

**G. A written summary of the findings of the Ecological Review (See Appendix B).**

The following paragraph is from the Recommendations section of the August 12, 2004 final Ecological Review:

*Based on the investigation of similar restoration projects and a review of engineering principles, the LDNR project team feels that the proposed strategies of the Dedicated Dredging on the Barataria Basin Landbridge project will likely achieve the desired ecological goals for the majority of the 20 year project life. At this time, the Louisiana Department of Natural Resources, Coastal Restoration Division recommends that the Dedicated Dredging on the Barataria Basin Landbridge project be considered for CWPPRA Phase 2 authorization.*

**H. Application for and/or issuance of the public notices for permits. If a permit has not been received by the agency, a notice from the Corps of when the permit may be issued.**

The FWS was issued a Section 404 permit from the Corps of Engineers on April 6, 2005.

**I. A hazardous, toxic and radiological waste (HTRW) assessment, if required, has been prepared.**

An HTRW assessment/contaminants screening was conducted by the FWS Lafayette Field Office's Environmental Contaminants Specialist. It was concluded that project implementation would not encounter any of the known wells or associated oil and gas facilities in the project area and that re-suspension of contaminants from sediment disturbance is not expected. Based on available information, further study is not warranted.

**J. Section 303(e) approval from the Corps.**

Section 303(e) approval was granted by the Corps via letter dated August 4, 2004.

**K. Overgrazing determination from the NRCS (if necessary).**

An overgrazing determination was issued on January 12, 2004 by the NRCS and indicated that overgrazing would not be a problem in the project area.

**L. Revised cost estimate of Phase 2 activities, based on the revised Project design.**

**Funding/Budget information:**

- 1.) - Specific Phase Two funding request (updated construction cost estimate, three years of monitoring and O&M, etc.)
- 2.) - Fully funded, 20-year cost projection with anticipated schedule of expenditures

**The specific Phase 2 funding request (updated construction estimate and three years of monitoring and O&M) is \$15,231,142.** The revised fully-funded cost of the project is \$15,842,343. The revised budget sheets, with the anticipated schedule of expenditures, are provided in Attachment 1.

**M. A Wetland Value Assessment, reviewed and approved by the Environmental Work Group.**

A revised Wetland Value Assessment for the full project was prepared and reviewed by the Environmental Work Group. Benefits for Site 1, which totals 504 acres, include 242 net acres and 135 net average annual habitat units.

**N. A breakdown of the Prioritization Criteria ranking score, finalized and agreed-upon by all agencies during the 95% design review.**

The following Prioritization Criteria scores were reviewed and agreed upon by the Environmental and Engineering Workgroups.

Criteria	Score	Weight	Final Score
Cost Effectiveness	2.5	2	5

Area of Need	10	1.5	15
Implementability	10	1.5	15
Certainty of Benefits	7	1	7
Sustainability of Benefits	4	1	4
HGM – Riverine Input	0	1	0
HGM – Sediment Input	0	1	0
HGM – Landscape Features	10	1	10
<b>Total Score</b>			<b>56</b>

# **Attachment 1**



BA-30 - East Grand Terre Island Restoration

# East Grand Terre Island (BA-30) Technical Committee Meeting

December 6, 2006



SEP 30



## Project Overview

### Project Location:

Region 2, Barataria Basin

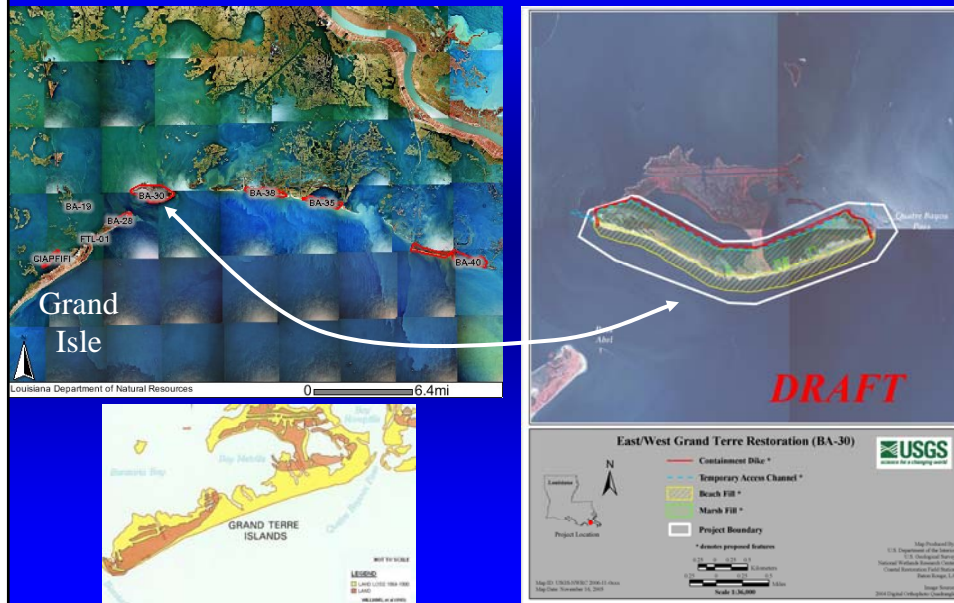
### Problem:

On-going shoreline erosion has resulted in breaching of the barrier shoreline

### Goals:

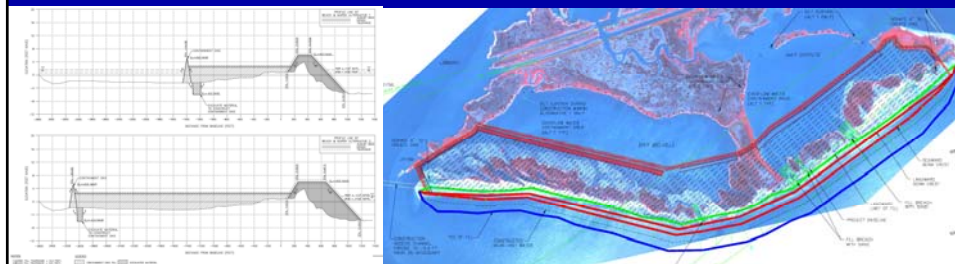
- 1) Restore beach and dune to prevent breaching and maintain shoreline integrity
- 2) Create and restore barrier island habitats

# Project Map



# Project Features Overview

- Restore 2.8 miles barrier shoreline through construction of +6 foot dune with advanced nourishment.
- Construction 450-acre marsh platform north of and contiguous to the beach and dune fill to provide foundation for continued shoreline rollover and retreat.
- Install sand fencing and vegetative plantings.



## Project Benefits & Costs

### Project benefits

- Create and restore about 620 acres of barrier island immediately post-construction
- Maintain 2.8 miles of eroding shoreline
- Provide 335 net acres at TY20

### Project costs

- The Fully Funded Cost for the project is: \$36,705,731
- Phase 2 increment 1 request is \$ 33,881,341

### Prioritization Score

- 60

## Project Comparison/Contrast

The Present vs. PPL # 9

	Phase One	Current	% change
Fully funded cost (M)	\$ 18.2	\$ 36.7	201 %
TY 20 Net Acres	403	335	83 %
AAHU	177	268.9	151 %

Cost increase due to:

- 1) Project changes to increase dune and beach restoration to meet goal of maintaining shoreline integrity
- 2) Construction cost adjustments to reflect post-Katrina business climate and increase in construction contingency

## Project Need

- Project conditions continue to deteriorate with permanent breaches in shoreline (shoreline erosion rates range from 20 to 80 feet/year (1996 to 2002)).
- Project costs expected to increase 15 – 20 %/year for the next two to three years



## Project Need

- Project is one component of overall basin-wide effort to restore barrier shoreline (six projects in various stages)
- Limited window of construction feasibility
- Continued deterioration will result in 5-mile opening directly between lower Barataria Bay and the Gulf of Mexico.



# Questions?

Post Katrina & Rita



## INFORMATION REQUIRED FOR PHASE II AUTHORIZATION REQUESTS

### 1. Description of Phase I Project

As authorized for Phase I in January 2000 (PPL 9) the project included restoration of 40 acres of beach and dune on the western portion of West Grand Terre, restoration of about 75 acres of beach and dune, and creation of about 212 acres of saline marsh on East Grand Terre Island (Figure 1). At the time of Phase I authorization, project goals were identified as 1) prevent breaching of the barrier shorelines through the 20-year project life, 2) protect existing structures on West Grand Terre island, and 3) achieve various acreage targets for dune, marsh, and other barrier island habitats.

A summary of Phase I project costs and benefits is provided below.

Fully Funded Total Project Cost	\$18.2 M
Net Acres at TY20	403
Average Annual Habitat Units	177

### 2. Overview of Phase I Tasks, Process and Issues

Phase I tasks included pre-design investigations (i.e., topographic and bathymetric surveys, geotechnical investigations), various engineering assessments of project alternatives, and completion of 95% level plans and specifications for the preferred alternative. Design analyses revealed that the majority of project goals for West Grand Terre would be met without action. Design analyses for East Grand Terre suggested that the original conceptual design would not provide enough beach and dune strength on East Grand Terre to meet the primary project objectives, and that more robust project design would be required. A change in project scope was approved by the Task Force to proceed to final design on the preferred alternative for East Grand Terre only.

Other Phase I activities included development of the landrights workplan, preliminary ownership report, and execution of appropriate servitudes and agreements, development and submission of permit application materials, and development of draft NEPA documents. The project sponsors determined that HTRW investigations were not required based on review of land use history and previous basin-wide assessments conducted by the Corps of Engineers.

### 3. Description of the Phase II Candidate Project

#### A. Project Features

The recommended plan includes beach and dune fill to address the severity of erosion along the gulf-front shoreline and to repair shoreline breaches (Figure 2). The beach and dune fill template is approximately 15,000 ft long with a 90-foot wide dune design section to +6 feet with 1:30 back- and 1:45 fore-slopes. Advanced fill is distributed non-uniformly to account for varying longshore transport rates along the island. The maximum constructed berm width

is 195 feet. Total in place beach and dune fill volume is estimated at 1,576,650 cy. The recommended plan also includes a marsh platform in the southern portions of Bays Melville and Dispute with construction elevation of +2.3 feet. The required fill volume is approximately 1,732,000 cy. Construction of the project is expected to create or enhance 456 acres of marsh.

Long term project components include extensive vegetative plantings, replacement of sand fences, retention dike gapping, and project performance assessments throughout the project life.

B. Updated assessment of benefits and current cost estimates

Detailed costs are provided in attached budget spreadsheet.

Fully Funded Total Project Cost	\$36.7 M
Phase II, Increment I Request	\$33.9 M
Net Acres at TY20	335
Average Annual Habitat Units	268.92

C. In cases of substantial modifications to original conceptual design or costs, describe the specific changes both qualitatively and quantitatively

The project has changed since Phase I authorization to remove West Grand Terre from the current proposed project and increase project features on East Grand Terre resulting in a net increase in project cost from that estimated at the time of Phase I authorization. The Task Force approved a change in project scope at its July 27, 2005 meeting. Additionally, project costs were updated in November 2006 to account for post-Katrina business climate adjustment.

## PHASE II CHECKLIST

A. List of Project Goals and Strategies

The goals of this project are to repair breaches and tidal inlets in the shoreline, reinforce the existing shoreline with sand and plug/repair the growing tidal inlets through the shoreline. The design approach is to maximize surface area per planform unit volume for island stabilization and dune, supratidal (i.e., swale), and intertidal marsh creation by preventing a breach (i.e., tidal inlet) with a 20-year or lesser storm event.

Project strategies identified in the Ecological Review are 1) construct 71 acres of dune platform to +6 feet NAVD-88, 82 acres of beach, and 432 acres of back barrier marsh on East Grand Terre, 2) place marsh creation material at an elevation of +2.3 feet NAVD-88 and allow it to settle and dewater down to the intertidal range, 3) utilize effective planting schemes and sand fencing to maximize vegetative coverage and survival along with



providing increased dune stabilization, 4) create tidal ponds and creeks and ensure tidal exchange by degrading retention dikes that do not naturally degrade.

B. Cost Sharing Agreement

A cooperative agreement was executed between NOAA and LDNR for Phase I activities.

C. Notification from the State or the Corps that landrights will be finalized in a short period of time after Phase 2 approval.

Ms. Helen Hoffpauir, CRD Land Manager, has notified the Technical Committee that "At this time, no land rights acquisition problems are anticipated. Therefore, DNR is confident that land rights for the above referenced project will be finalized in a reasonable period of time after Phase II Approval."

D. A favorable Preliminary Design Review (30% Design Level).

A Preliminary Design review was held on May 26, 2005. A change in project scope was identified during the design review process. The Task Force concurred with the change in scope on July 27, 2005.

E. Final Project Design Review (95% Design Level)

The Final Design Review is scheduled for 30 November 2005.

F. A draft of the Environmental Assessment of the Project

A draft EA was circulated to agencies for review in December 2005. With the exception of USFWS comments regarding designated critical habitat for piping plover, only minor comments were received. Pending receipt of construction approval, consultation with USFWS will be undertaken. Upon completion of the consultation, the EA will be finalized.

G. Written summary of the findings of the Ecological Review

"Based on the current level of design, the proposed strategies of the East/West Grand Terre Islands Restoration project would achieve some ecological benefits and warrants proceeding towards Phase II funding. The LDNR maintains its concurrence with the selection of beach alternative 1 and marsh alternative 1 as an attempt to construct the most cost effective alternatives to restore EGT. The current level of design warrants continued progress towards Phase II funding."

H. Application for and/or issuance of the public notices for permits

Permit applications were submitted in December 2005. Issuance of regulatory approvals is pending consultation with USFWS regarding piping plover critical habitat located in the project area.

I. A hazardous, toxic and radiological waste (HTRW) assessment, if required

The project sponsors determined that HTRW investigations were not required based on review of land use history and previous basin-wide assessments conducted by the Corps of Engineers.

J. Section 303(e) approval

Complete.

K. Overgrazing determination from the NRCS

Received October 7, 2005.

L. Revised fully funded cost estimate

The revised fully funded cost estimate is \$36,705,731.

M. A Wetland Value Assessment

A revised Wetland Value Assessment was reviewed and approved by the ENG WG.

N. Prioritization Criteria ranking score

A draft Prioritization has been developed and will be submitted for review by the Workgroups. Proposed scores are shown below and will be updated at Technical Committee meeting based on any revisions required by the Workgroups.

	Weighting	Score	Weighted Score
I. Cost-effectiveness	20%	1	2
II. Area of Need	15%	10	15
III. Implementability	15%	10	15
IV. Certainty of Benefits	10%	7	7
V. Sustainability of Benefits	10%	6	6
VI. Increased Riverine Input	10%	0	0
VII. Increased Sediment Input	10%	5	5
VII. Critical Landscape Features	10%	10	10
<b>TOTAL</b>			<b>60</b>

Figure 1: Phase I level Project Map

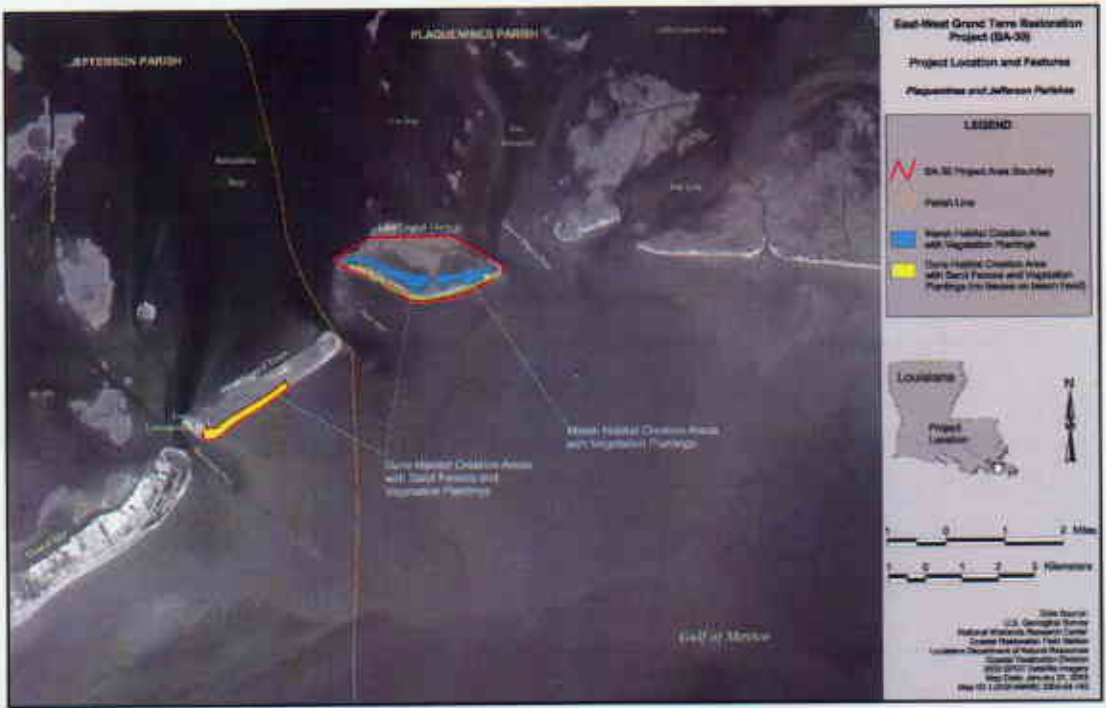


Figure 2: Phase II Project Feature and Boundary Map



TV-11b - Freshwater Bayou Bank Stab-Belle Isle Canal-Lock

**Freshwater Bayou Bank Stabilization  
(Belle Isle Canal to Lock) (East) (TV-11b/XTV-27)  
Vermilion Parish, Louisiana**



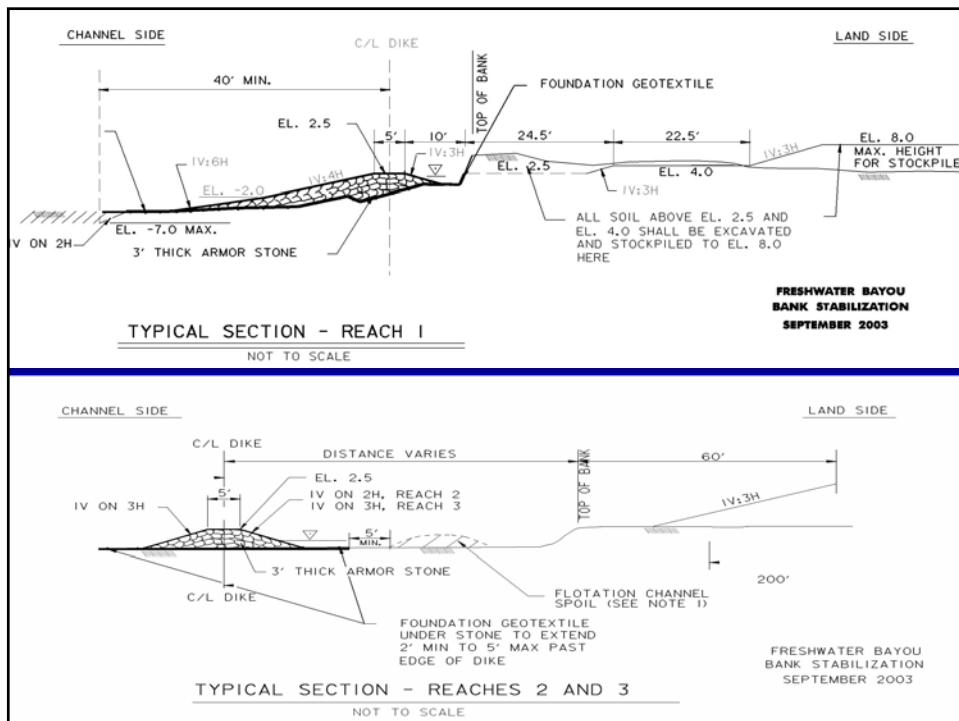
December 2006

## Project Background

- Authorized in January 2000 by Breaux Act (CWPPRA) Task Force on PPL9
- ~40,000 linear feet of rock dike to stop shoreline erosion along Freshwater Bayou Canal from Belle Isle Bayou to the Lock
- Original project included hydrologic restoration features but those were dropped after initial review by the design team

# Wetlands Loss Problems

- The banks of Freshwater Bayou Canal are rapidly eroding (-10ft/yr), due mainly to boat traffic.
- Breaches in the bankline allow boat wakes to push turbid, higher salinity waters into interior wetlands, causing marsh loss and decreasing SAV coverage.
- A large area of interior marsh in the northern portion of the project area is fragmenting and turning to open water, in part due to the breaches.



## Benefits and Costs

- Rock dike will protect and benefit 241 acres of marsh over 20-years
- Project will extend shoreline protection from the lock to a completed state-only project (TV-11)
- Fully funded cost estimate is \$30,070,170.



## Questions?







DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 60267  
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO

ATTENTION OF:

CEMVN-PM-C (1110-2-1150a)

21 November 2006

MEMORANDUM FOR Mr. Troy Constance, Chairman, CWPPRA Technical Committee

SUBJECT: Construction Approval Request for Freshwater Bayou Bank Stabilization – Belle Isle Bayou to the Lock (TV-11b/XTV-27), Vermilion Parish, Louisiana.

1. As required by Section 6(j) of the CWPPRA Standard Operating Procedures Manual, the U.S. Army Corps of Engineers (USACE) and Louisiana Department of Natural Resources (LDNR) request approval to construct the subject project.
2. The original project approved on the 9<sup>th</sup> priority list included shoreline protection and hydrologic restoration components. The hydrologic restoration features were removed during the design phase (see item m for additional details about the removal of this feature). The following information summarizes completion of the tasks required prior to seeking authorization for project construction:

- a. List of Project Goals and Strategies.

The goal of the project is to stop shoreline erosion along the east bank of Freshwater Bayou Canal between the Leland Bowman Lock and Belle Isle Bayou (approximately 40,000 feet) using a rock dike. A copy of the project goals and strategies are included in enclosure A.

- b. A Statement that the Cost Sharing Agreement between the Lead Agency and the Local Sponsor has been executed for Phase I.

A USACE legal opinion indicates that execution of a cost share agreement requires prior Task Force approval of construction. In line with this requirement, the agreement will be executed following Task Force action on the project. A copy of the draft cost sharing agreement is included in enclosure B.

c. Notification from the State or the Corps that landrights will be finalized in a short period of time after Phase 2 approval.

A Real Estate Plan has been completed. The plan outlines all of the necessary real estate instruments required to construct the project and identifies affected landowners. It is estimated that all necessary real estate instruments can be obtained within 90-days of construction approval. A copy of the Real Estate Plan is included in enclosure C.

d. A favorable Preliminary Design Review (30% Design Level).

A 30% Design Review was held in Abbeville, Louisiana on June 27, 2003 and a memo documenting the completion of the design review was sent to the members of the Technical Committee. In addition, the Louisiana Department of Natural Resources provided a letter of support for proceeding with completion of the design of the project. A copy of the letter is included in enclosure D.

e. Final Project Design Review (95% Design Level).

A 95% design review was completed on 22 January 2004. A copy of the letter is included in enclosure E.

f. A draft of the Environmental Assessment of the Project, as required under the National Environmental Policy Act must be submitted thirty days before the request for approval.

A Draft Environmental Assessment was released for public comment in May 2002. A Finding of No Significant Impact was signed in November 2002 completing the National Environmental Policy Act compliance requirements. A copy of the draft Environmental Assessment is included in enclosure F.

g. A written summary of the findings of the Ecological Review.

A final Ecological Review was distributed at the 95% Design Review meeting. A summary of the findings is found on page 7 and page 8 of the report. A copy of the report can be found in enclosure G.

h. Application for and/or issuance of the public notices for permits.

The Corps of Engineers is not required to obtain a permit to construct this project. However, an Environmental Assessment was completed in November 2002 to cover all wetlands conservation and protection issues and other environmental considerations associated with construction and maintenance of the project.

- i. A HTRW assessment, if required, has been prepared.

An HTRW assessment was included in the Environmental Assessment completed in November 2002.

- j. Section 303(e) approval from the Corps.

Section 303(e) approval was provided in February 2004. A copy of the signed 303(e) letter can be found in enclosure J.

- k. Overgrazing determination from the NRCS (if necessary).

An on 22 December 2003 and is included as part of the Real Estate Plan. The Natural Resources Conservation Service concluded that overgrazing is not a problem in the project area. A copy of the overgrazing determination letter provided by NRCS is included in enclosure K.

- l. Revised cost estimate of Phase 2 activities, based on the revised Project design.

The Economics Work Group prepared a fully funded estimate in January 2004. The estimate was updated in November 2005 detailing a fully funded cost of \$ 30,070,170. A copy of the revised estimate is included in enclosure L.

- m. A revised Wetland Value Assessment must be prepared if, during the review of the preliminary NEPA documentation, three of the Task Force agencies determine that a significant change in project scope occurred.

Changes in project scope resulted in a reduction in the project area and environmental benefits. As a result, in accordance with standard operating procedures, the project development team coordinated revisions to the WVA with the Chairman of the CWPPRA Environmental Work Group. Project benefits were reduced to 74.26 Average Annual Habitat Units; a 70% reduction from the originally authorized project. However, the elimination of the water control structures also reduced the project construction costs and as a result the revised cost benefit ratio for the shoreline protection feature is not significantly different than the original estimate.

- n. A breakdown of the Prioritization Criteria ranking score, finalized and agreed-upon by all agencies during the 95% design review.

A revised Prioritization Criteria ranking score has been prepared and reviewed through the CWPPRA working groups. A prioritization fact sheet is included in the Final Design Report. A copy of the revised prioritization fact sheet based on the new cost estimate of Phase 2 activities has been included in enclosure N.

3. If you have any questions regarding this project please call Mr. Gregory Miller at (504) 862-2310 or Dr. Ken Duffy at (225) 342-4106.

GREGORY MILLER  
Project Manager  
Coastal Restoration Branch

# Enclosure A

Original Phase I Project  
Fact Sheet

Overview of Phase I Tasks,  
Process and Issues

Updated Phase II Project  
Fact Sheet

Project Goals and Strategies

## **Description of Original Phase I Project Freshwater Bayou Canal Bank Stabilization (Belle Isle to Lock)**

- Authority:** Coastal Wetlands Planning, Protection and Restoration Act
- Sponsors:** U.S. Army Corps of Engineers and LA Department of Natural Resources
- Location:** Vermilion Parish, LA.
- Problem:** The banks of Freshwater Bayou Canal are rapidly eroding, due mainly to boat traffic. In the project area, several breaches have developed in the bankline along the east side of the canal. These breaches allow boat wakes to push turbid, higher salinity waters into interior marsh, causing marsh loss and decreasing SAV coverage. A large area of interior marsh in the northern portion of the project area is fragmenting and turning to open water, in part due to the breaches.
- Features:** 1) A rock dike would be built along the eastern bank of Freshwater Bayou Canal, between Belle Isle Canal and Freshwater Bayou Lock, a distance of approximately 40,000-ft. The dike is designed to halt shoreline erosion along the east bank of the canal. Special features are being incorporated into the project design to allow estuarine organisms to access wetlands behind the dike. 2) Four water control structures would be built in the spoil banks of canals running along the eastern and southern boundary of the project area. The structures would be flap-gated variable crest weirs.
- Benefits:** Over 20-years, the project will benefit approximately 529 ac of wetlands.
- Cost:** The preliminary estimated cost to construct, maintain, and monitor this project is \$25.1 million.
- Contact:** For additional information contact Gregory Miller at (504) 862-2310.

## **Overview of Phase One Tasks, Process and Issues Freshwater Bayou Bank Stabilization (TV-11b)**

### Task Overview

The Corps of Engineers and the Louisiana Department of Natural Resources project delivery team developed a work plan to guide the project design efforts. The work plan called for identifying landowners in the area, obtaining right of entry permissions to conduct engineering data collection for design work including site surveys and geotechnical investigations. The engineering data was collected and analyzed to produce a recommended design template, alignment, and cost estimate for the proposed project. Environmental compliance actions were initiated in accordance with NEPA regulations and a draft Environmental Assessment was produced. A real estate plan was developed identifying project area landowners and the easements necessary for construction.

Final designs have been developed for approximately 40,000 linear feet of bank protection that is recommended for construction.

### Issues

No significant issues arose during the Phase I design process. However, an incorrect conversion of initial survey elevations to the NAVD 88 datum resulted in design modifications between the preliminary and final design reviews.

### Design Changes

A hydrologic restoration component of the project that was included in the original concept approved on the priority list has been dropped. The feature was removed because of lack of support from the local sponsor. In addition, three typical sections for rock dikes and bank paving will be used to protect the shoreline. These sections differ from the initial cross sections developed for the candidate project that was selected to the priority project list. Changing the cross sections resulted in increasing the amount of rock that will be required for construction. All of these design changes were reviewed by the Environmental Work Group and detailed in the project 30% and 95% design reviews.

**Freshwater Bayou Bank Stabilization  
(Belle Isle Canal to Lock) (East) (XTV-27)  
Vermilion Parish, Louisiana**

- Lead Agencies:** U.S. Army Corps of Engineers and State of Louisiana Department of Natural Resources
- Project Location:** This 241-acre project area is located in Vermilion Parish along the eastern shoreline of Freshwater Bayou Canal (FBC) between the Freshwater Bayou Lock and Belle Isle Canal.
- Project Purpose:** The banks of Freshwater Bayou Canal are rapidly eroding, due mainly to boat traffic. In the project area, several breaches have developed in the bankline along the east side of the canal. These breaches allow boat wakes to push turbid, higher salinity waters into interior marsh, causing marsh loss and decreasing SAV coverage. A large area of interior marsh in the northern portion of the project area is fragmenting and turning to open water, in part due to the breaches.
- Project Features:** A rock dike would be built along the eastern bank of Freshwater Bayou Canal, between Belle Isle Canal and Freshwater Bayou Lock, a distance of approximately 40,000-feet. The dike is designed to halt shoreline erosion along the east bank of the canal. Special features are being incorporated into the project design to allow estuarine organisms to access wetlands behind the rock dike. These special features will leave small gaps in the rock at infrequent intervals to allow natural water exchange behind the dike segments. Shoreline sections at the gap locations will be armored to prevent erosion into the adjacent bankline and marshes.
- Project Costs:** The estimated cost of the project, including real estate, environmental compliance, engineering and design, relocations, construction, monitoring, and O&M expenses, is \$ 30,070,170.
- Project Status:** The partnering agencies have completed a 30% design review and a 95% design review. The project schedule calls for seeking construction authorization from the CWPPRA Task Force at the winter 2006 meeting.
- Information:** Additional information on this project is available on the LACOAST.GOV website or may be obtained by contacting Gregory Miller at 504-862-2310 or via email at [Gregory.B.Miller@mvn02.usace.army.mil](mailto:Gregory.B.Miller@mvn02.usace.army.mil).





**Freshwater Bayou (Belle Isle Canal to Lock - East)  
TV-11b**



**Legend**

-  Proposed Retaining Dike
-  Shut-In Well
-  Inactive Well
-  Weir Structure



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

2000 SPOT Imagery  
 Map Date: May 30, 2003  
 Map ID: USGS-NWRC 2003-04-0248

Freshwater Bayou Bank Stabilization (TV-11b)

Project Goals and Strategies

Goal Statement

The overall goals of this project are to:

- Achieve a 7-fold increase in emergent marsh acreage in Area A, compared to without project predictions, by the end of the 20-year project life (Figure 1); and,
- Reduce the rate of marsh loss by 15% in Area B over the 20-year project life (Figure 1).

Strategy Statement

The project goals will be achieved through the implementation of the following strategies/project features:

- construction of a large conveyance channel through the levee of the Mississippi River
- construction of bifurcation channels (divisions of the main conveyance channel) every five years
- construction of Sediment Retention Enhancement Devices down-stream from the crevasse cut
- beneficial placement of dredged material from conveyance channel construction within the project area

# Enclosure B

Draft Cost Sharing Agreement

# Enclosure C

Real Estate Plan

REAL ESTATE PLAN  
COASTAL WETLANDS PLANNING, PROTECTION, AND RESTORATION ACT  
FRESHWATER BAYOU SHORELINE STABILIZATION (EAST)  
(BELLE ISLE BAYOU TO THE LOCK)  
VERMILION PARISH, LA

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1. PROJECT NAME AND PURPOSE. The purpose of this Real Estate Plan (REP) is to present the overall plan describing the real estate requirements and costs for the Coastal Wetland Planning, Protection, and Restoration Act (CWPPRA) Freshwater Bayou Shoreline Stabilization (East) (Belle Isle Bayou to the Lock) project. The information contained herein is tentative in nature for planning purposes only. The final real property acquisition lines are subject to change even after approval of this report. All exhibits referred to are within this plan.

2. Authorization. This project was authorized on the 9<sup>th</sup> Priority Project List selected by the Task Force on January 11, 2000.

3. Description of Work. The banks of Freshwater Bayou Canal are rapidly eroding, due mainly to boat traffic. In the project area, several breaches have developed in the bank line along the east side of the canal. These breaches allow boat wakes to push turbid, higher salinity waters into interior marsh, causing marsh loss and decreasing submerged aquatic vegetation coverage. A large area of interior marsh in the northern portion of the protect area is fragmenting and turning to open water, in part due to the breaches.

The proposed rock dike will be constructed to elevation +3.5 feet NAVD88, along the eastern bank of Freshwater Bayou Canal, between Belle Isle Canal and Freshwater Bayou Lock (the lock), a distance of approximately 7.5 miles. The dike is designed to halt shoreline erosion along the east bank of the canal. Shoreline sections at the gap locations will be armored to prevent erosion into the adjacent bank line and marshes. Approximately 380,000 tons of rock will be placed upon approximately 215,000 square feet of geo-textile fabric to a height of +3.5 feet NAVD88.

The construction of this CWPPRA project does not foresee having to excavate a flotation access channel for the placement of the rock. However, it has been included in the project as a possible feature. If necessary, a 130-foot-wide flotation channel may be excavated to a maximum depth of elevation -8.0 NAVD88. All material excavated for the project will be placed along the east bank of the canal, within the water between the newly constructed dike and the bank.

There are several oil and gas canals located along Freshwater Bayou and the proposed project construction would allow all to remain open with the exception of two. The two sites designated for closure, and also determined to be non-active canals, are depicted as (1) stations 284+66 and 281+54, and (2) stations 204+00 and 189+40 on the right-of-way maps as provided at Exhibit 1.

Equipment anticipated for use on this project will include conventional construction equipment such as barge mounted draglines and cranes, a material barge for the rock, excavators, marsh buggies, and backhoes. The survey equipment that will be required is survey boats and standard hand-held survey equipment.

The project life is 20 years.

4. Description of LERRD's. The proposed project area, which can be viewed using the rights-of-way maps provided at Exhibit 1, is located along the left descending bank of the Freshwater Bayou Navigation Channel in Vermilion Parish, Louisiana. The area to be acquired is encumbered with a channel easement in favor of the United States and the land has eroded into the water. Under the routine operation and maintenance of the Freshwater Bayou Navigation Channel, the channel is currently maintained to 12 feet in depth by 125 feet in width from the Gulf Intracoastal Waterway to the 12-foot contour of the Gulf of Mexico. The outer reach from the lock through the bar channel (Mile 1.3 to -4.0) is usually dredged every 3 to 4 years, the last time being in 2001. The inland reach from mile 1.6 to 19.8 is usually dredged every 8 to 10 years, the last maintenance event taking place in 1980. The Freshwater Bayou Lock, a feature of the navigation channel project, is located at the southern most end of the inland reach in the navigation channel near the Gulf of Mexico.

The lock is only opened to allow access for waterborne traffic to and from the navigation channel and to alleviate elevated water levels due to periodic heavy rains occurring in the Mermentau and Vermilion drainage basins. Freshwater Bayou is popular with regard to commercial and recreational activities that include fishing, boating, and bird watching. No camps are affected by this project.

Approximately 235.28 acres of rights-of-way are needed for the project. The project area consists of open water. It is currently assumed that approximately two (2) ownerships will be impacted by the project if constructed.

5. Non-Federal Sponsor LER Already Owned. According to the Department of Natural Resources (DNR), they do own LER within the project area. However, a State Land Office determination has been ordered for confirmation.

6. Estate. This project will require the acquisition of a non-standard perpetual Channel Improvement, Disposal, and Bank Stabilization Easement. The subordination verbiage has been inserted at the end of the estate, to ensure the integrity of the canal alteration. We would not want the preexisting canal right-of-way to "prime" the canal alteration work. See Exhibit 2 for a description of the estate.

7. Existing Federal Interests. The Federal Government does have existing realty interests in the project area. As authorized in 1960, the Vermilion Parish Police Jury conveyed to the United States a perpetual channel and dredged material disposal easement that was acquired for the Freshwater Bayou Navigational Channel project. However, given the fact that the proposed bank stabilization of Freshwater Bayou will be constructed under a different authority, we will not assert the use of the existing real estate interests.

8. Navigational Servitude. The Freshwater Bayou Canal is a man-made channel, therefore, the navigation servitude will not be asserted for construction of this project.

9. Flooding Induced by the Project. This project will not induce flooding.

10. Maps. Maps showing the project rights-of-way limits are provided at Exhibit 1, Drawings 2 of 23 through 8 of 23, of this report.

11. Baseline Cost Estimate/Chart of Accounts (COAs). See Exhibit 3, entitled "CWPPRA, Freshwater Bayou Shoreline Stabilization (East) (Belle Isle Bayou to the Lock), Vermilion Parish, LA." Because the cost of the LERRD value was under \$10,000, a gross appraisal is not required. The real estate acquisition cost has been estimated at \$132,000. A 25 percent contingency has been included in that estimate.

12. Uniform Relocation Assistance (PL 91-646) as amended, Title II. Benefit payments under the provisions of Title II of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended, are not currently applicable since the construction of this project does not require the displacement of persons and habitable or commercial structures. However, should current plans change, and the displacement of persons and habitable or commercial structures be required during the construction of this project, Title II of this Act may become relevant. Title III procedures are applicable.

13. Mineral Activities/Timber Harvesting. There are no mineral activities or timber harvesting within the project footprint.

14. Non-Federal Sponsor. The non-Federal Sponsor (NFS) for this project is the Louisiana Department of Natural Resources (LaDNR). For projects authorized by CWPPRA, the NFS is not obligated to provide lands, easements, rights-of-way, relocations, or dredged material disposal areas (LERRDs). LaDNR does not have quick take authority. It is the agency's policy not to condemn private property. The sponsor has been assessed as insufficiently capable of acquiring real estate interests from the private landowners. Therefore, the Federal Government will conduct acquisition activities. However, LaDNR, as the NFS, has contractually agreed in all previous Cost Sharing Agreements for CWPPRA projects, to provide the real estate interests that are owned, claimed, or controlled by the State. If LaDNR decides otherwise, the Federal Government would have to acquire all of the real estate interests necessary for construction, operation and maintenance of



the CWPPRA, Freshwater Bayou Shoreline Stabilization (East)(Belle Isle Bayou to the Lock) project. An Assessment of the Non-Federal Sponsor's Real Estate Acquisition Capability has been completed and was coordinated with Ms. Helen Hoffpauir of LaDNR, Coastal Restoration on 12 February 2003. A copy is provided as Exhibit 4.

15. Zoning Ordinances. No application of zoning ordinances is proposed in lieu of, or to facilitate, acquisition in connection with this project.

16. Acquisition Schedule. The Federal Government will acquire all lands, easements, rights-of-way, relocations, and dredged material disposal areas (LERRD's) determined to be necessary for construction of the project. The acquisition schedule is based on having the CWPPRA, Freshwater Bayou Shoreline Stabilization (East) (Belle Isle Bayou to the Lock) project authorized, the Cost-Sharing Agreement signed with the non-Federal sponsor, and receipt of the rights-of-way maps. A deviation from any of these assumptions will affect the schedule. This schedule shows the duration of each event, as well as the cumulative duration from the beginning of real estate activities. An Acquisition Schedule is provided as Exhibit 5.

17. Facility/Utility Relocations. There are facilities and/or utilities within the proposed project rights-of-way. At this time, the construction of this project does not require relocation and/or removal of those facilities and/or utilities. Facilities and/or utilities known at this time to be located within the project rights-of-way include a Trunkline Gas Company 6" HP gas pipeline located at baseline station (B/L Sta.) 453+11; a SLEMCO overhead power line and subterranean power cable below canal located at B/L Sta. 448+54; a Texas Gas Transmission, LLC 12' natural gas pipeline located at B/L Sta. 440+99; a UNOCAL 2 ½-inch water line and six 6" HP gas lines at B/L Sta. 425+44; an unknown pipeline at B/L Sta. 394+48; an ExxonMobile 10" oil, gas, and water pipeline located at B/L Sta. 377+30; a Transcontinental (Williams Olefins, LLC) 8" natural gas pipeline located at B/L Sta. 291+25; an unknown pipeline at B/L Sta. 260+97 and another at B/L Sta. 228+46; and a Tennessee Gas 16" and 12" natural gas pipelines located at B/L Sta. 193+65.

A statement that the pipelines are a "no work area" will be added to the specifications anticipating that additional rock over some or all of the pipelines shown on the drawings (to close in the gaps) will be completed by future modifications. The rock dike will either avoid or be placed at selected utilities depending on the permissions received from the respective owner. If no permissions are received, no excavation or disposal of materials will be allowed within 50-feet of any subterranean utilities as shown on the maps provided at Exhibit 1. This pertains to both the construction of the dike, and, if required, the flotation channel.

A Preliminary Attorney's Investigation and Report of Compensable Interest was not prepared at this time. However, if it is determined during Phase II that the pipelines will be affected, a report will be prepared.

18. Environmental. All environmental investigations have been completed. An Environmental Assessment #327 has been prepared. A Finding of No Significant Impact was signed on 29 October 2002. A Hazardous, Toxic, and Radioactive Waste (HTRW) Land Use History and a Phase I HTRW Initial Site Assessment have been completed for the proposed action and the risk of encountering HTRW for the proposed project is low. It has been determined that the proposed action would have no impact upon cultural resources and no significant impact on the Freshwater Bayou Navigation Channel, Wetlands, Fisheries, Wildlife, Essential Fish Habitat, Endangered or Threatened Species, or Recreational Resources. No real estate acquisition will take place prior to the approval of this Real Estate Plan or the execution of the Cost Sharing Agreement (CSA). No impacts have been identified that would require compensatory mitigation.

19. Landowner Concerns. The Vermilion Parish School Board and the Exxon/Mobil Oil Corporation are the assumed owners of the project area. Property ownership will be confirmed in Phase II. In addition to the property owners, the Vermilion Corporation (represented by Mr. "Judge" Edwards) has a 100-year surface lease to the area. It is believed they have somewhere in the vicinity of 40-50 years left on this lease. Mr. Greg Miller, Corps of Engineers Project Manager, has stated that the Vermilion Corporation is familiar with and in his conversations with Mr. Edwards, is in favor of the project.

20. Non-Federal Sponsor Notification of Risks. The Federal Government will acquire on behalf of the non-Federal Sponsor, LaDNR. Therefore, no notification of risk letter is necessary.

21. Access. Access to the area is via the Mississippi River, Grand Pass Mississippi River outlet, and Freshwater Bayou Canal. The area can only be reached by boat or hydroplane.

22. Oysters. There are no oyster leases in the Freshwater Bayou project area. Nor will the project have secondary impacts to leases during construction or operation and maintenance.

23. Operations and Maintenance. Operation and maintenance of the project is a non-Federal sponsor responsibility.

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Prepared by: MICHELLE S. MARCEAUX  
Appraisal & Planning Branch  
Real Estate Division

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Reviewed by: JOSEPH G. KOPEC  
Chief, Appraisal & Planning Branch

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Approved by: WILLIAM C. LEWIS, JR.  
Chief, Real Estate Division

Dated: December 2003

**EXHIBIT 2**

**PROPOSED ESTATE**

**Proposed Estate for Freshwater Bayou, CWPPRA**

**NON-STANDARD**

**PERPETUAL CHANNEL IMPROVEMENT, DISPOSAL AND BANK STABILIZATION EASEMENT**

A perpetual and assignable right and easement in Tract Number \_\_\_\_\_ to dredge the existing channel; construct, operate, and maintain dikes and flotation access channels; deposit dredged material; construct, maintain, repair, operate, patrol and replace bank stabilization works, including all appurtenances thereto; and for such other purposes as may be required in connection with the Freshwater Bayou, CWPPRA project, including the right to alter or close those portions of the following two canals that are located within this tract: the canal approximately between Stations 284+66 and 281+54 and the canal located approximately between Stations 204+00 and 189+40, but without the right to alter, close or otherwise obstruct access to all other canals and waterways within this tract; provided that no structures for human habitation shall be constructed or maintained on the land, and that no other structures shall be constructed or maintained on the land except as may be approved in writing by (the District Engineer of the U.S. Army Engineer District, New Orleans or the State of Louisiana, as represented by the Louisiana Department of Natural Resources; subject to existing easements for public roads and highways, public utilities, railroads and pipelines; reserving, however, to the Grantors, (their heirs) (its successors) and assigns, all such rights and privileges as may be used and enjoyed without interfering with the use of the project for the purposes authorized by Congress or abridging the rights and easements herein conveyed.

Prepared by:

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Maurya Kilroy  
Attorney-Advisor  
Local Sponsor & Inleasing Acquisition Branch

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William C. Lewis, Jr.  
Chief, Real Estate Division

**EXHIBIT 3**

**BASELINE COST ESTIMATE (COA's)**

**EXHIBIT 4**

**ASSESSMENT OF NON-FEDERAL SPONSOR'S  
REAL ESTATE ACQUISITION CAPABILITY**

**EXHIBIT 5**  
**ACQUISITION SCHEDULE**



# Enclosure D

30% Design Review Letter

# Enclosure E

95% Design Review Letter

# State of Louisiana

PM-C

KATHLEEN BABINEAUX BLANCO  
GOVERNOR



SCOTT A. ANGELLE  
SECRETARY

DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

May 11, 2004

Mr. John Saia  
Deputy District Engineer for Project Management  
U.S. Army Corps of Engineers  
P.O. Box 60267  
New Orleans, LA 70160-0267

Re: 95% Design Review for Freshwater Bayou Canal Shoreline Protection – Belle Island  
to Lock (TV-11b)  
Statement of Successful Completion

Dear Mr. Saia:

The 95% design review meeting was successfully completed on January 22, 2004 for the Freshwater Bayou Canal Shoreline Protection – Belle Island to Lock (TV-11b) project. Based on our review of the Final Design Report, plans and specifications, the Ecological Review, and the environmental compliance documentation, as local sponsor, we concur to request permission from the Technical Committee to proceed to Phase II for this project.

In accordance with the CWPPRA Project Standard Operating Procedures Manual, we request that you forward the items required in Appendix C – Information Required in Phase II Authorization Requests to the CWPPRA Technical Committee for subsequent approval by the CWPPRA Task Force. We also request that our project manager, Kenneth Duffy, be copied on this and all other correspondence concerning this project.

Please do not hesitate to call if I may be of any assistance.

Sincerely,

Christopher P. Knotts, P.E.  
Director

cc: David Burkholder, P.E., Engineer Manager  
Kenneth Duffy, Ph.D., Project Manager  
Shannon Dupont, P.E., Project Engineer

CPK:KCD:kcd

# Enclosure F

Draft EA #327



## DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO  
ATTENTION OF:

Planning, Programs, and  
Project Management Division  
Environmental Planning  
and Compliance Branch

### FINDING OF NO SIGNIFICANT IMPACT (FONSI)

### FRESHWATER BAYOU BANK STABILIZATION PROJECT

### VERMILION PARISH, LOUISIANA

### EA #327

Description of Proposed Action. The New Orleans District, U.S. Army Corps of Engineers, proposes to construct a bankline stabilization structure. The proposed action is located along the left descending bank of the Freshwater Bayou Navigation Channel in Vermilion, Parish, Louisiana. The proposed action consists of placing approximately 240,000 tons of rock on approximately 180,000 square-yards of geotextile fabric to a crown height of +3.5 feet NGVD along the left descending bank of Freshwater Bayou benefiting approximately 285 acres of wetland habitat (see attached figure). The rock dike would extend approximately 41,000 feet from Belle Isle Bayou to the lock bypass channel adjacent to the Freshwater Bayou Lock. Rock would be placed parallel to the existing bankline, while maintaining fisheries access to aquatic habitat found behind the existing spoilbank. A floatation channel would be excavated (approx 262,000 cubic yards) in open water in Freshwater Bayou to construct the rock dike. Material excavated from the floatation channel would be placed between the rock dike and the bankline; the material would not be stockpiled and would be placed no higher than the existing bankline.

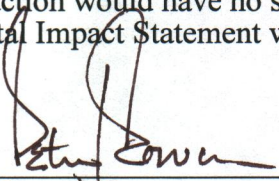
Factors Considered in Determination. This office has assessed the impacts of the proposed action on significant resources, including Freshwater Bayou, Wetlands, Fisheries, Wildlife, Essential Fish Habitat (EFH), Endangered Species, Air Quality, and Cultural Resources. It is noted herein that EFH, for pink shrimp and the Gulf stone crab, is not designated in coastal Louisiana as incorrectly listed in EA #327 (page EA - 5). No significant adverse impacts were identified for any of the significant resources. The risk of encountering HTRW is low. No impacts were identified that would require compensatory mitigation.

Environmental Design Commitments. The following commitment is an integral part of the proposed action: Design and construction of the rock dike would be done in a manner to minimize impacts to fisheries access into wetlands located behind the proposed alignment. The terminal ends of each segment of rock dike would be left open, not tied into the existing bankline, to maintain access.

Public Involvement. The proposed action has been coordinated with appropriate Federal, state, and local agencies and businesses, organizations, and individuals through distribution of Environmental Assessment #327 (EA #327) for their review and comment.

Conclusion. This office has assessed the potential environmental impacts of the proposed action. Based on this assessment, and a review of the public comments made on EA #327 a determination has been made that the proposed action would have no significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared.

29 Oct 02  
Date

  
Peter J. Rowan  
Colonel, U.S. Army  
District Engineer

General Features of Proposed Action



# Enclosure G

Ecological Review



# E C O L O G I C A L R E V I E W

**Freshwater Bayou Bank Stabilization (Belle Isle to Lock)**  
CWPPRA Priority Project List 9  
(State No. TV-11b)

January 2004

Agaha Y. Brass and Kyle F. Balkum  
Restoration Technology Section  
Coastal Restoration Division  
Louisiana Department of Natural Resources

## ECOLOGICAL REVIEW

### Freshwater Bayou Bank Stabilization (Belle Isle to Lock)

*In August 2000, the Louisiana Department of Natural Resources (LDNR) initiated the Ecological Review to improve the likelihood of restoration project success. This is a process whereby each restoration project's biotic benefits, goals, and strategies are evaluated prior to granting construction authorization. This evaluation utilizes monitoring and engineering information, as well as applicable scientific literature, to assess whether or not, and to what degree, the proposed project features will cause the desired ecological response.*

#### **I. Introduction:**

The Freshwater Bayou Canal, constructed between 1965 and 1967, provides major shipping access from the Gulf of Mexico to Intracoastal City on the Gulf Intracoastal Waterway (GIWW). In 1968, a lock was built at the southern-most end of the inland reach of the navigation channel near the Gulf of Mexico to control the intrusion of saltwater into Freshwater Bayou Canal. It is opened only to allow access for shipping traffic and to alleviate elevated water levels caused by periodic heavy rains. Between 1979 and 1986, approximately 300,000 tons of cargo were transported along the Freshwater Bayou Canal [United States Army Corps of Engineers (USACE) 1989], demonstrating the importance of this highly used channel.

The purpose of the proposed Freshwater Bayou Bank Stabilization (Belle Isle to Lock), TV-11b project is to stop shoreline erosion along the east bank of Freshwater Bayou Canal in Vermilion Parish, Louisiana. Between 1968 and 1992, the Freshwater Bayou Canal shoreline eroded at an average rate of 12.5 feet per year (Brown and Root 1992). Monitoring data, collected from shoreline reference stations as part of the Freshwater Bayou Wetland Protection (ME-04) project indicated that the shoreline eroded at an average of 6.69 feet per year between 1995 and 1996, and 11.15 feet per year between 1996 and 1998 (Vincent et al. 2000a). Ongoing LDNR monitoring efforts have indicated that from 1995 to 1998 the eastern shoreline of Freshwater Bayou Canal eroded at an average rate of 9.17 feet/year (Vincent et al. 2000a). Continued shoreline erosion, caused by vessel wakes, has breached the spoil bank in many areas, subjecting interior marshes to increased water salinities, wave energies, and tidal scour. Tidal scour has eroded organic soils of interior marshes, resulting in emergent vegetation loss within the project area (Vincent et al. 2000b).

The Freshwater Bayou Bank Stabilization project involves the construction of a foreshore rock dike along the east bank of Freshwater Bayou Canal. The project encompasses 11,000 acres of intermediate and brackish marsh and extends approximately 39,330 feet from the Freshwater Bayou Lock north to Belle Isle Bayou (Figure 1). It is anticipated that this strategy will stop erosion in this area, and reduce deterioration of interior marshes. *Coast 2050*, Louisiana's guiding document for the restoration of a sustainable coastal ecosystem, identifies the stabilization of major navigation channels as both a "Coastwide Common Strategy" and a "Regional Ecosystem Strategy" which will reduce future wetland loss (Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority 1998).

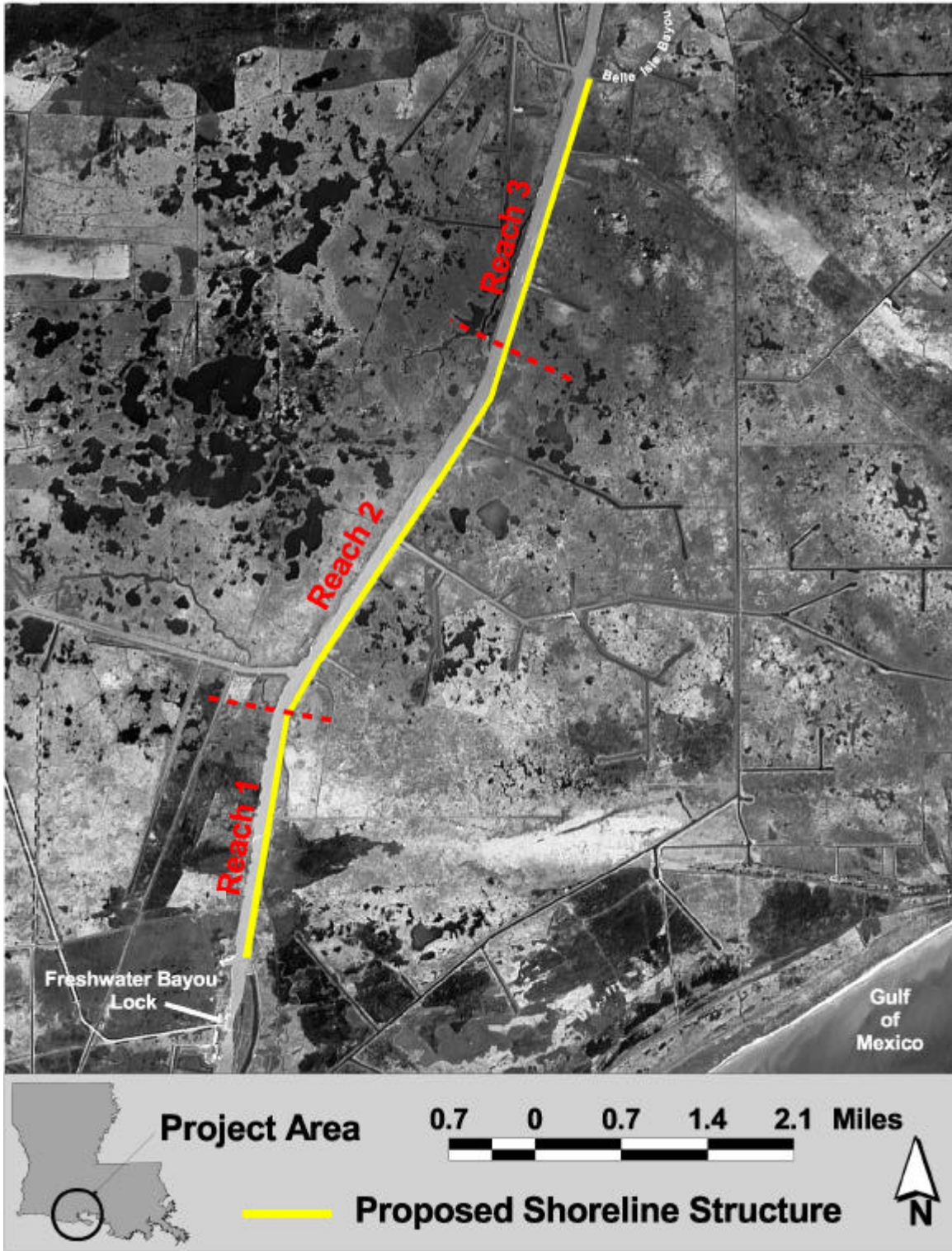


Figure 1: Freshwater Bayou Bank Stabilization (Belle Isle to Lock) project area.

**II. Goal Statement:**

The goal of this project is to stop shoreline erosion along the east bank of Freshwater Bayou Canal from the Freshwater Bayou Lock to Belle Isle Bayou.

**III. Strategy Statement:**

The project goal will be achieved through the construction of a foreshore rock dike along a 39,330-foot stretch of Freshwater Bayou Canal from Freshwater Bayou Lock to Belle Isle Bayou.

**IV. Strategy-Goal Relationship:**

Construction of a foreshore rock dike will restore the integrity of the Freshwater Bayou Canal bank which has continued to erode and breach into the marsh to the east of the project area. The proposed permeable barrier will dissipate wave energy, and effectively halt shoreline/bankline erosion.

**V. Project Feature Evaluation:**

A geotechnical investigation was performed to assess the native soil's ability to withstand the designed weight of the proposed rock structure. Based on the results of this analysis, it was determined that the project area contained three distinct soil reaches which required the design of three separate shoreline protection features for each reach (Figure 1). Below is a summary of a geotechnical investigation that describes the settlement and slope stability suggestions associated with the different types of proposed project features. The accepted measure of a slope's stability is its "safety factor" or minimum factor of safety (FS<sub>min</sub>), which is the ratio of the forces or moments tending to prevent failure (soil strength, primarily) to those that cause failure [soil and surcharge weights plus seepage forces, primarily (Soil Testing Engineers, Inc. 2001)]. The recommended safety factor that should be adhered to for rock structures built in this project area is a FS<sub>min</sub> = 1.20. Table 1 summarizes the stability analyses for the three project reaches at +3.5 feet NAVD-88. Table 2 summarizes predictions of long-term structure settlement along the three reaches.

The general design for Reach 1 [the southernmost region (Station 40+10 to Station 163+60)] will include an onshore dike with 1 vertical (V) on 3 horizontal (H) side slopes for the land and channel sides of the reach. A 1V on 18H channel side berm is required for stability at locations where the mud line dips below -2 feet NAVD-88. This berm will act as a counterbalance against slope stability failure. At these locations, the adjacent top bank will be degraded to +2.5 feet NAVD-88. As currently designed the structure along Reach 1 meets the minimum factor of safety (Table 1). Reach 2 (centrally located between Reaches 1 and 3) of the project area (from Station 163+60 to Station 354+40) met the required factors of safety and soil stability requirements necessary for a successful structure. The rock dike was designed using slopes of 1V on 3H for the channel side and 1V on 2H for the bank side. Reach 3 [the northernmost reach (Station 358+19 to Station 469+77)] will have side slopes of 1V on 3H on both sides. Reach 3 will also contain an embedment berm to act as a counterbalance in certain areas of the reach. The embedment berm will be placed behind the primary structure built to +1.4 feet NAVD-88 with 1V on 2H side slopes. The geotechnical investigation determined that geotextile reinforcement and embedment berm are required to achieve the minimum factor of safety (Table 1).

**Table 1.** Description of Safety Factors for Proposed Project Features (USACE 2003a)

Reach Number	Minimum Factor of Safety for Extreme Low Water Elevation -4	Minimum Factor of Safety for Average Low Water Elevation -2.3
1 Bank Paving	1.20	(see note below)
2 Rock Dike	1.34	(see note below)
	1.33	(see note below)
3 Rock Dike	0.88*	(see note below)
	0.88**	(see note below)
	0.94***	(see note below)
	0.94****	(see note below)

\* Geotextile reinforcement (tensile strength 300 #/in at 5% strain) required for FSmin = 1.20 for extreme low water case and embedment is insufficient, a berm must be added.

\*\* Geotextile reinforcement (tensile strength 300 #/in at 5% strain) and embedment berm are required for FSmin = 1.20 for extreme low water case.

\*\*\* Reduced composite excludes the following sections: Sta.354+41, 358+19, 365+75, 408+08, 418+90, 422+50, 438+35, and 457+77. Geotextile reinforcement (tensile strength 240 #/in at 5% strain) required for FSmin = 1.20 for extreme low water case and embedment is sufficient FSmin = 1.20.

\*\*\*\* Geotextile reinforcement (tensile strength 320 #/in at 5% strain) required for FSmin = 1.20 for extreme low water case and embedment is sufficient FSmin = 1.20.

Note: For re-design at grade Elevation +3.5, only controlling cases were analyzed.

**Table 2.** Long-term structure settlement predicted for the 20-year project life (USACE 2002 and USACE 2003b).

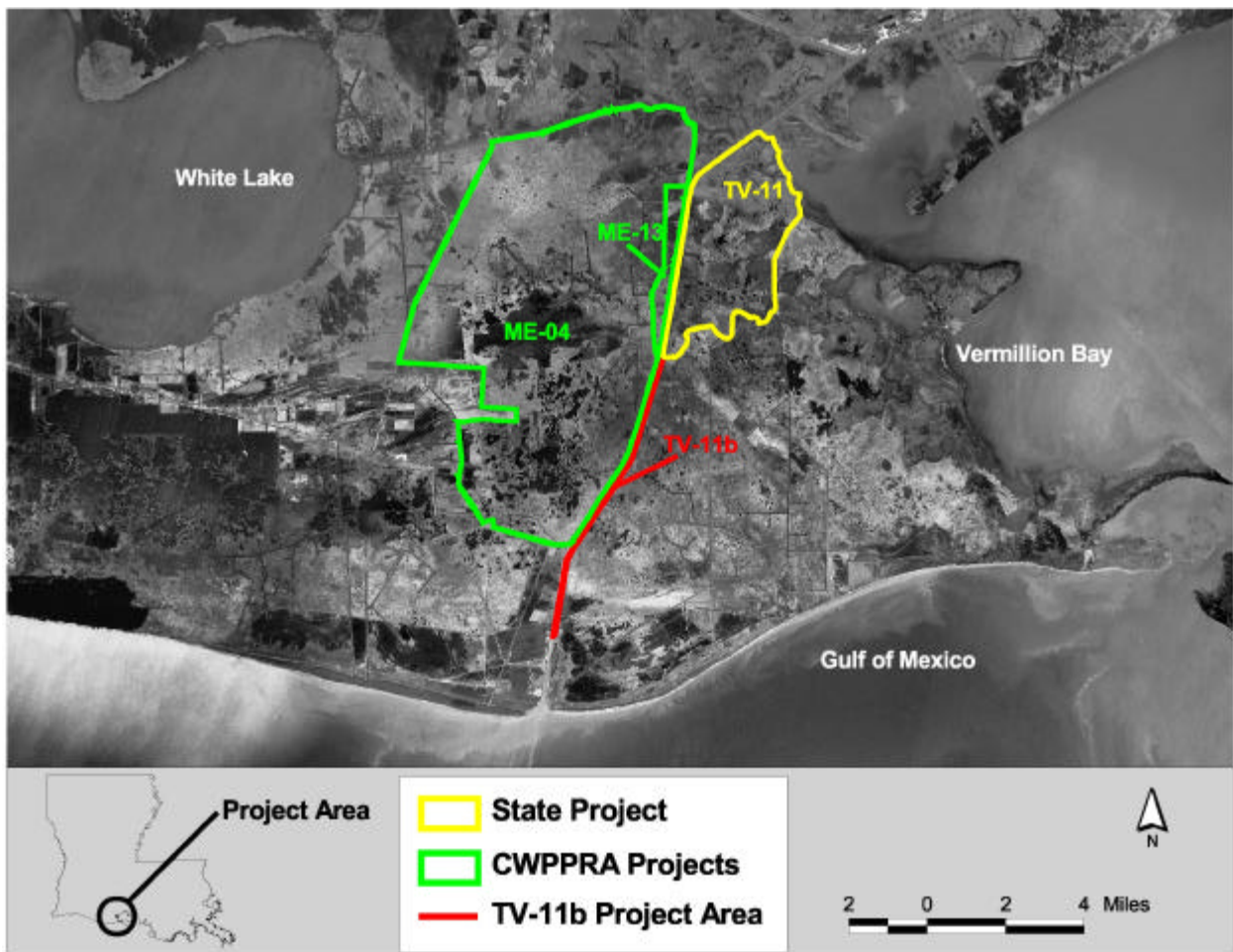
Reach	Baseline Stations	20 Year Settlement	Ultimate Long Term Settlement
1	Station 40+10 to Station 163+60	6 inches	12 inches
2	Station 163+60 to Station 354+40	2 to 7 inches	7 to 12.5 inches
3	Station 354+40 to Station 469+78	1.5 to 5.5 inches	4.5 to 8 inches

All of the stone structures will be underlain by geotextile fabric and built to an elevation of +3.5 feet NAVD-88 with crown widths of 5 feet. The aforementioned geotextile fabric will be used to reduce potential stability failure and construction settlement. Material excavated from the floatation channel (dredged for access to the project area) will be beneficially placed between the dike and the existing shoreline no higher than the top of the adjacent rock dike.

A total of 13 proposed pipeline and canal openings along the rock dike's length will also serve as fisheries access points. The gaps at pipeline crossings are 100 feet wide (50 feet on each side of the pipeline). Gaps at canals and natural creeks vary in width depending upon the site. The rock dike terminus, created by each opening, will be built to the same side slopes and elevation as the rest of the dike within each respective reach; however, the crown widths at those positions will be wider (7 feet).

**VI. Assessment of Goal Attainability:**

Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) shoreline protection projects similar to Freshwater Bayou Bank Stabilization (Belle Isle to Lock), have been implemented on Freshwater Bayou (Figure 2) and other navigation canals as a means of protecting those banks from further erosive elements. Monitoring results and anecdotal information from these projects indicate that shoreline protection measures have been effective at preventing or reducing further erosion.



**Figure 2:** Freshwater Bayou Bank Stabilization (Belle Isle to Lock) and other CWPPRA and State projects along Freshwater Bayou Canal.

Projects on Freshwater Bayou Canal:

? Freshwater Bayou Wetlands Protection (ME-04) is a CWPPRA project located on the

western bank of Freshwater Bayou Canal directly across from the proposed TV-11b project (Figure 2). This project was initiated in January 1995 and included the construction of water control structures and a 28,000 linear foot foreshore rock dike at +4.0 feet NAVD-88. The rates of subsidence and sea level rise in the project area were estimated to be relatively low, 0.13 inches per year and 0.25 inches per year, respectively (Penland et al. 1989). Although monitoring efforts are still ongoing, data analyses suggest that the rock dike significantly reduced wave-induced shoreline erosion after construction. Between June 1995 and July 1996, the shoreline behind the constructed dike actually prograded at an average rate of 2.17 feet per year while the reference area eroded at a rate of 6.69 feet per year (Raynie and Visser 2002). Between August 1996 and February 1998, the protected shoreline continued to prograde at an average rate of 0.89 feet per year as the reference area eroded at an average rate of 11.15 feet per year (Raynie and Visser 2002). However, between March 1998 and May 2001, the protected shoreline eroded an average of 2.62 feet per year while the reference area eroded an average of 9.99 feet per year (Raynie and Visser 2002). The steady decrease in the effectiveness of the project features over time is due in large part to the “substandard nature of the original construction material used, and the logistics of implementing a cost-effective maintenance lift to the structure” (Raynie and Visser 2002).

- ? Freshwater Bayou Bank Stabilization (ME-13), located in Vermilion Parish on the west bank of Freshwater Bayou Canal, is directly opposite from the TV-11 state project and northwest of the proposed TV-11b project (Figure 2). The main cause of wetland loss in the ME-13 project area is boat wake-induced shoreline erosion of the canal spoil banks and organic soils of the interior marsh (USACE and LDNR 1994). A 23,193 linear foot continuous rock dike, built to an elevation of +3.7 to +4.0 feet NAVD-88, was installed parallel to the western shoreline in 1998 to address this loss. Pre-construction data at the ME-13 reference areas on the east bank indicate that the canal eroded at an average rate of 6.54 feet per year between April 1995 and July 1996 (Vincent and Sun 1997). Post-construction data collected from July 1998 through July 2003 revealed that the shoreline behind the constructed rock dike prograded on average 0.84 feet per year (Vincent 2003). During the same period, the unprotected reference areas eroded on average 11.94 feet per year (Vincent 2003).
- ? The Freshwater Bayou Bank Protection (TV-11) state project, constructed in 1994, is located on the east bank of Freshwater Bayou Canal, immediately north of the proposed TV-11b project and consists of 25,800 linear feet of shoreline protection constructed at +4.0 feet NAVD-88 (Figure 2). Due to manpower deficiencies and budgetary constraints, little monitoring information exists for this project; therefore, no specific conclusions can be drawn regarding the performance of the breakwaters. The lack of post-construction aerial photography precludes any definitive analysis of shoreline movement and changes in land to water ratios within the project area (LDNR 1996).

CWPPRA Projects on other Navigation Channels:

- ? The Cameron Prairie National Wildlife Refuge Shoreline Protection (ME-09) project was designed to protect 247 acres of marsh by preventing further widening of the GIWW. The shoreline erosion rate was estimated to be 2.5 feet per year prior to project construction in 1994 (United States Fish and Wildlife Service 1991). Since construction of the 13,200 linear foot rock dike (built to an initial elevation of +3.7 feet NAVD-88), shoreline erosion in the project area has been halted, and the shoreline behind the structure has prograded. From 1995 to 2000, the shoreline within the project area prograded an average of 9.8 feet per year (Barrilleaux and Clark 2002). Meanwhile, the reference areas continued to erode at an average rate of 4.1 feet per year (Barrilleaux and Clark 2002). In addition, 3.03 acres of vegetated wetland were created behind the rock dike on the navigation channel, indicating that low sediment availability does not prohibit wetland creation (Courville 1997).
  
- ? The Clear Marias Bank Protection (CS-22) project in Cameron Parish is similar to the proposed TV-11b project. It is located along the north bank of the GIWW between the Alkali Ditch and Goose Lake. Pre-construction shoreline erosion rates along the northern shoreline of the GIWW were 3.9 feet per year (USDA 1994). Erosion rates along the southern shoreline were 16.0 feet per year (National Marine Fisheries Service 1996). In March of 1997, a 35,000 foot limestone breakwater, built to an elevation of +3.0 feet NGVD-29, was completed from the northern bank of the GIWW to prevent continued erosion of the management levee and the encroachment of the GIWW into the project area (LDNR 1998b). Post-construction shoreline data collected in 1997 and 2000 indicated that the total project area shoreline had prograded 12.99 feet per year Miller 2001). The reference area for the same time intervals eroded 20.52 feet (Miller 2001).
  
- ? Perry Ridge Shore Protection (CS-24) and GIWW-Perry Ridge West Bank Stabilization (CS-30) projects were constructed in 1999 and 2001, respectively, along the northern bank of the GIWW in Cameron Parish. Both projects involved the construction of rock dikes to elevations of +3.7 to +4.0 feet NAVD-88 to prevent further shoreline erosion, but recent construction has precluded a definitive evaluation of project features. However, field observations indicate that the rock dike has halted shoreline erosion within the CS-24 project area (LDNR 2002).

**VII. Summary and Conclusions:**

The goal of the proposed Freshwater Bayou Bank Stabilization (TV-11b) project is to stop shoreline erosion along the east bank of Freshwater Bayou Canal from Freshwater Bayou Lock north to Belle Isle Bayou. The geotechnical investigation of the TV-11b project area concluded that soil characteristics within Reach 2 met all the soil stability requirements necessary for the construction of a foreshore dike. However, the data indicted that soil characteristics along Reaches 1 and 3 were not stable enough to support the initially proposed dike structure. Therefore, the designs were modified to incorporate an onshore pavement structure for Reach 1 and the use of both embedment berms and



geotextile reinforcement for Reach 3. These project modifications will improve structure stability.

Data collected from constructed shoreline protection projects along Freshwater Bayou Canal and the GIWW indicate that foreshore rock dikes are successful at stopping and/or reducing shoreline erosion rates. The decreasing effectiveness of the ME-04 project features, located on the opposite bank from TV-11b, reinforces the need for the appropriate rock gradation for use in dike construction.

Recommendations:

Based on the investigation of similar restoration projects and a review of engineering principles, the proposed strategies of the Freshwater Bayou Bank Stabilization (TV-11b) project will likely achieve the desired goal of stopping shoreline erosion. At this time, the level of design of the project's physical effects warrant continued progress toward construction pending a favorable 95% Design Review and resolution of the following issue:

- ? The Operations and Maintenance budget should be significant enough to provide for a maintenance lift to the structure should the dike's integrity be compromised.

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# Enclosure J

Section 303(e) Determination

# Enclosure K

Overgrazing Determination Letter



Natural Resources Conservation Service  
3737 Government Street  
Alexandria, LA 71302

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December 22, 2003

Mr. Gregory Miller  
Project Manager/Biologist  
U.S. Army Corps of Engineers  
New Orleans District  
Coastal Restoration Branch  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Dear Mr. Miller:

RE: Freshwater Bayou Bank Stabilization and Hydrologic Restoration-Belle Isle Canal  
To Lock TV-11b

I am in receipt of your request for an overgrazing determination for the Freshwater Bayou Bank Stabilization and Hydrologic Restoration-Belle Isle Canal to Lock TV-11b. I contacted our local district conservationist and our state resource conservationist to discuss the grazing in the project area. Currently, livestock are not grazing in the area nor do we see a potential for grazing once the project is installed. Therefore, it is our opinion that overgrazing is not a problem in this project area. If you have any questions, please let me know.

Sincerely,

A handwritten signature in blue ink, appearing to read "W. Britt Paul".

W. Britt Paul  
Assistant State Conservationist  
For Water Resources and Rural Development

cc: Bruce Lehto, Area Conservationist, Leesville, NRCS, Louisiana  
Charles Starkovich, District Conservationist, NRCS, Lake Charles, Louisiana  
Bart Devillier, District Conservationist, NRCS, Abbeville, Louisiana

# Enclosure L

Revised Cost Estimate



# Enclosure N

Prioritization Fact Sheet

## PRIORITIZATION FACT SHEET

### **Freshwater Bayou Shoreline Stabilization (Belle Isle Canal to the Lock) (XTV-27/TV-11b)**

Revised 21 November 2006

#### **Project Name and Number**

This 9th priority list project was originally called “Freshwater Bayou Shoreline Stabilization and Hydrologic Restoration (Belle Isle to the Lock) (XTV-27)”. The hydrologic restoration features were dropped at the request of the local sponsor. The current project name is “Freshwater Bayou Shoreline Stabilization (Belle Isle Canal to the Lock) (XTV-27)”.

#### **Goals**

Prevent shoreline and wetlands erosion through the construction of a rock breakwater along the east bank of the Freshwater Bayou Canal from Belle Isle Canal to the Lock.

#### **Proposed Solution**

A rock dike will be built along the eastern bank of Freshwater Bayou Canal, between Belle Isle Canal and Freshwater Bayou Lock, a distance of approximately 40,000-feet. The dike is designed to halt shoreline erosion along the east bank of the canal. Periodically spaced gaps are incorporated into the project design to allow estuarine organisms to access wetlands behind the rock dike. In some cases shoreline sections at the gap locations may be armored to prevent erosion into the adjacent bankline and marshes.

Changes in project scope resulted in a reduction in the project area and environmental benefits. As a result, in accordance with program procedures, the project development team coordinated revisions to the WVA with the Chairman of the CWPPRA Environmental Work Group. Project benefits were reduced to 75 Average Annual Habitat Units; a 70% reduction from the originally authorized project. However, the elimination of the water control structures and other design changes reduced the project construction costs and as a result the revised cost benefit ratio is not expected to be significantly different than the original estimate.

#### **Proposed Prioritization Criteria Scores and Justification**

##### **I. Cost Effectiveness (cost/net acre)**

Project features have been dropped reducing the acres protected and restored to 241 acres. The revised cost per net acre is \$124,772 ( $\$30,070,170 \div 241 \text{ acres} = \$124,772/\text{acre}$ ).

**Based upon these numbers, the project should receive 1 point for this criterion.**

##### **II. Area of Need, High Loss Area**

- Area A has a shoreline erosion rate of 12.5 feet per year. The project is located on the boundary between the Teche/Vermilion and the Calcasieu/Sabine/Mermentau basins but technically falls within the Teche/Vermilion basin. Based upon the prioritization criteria, this loss rate is considered medium and would receive a score of 3 points.

**Based upon these numbers, the project should receive 3 points for this criterion.**

### **III. Implementability**

There are no major, unaccounted, impediments to implementing this project. Adequate funds are provided in the cost estimate for operations and maintenance costs.

**Based upon this information, the project has no obvious issues affecting implementability and should receive 10 points for this criterion.**

### **IV. Certainty of Benefits**

This project will build a shoreline protection dike in the chenier plain.

**Based upon the proposed plan and location, the project should receive 10 points for this criterion.**

### **V. Sustainability of Benefits**

This project proposes to employ a 40,000 foot-rock dike to prevent shoreline erosion. Under the assumptions of the prioritization procedures, the full project benefits are expected to continue beyond TY 20 until the next required maintenance cycle after which benefits would be reduced to 75% effectiveness. This project has maintenance events scheduled in years 5 and 15 and based upon that cycle would have another event in TY 25.

TY	% Effective	Feet Lost Per Year	Acres Lost Per Year
20	100%	0	0.00
21	100%	0	0.00
22	100%	0	0.00
23	100%	0	0.00
24	100%	0	0.00
25	100%	0	0.00
26	75%	3.125	2.87
27	75%	3.125	2.87
28	75%	3.125	2.87
29	75%	3.125	2.87
30	75%	3.125	2.87
Totals:		15.625	14.35

Using these shoreline erosion rates and assumptions, the acres of marsh in project Area A will decrease 6.0% (14.35 acres/241 acres = .059) between TY20 – TY30.

**Based upon the percent change in project area wetland acres from TY20 –TY30, the project should receive 8 points for this criterion.**

### **VI. HGM Riverine Input (Increasing riverine input in the deltaic plain or freshwater input and saltwater penetration limiting in the Chenier plain)**

This project will not affect freshwater inflow or salinity.

**Based upon the prioritization process, the project should receive 0 points for this criterion.**

VII. HGM Sediment Input (Increased sediment input)

This project will not increase sediment input over that presently occurring.

**Based upon the prioritization process, the project should receive 0 points for this criterion.**

VIII. HGM Structure and Function (Maintaining landscape features critical to a sustainable ecosystem structure and function)

The project would not protect any landscape features critical to the mapping units.

**Based upon the prioritization process, the project received 0 points for this criterion.**

Weighted Prioritization Score

$$(1*2.0) + (3*1.5) + (10*1.5) + (10*1.0) + (8*1.0) + (0*1.0) + (0*1.0) + (0*1.0) = 39.5 \text{ points}$$

**Preparers of Fact Sheet**

Gregory Miller, Corps of Engineers, (504) 862-2310, [gregory.b.miller@mvn02.usace.army.mil](mailto:gregory.b.miller@mvn02.usace.army.mil)

Carrie Schmidt de la Fuente, LA Dept. of Natural Resources, (225) 342-6749,

[carries@dnr.state.la.us](mailto:carries@dnr.state.la.us)


Ken Duffy, LA Dept. of Natural Resources, (225) 342-4106, [kend@dnr.state.la.us](mailto:kend@dnr.state.la.us)



**Freshwater Bayou (Belle Isle Canal to Lock - East)  
TV-11b**



**Legend**

-  Proposed Retaining Dike
-  Shut-In Well
-  Inactive Well
-  Weir Structure



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

2000 SPOT Imagery  
Map Date: May 30, 2003  
Map ID: USGS-NWRC 2003-04-0248

TE-43 - GIWW Bank Restoration of Critical Areas in Terre

**CWPPRA**  
**GIWW Restoration of Critical Areas**  
**(TE-43)**  
**Phase II Request**

**Technical Committee Meeting**

December 6, 2006

Baton Rouge, LA

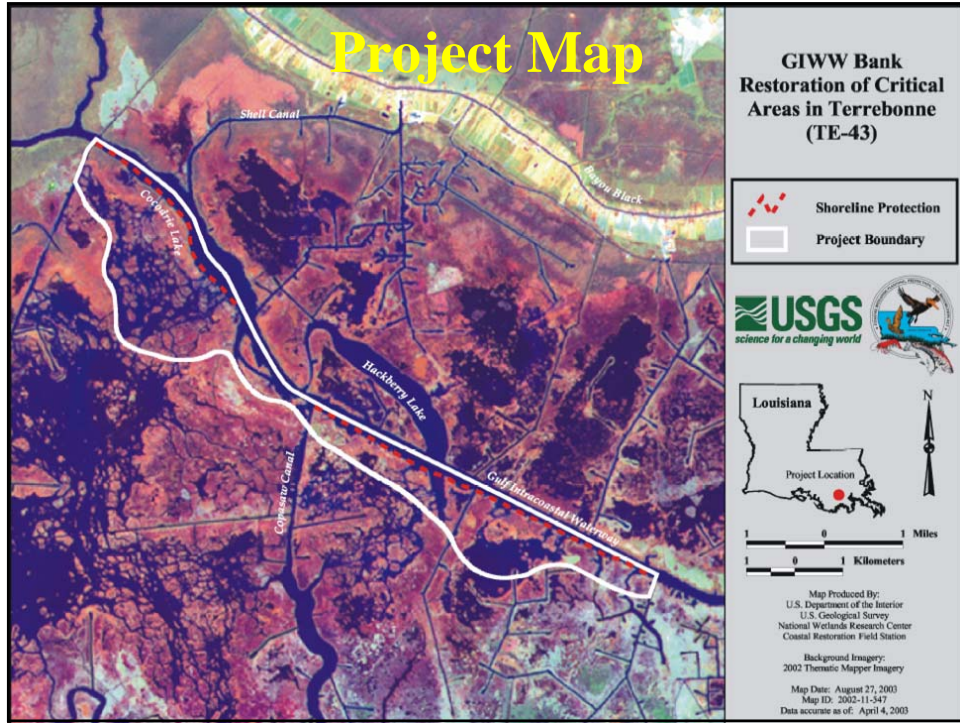
**Project Overview**

**Project Location:** Region 3, Terrebonne Basin, Terrebonne Parish, south bank of the GIWW from mile marker 80 to mile marker 70.

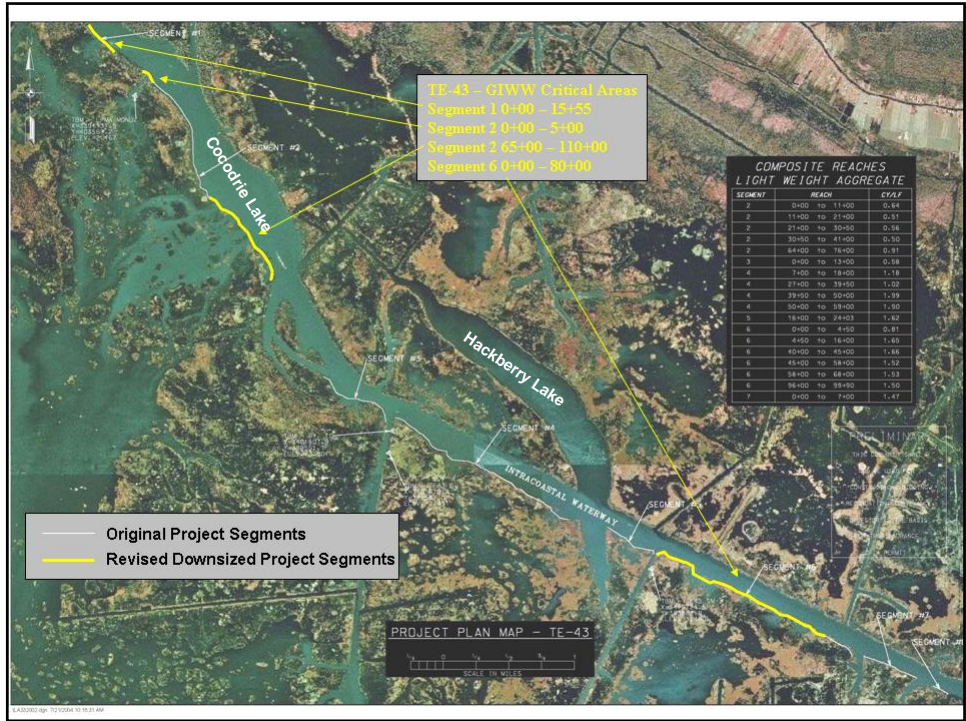
**Problem:** Deterioration of the southern bankline of the GIWW threatens fragile floating marshes of Penchant Basin and short-circuits freshwater conveyance to the east.

**Goals:**

- 1) Stop bankline erosion into the fragile floating marshes.
- 2) Maintain freshwater conveyance function of the GIWW.













## **Project Features Overview**

- **Installation of approximately 14,555 lf of shoreline protection along the southern bank of the GIWW by constructing a foreshore rock rip-rap dike and in places of poor soil bearing capacities using composite rock rip-rap with lightweight core aggregate.**
- **The foreshore rock dike will be situated along the -1.0-ft NAVD 88 contour in approximately 2.0 ft to 3.0 ft of water, stage dependant. The dike crown will be constructed to an elevation of +3.5 NAVD88 and have a width of 3.0 ft. The dike will have front and back side-slopes of 2.5:1.**

## Project Benefits & Costs

- **Total Area Benefitted:** 1,180 acres
- **Net acres after 20 yrs:** 132 acres
- **Prioritization Score:** 40.25
- **Project Costs:**
  - **Fully Funded Phase II** \$15,968,229
  - **Phase II, Increment 1** \$13,175,994
  - **Total Fully Funded** \$17,704,212

## Project Comparison/Contrast

The Present vs. PPL # 10

- **Original Phase II Funding vs Present Request:**
  - \$17,922,015 original
  - \$13,175,994 present (reflects inflationary costs and adjustments to length and design of features)
- **Changes in Project Features**
  - 37,000 linear feet to 14,555 linear feet
- **Changes in WVA – Benefit area reduced from 3324 acres to 1,180 acres and the acres created/protected/restored from 366 acres to 132 acres. No change in Prioritization Score (40.25).**

## Why Should You Fund this Project Now?

- To improve the efficiency of Atchafalaya freshwater conveyance via the GIWW to eastern and southern marshes of the Terrebonne Basin that would benefit from increased flows of freshwater and nutrients.
- To close major breaches and sustain GIWW bankline that eminently threatens to breach into adjacent floating marshes.

## Questions?



United States Department of Agriculture



Natural Resources Conservation Service  
646 Cajundome Blvd., Suite 180  
Lafayette, Louisiana 70506

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November 27, 2006

Mr. Troy Constance, Acting Chair  
CWPPRA Technical Committee  
U.S. Army Corps of Engineers  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Dear Mr. Constance:

RE: GIWW Bank Restoration of Critical Areas (TE-43)  
Phase II Authorization Request

The Natural Resources Conservation Service (NRCS) and Louisiana Department of Natural Resources (LDNR) request Phase II authorization for the GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43). The project was authorized for Phase I as a part of Priority Project List 10 (PPL 10) in January 2001 by the Louisiana Coastal Wetlands Conservation and Restoration Task Force (Task Force) under the authority of the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA). This request is submitted in accordance with the CWPPRA Project Standard Operating Procedures (SOP) Manual. Please be advised that the original Phase I candidate involved construction of 37,000 ft of bankline protection whereas this Phase II request has been revised to 15,000 ft (see Description of Phase II project in Enclosure 1 for details). Questions regarding this project may be referred to Ron Boustany at (337) 291-3067.

Sincerely,

Britt Paul  
Assistant State Conservationist/Water Resources

encl

cc (via email only):

Mr. Greg Breerwood, Chairman, Technical Committee  
Gerry Duszynski, DNR Technical Committee Member  
Darryl Clark, USFWS Technical Committee Member  
Rick Hartman, NMFS Technical Committee Member  
Sharon Parrish, EPA, Technical Committee Member  
Julie Leblanc, USACOE, P&E Subcommittee  
Dan Llewellyn, DNR P&E Subcommittee Member  
Kevin Roy, USFWS P&E Subcommittee Member  
Detra Washington, Governors Office

Rachel Sweeney, NMFS P&E Subcommittee Member  
Tim Landers, EPA P&E Subcommittee Member  
John Jurgensen, NRCS P&E Subcommittee Member  
Ron Boustany, Project Manager, NRCS  
Ismail Merhi, Project Manager, LDNR  
Michael Trusclair, District Conservationist, NRCS  
Ronnie Faulkner, Design Engineer, NRCS  
Randolph Joseph, Jr., ASTC/FO, NRCS

# **Enclosure 1**

## **Information Required in Phase II Authorization Request**

### **GIWW BANK RESTORATION OF CRITICAL AREAS IN TERREBONNE (TE-43)**

#### **Description of Phase I Project**

The TE-43 GIWW Critical Areas project was approved relative to the 10<sup>th</sup> CWPPRA Priority Project List. The Natural Resources Conservation Service (NRCS) is the federal sponsor for this project. The objective of this project is to protect critically eroding portions of the southern bank of the Gulf Intracoastal Waterway (GIWW).

The Gulf Intracoastal Waterway (GIWW) Bankline Restoration Project is located in Terrebonne Parish approximately ten miles east of the Lower Atchafalaya River and ten miles southwest of Houma, Louisiana. The specific location proposed for the structures is the southern bank of the GIWW originating at a point close to mile marker 80 and terminating at a point close to mile marker 70.

In the past 20 years, as the efficiency of the Lower Atchafalaya River has decreased, Lake Verret subbasin flooding and Atchafalaya River flows via the GIWW have increased. Deterioration of fresh and intermediate wetlands, particularly the floating marsh, in the upper Penchant basin has been attributed to sustained elevated water levels. In addition, wave action from commercial and recreational traffic on the GIWW has caused floating marshes in some areas to become directly exposed to increased circulation through unnatural connections formed where channel banks have deteriorated.

The objective of the GIWW Bankline Restoration project is to protect critically eroding portions of the southern bank of the GIWW that act as an interface between the fragile fresh marshes and the turbulent high velocities that occur within the GIWW. Proposed measures include installing shoreline protection structures along the southern bank of the GIWW. The structures will provide protection to the banks of the GIWW, which have experienced severe erosion since the construction of the GIWW in the early 1950's.

The project goals were: 1) To enable the GIWW to function as a conveyance channel to direct Atchafalaya River freshwater flow to specific locations that would benefit from increased flows of fresh water and nutrients, and 2) To provide relief to marshes connected to the GIWW that are currently suffering from prolonged inundation and wave action while stopping shoreline erosion along the remaining bank of the GIWW.

The proposed solution is to restore critical lengths of deteriorated channel banks, and stabilize/armor selected critical lengths of deteriorated channel banks with hard shoreline stabilization materials.



The Wetland Value Assessment (WVA) conducted for the Phase I project estimated a benefited area of 3,324 acres and the net acres created/protected/restored of 366 acres at TY20.

At the time of Phase I approval, the fully-funded project cost was \$19,657,998. That figure included \$1,735,983 for Phase I and \$17,922,015 for Phase II. The original cost breakdown for Phases I and II is presented in the following table:

<b>Task Name</b>	<b>Phase I Costs</b>	<b>Phase II Costs</b>
Engineering and Design	\$1,113,611	
Land Rights	\$52,529	
DNR Administration	\$267,256	\$279,601
NRCS Administration	\$286,282	\$299,506
Monitoring	\$14,954	\$83,493
Corps Project Management	1,351	\$20,740
Construction		\$11,981,341
Contingency		\$2,995,335
Supervision and Inspection		\$182,451
Operations and Maintenance		\$2,079,548
<b>Total</b>	<b>\$1,735,983</b>	<b>\$17,922,015</b>

The original project fact sheet and map depicting the project boundary and project features is provided below.



## GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43)

### Project Status

**Approved Date:** 2001      **Project Area:** 3,324 acres  
**Approved Funds:** \$2.2 M      **Total Est. Cost:** \$19.7 M  
**Net Benefit After 20 Years:** 366 acres  
**Status:** Engineering and Design  
**Project Type:** Shoreline Protection

### Location

The project is located in the Terrebonne basin, in Terrebonne Parish, Louisiana.

### Problems

In the past 20 years, as the efficiency of the Lower Atchafalaya River has decreased, Verrett subbasin flooding and Atchafalaya River flows via the Gulf Intracoastal Waterway (GIWW) have increased. Deterioration of fresh and intermediate wetlands, particularly of the floating marshes in the upper Penchant basin, has been attributed to sustained elevated water levels. In addition, floating marshes in some areas have become directly exposed to increased circulation through unnatural connections formed where channel banks deteriorated.

Conversely, losses in the central Terrebonne Parish marshes have been attributed to the elimination of riverine inflow coupled with subsidence and altered hydrology from canal dredging that facilitated saltwater intrusion. Increased flow of the GIWW and wave pulses from navigation traffic are causing additional breakup and loss of floating marshes in unprotected areas.

### Restoration Strategy

This project will restore critical lengths of deteriorated channel banks and stabilize/armor selected critical lengths of deteriorated channel banks with hard shoreline stabilization materials.

### Progress to Date

Geotechnical soils investigation report is complete. Soils in the area are very soft and fluid.

This project is on Priority Project List 10.



Large mats of floating freshwater marsh, such as this one, detach from their point of origin and enter the GIWW through large breaches in the existing shoreline.



Concrete "H" pile/panel structures, similar to this one, will be installed at locations within the project area where shoreline erosion is critical. Soils with high amounts of organic material, which have poor strength, necessitated the use of a structure such as this.

*For more project information, please contact:*



**Federal Sponsor:**  
 Natural Resources Conservation Service  
 Alexandria, LA  
 (318) 473-7756



**Local Sponsor:**  
 Louisiana Department of Natural Resources  
 Baton Rouge, LA  
 (225) 342-7308

# GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43)

Shoreline Protection  
Project Boundary



**USGS**  
science for a changing world



Louisiana

Project Location



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

Background Imagery:  
2002 Thematic Mapper Imagery

Map Date: August 27, 2003  
Map ID: 2002-11-547  
Data accurate as of: April 4, 2003



## **Overview of Phase I Tasks, Process, and Issues**

The following tasks were completed during Phase I:

- 1) Interagency kickoff meeting and field trip
- 2) Final Cost Share Agreement executed between NRCS and DNR
- 3) Preliminary landrights
- 4) Magnetometer survey
- 6) Geotechnical investigation of the proposed alignment
- 7) 30% design review
- 8) 95% design review
- 9) Draft Ecological Review
- 10) Draft Environmental Assessment
- 11) Final construction cost estimate
- 12) Section 404 Permit complete
- 13) Overgrazing determination from NRCS
- 14) Cultural resources clearance

### Geologic Information

The predominant soil that occurs along the existing bankline of the GIWW is Aquents, Dredged, occasionally flooded. For the remainder of the project area, Kenner muck – very frequently flooded, makes up the majority of the soil type. Other soil types present within the project area are Fausse Clay – frequently flooded, Barbary muck – frequently flooded, Gramercy/Cancienne – silty clay loam, and Allemands muck – very frequently flooded (NRCS 2002, unpublished data).

The mudline at the boring locations varied from elevations 0.0 to -3.0 NAVD88 and was located from 1 foot to 4 feet below the water surface at the time of drilling.

The upper soils are typically highly organic, classifying as high plastic clays with organic matter, organic clays, or peats. In general, soft consistencies are not encountered until depths exceed 30 feet with some medium stiff consistencies occurring below approximately 60 feet.

Water contents ranged from 29 percent on a sample of silty sands to 1,004 percent on a sample of peat with approximately two thirds of the water contents exceeding 100 percent.

Liquid limits ranged from 34 on a sample of silty clays to 807 percent on a sample of peat. More than 97 percent of the liquid limits exceeded 50 percent, and approximately 82 percent of the liquid limits exceed 100 percent.

Plastic limits ranged from 20 on a sample of silty clays to 450 percent on a sample of organic clays. However, about 96 percent of the plastic limits were between 20 and 100

percent, and slightly more than 86 percent of the plastic limits were between 20 and 50 percent.

Plasticity indices ranged from non-plastic on a sample of peat to 557 percent on a sample of clays with peat seams and pockets with nearly 90 percent of the plasticity indices exceeding 50 percent and slightly more than 73 percent of the plasticity indices exceeding 100 percent.

Unconfined and triaxial compression tests yielded cohesions ranging from 22 lbs per sq ft to 603 lbs per sq ft, except for one unconfined compression test which yielded a cohesion value of 1,328 lbs per sq ft. Slightly more than 88 percent of the unconfined and triaxial compression tests yielded cohesions below 250 lbs per sq ft, which is the upper limit of a very soft consistency. Slightly more than 36 percent of the unconfined and triaxial compression tests yielded cohesions below 100 lbs per sq ft.

Field vane test performed generally in the upper soils yielded cohesions ranging from 37 lbs per sq ft to 268 lbs per sq ft with nearly 40 percent of the field vane tests yielding cohesions below 100 lbs per sq ft.

#### Hydrology and Hydraulics

The water levels in the watershed are influenced by tides and wind. The mean high water is 2.0' NAVD88. The mean low water is 0.5' NAVD88.

#### Engineering and Design Tasks

The Department of Natural Resources letter "RE: Generalized Guidelines for Coastal Structures Design Parameters" dated January 07, 2000, and its attachment "Design Guidelines for CWPPRA Shoreline Protection Structures" were used to determine the wave heights used to design the rock / rock composite dike. Under the guidelines set forth in the letter a still water elevation (SWE), a wave height, the height of the structure, and the wave forces must be determined. In an effort to be conservative, the SWE was set at the storm water elevation of +2.5 NAVD88. Concurrently, the average bottom elevation was determined to be approximately -1.5 NAVD88.

Minimum and maximum design wave heights are determined according to the guidelines, where the minimum wave height is equal to 2.0 feet unless this is greater than the water depth and the maximum wave height is 0.78 times the water depth. Therefore the minimum and maximum wave heights were set at 2.0 and 3.12 feet respectively.

A wind generated wave height was determined using a 70 mph wind. The maximum peak gust, 70 mph, was chosen out of a comparison of New Orleans, Lake Charles and Baton Rouge wind speeds, provided in NOAA's "Climatic Wind Data for the United States". The wave height for this wind speed was used as an input for the ACES program in which wind in shallow and deep open water conditions was determined. The shallow and deep open water wave conditions return wave heights of 1.44 and 1.67 feet

respectively. Along with these wave heights, one other wave height was determined. This is the wave height due to boat traffic. Since most of the traffic in the GIWW is crew boats a wave height of 3.0 feet was used in accordance with the guidelines.

The minimum top elevation of the structure was determined to be 3.5 NAVD88 based on the ability of the structure to be overtopped, and the guidelines. The wave impact forces were determined by deciding if the maximum wave height is breaking or non-breaking. This is done using the Shore Protection Manual (SPM), Chapter 2, Section VI, Part 2. In this case, a wind duration of 2.0 seconds was used, which allowed for the determination of the deepwater wave steepness, 0.024. The deepwater wave steepness is used as an input into Figure 2-72 of the SPM in order to determine the breaker height index, which in turn is used to determine the breaking wave height, 3.0 feet. The breaking wave height was then used as an input in Equation 2-92 of the SPM in order to determine the depth of water that the breaking wave would break at, 4.59 feet. Since the depth of water at which the wave would break at is greater than the depth of water at the structure, the wave will break before it reaches the structure, and thus is not a concern in the design of the structure.

The geotechnical investigation provided the minimum slopes for a composite and a rock dike. With this information in combination with the settlements for each type of section, also provided in the geotechnical investigation, a determination of the most economic design method (rock / composite) was made on a per reach basis. The most economic method per reach was used as the determining factor for which sections of the dike would be composite rather than rock only. These determinations led to the specification of 2:1 (H:V) side slopes for the rock only sections and 2.5:1(H:V) side slopes for the composite sections, based on the minimum slopes provided by the geotechnical investigation.

With the maximum wave height, wave forces, and side slopes determined the size of the rock riprap was determined to be a Corps of Engineers R-1000 gradation. This was done using equation 7-117 from the SPM, with a stability coefficient of 2.2, and the two side slopes (2:1, 2.5:1) that were proposed for this structure. The top width of the structure was determined to be 3.0 feet using equation 7-120 of the SPM, with the median size of the gradation above.

A layer thickness for the composite sections of the structure had to be determined. This was accomplished using equations 7-123 and 7-124 of the SPM. The maximum thickness from these two equations was determined to be 1.6 feet. To be conservative a 2.0 foot layer thickness has been specified for the structure design.

Design meetings were held at the 30% (May 25, 2004) and 95% (August 26, 2004) levels.

#### Landrights, Cultural Resources, Environmental Compliance and Other Tasks

Preliminary landrights has proceeded smoothly and no problems are anticipated in acquiring final landrights.

No cultural resource sites are located within the project area.

Environmental concerns were considered in the planning and design of this project. A FONSI, Environmental Assessment, and Ecological Review Report have been completed. A Section 404 permit has been approved by the USACE. A Storm Water Pollution Prevention Plan has been developed for this project since the disturbed construction site is more than one (1) acre. A permit to dredge material for construction has been obtained by the local sponsors from the U.S. Corps of Engineers and the Louisiana Department of Natural Resources, Coastal Zone Management.

A draft Ecological Review is available and a final EA dated December, 2002 was developed after receiving comments on the draft EA, which was submitted for public comment in April, 2002.

## **Description of the Phase II Candidate Project**

The original candidate for Phase I authorization of TE-43 involved a near complete armoring of a section of the GIWW bankline (referred to as Area G) (Figure 1) totaling 37,000 feet where the bankline had deteriorated significantly and at some points breached into the adjacent floating marshes of the upper Penchant Basin. The two major breach areas are located at the NW and SE extents of the project area (Figure 2). In Fall 2005 and Spring 2006, NRCS and LDNR with the consent of Terrebonne Parish and a major landowner reevaluated the project. Based upon new USGS data and joint NRCS and LDNR field analysis, a revised downsized project was agreed upon that removed segments along intact banks and targeted only the two major breach areas within the project boundary (Figure 3). The purpose of the downsizing was to concentrate efforts on those critical areas where the bankline had breached or is imminently threatening to breach into adjacent fragile floating marshes. NRCS and LDNR criteria for downsizing required that the revised project not add any new areas to the project and would not significantly alter the overall project goals.

The final design of the project features are essentially unchanged from the original Phase I project with exception to the total length. The project contains shoreline protection by means of a hard shoreline structure. The Phase 0 approved length of the structure was approximately 37,000 feet whereas the length of the designed project that targets just the major breach areas is approximately 14,555 feet.

The work to be accomplished will consist of the installation of approximately 14,555 feet of shoreline protection along the southern shoreline of the GIWW by constructing a rock rip-rap dike and in places of poor soil bearing capacities constructing a composite rock rip-rap dike with a lightweight core aggregate as seen in Figures 4 and 5 (typical and composite rock dike sections).

Previous projects involving similar bankline structures that have been successfully constructed along the GIWW and other similar type areas include Perry Ridge Shore Protection (CS-24), GIWW-Perry Ridge West Bank Stabilization (CS-30), Cameron Prairie NWR Shoreline Protection (ME-09), Freshwater Bayou Bank Stabilization (ME-13) and Freshwater Bayou Wetland Protection (ME-04). Additionally, the analysis and results included in the geotechnical investigations support the concept that a rock/rock composite structure is capable of being constructed, and establishes the required stable side slopes as well as expected settlements.



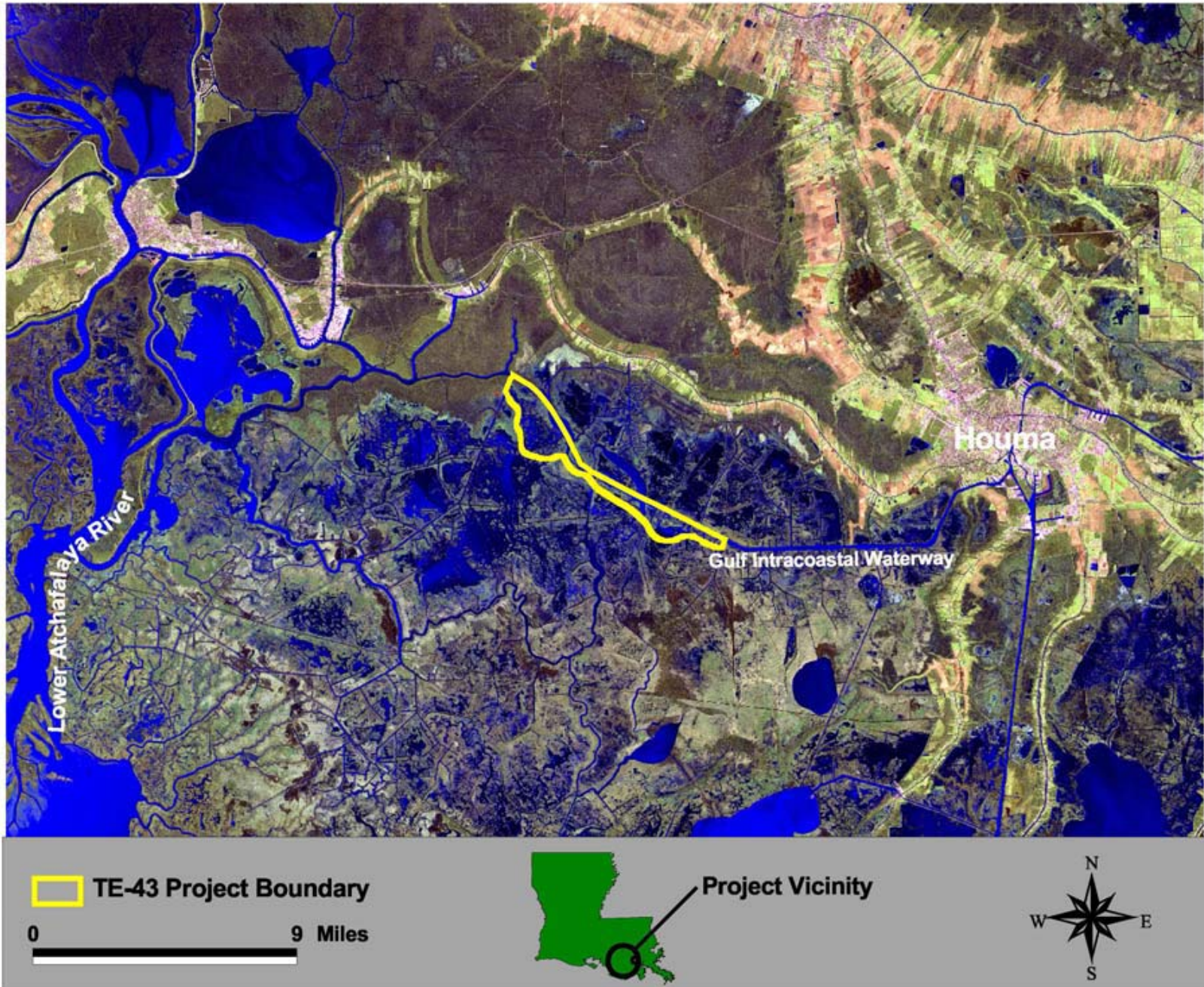


Figure 1. Vicinity map of original boundary of GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43).

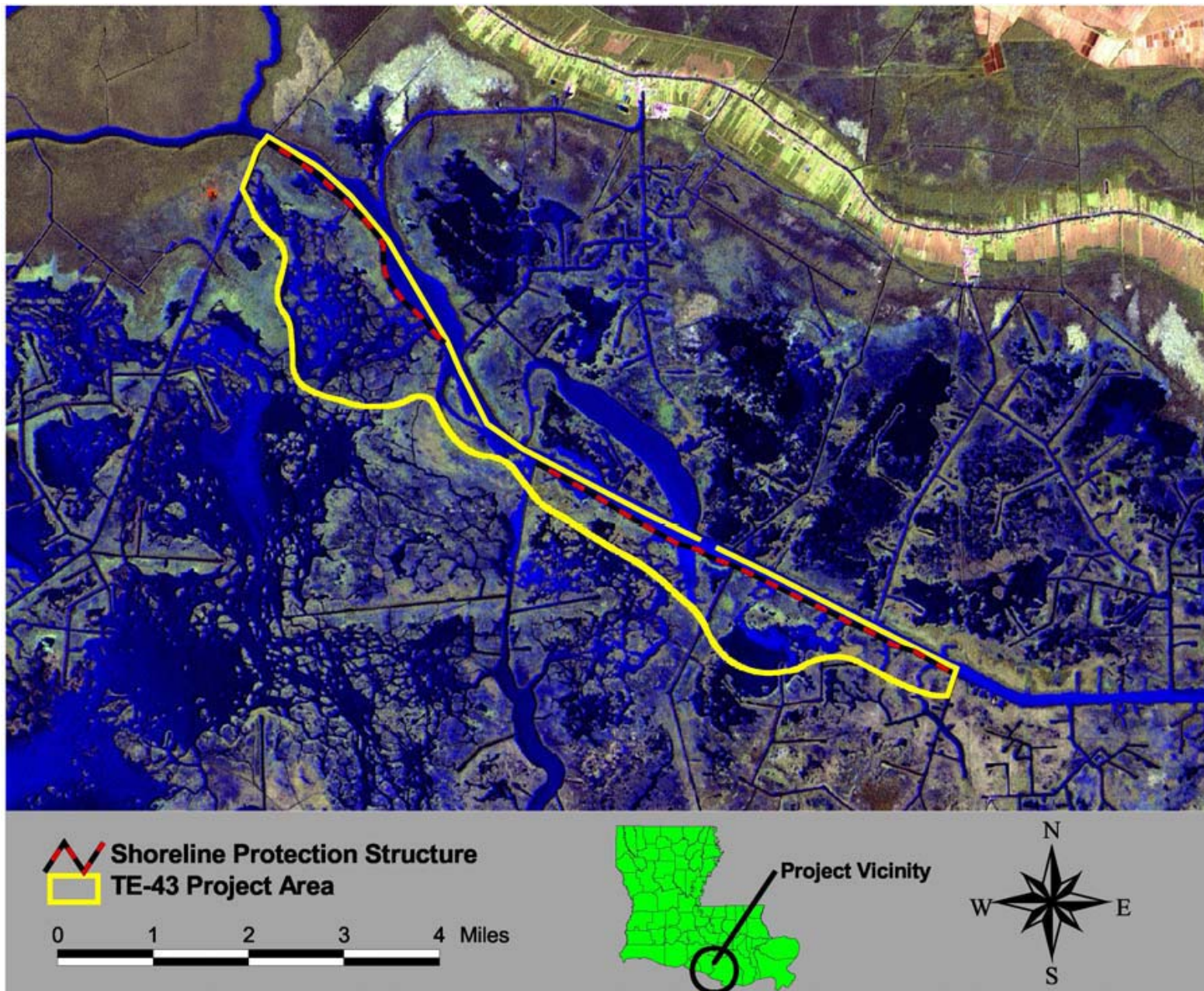


Figure 2. Expanded view of original project boundary of GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43) also indicating extent of shoreline protection coverage.

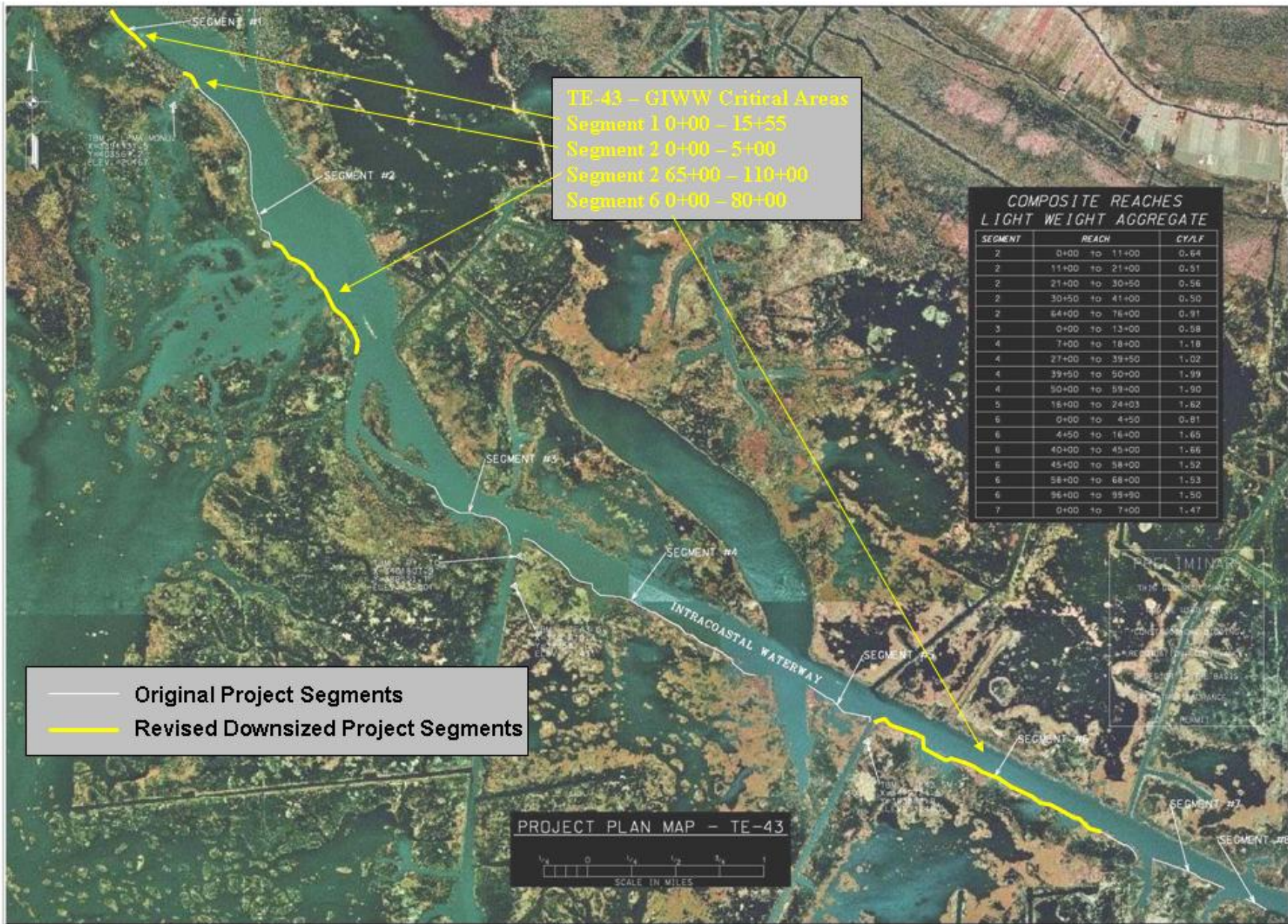
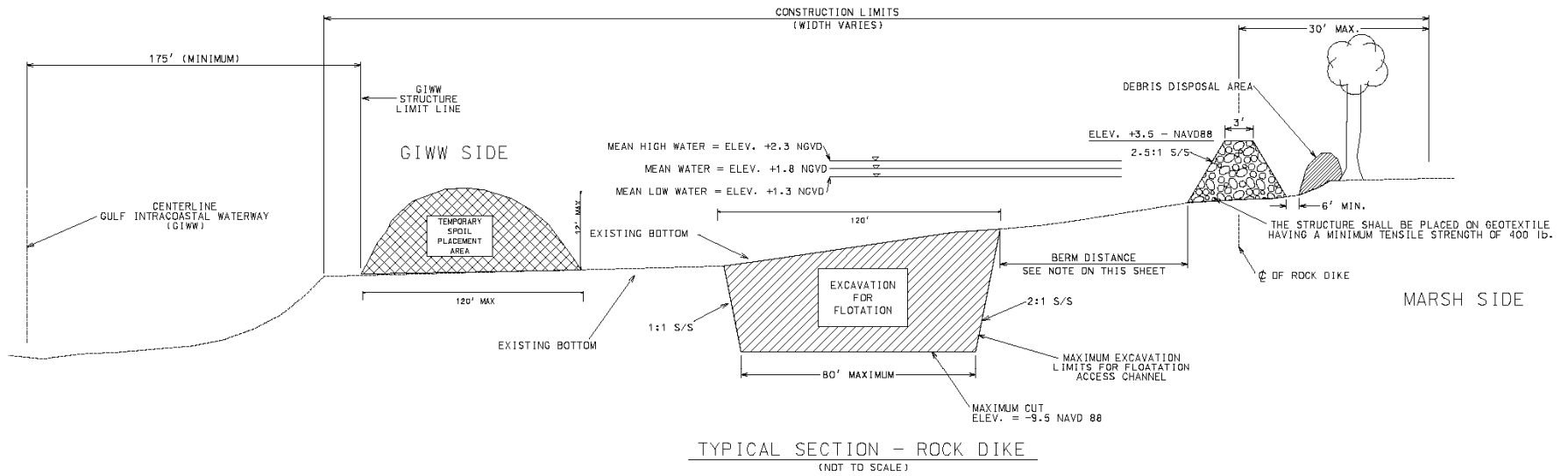
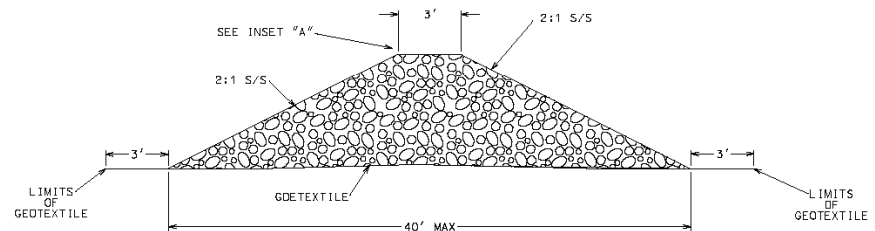


Figure 3. Original and Revised Project Segments on GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43).



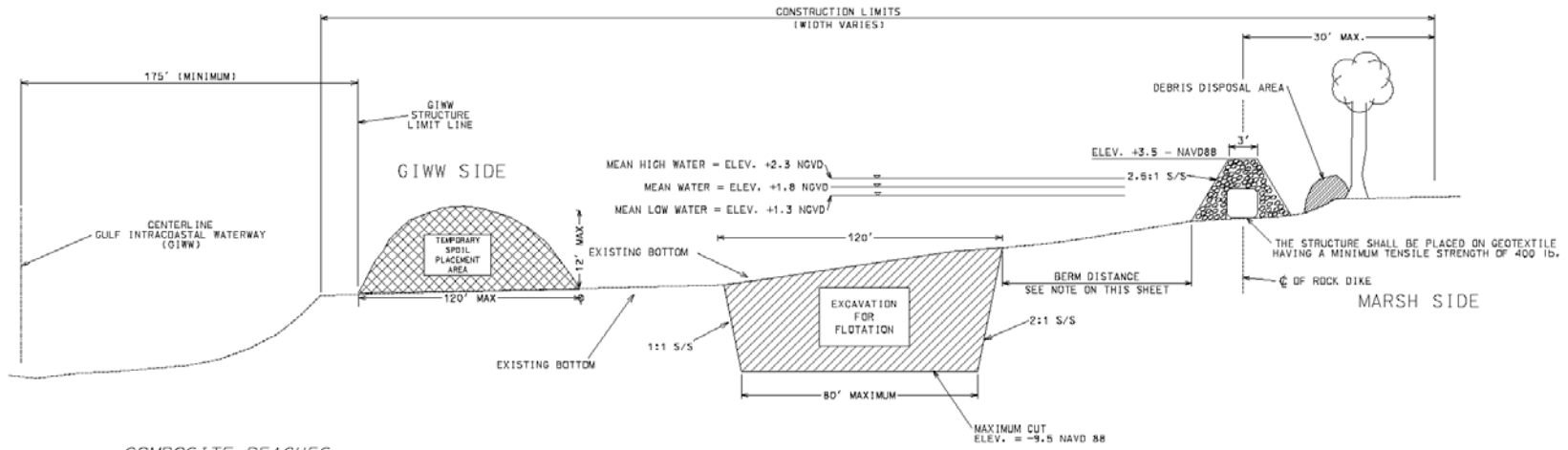
NOTE:  
 ALL SPOIL SHALL BE PLACED BACK INTO ACCESS CHANNEL AFTER CONSTRUCTION OF DIKE IS COMPLETE.  
 AS REQUIRED TREES SHALL BE REMOVED AND PLACED ON THE MARSH SIDE OF THE STRUCTURE.  
 THE BERM DISTANCE SHALL BE 30' EXCEPT FOR THE FOLLOWING REACHES WHICH SHALL BE 40': SEGMENT 3-STA. 16+00-26+33, SEGMENT 4-STA. 0+00-5+00, SEGMENT 6-STA. 19+00-34+00.  
 THE HEIGHT OF THE DIKE IS VARIABLE. THE DIKE IS PLANNED TO FOLLOW THE -1.0' CONTOUR. THE ACTUAL LAYOUT MAY VARY. THEREFORE THE DIKE COULD VARY IN HEIGHT FROM 4.0' TO 5.0'.  
 THE DEPTH OF THE ACCESS CANAL IS ALSO VARIABLE. THIS DEPENDS ON THE TOPOGRAPHY AND HOW MUCH THE CONTRACTOR CHOOSES TO EXCAVATE.



ROCK DIKE DETAIL

PRELIMINARY  
 THIS DOCUMENT SHALL  
 NOT BE USED FOR  
 CONSTRUCTION, BIDDING,  
 RECREATION, CONVEYANCE,  
 OR SALES.

Figure 4 – Typical Rock Dike Section.



TYPICAL SECTION - COMPOSITE ROCK DIKE  
(NOT TO SCALE)

COMPOSITE REACHES  
LIGHT WEIGHT AGGREGATE

SEGMENT	REACH	CY/LF
2	0+00 to 11+00	0.64
2	11+00 to 21+00	0.51
2	21+00 to 30+50	0.56
2	30+50 to 41+00	0.50
2	64+00 to 76+00	0.91
3	0+00 to 13+00	0.58
4	7+00 to 18+00	1.18
4	27+00 to 39+50	1.02
4	39+50 to 50+00	1.99
4	50+00 to 59+00	1.90
5	16+00 to 24+03	1.62
6	0+00 to 4+50	0.81
6	4+50 to 16+00	1.65
6	40+00 to 45+00	1.66
6	45+00 to 58+00	1.52
6	58+00 to 68+00	1.53
6	96+00 to 99+90	1.50
7	0+00 to 7+00	1.47

NOTE:

WIDTH AND HEIGHT OF BAGGED LIGHTWEIGHT AGGREGATE IS VARIABLE. A MINIMUM OF 2" OF ROCK COVERAGE SHALL BE PLACED ON SIDES AND TOP OF BAGGED AGGREGATE.

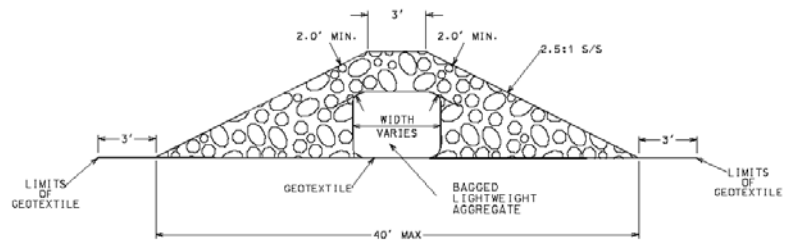
ALL SPOIL SHALL BE PLACED BACK INTO ACCESS CHANNEL AFTER CONSTRUCTION OF DIKE IS COMPLETE.

AS REQUIRED TREES SHALL BE REMOVED AND PLACED ON THE MARSH SIDE OF THE STRUCTURE.

THE BERM DISTANCE SHALL BE 30' EXCEPT FOR THE FOLLOWING REACHES WHICH SHALL BE 40': SEGMENT 3-STA. 16+00-36+33, SEGMENT 4-STA. 0+00-5+00, SEGMENT 6-STA. 19+00-34+00.

THE HEIGHT OF THE DIKE IS VARIABLE. THE DIKE IS PLANNED TO FOLLOW THE -1.0' CONTOUR. THE ACTUAL LAYOUT MAY VARY. THEREFORE THE DIKE COULD VARY IN HEIGHT FROM 4.0' TO 5.0'.

THE DEPTH OF THE ACCESS CANAL IS ALSO VARIABLE. THIS DEPENDS ON THE TOPOGRAPHY AND HOW MUCH THE CONTRACTOR CHOOSES TO EXCAVATE.



COMPOSITE ROCK DIKE DETAIL  
(ALTERNATIVE)

PRELIMINARY

THIS DOCUMENT SHALL  
NOT BE USED FOR  
CONSTRUCTION, BIDDING,  
RECORDATION, CONVEYANCE,  
OR SALES.

Figure 5 – Typical Composite Rock Dike Section.

### Updated Assessment of Benefits

The original WVA conducted for the Phase I project estimated a benefited area of 3,324 acres and the net acres created/protected/restored of 366 acres at TY20. The downsized project pro-rated benefit area is 1,180 acres (36% of original) for a net acres created/protected/restored of 132 acres at TY 20.

### Modifications to the Phase I Project

The Phase 0 approved length of the structure was approximately 37,000 feet, whereas the length of the designed project has been reduced to approximately 14,555 feet and confined to the major bankline breach areas. The final design of the project structures are essentially unchanged from the original Phase I project with exception to the total bankline coverage of the project. The project contains shoreline protection by means of a hard shoreline structure.

### Current Cost Estimate

The revised total fully-funded cost prepared by the CWPPRA Economics Work Group is **\$17,704,212** (see fully funded cost spreadsheet). Phase I costs are unchanged from the original Phase I project budget (\$1,735,983). The total Phase II cost is estimated at **\$15,968,229** and the Phase II-Increment 1 cost at **\$13,175,995**.

**Final Project Fact Sheet**  
November 27, 2006

**Project Name - GIWW Bank Restoration of Critical Areas in Terrebonne (TE-43)**

**Coast 2050 Strategy** – Region 3 - #6 Stabilize navigation channel banks or cross sections for water conveyance.

**Project Location** – Region 3, Terrebonne Basin, Terrebonne Parish, south shore of GIWW.

**Problem** - In the past 20 years, as the efficiency of the Lower Atchafalaya River has decreased, Lake Verret subbasin flooding and Atchafalaya River flows via the GIWW have increased. Deterioration of fresh and intermediate wetlands, particularly the floating marsh, in the upper Penchant basin has been attributed to sustained elevated water levels. In addition, wave action from commercial and recreational traffic on the GIWW has caused floating marshes in some areas to become directly exposed to increased circulation through unnatural connections formed where channel banks have deteriorated.

**Goals** - To enable the GIWW to function as a conveyance channel to direct Atchafalaya River freshwater flow to specific locations that would benefit from increased flows of fresh water and nutrients, and 2) To provide relief to marshes connected to the GIWW that are currently suffering from prolonged inundation and wave action while stopping shoreline erosion along the remaining bank of the GIWW.

**Proposed Solution** - The proposed solution is to restore critical lengths of deteriorated channel banks, and stabilize/armor selected critical lengths of deteriorated channel banks with hard shoreline stabilization materials.

**Project Benefits** – The project would benefit approximately 1180 acres adjacent to the largest floating marsh complex in coastal Louisiana and a predicted net acres created/protected/restored of 132 acres at TY 20.

**Project Cost** – Total fully funded cost is \$17,704,212.

**Sponsoring Agency and Contact** – Natural Resources Conservation Service (NRCS)  
Ron Boustany, Project Manager, Lafayette, LA (337) 291-3067,  
**ron.boustany@la.usda.gov**



**Legend**

Bankline\_Stabilization



GIWW Bank Restoration  
of Critical Areas in Terrebonne  
TE-43  
Terrebonne Parish, Louisiana





## **Enclosure 2**

### **Checklist of Phase II Requirements**

#### **TE-43 GIWW BANK RESTORATION OF CRITICAL AREAS INCREMENT 1 – AREA ‘G’**

##### **A. List of Project Goals and Strategies.**

The project goals are: 1) To enable the GIWW to function as a conveyance channel to direct Atchafalaya River freshwater flow to specific locations that would benefit from increased flows of fresh water and nutrients, and 2) To provide relief to marshes connected to the GIWW that are currently suffering from prolonged inundation and wave action while stopping shoreline erosion along the remaining bank of the GIWW.

##### **B. A Statement that the Cost Sharing Agreement between the Lead Agency and the Local Sponsor has been executed for Phase I.**

A Cost Share Agreement between the Natural Resources Conservation Service and Louisiana Department of Natural Resources was executed on May 16, 2001. A draft amendment, authorizing construction, operation, maintenance, and monitoring, to the Cost Share Agreement has been prepared.

##### **C. Notification from the State or the Corps that landrights will be finalized in a short period of time after Phase 2 approval.**

NRCS has requested the required letter from DNR relative to landrights being finalized in a relatively short period of time after Phase 2 approval. By way of letter received September 2, 2004, DNR stated that they anticipated no landrights acquisition problems with the project. At this time all landowners have indicated approval of project and signatures pending funding approval, and all pipeline companies have given consent.

##### **D. A favorable Preliminary Design Review (30% Design Level). The Preliminary Design shall include completion of surveys, borings, geotechnical investigations, data analysis review, hydrologic data collection and analysis, modeling (if necessary), and development of preliminary designs.**

A 30% design review meeting was held on May 25, 2004, and resulted in favorable reviews of the project design with minor modifications. DNR and NRCS agreed on the project design and agreed to proceed to the 95% design level and with project implementation.

##### **E. Final Project Design Review (95% Design Level). Upon completion of a favorable review of the preliminary design, the Project plans and specifications shall be developed and formalized to incorporate elements from the Preliminary Design and the Preliminary Design Review. Final Project Design Review (95%) must be successfully completed prior to seeking Technical Committee approval.**

A 95% design meeting was held on August 26, 2004, and resulted in favorable reviews of the project design with no modifications and few comments. DNR and NRCS agreed on the project design and agreed to proceed with project implementation.

**F. A draft of the Environmental Assessment of the Project, as required under the National Environmental Policy Act must be submitted thirty days before the request for Phase 2 approval.**

A final EA dated December, 2002 was developed after receiving comments on the draft EA, which was submitted for public comment in April, 2002.

**G. A written summary of the findings of the Ecological Review.**

A favorable 95% Design Review was conducted on August 26, 2004. The following paragraph is from the Recommendations section of the August 2004 draft Ecological Review:

*Based on information gathered from similar restoration projects, engineering designs, and related literature, the proposed strategies in the GIWW Bank Restoration of Critical Areas in Terrebonne project will likely achieve the desired goals provided Operation and Maintenance funds are available for structure rehabilitation. It is recommended that this project progress towards construction authorization pending a favorable 95% Design Review.*

**H. Application for and/or issuance of the public notices for permits. If a permit has not been received by the agency, a notice from the Corps of when the permit may be issued.**

Section 404 Permit has been received dated January 18, 2006. Water Quality Certification (LDEQ) has been granted via letter dated September 20, 2005. A letter notifying consistency with Louisiana Coastal Resources Program (LCRP) has been issued, dated December 7, 2004.

**I. A hazardous, toxic and radiological waste (HTRW) assessment, if required, has been prepared.**

NRCS procedures do not call for an HTRW assessment on this project.

**J. Section 303(e) approval from the Corps.**

Section 303(e) approval was granted by the Corps via letter dated July 8, 2003.

**K. Overgrazing determination from the NRCS (if necessary).**



**M. A revised Wetland Value Assessment reviewed and approved by the Environmental Work Group.**

Because the change in the segment lengths did not significantly alter the objectives of the project, the WVA was revised to reflect pro-rated benefits with respect to the length of the project features. Therefore, the environmental benefits associated with this project are adjusted proportionally to the size. The original Phase I benefited project area was 3,324 acres and the net acres created/protected/restored at TY20 were 366 acres. The revised pro-rated benefit area is 1,180 acres (36% of original) and the net acres created/protected/restored is 132 acres.

**N. A breakdown of the Prioritization Criteria ranking score, finalized and agreed-upon by all agencies during the 95% design review.**

The following Prioritization Criteria scores were submitted for reviewed by the Engineering and Environmental Work Groups and agreed upon by all agencies:

<b>Criteria</b>	<b>Score</b>	<b>Weight</b>	<b>Final Score</b>
Cost Effectiveness	1.0	2	2
Area of Need	7.5	1.5	11.25
Implementability	10	1.5	15
Certainty of Benefits	8	1	8
Sustainability of Benefits	4	1	4
HGM – Riverine Input	0	1	0
HGM – Sediment Input	0	1	0
HGM – Landscape Features	0	1	0
<b>Total Score</b>			<b>40.25</b>

PO-33 - Goose Point/Point Platte Marsh Creation

**CWPPRA  
Goose Point/Point Platte Marsh Creation  
(PO-33)  
Phase II Request**

**Technical Committee Meeting**



**December 6, 2006  
Baton Rouge, LA**



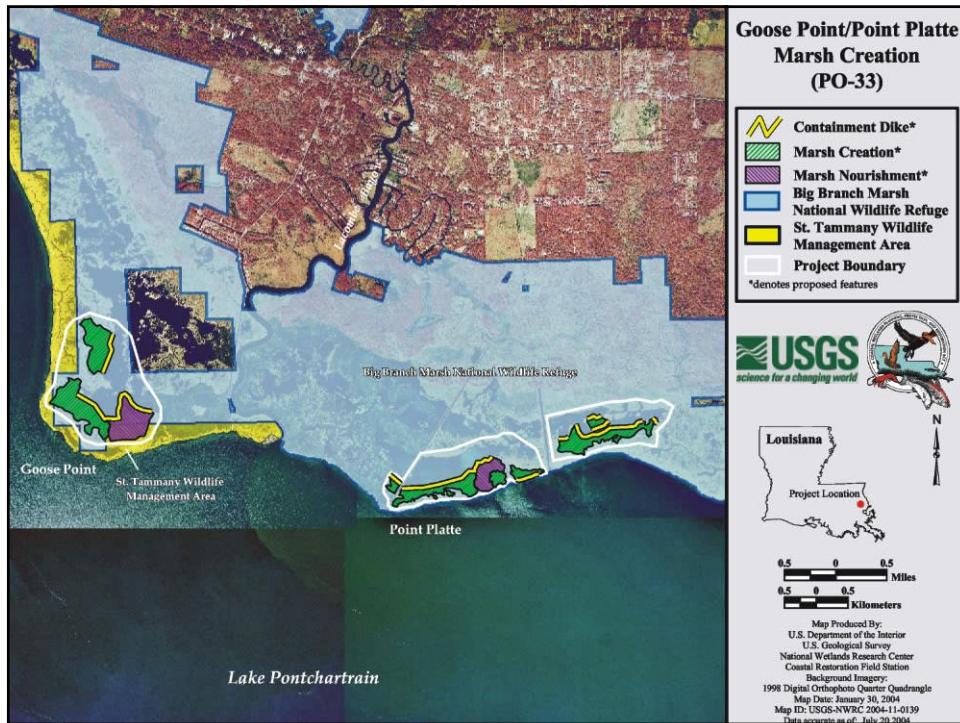
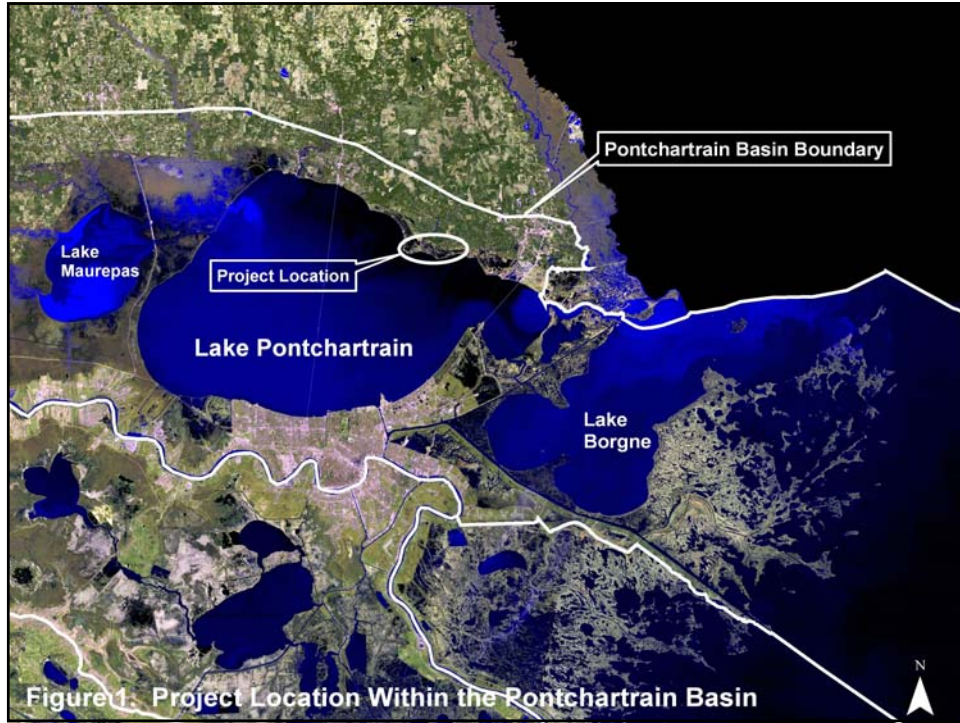
**Project Overview**

**Project Location:** Region 1, Pontchartrain Basin, St. Tammany Parish, north shore of Lake Pontchartrain

**Problem:** High loss rate (-3.1%/yr) from 1956-1978; historically intermediate and low-salinity brackish marsh; loss believed to be caused by ponding and saltwater intrusion; lake shoreline very narrow in some places and breached in several locations

**Goals:**

- 1) Re-create 566 acres of marsh in open water to restore the lake-rim function
- 2) Maintain 436 net acres of marsh at the end of the project life



## Project Features Overview

- 566 acres of marsh creation/nourishment; 417 acres of open water and 149 acres of degraded marsh will be filled with dredged material
- Target height of +2.0-ft NAVD88 with a maximum fill height of +2.5-ft in marsh creation areas; fill height of +1.5-ft in marsh nourishment areas; average marsh elevation is +1.0-ft
- Containment dikes constructed to +3.5-ft with a 5-ft crown width and 1(V):3(H) side slopes
- Two borrow sites totaling 298 acres in Lake Pontchartrain; approximately 10-ft of dredging at each site







## **Project Benefits & Costs**

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- **In total, the project will benefit 1,384 acres of marsh and open water habitat; 436 net acres of marsh at the end of the 20-year project life**
- **Wetland Value Assessment: 297 Net AAHUs**
- **The Fully Funded Cost is: \$20,867,777  
Phase 2 Request is: \$18,989,923**
- **The Prioritization Score is: 53**

## **Why Should We Fund This Project Now?**

---

- **Numerous shoreline breaches currently exist; narrow shoreline rim in some locations**
- **This is the only project being considered for funding on the north shore of Lake Pontchartrain; this area experienced extensive loss from Hurricane Katrina**
- **Marshes along the north shore of Lake Pontchartrain are extremely important in reducing storm damage to towns of Lacombe and Slidell, infrastructure, etc.**

# Questions?

## Goose Point/Point Platte Marsh Creation PO-33





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

646 Cajundome Blvd.

Suite 400

Lafayette, Louisiana 70506

November 29, 2006

Mr. Troy Constance, Acting Chairman  
CWPPRA Technical Committee  
U.S. Army Corps of Engineers, New Orleans District  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Dear Mr. Constance:

The U.S. Fish and Wildlife Service and Louisiana Department of Natural Resources would like to submit the Goose Point/Point Platte Marsh Creation Project (PO-33) for Phase 2 approval. That project was approved for Phase 1 funding by the CWPPRA Task Force as part of the 13<sup>th</sup> Priority Project List. The enclosed packet includes all information required for a Phase 2 authorization request, per Section 6.j. of the CWPPRA Standard Operating Procedures manual. This Phase 2 authorization request is also being sent to all CWPPRA Technical Committee and Planning and Evaluation Subcommittee members.

If you have any questions regarding this submittal, please contact Mr. Kevin Roy of this office at (337) 291-3120.

Sincerely,

/s/Russell C. Watson  
Supervisor  
Louisiana Field Office

Enclosures

# Phase II Authorization Request

## Goose Point/Point Platte Marsh Creation

### PO-33

#### Description of Phase I Project

The PO-33 Project was approved for Phase I funding on the 13<sup>th</sup> Priority Project List. At the time of Phase I authorization, project features included:

- 1) Hydraulic dredging in Lake Pontchartrain to create 437 acres of marsh and nourish 114 acres of existing marsh (Figure 1). The target elevation for the fill material was 1.0 foot above average marsh elevation;
- 2) Earthen containment would be used where necessary around the project perimeter to contain dredged material. Depending on soil stability, containment dikes would be breached upon demobilization;
- 3) The marsh platform would be planted with appropriate vegetation.

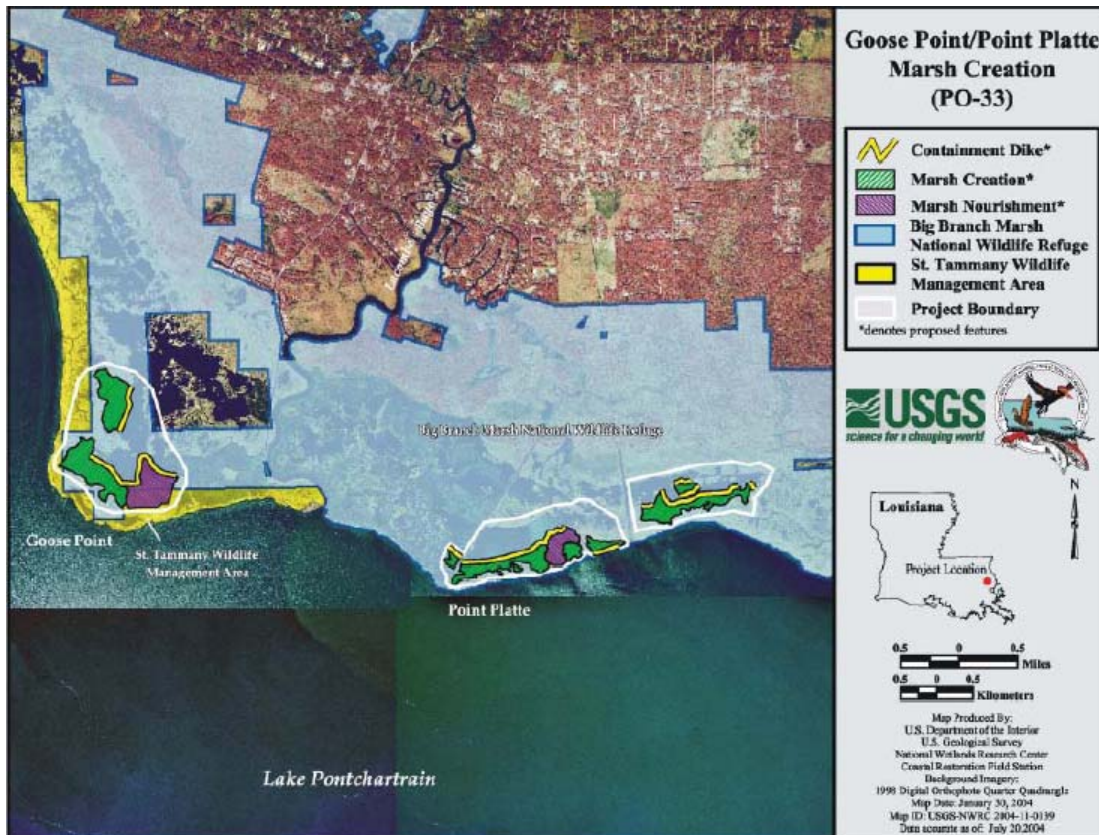


Figure 1. Project features at the time of Phase 1 approval.

Specific goals of the project were to: 1) create 437 acres of emergent marsh through the deposition of dredged material into open water areas and 2) nourish/enhance 114 acres of emergent marsh by adding a layer of sediment to the marsh surface.

The Wetland Value Assessment conducted for the Phase I project estimated a benefited area of 1,384 acres and the net creation/restoration of 436 acres of marsh at the end of the project life.

At the time of Phase I approval, the fully-funded project cost was \$21,747,421. That figure included \$1,930,596 for Phase I and \$19,816,825 for Phase II. The cost breakdown for Phases I and II is presented in the following table.

<b>Task Name</b>	<b>Phase I Costs</b>	<b>Phase II Costs</b>
Engineering and Design	\$1,241,993	
Land Rights	\$10,428	
DNR Administration	\$329,530	\$328,271
FWS Administration	\$347,528	\$364,382
Monitoring	\$0	\$0
Corps Project Management	\$1,387	\$19,612
Construction		\$14,576,359
Contingency		\$3,644,090
Supervision and Inspection		\$416,905
Operations and Maintenance		\$467,206
<b>Total</b>	<b>\$1,930,596</b>	<b>\$19,816,825</b>

## **Overview of Phase I Tasks, Process and Issues**

The following tasks were completed during Phase I:

- 1) Interagency kickoff meeting and field trip
- 2) Final Cost Share Agreement executed between FWS and DNR
- 3) Preliminary landrights
- 4) Elevation surveys for the borrow areas, fill sites, and containment sites
- 5) Magnetometer survey
- 6) Geotechnical investigation of the borrow and fill sites
- 7) 30% design review
- 8) 95% design review

- 9) Draft Ecological Review
- 10) Draft Environmental Assessment
- 11) Construction cost estimate
- 12) Application for Corps Section 404 permit
- 13) Overgrazing determination
- 14) Cultural resources clearance
- 15) HTRW assessment
- 16) Section 303e approval

### Engineering and Design Tasks

Bathymetric surveys were performed in Lake Pontchartrain to produce cross-sectional data of the borrow areas. A magnetometer survey was performed in the borrow areas to verify existing pipelines and detect any unknown and/or abandoned pipelines. In order to detect certain lake-bottom features such as oyster beds, sand pockets, Pleistocene channels, and geologic faults, sub-bottom profile and side-scan sonar surveys were performed in the borrow areas.

In order to determine the suitability of the soils in the PO-33 project area for the various proposed marsh creation/nourishment features, a geotechnical investigation was performed which included collection of soil borings, laboratory tests to determine soil characteristics, and stability analyses on the borrow areas. A total of eleven (11) subsurface borings were drilled in the project area and tested in the laboratory for classification, strength, and compressibility.

Design meetings were held at the 30% (July 20, 2006) and 95% (November 8, 2006) levels.

### Landrights, Cultural Resources, Environmental Compliance and Other Tasks

Preliminary landrights work has proceeded smoothly and no problems are anticipated in acquiring final landrights.

The Louisiana Department of Culture, Recreation and Tourism and the Chitimacha Tribe of Louisiana have indicated no objections to project implementation.

The Fish and Wildlife Service has applied for a Corps of Engineers Section 404 permit and requested that the Louisiana Department of Natural Resources-Coastal Management Division determine if the project is consistent with the Louisiana Coastal Resources Program. Water quality certification has also been requested from the Louisiana Department of Environmental Quality.

An overgrazing determination provided by the Natural Resources Conservation Service indicated that overgrazing is not a problem in the project area. An HTRW assessment conducted by the Lafayette Field Office of the U.S. Fish and Wildlife Service indicated that no HTRW materials should be encountered during project implementation.

A draft Ecological Review is available and a draft Environmental Assessment was issued for public comment on November 6, 2006.

## **Description of the Phase II Candidate Project**

### Project Features

Sediment will be hydraulically dredged in Lake Pontchartrain and pumped into open-water and fragmented marsh areas to create approximately 566 acres of marsh. Approximately 298 acres of water bottom in Lake Pontchartrain would be dredged to a maximum depth of -23 feet North American Vertical Datum of 1988 (NAVD 88; all following elevations are reported in NAVD 88). A magnetometer survey was conducted in the borrow area to identify pipelines and other hazards, and the proposed borrow areas have been configured to avoid those hazards.

To determine target elevations for the fill sites, consolidation settlement calculations and self-weight consolidation tests were run for borings taken within the fill sites and borrow areas. The purpose of those analyses was to determine a fill elevation that would be as close as possible to the existing marsh elevation after 20 years, and that would fall within the inter-tidal zone for the longest period of time. It was concluded that a target fill elevation of +2.0 feet would ultimately settle to an elevation of +0.80 feet and that a target fill elevation of +2.5 feet would ultimately settle to an elevation of +1.1 feet. Those values are extremely close to the existing marsh elevation (+1.0 feet) and fall within the inter-tidal zone (MHW=1.08 feet, MLW=0.48 feet), therefore a target fill elevation of +2.0 feet was selected with a maximum fill elevation of +2.5 feet. Subsequently, a target fill elevation of +1.5 feet was selected for the marsh nourishment sites, which include fragmented marsh, are relatively well contained by surrounding marsh, and are mainly intended as outfall for the marsh creation sites.

Containment dikes will be built to +3.5 feet with a 5-foot crown width and 1(V):3(H) side slopes. Containment dikes will be constructed with a bucket dredge using *in situ* material from within each fill site and the borrow area will be filled with hydraulically dredged material. It is anticipated that the containment dikes will subside and breach naturally to allow tidal connectivity and prevent ponding. Project features are shown in Figure 2.

### Updated Assessment of Benefits

An updated assessment of benefits was not prepared for this project because the project scope has not significantly changed from the Phase 1 project.

### Modifications to the Phase 1 Project

Final design features are essentially unchanged from the original Phase 1 project.

### Current Cost Estimate

The revised fully-funded cost prepared by the CWPPRA Economics Work Group is \$20,867,777.



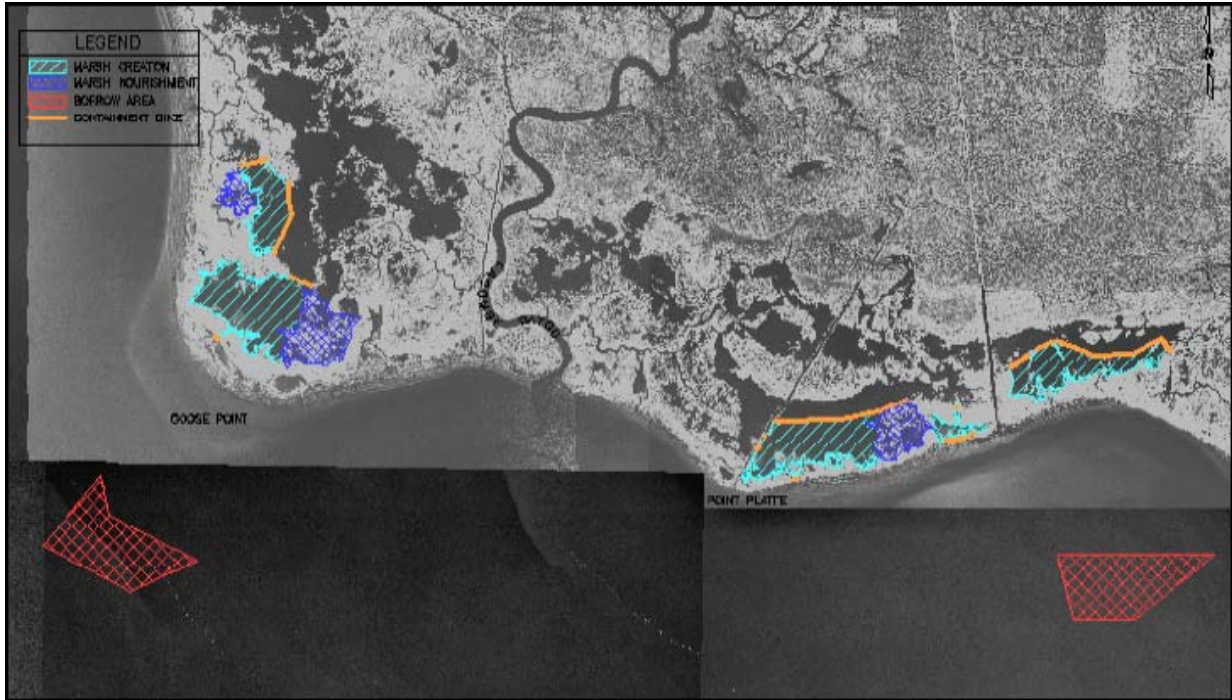


Figure 2. Project features.

## **Checklist of Phase Two Requirements**

### **A. List of Project Goals and Strategies.**

The goals of the project are to: 1) create 566 acres of emergent marsh through the deposition of dredged material into open water and fragmented marsh and 2) provide a net benefit of 436 acres of marsh at the end of the 20-year project life.

### **B. A Statement that the Cost Sharing Agreement between the Lead Agency and the Local Sponsor has been executed for Phase I.**

A Cost Share Agreement between the U.S. Fish and Wildlife Service and Louisiana Department of Natural Resources was executed on May 14, 2004. A draft amendment, authorizing construction, operation, maintenance, and monitoring, to the Cost Share Agreement has been prepared.

### **C. Notification from the State or the Corps that landrights will be finalized in a short period of time after Phase 2 approval.**

FWS has received verbal notification from DNR that landrights will be finalized in a relatively short time after Phase 2 approval.

### **D. A favorable Preliminary Design Review (30% Design Level). The Preliminary Design shall include completion of surveys, borings, geotechnical investigations, data analysis review, hydrologic data collection and analysis, modeling (if necessary), and development of preliminary designs.**

A 30% design meeting was held on July 20, 2006, and resulted in favorable reviews of the project design with minor modifications. DNR and FWS agreed on the project design and to proceed with project implementation.

### **E. Final Project Design Review (95% Design Level). Upon completion of a favorable review of the preliminary design, the Project plans and specifications shall be developed and formalized to incorporate elements from the Preliminary Design and the Preliminary Design Review. Final Project Design Review (95%) must be successfully completed prior to seeking Technical Committee approval.**

A 95% design meeting was held on November 8, 2006, and resulted in favorable reviews of the project design with minor modifications. DNR and FWS agreed on the project design and to proceed with project implementation.

### **F. A draft of the Environmental Assessment, as required under the National Environmental Policy Act must be submitted thirty days before the request for Phase 2 approval.**

A draft EA was issued for public comment on November 6, 2006.

### **G. A written summary of the findings of the Ecological Review.**

The following paragraph is from the Recommendations section of the October 23, 2006 draft 95% Ecological Review:

*Based on the evaluation of similar projects, a review of engineering principles, and an evaluation of the revised design report including comments received at the 30% Design Review meeting (held July 20, 2006), the LDNR project team feels that the conceptual design for the Goose Point/Point Platte Marsh Creation project would likely achieve the desired ecological goals for the majority of the 20-year project life and concurs that the current level of design warrants continued progress toward the Phase II funding request.*

**H. Application for and/or issuance of the public notices for permits. If a permit has not been received by the agency, a notice from the Corps of when the permit may be issued.**

The FWS has applied for a Section 404 permit from the Corps of Engineers.

**I. A hazardous, toxic and radiological waste (HTRW) assessment, if required, has been prepared.**

An HTRW assessment/contaminants screening was conducted by the FWS Lafayette Field Office's Environmental Contaminants Specialist. It was concluded that project implementation would not encounter any of the known wells, pits or associated facilities. No resuspension of contaminants from sediment disturbance is expected.

**J. Section 303(e) approval from the Corps.**

Section 303(e) approval was received from the Corps via email on November 27, 2006.

**K. Overgrazing determination from the NRCS (if necessary).**

An overgrazing determination was issued on January 24, 2005 by the NRCS and indicated that overgrazing would not be a problem in the project area.

**L. Revised cost estimate of Phase 2 activities, based on the revised Project design.**

**Funding/Budget information:**

- 1.) - Specific Phase Two funding request (updated construction cost estimate, three years of monitoring and O&M, etc.)**
- 2.) - Fully funded, 20-year cost projection with anticipated schedule of expenditures**

The specific Phase 2 funding request (updated construction estimate and three years of monitoring and O&M) is \$18,989,923. The revised fully-funded cost of the project is \$20,867,777. The revised budget sheets, with the anticipated schedule of expenditures, are provided in Attachment 1.

**M. A Wetland Value Assessment, reviewed and approved by the Environmental Work Group.**

This project has not undergone a significant change in scope. Therefore, a revised Wetland Value Assessment was not prepared. Benefits for this project are the same as those at the time of Phase 1 approval.

**N. A breakdown of the Prioritization Criteria ranking score, finalized and agreed-upon by all agencies during the 95% design review.**

The following Prioritization Criteria scores were reviewed and agreed upon by all the Environmental and Engineering Workgroups.

<b>Criteria</b>	<b>Score</b>	<b>Weight</b>	<b>Final Score</b>
Cost Effectiveness	5	2	10
Area of Need	4	1.5	6
Implementability	10	1.5	15
Certainty of Benefits	7	1	7
Sustainability of Benefits	10	1	10
HGM – Riverine Input	0	1	0
HGM – Sediment Input	0	1	0
HGM – Landscape Features	5	1	5
<b>Total Score</b>			<b>53</b>

# **Attachment 1**

ME-21 - Grand Lake Shoreline Protection

# CWPPRA Grand Lake Shoreline Protection Project (ME-21) Phase II Request

## Technical Committee Meeting



U.S. Army  
Corps of Engineers  
New Orleans  
District

December 6, 2006  
Baton Rouge, LA



## Project Overview

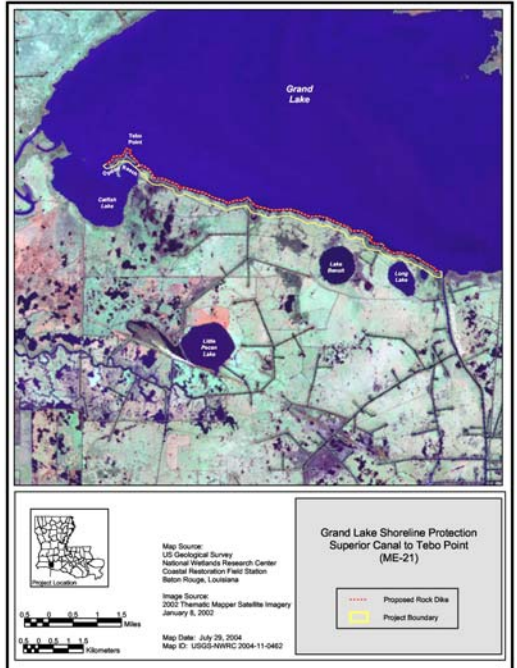
**Project Location:** Region 4, Mermentau Basin, Cameron Parish, south shore of Grand Lake.

**Problem:** Shoreline erosion rates in this area vary from 11 to 32 feet per year according to a comparison of aerial photography from 1978/1979 and 1997/1998.

**Goals:**

1. Stop shoreline erosion from Superior Canal to Tebo Point.
2. Promote accretion between the breakwater and the shore.

## Project Map



## Project Features Overview

- ◆ Construct rock dike along 37,800 lf of shoreline from Superior Canal to the mouth of Catfish Lake with a separable option to place 5,700 feet additional lf around Tebo Point, to the west of the base project footprint.
- ◆ The rock dike would be situated along the -1.0-ft NAVD 88 contour in 2.0 ft to 3.0 ft of water. The crown would be constructed to elevation +3.0 NAVD88 and 4.0 ft. width. Front and back side-slopes of 1.0 ft vertical on 1.5 ft horizontal.





## Project Benefits & Costs

- Project with Tebo Point extension:  
Benefits – 540 net acres  
Total fully funded cost - \$24,117,374.  
Prioritization Score – 61.25
- Project without Tebo Point extension:  
Benefits – 495 net acres  
Total fully funded cost - \$21,737,859.  
Prioritization Score – 61.25

## Additional Project Benefits

An additional 90 acres of marsh would be created behind the rock dike from beneficial use of floatation channel dredge material. These acres are not included in the reported net benefit acres for the project.



## Project Comparison

Item	Current with TP	Original	Difference
Length:	43,500 LF	39,000 LF	+4,500 LF
Benefits:	540 net acres	495 net ac	+45 net ac
FF Cost:	\$24.1 m	\$13.6 m	+\$10.5 m
Cost/LF:	\$554	\$349	\$205
Cost/ac:	\$44,630	\$27,475	\$17,155

Item	Current w/out TP	Original	Difference
Length:	37,800 LF	39,000 LF	+1,200 LF
Benefits:	495 net acres	495 net ac	0 net ac
FF Cost:	\$21.7 m	\$13.6 m	+\$8.1 m
Cost/LF:	\$574	\$349	\$225
Cost/ac:	\$43,838	\$27,475	\$16,363

## Why Fund This Project Now?

- The shoreline is eroding an average 25 ft/yr
- Project ranks 2nd highest out of 12 prioritized projects .
- Land loss in Region IV (164 mi<sup>2</sup>) resulting from Hurricane Rita was more than 4.6 times the land loss in Region III resulting from Hurricane Rita, and 8.6 times the land loss in Region I (19 mi<sup>2</sup>) and 2 times the land loss in Region II (77 mi<sup>2</sup>) resulting from Hurricane Katrina.
- This is the only full project up for consideration in Region IV this funding cycle, Region IV, which has been neglected in the LCA – near term plan.
- No projects were funded for construction last year in Region IV



Questions?



REPLY TO  
ATTENTION OF:

## DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

November 22, 2006

CEMVN-PM-C (1110-2-1150a)

MEMORANDUM FOR: Mr. Troy Constance, Chair, CWPPRA Technical Committee

SUBJECT: Phase II Authorization Request for the Grand Lake Shoreline Protection Project (ME-21), Cameron Parish, LA

The U.S. Army Corps of Engineers (USACE) and Louisiana Department of Natural Resources (LDNR) request Phase II authorization for the Grand Lake Shoreline Protection Project (ME-21).

The project was authorized for Phase I as a part of Priority Project List 11 (PPL 11) on January 16, 2002 by the Louisiana Coastal Wetlands Conservation and Restoration Task Force (Task Force) under the authority of the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA). This request is submitted in accordance with the CWPPRA Project Standard Operating Procedures (SOP) Manual.

1. Description of Phase I Project: A description of the Grand Lake Shoreline Protection candidate project as selected for Phase I authorization is found in Enclosure 1. Enclosure 1 contains the original Fact Sheet and map depicting the project boundary and project features. It includes a description of the conceptual features, a summary of the benefits, and budget information as estimated for the project at the time of Phase I authorization.

2. Overview of Phase I Tasks, Process and Issues: After receiving Phase I approval on January 16, 2002, the project delivery team (PDT) was assembled with representatives from the USACE and the LDNR. The PDT developed and submitted a work plan to accomplish Phase I activities to the P&E Subcommittee for their review. The PDT also conducted a kickoff meeting and site visit on June 26-27, 2002. Contracts were awarded to conduct hydrographic surveys, magnetometer surveys, and borings. The USACE Engineering Division performed the engineering and design for the project. The project design considered an option to extend the project alignment around Tebo Point an additional 5,700 linear feet. A 30% design review meeting was held on May 11, 2004, which resulted in a letter from the LDNR concurring to proceed with final design. DNR concurred that the project should proceed with the extension contingent on an assessment of a cultural resources site near Tebo Point. All NEPA documentation was completed resulting in a final Environmental Assessment and a Finding of No Significant Impact (FONSI) dated 2 April 2004, with a supplemental EA issued for the 5,700 linear foot Tebo Point extension. The Plans and Specifications were prepared and the Design Report finalized. The USACE Real Estate Division completed the official Real Estate Plan, which defines the real estate requirements in Phase II. The LDNR prepared the Ecological Review. A 95% Design Review Meeting was held on August 16, 2004. The Final Design Report including all supporting appendices was provided for the 95% Design Review Meeting.

### 3. Description of the Phase II Candidate Project:

A. A description of the Grand Lake Shoreline Protection Phase II candidate project is found in Enclosure 3-A. Enclosure 3-A contains the current Fact Sheet and map depicting the project boundary and project features. It includes a detailed description of the features of the project, a summary of the benefits and project budget information.

B. The originally approved Grand Lake Shoreline Protection project started at Superior Canal and terminated at the beginning of Tebo Point. As a result of the Phase I analyses, the USACE and LDNR concluded that it would be beneficial to extend the project to include all of Tebo Point within the project design. This extension increased the rock dike length by approximately 5,700 lf (15.1%), the benefits by 45 net acres (+9.1%), and the total fully funded cost by \$2,379,515 (+10.9%).

C. A table comparing the project at the time of Phase I approval and the current project has been included as enclosure 3-C.

### 4. Checklist of Phase II requirements:

#### A. List of Project Goals and Strategies.

Goal #1: To stop shoreline erosion from Superior Canal to Tebo Point.

Goal #2: To promote accretion between the breakwater and the shore.

Coast 2050 Strategy: Regional #16 - Stabilize Grand and White Lakes' shorelines.

B. Since the Cost Sharing Agreement (CSA) between the USACE and the LDNR covers both Phase I and Phase II, it cannot be executed until the project is approved for Phase II funding and construction. A cost share agreement will be executed shortly after receiving Phase II approval and would not impact the construction schedule.

C. The USACE will finalize landrights in a short period of time after Phase II approval.

D. The USACE and the LDNR conducted a favorable 30% Design Review Meeting on May 11, 2004. As a part of that review, the Preliminary Design Report was provided for agency review and comment. The Preliminary Design Report included the results of the surveys, borings, geotechnical investigations, data analysis review, and the preliminary designs. The LDNR sent a letter dated May 12, 2004 indicating their concurrence to proceed with the final design of the project. A copy of the letter of concurrence has been included as enclosure 4-D.

E. The USACE and the LDNR conducted a favorable 95% Design Review Meeting on August 16, 2004. As a part of that review, the Project plans and specifications and the Final Design Report were provided for agency review and comment. The LDNR sent a letter dated August 30, 2004 that indicated their concurrence to proceed with the Phase II request for the project. A copy of the letter of concurrence has been included as enclosure 4-E.

F. The Environmental Assessment (EA) for the project was finalized and a copy of the signed FONSI, dated 2 April 2004, has been included as enclosure 4-F. A supplemental EA and FONSI, dated 1 March 2005, for the Tebo Point extension is also included.

G. A copy of the Ecological Review completed by the LDNR has been included as enclosure 4-G.

H. All permits and authorizations, including Water Quality Certificate, dated 23 January 2004, Coastal Zone Consistency, dated 11 March 2004. All Fish and Wildlife Coordination Act and Essential Fish Habitat requirements have been met and the LA State Historic Preservation Officer has concurred with a determination of no effect on historic properties.

I. The hazardous, toxic and radiological waste (HTRW) assessment was addressed in the EA.

J. A copy of the signed Section 303(e) approval from the USACE has been included as enclosure 4-J.

K. A copy of the Overgrazing determination from the Natural Resources Conservation Service (NRCS) has been included as enclosure 4-K. The letter indicates that there is no problem with overgrazing within the project area.

L. A current revised fully-funded cost estimate of Phase II activities or economic analyses, based on the current Project design has been included as enclosure 4-L and summarized directly below.

Funding/Budget information:

1) Specific Phase II funding request (construction and three years of O&M):

Grand Lake SP with Tebo Point extension: \$20,331,946

Grand Lake SP without extension: \$17,980,307

2) Fully-funded 20-year cost estimates:

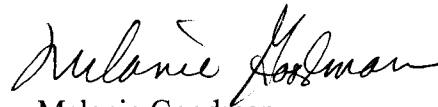
Grand Lake SP with Tebo Point extension: \$24,117,374

Grand Lake SP without extension: \$21,737,859

M. A revised Wetland Value Assessment (WVA) was not required for the original project limits because there was not a change in scope as defined by the CWPPRA SOP. A WVA for the Tebo Point extension option was prepared and reviewed by the Environmental Workgroup. The resulting benefits have been included in enclosure 3-A in the benefits write-up.

N. A summary of the Prioritization Criteria ranking score, finalized and agreed upon by all agencies prior to the 95% design review and updated with the current fully-funded cost estimate as of November 20, 2006 has been included as enclosure 4-N.

If you have any questions regarding the subject project, please call Ms. Melanie Goodman at (504) 862-1940.

A handwritten signature in cursive script that reads "Melanie Goodman".

Melanie Goodman  
Project Manager  
Restoration Office

Enclosures

# Enclosure 1

Phase 1 Fact Sheet



PPL11 FINAL PROJECT NOMINEE FACT SHEET

Nov 20, 01 pl11NovFS Grand Lake

**ME-16-2 Grand Lake Shoreline Protection, from Superior Canal to Tebo Point**

**Coast 2050 Strategy** - Regional #16 - Stabilize Grand and White Lakes shorelines.

**Project Location** - Region 4, Mermentau Basin, Cameron Parish, south shore of Grand Lake.

**Problem** -According to a comparison of the 1978-79 aerial photography with 1997-98 photography, shoreline erosion rates in this area vary from 11 to 32 feet per year.

**Goals** – 1) stop shoreline erosion from Superior Canal to Tebo Point. 2) promote accretion between the breakwater and the shore.

**Proposed Solution** - Approximately 39,000 feet of stone breakwater will be built in Grand Lake at the outer edge of the –2 foot contour from Superior Canal to Tebo Point. The crest elevation will be +2.0 feet NGVD; crest width 4 feet; front and back slopes 1:3; and stone size 650# maximum. Approximately 163,000 tons of riprap will be used. The stone will be placed on geotextile fabric that is 200 lb/inch. Gaps for fish access will be built every 1,000 feet. They will have a top width of 46 feet and extend to the lake bottom. They will be lined with a concrete apron. A flotation channel will be at least 35 feet from the centerline of the dike with a side slope of 1:4 and a depth of –6 feet. Material from the flotation canal will be cast inside the breakwater.

**Project Benefits** – The project would benefit 445 acres of fresh marsh and 717 acres of open water (total 1,162 acres). Shoreline loss would be prevented and some marsh would accrete south of the breakwater so at the end of 20 years, 495 acres of marsh would be protected/created.

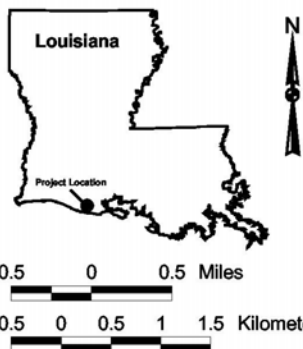
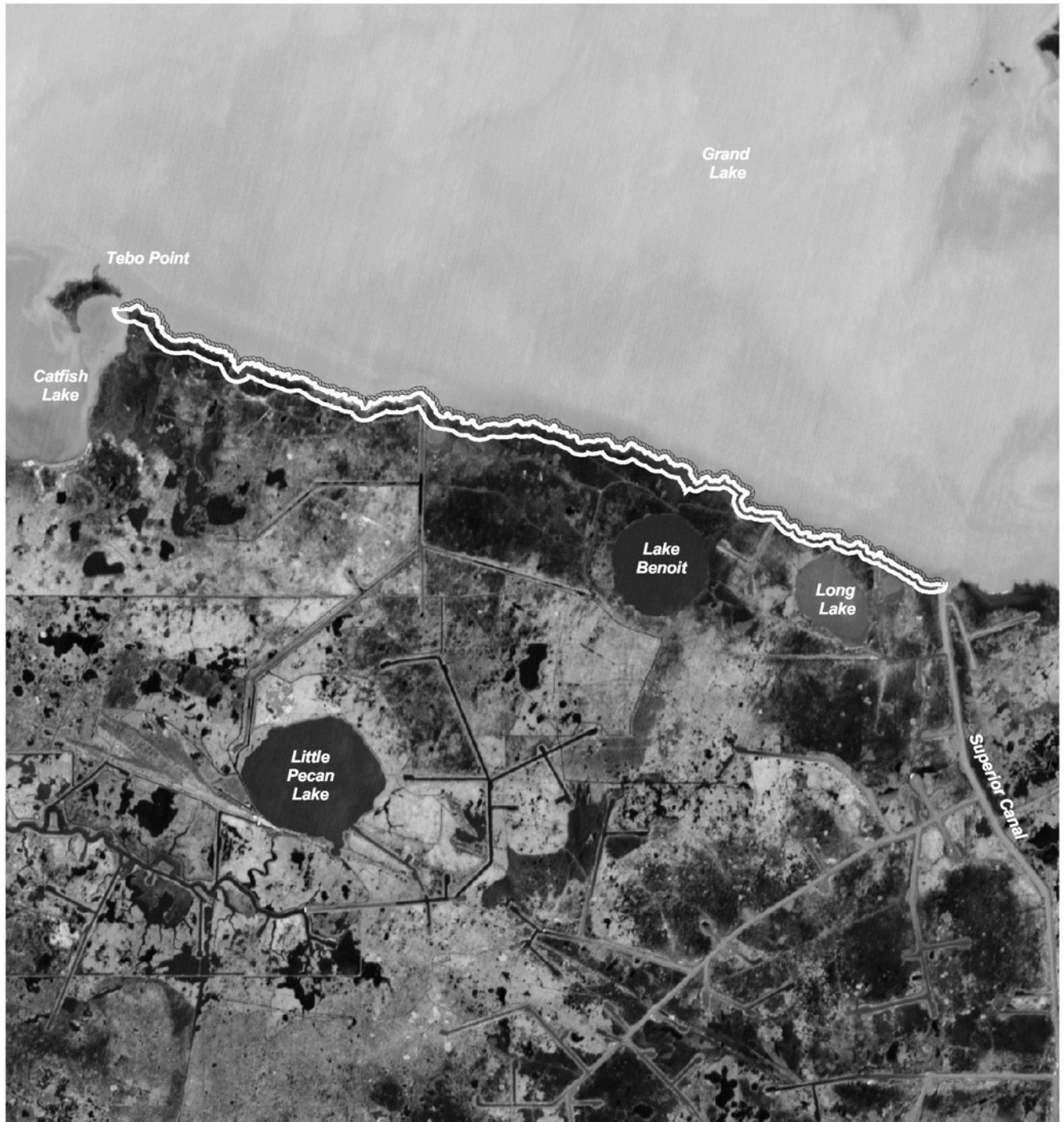
**Preliminary Costs** – The total fully funded cost is \$13,562,500. The fully funded first cost is \$9,559,700.



**Risk/Uncertainty and Longevity/Sustainability** – There will be a low degree of risk associated with this project because monitoring has indicated that breakwaters significantly reduce erosion. The project should continue providing benefits more than 20 years after construction because some rocks will be replaced at years 5 and 15.

**Sponsoring Agency and contact Persons** – Corps of Engineers

Sue Hawes, COE, 504 862-2518 [suzanne.r.hawes@mvn02.usace.army.mil](mailto:suzanne.r.hawes@mvn02.usace.army.mil)

Christopher Alfonso, 504 862-2401 [christopher.d.alfonso@mvn02.usace.army.mil](mailto:christopher.d.alfonso@mvn02.usace.army.mil)



 Project area  
 Proposed Breakwater

Data Source:  
 U.S. Geological Survey  
 National Wetlands Research Center  
 Coastal Restoration Field Station  
  
 LA Department of Natural Resources  
 Coastal Restoration Division  
  
 Map Date: November 16, 2001  
 Map ID: 200204142  
  
 Image Data:  
 1990 SPOT Panchromatic Imagery

CWPPRA PPL11  
 Region 4  
  
**Grand Lake Shoreline Protection  
 Superior Canal to Tebo Point  
 (ME-16-2)**

# Enclosure 3-A

Final Fact Sheet

## FINAL PROJECT FACT SHEET

November 29, 2006

### **Project Name: Grand Lake Shoreline Protection, ME-21**

**Coast 2050 Strategy:** Regional #16 - Stabilize Grand and White Lakes shorelines.

**Project Location:** Region 4, Mermentau Basin, Cameron Parish, south shore of Grand Lake.

**Problem:** According to a comparison of the 1978-79 aerial photography with 1997-98 photography, shoreline erosion rates in this area vary from 11 to 32 feet per year.

**Goals:** 1) stop shoreline erosion from Superior Canal to Tebo Point. 2) promote accretion between the breakwater and the shore.

**Proposed Solution:** The final design consists of constructing approximately 37,800 linear feet of rock dike stretching from Superior Canal to the mouth of Catfish Lake with an option to place up to an additional 5,700 feet of dike to the west of the base project footprint (option reach). The Technical Committee and Task Force will be given the option to fund the increased length. This fact sheet covers both funding alternatives up for consideration. The rock dike will be situated along the -1.0-ft NAVD 88 contour in approximately 2.0 feet to 3.0 feet of water, stage dependant. The dike crown will be constructed to an elevation of +3.0 NAVD88 (+/-0.25') and have a width of approximately 4.0 feet. The dike will have front and back side-slopes of 1.0-foot vertical on 1.5-foot horizontal. It will be constructed by placing 650# maximum stone on a layer of geotextile fabric. Gaps for fish access will be built at approximate 1,000-foot intervals. A flotation channel will be dredged parallel to and lake-ward of the rock dike, no closer than 45 feet from the centerline of the dike. The maximum allowable dredging depth for the flotation channel is -5.5 feet NAVD 88. All material from the flotation channel will be cast inside of the rock dike.

**Project Benefits:** The 37,800 lf of rock dike will benefit 445 acres of existing fresh marsh and 717 acres of open water (total 1,162 acres). Shoreline loss will be prevented and some marsh will accrete south of the breakwater so at the end of 20 years, 495 acres of marsh will be protected/created. The proposed extension around Tebo Point will benefit an additional 45 acres of fresh marsh and an additional 32 acres of open water. At the end of 20 years, an additional 45 acres will be protected/created.

**Estimated Fully Funded Costs:** The total fully funded cost of the project including the Tebo Point option is \$24,117,374. The total fully funded cost of the base reach is \$21,737,859.

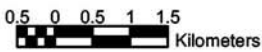
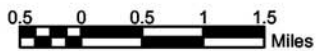
**Risk/Uncertainty and Longevity/Sustainability:** There will be a low degree of risk associated with this project because monitoring has indicated that breakwaters significantly reduce erosion. The project should continue providing benefits more than 20 years after construction because there is a scheduled maintenance event in year 3 and year 15.

### **Sponsoring Agency and Contact Persons:**

Melanie Goodman, USACE PM, 504-862-1940, [Melanie.L.Goodman@mvn02.usace.army.mil](mailto:Melanie.L.Goodman@mvn02.usace.army.mil)  
Kenneth Duffy, LDNR PM, 225-342-4106, [kend@dnr.state.la.us](mailto:kend@dnr.state.la.us)



Project Location



Map Source:  
 US Geological Survey  
 National Wetlands Research Center  
 Coastal Restoration Field Station  
 Baton Rouge, Louisiana

Image Source:  
 2002 Thematic Mapper Satellite Imagery  
 January 8, 2002

Map Date: July 29, 2004  
 Map ID: USGS-NWRC 2004-11-0462

### Grand Lake Shoreline Protection Superior Canal to Tebo Point (ME-21)

- - - Proposed Rock Dike
- Project Boundary

# Enclosure 3-C

Description of Changes  
From Phase I Approval

## Description of Changes From Phase I Approval

There are no changes to project scope from Phase I approval. An option to extend the original project is also up for consideration by the Technical Committee and Task Force.

### Comparison to Current Project without extension:

Description	Project Info at the time of Phase 0 approval (PPL 11)	Project Info Currently (without Tebo Pt option)	Difference
Length:	~39,000 lf	37,800 lf	slightly different bc based on actual dike alignment
Placement Location:	@ -2' NGVD contour	@ -1.0' NAVD 88 contour	similar, just difference in datums.
Crest El.:	+2.0' NGVD	+3.0' NAVD88	similar, just difference in datums.
Crest Width:	4 ft	4 ft	
Side Slopes:	1V:3H	1V:1.5H	revised based on geotech info
Stone Size:	650# max	650# max	
Fish Dip Spaces:	every 1,000 lf	every 1,000 lf	
Project Benefits:	495 net acres	495 net acres	No change
Total Fully Funded Cost:	\$13,562,500	\$21,737,859	60.3%

### Comparison to Current Project with Tebo Point extension:

Description	Project Info at the time of Phase 0 approval (PPL 11)	Project Info Currently (with Tebo Pt option)	Difference
Length:	~39,000 lf	43,500 lf	Increase of 4,500 lf
Placement Location:	@ -2' NGVD contour	@ -1.0' NAVD 88 contour	similar, just difference in datums.
Crest El.:	+2.0' NGVD	+3.0' NAVD88	similar, just difference in datums.
Crest Width:	4 ft	4 ft	
Side Slopes:	1V:3H	1V:1.5H	revised based on geotech info
Stone Size:	650# max	650# max	
Fish Dip Spaces:	every 1,000 lf	every 1,000 lf	
Project Benefits:	495 net acres	540 net acres	45 net acres more 9.09%
Total Fully Funded Cost:	\$13,562,500	\$24,117,374	77.8%

# Enclosure 4-D

30% Design Review Letter



# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

SCOTT A. ANGELLE  
SECRETARY

DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT  
May 12, 2004

Colonel Peter J. Rowan  
District Engineer  
U.S. Army Corps of Engineers  
P.O. Box 60267  
New Orleans, LA 70160-0267

Re: 30% Design Review for Grand Lake Shoreline Protection (ME-21)  
Statement of Local Sponsor Concurrence

Dear Col. Rowan:

The 30% design review meeting was held on May 11, 2004 for the Grand Lake Shoreline Protection (ME-21) project. 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, concur to proceeding with the design of the project, with the understanding that the two increments above baseline, Options A and B, will be contingent on an assessment of the cultural resources site near Tebo Point. Since no oyster leases will be affected by this project, there has been no assessment of potential impacts.

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. We also request that our project manager, Ken Duffy, be copied on this and other correspondence concerning this project.

Please do not hesitate to call if I may be of any assistance.

Sincerely,

Handwritten signature of Christopher P. Knotts in black ink.

Christopher P. Knotts, P.E.  
Director

cc: David Burkholder, Engineer Manager  
Luke Le Bas, Engineer Manager  
Ken Duffy, Project Manager

COASTAL ENGINEERING DIVISION  
P. O. BOX 44027 • BATON ROUGE, LA 70804-4027 • 617 N. THIRD STREET • 10TH FLOOR • BATON ROUGE, LA 70802  
PHONE (225) 342-7308 • FAX (225) 342-9417 • WEB <http://www.dnr.state.la.us>  
AN EQUAL OPPORTUNITY EMPLOYER

TOTAL P.01

# Enclosure 4-E

95% Design Review Letter

# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

SCOTT A. ANGELLE  
SECRETARY

**DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT**

August 30, 2004

Mr. John Saia  
Deputy District Engineer for Project Management  
U.S. Army Corps of Engineers  
P.O. Box 60267  
New Orleans, LA 70160-0267

Re: 95% Design Review for Grand Lake Shoreline Protection (ME-21)  
Statement of Successful Completion

Dear Mr. Saia:

The 95% design review meeting was successfully completed on August 16, 2004 for the Grand Lake Shoreline Protection (ME-21) project. Based on our review of the Final Design Report, plans and specifications, the Ecological Review, and the environmental compliance documentation, as local sponsor, we concur to request permission from the Technical Committee to proceed to Phase II for this project.

In accordance with the CWPPRA Project Standard Operating Procedures Manual, we request that you forward the items required in Appendix C -- Information Required in Phase II Authorization Requests to the CWPPRA Technical Committee for subsequent approval by the CWPPRA Task Force. We also request that our project manager, Kenneth Duffy, be copied on this and all other correspondence concerning this project.

Please do not hesitate to call if I may be of any assistance.

Sincerely,

Christopher P. Knotts, P.E.  
Director

CPK:KCD:kcd

cc: John Hodnett, P.E., Engineer Manager  
Luke LeBas, P.E., Engineer Manager  
Kenneth Duffy, Ph.D., Project Manager  
Amanda Phillips, P.E., Project Engineer

# Enclosure 4-F

EA # 380  
SEA #380 A



# DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO  
ATTENTION OF:

Planning, Programs, and  
Project Management Division  
Environmental Planning  
and Compliance Branch

## FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Grand Lake Shoreline Protection Project  
Cameron Parish, Louisiana  
EA # 380

Description of Proposed Action. The proposed action consists of building approximately 39,000 feet of stone breakwater along the south shore of Grand Lake in Cameron Parish, Louisiana. The breakwater will stretch westward from Superior Canal to the mouth of Catfish Lake, ending approximately 1,600 feet east of Tebo Point. This breakwater would be built at the outer edge of the 2-foot depth contour (estimated -1.2 ft North American Vertical Datum 1988 [NAVD 88] equivalent). Dimensions of the breakwater would be a crest elevation of +3.5 feet NAVD 88, a 4-foot crest width, and 1:5 front and back slopes. Stone size for the breakwater would be 650 pounds maximum (largest stones would be approximately 24 inches in diameter), and the dike would require approximately 185,000 tons of stones. The stones would be placed on geotextile separator fabric with a tensile strength of 3,600 pounds per linear foot. Gaps for fish access would be built approximately every 1,000 feet, would have a top width of 50 feet, and would extend to the lake bottom, with an approximate bottom width of 36 feet. A flotation channel for equipment access would be at least 45 feet from the centerline of the dike with side slopes of 1:2 and a depth of 5 feet. Material from the flotation canal would be cast inside the breakwater where feasible. Additional access dredging is likely to be required in the vicinity of the project site in order to allow rock transport from the Mermentau River to the project site. Controlling water depth would be 5 feet. Dredged material would be stockpiled adjacent to the required dredging location during construction, then returned to its pre-project location upon project completion. Shoreline loss would be prevented and some marsh would accrete south of the breakwater so at the end of 20 years, 495 acres of marsh would be protected and/or created.

Factors Considered in Determination. This office has assessed the impacts of the proposed action on significant resources, including Grand Lake, wetlands, fisheries, wildlife, essential fish habitat, endangered or threatened species, cultural resources, recreational resources, aesthetics, and air quality. No significant adverse impacts were identified for any of the significant resources. The risk of encountering HTRW is low. By a letter dated 7 May 2003, the U.S. Fish and Wildlife Service confirmed that the proposed action is not likely to adversely affect any endangered or threatened species. In a letter, dated 11 March 2004, the Louisiana Department of Natural Resources concurred with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program (Coastal Zone Consistency #C20040024).

A Water Quality Certificate, (#030801-08 / AI 117263 / CER20030001) dated 23 January 2004 was received from the Louisiana Department of Environmental Quality. Review of the Section 404(b)(1) Public Notice was completed on 7 November 2003. The Section 404(b)(1) Evaluation was signed on 30 October 2003. In a letter dated 3 March 2004, the Louisiana State Historic Preservation Officer concurred with a recommendation of no effect on historic properties. This office has concurred with, or resolved, all Fish and Wildlife Coordination Act recommendations contained in a letter from the U.S. Fish and Wildlife Service, dated 13 February 2004. This office has concurred with, or resolved, all Essential Fish Habitat recommendations contained in a letter from NOAA Fisheries, dated 11 March 2004.

Environmental Design Commitments. No impacts have been identified that would require compensatory mitigation. The following commitments are an integral part of the proposed action:

1.) If the proposed action is changed significantly or is not implemented within one year, CEMVN will reinitiate coordination with the USFWS to ensure that the proposed action would not adversely affect any Federally listed threatened or endangered species, or their habitat. (USFWS CAR letter dated 13 February 2004)

2.) CEMVN is aware of cultural site 16CM33 on Tebo Point. As the Proposed Action will stop at the mouth of Catfish Lake, approximately 1,600 feet east of Tebo Point, the project should have no effect on this resource. If, during construction, evidence is found that portions of site 16CM33 is located within construction areas, then all construction in the affected areas must cease until an CEMVN-PM-RN archaeologist is notified and appropriate actions can be determined. Furthermore, if in the future, the breakwater would be extended around Tebo Point, then a supplemental EA, including further study of cultural resources, will be required. If any unrecorded cultural resources are determined to exist within the proposed project boundaries, then no work will proceed in the area containing these cultural resources until a CEMVN-PM-RN archeologist has been notified and final coordination with the SHPO and THPO has been completed. (SHPO coordination letter dated 3 March 2004)

3.) Approximately 32 acres of muddy and non-vegetated bottom, would be lost under the footprint of the breakwater; however, the stabilization and creation of approximately 495 acres (or 149 Average Annual Habitat Units) of more desirable freshwater marsh which provides important nursery habitat (essential fish habitat) would make up for this loss. (NOAA Fisheries coordination letter dated 9 February 2004)

Public Involvement. The proposed action has been coordinated with appropriate Federal, state, and local agencies and businesses, organizations, and individuals through distribution of Environmental Assessment # 380 (EA #380) for their review and comment.

Conclusion. This office has assessed the potential environmental impacts of the proposed action. Based on this assessment, and a review of the public comments made on EA #380 a determination has been made that the proposed action would have no significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared.

2 APR 04

Date



Peter J. Rowan  
Colonel, U.S. Army  
District Engineer



# DEPARTMENT OF THE ARMY

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO  
ATTENTION OF:

Planning, Programs, and  
Project Management Division  
Environmental Planning  
and Compliance Branch

## FINDING OF NO SIGNIFICANT IMPACT (FONSI)

### TEBO POINT SEGMENT GRAND LAKE SHORELINE PROTECTION PROJECT

CAMERON PARISH, LOUISIANA

SEA #380A

Description of Proposed Action. The U.S. Army Corps of Engineers, New Orleans District, proposes to continue the construction of a rock breakwater for approximately 5,700 feet, along the southern shore of Grand Lake from Catfish Lake around Tebo Point. The breakwater would be built at the outer edge of the -2 foot depth contour [estimated -1.2 ft North American Vertical Datum 1988 (NAVD 88) equivalent]. The crest would be +3.5 feet NAVD 88 elevation, and would have a 4-foot top width. The side slopes of the breakwater would be 1:1.5. The project would require approximately 18,000 tons of stones, with the largest stones being approximately 24-inches in diameter. The stones would be placed on geotextile fabric that is rated to 350 pounds per square inch. Gaps for fish access would be built approximately every 1,000 feet, would have a top width of 50 feet, and would extend to the lake bottom. Bottom width of the fish breaks would be approximately 36 feet, based on the 1:1.5 side slopes. A flotation channel would be at least 45 feet from the centerline of the breakwater with side slopes of 1:2. Maximum dredging depths would be limited to an elevation no lower than -5.5 feet NAVD 88. Material from the flotation canal would be cast inside the breakwater where feasible. Additional access dredging is likely to be required in the vicinity of the project site in order to allow stone transport from the Gulf Intracoastal Waterway and/or the Mermentau River to the project site. Controlling water depth would be -5.5 feet and materials would be stockpiled adjacent to the required dredge location during construction then returned to its pre-project location upon project completion. Shoreline loss would be prevented and some marsh would accrete south of the breakwater so at the end of 20 years, approximately 45 acres of marsh would be protected and/or created.

Factors Considered in Determination. This office has assessed the impacts of the proposed action on significant resources, including Grand Lake, wetlands, fisheries, wildlife, essential fish habitat, threatened or endangered species, cultural resources, recreation, and air quality. No significant adverse impacts were identified for any of the significant resources. The risk of encountering HTRW is low. No impacts were identified that would require compensatory mitigation. By letters dated September 15, 2004 and December 21, 2004, respectively, the U.S. Fish and Wildlife Service and the National Marine Fisheries Service confirmed that the proposed

action is not likely to adversely affect any endangered or threatened species. In a letter dated February 22, 2005, the Louisiana Department of Natural Resources concurred with the determination that the proposed action is consistent, to the maximum extent practicable, with the Louisiana Coastal Resources Program (Coastal Zone Consistency #C20040024 as amended). A Water Quality Certificate (#30801-08 as amended), dated February 23, 2005 was received from the Louisiana Department of Environmental Quality. The Section 404(b)(1) evaluation was amended on October 21, 2004. In a letter dated February 11, 2005, the Louisiana State Historic Preservation Officer concurred with a recommendation of no effect on historic properties. This office has concurred with, or resolved, all Fish and Wildlife Coordination Act recommendations contained in a letter from the U.S. Fish and Wildlife Service, dated January 13, 2005. This office has concurred with, or resolved, all comments on the air quality impact analysis documented in the EA, which were contained in a letter from Louisiana Department of Environmental Quality, dated December 29, 2004. This office has concurred with, or resolved, all Essential Fish Habitat recommendations contained in a letter from the National Marine Fisheries Service, dated December 22, 2004.

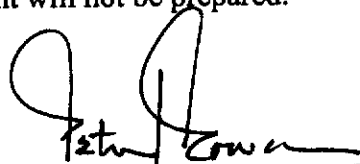
Environmental Design Commitments. The following commitments are an integral part of the proposed action

- 1.) If the proposed action is changed significantly or is not implemented within one year, CEMVN will reinstate coordination with the USFWS to ensure that the proposed action would not adversely affect any Federally listed threatened or endangered species, or their habitat. (USFWS letter dated January 13, 2005.)
- 2.) If, during construction, evidence is found that a portion of site 16CM33 is located within the construction area or if any unrecorded cultural resources are determined to exist within the proposed project boundaries, then all construction in the affected areas must cease until a CEMVN archaeologist is notified and final coordination with the SHPO and THPO has been completed. [CEMVN-PM-RN/SHPO Standard Operating Procedure]

Public Involvement. The proposed action has been coordinated with appropriate Federal, state, and local agencies and businesses, organizations, and individuals through distribution of Environmental Assessment # 330A (EA #380A) for their review and comment. EA#380A is attached hereto and made a part of this FONSI.

Conclusion. This office has assessed the potential environmental impacts of the proposed action. Based on this assessment, a review of the comments made on EA #380A, and the implementation of the environmental design commitments listed above, a determination has been made that the proposed action would have no significant impact on the human environment. Therefore, an Environmental Impact Statement will not be prepared.

1 MAR 05  
Date

  
Peter J. Rowan  
Colonel, U.S. Army  
District Engineer



# Enclosure 4-G

Ecological Review

**E C O L O G I C A L R E V I E W**

**Grand Lake Shoreline Protection**

CWPPRA Priority Project List 11

(State No. ME-21)

August 31, 2004

Mark A. Stead  
Restoration Technology Section  
Coastal Restoration Division  
Louisiana Department of Natural Resources

## **Ecological Review Grand Lake Shoreline Protection**

*In August 2000, the Louisiana Department of Natural Resources (LDNR) initiated the Ecological Review to improve the likelihood of restoration project success. This is a process whereby each restoration project's biotic benefits, goals, and strategies are evaluated prior to granting construction authorization. This evaluation utilizes environmental data and engineering information, as well as applicable scientific literature, to assess whether or not, and to what degree, the proposed project features will cause the desired ecological response.*

### **I. Introduction**

The proposed Grand Lake Shoreline Protection (ME-21) project is located in the Mermentau Basin in Cameron Parish, Louisiana. The project area encompasses the southern shore of Grand Lake from Superior Canal to the mouth of Catfish Lake and may include an optional structural increment that extends westward to Tebo Point (Figure 1). The total area of the Grand Lake Shoreline Protection project is approximately 1,162 acres and is primarily composed of fresh emergent marsh (445 acres) and open water (717 acres) habitats (USACE 2001). Approximately 37,800 feet of Grand Lake shoreline will be protected through the construction of a foreshore rock dike, with an option to protect 5,700 feet of shoreline around Tebo Point.

*Coast 2050* identified elevated water levels and wave energy generated by strong frontal winds as the major factors contributing to the rapid erosion of the southern shore of Grand Lake [Louisiana Coastal Wetlands Conservation and Restoration Task Force and the Wetlands Conservation and Restoration Authority (LCWCRTF&WCRA) 1999]. Erosion rates calculated by comparing aerial photographs from 1978-1979 to those taken in 1997-1998 revealed that 11 to 32 feet of shoreline was lost annually (USACE 2001). Construction of the foreshore rock dike will prevent the lake from breaching into adjacent open water areas (Lake Benoit and Long Lake) and will protect interior marsh, which without the structure, will be subjected to increased wave energy (LCWCRTF&WCRA 1999). The proposed strategy of protecting and stabilizing the southern shoreline of Grand Lake is supported by the *Coast 2050* Region 4 Ecosystem Strategies which promote the stability and protection of bay, lake, and gulf shorelines for the preservation of interior wetlands and the maintenance of favorable hydrologic conditions.

### **II. Goal Statement**

- Stop erosion along approximately 37,800 linear feet of the southern bank of Grand Lake and as a result save 445 acres of interior emergent marsh that is expected to be lost over the 20 year project life.
- Increase submerged aquatic vegetation (SAV) coverage to 80% in the open water areas from a baseline of 10% over the 20 year project life.
- Create 50 acres of emergent marsh between the Grand Lake shoreline and the foreshore rock dike over the 20 year project life.
- Stop erosion along the shoreline of Tebo Point and as a result save 28 acres of emergent marsh that is expected to be lost over the 20 year project (optional goal).

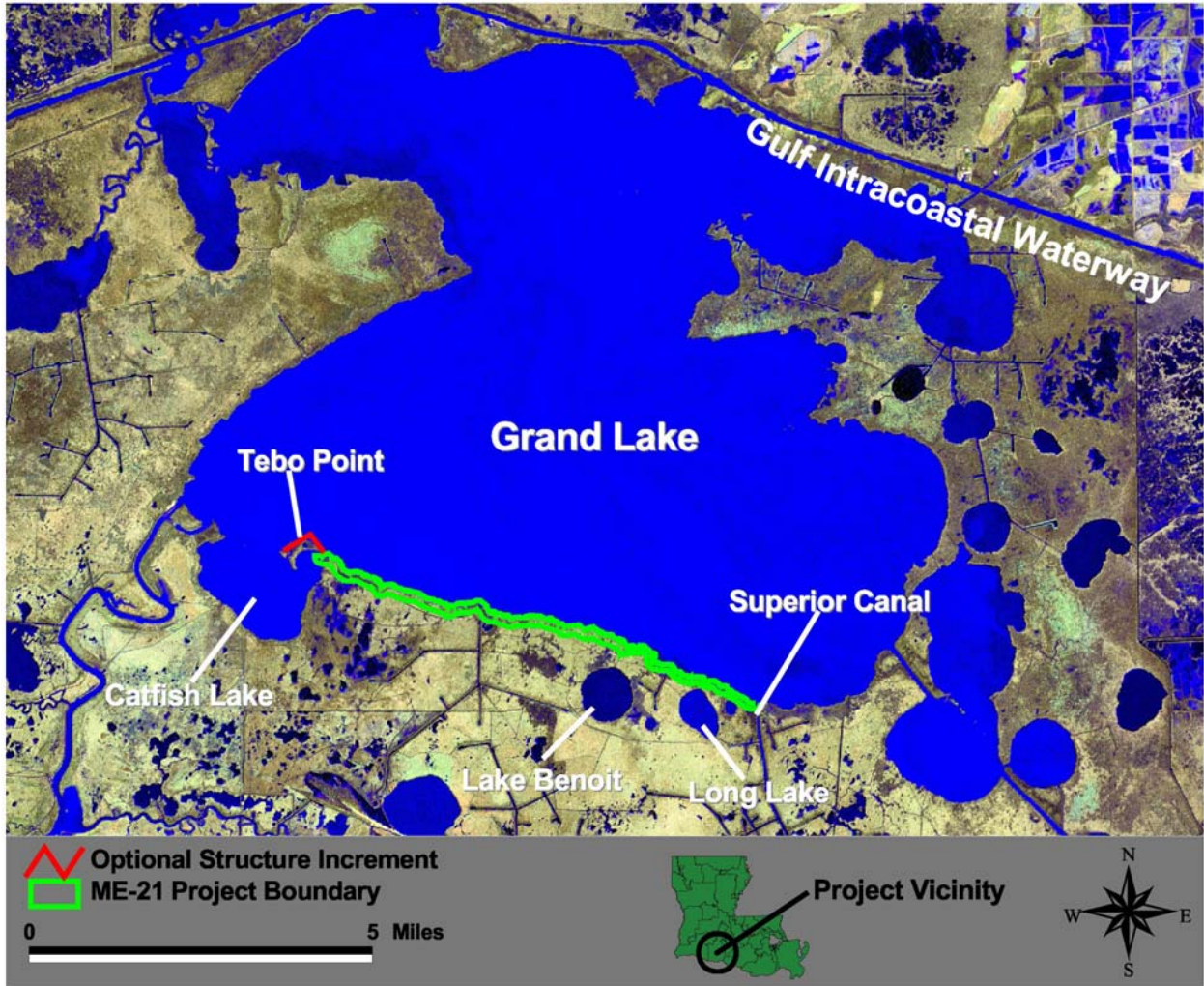


Figure 1. Grand Lake Shoreline Protection project area.

**III. Strategy Statement**

The project goals will be achieved through the construction of an approximately 37,800 foot foreshore rock dike along the southern shore of Grand Lake from Superior Canal to the mouth of Cattfish Lake with the option of including an additional 5,700 feet of structure around Tebo Point.

**IV. Strategy-Goal Relationship**

The construction of a foreshore rock dike will stop erosion along the southern Grand Lake shoreline by dampening wind generated waves. The stabilization of the lake shoreline will in turn protect interior marsh from being exposed to wave energy. Marsh accretion is expected to occur behind the shoreline protection structure due to the occasional overwash of waves and subsequent deposition of sediment. Additional marsh creation benefits will be achieved through the strategic placement of dredged spoil from the digging of the flotation canals.

The construction of the foreshore rock dike is expected to increase the overall percentage of SAV coverage in the area behind the shoreline protection structure from 10% to 80%. SAV

habitat creation is expected to occur due to the reduction of turbidity in the shallow open water areas and the resulting increase in overall light penetration.

**V. Project Feature Evaluation**

A 37,800 foot foreshore rock dike will be constructed along the southern shore of Grand Lake 200 feet from the existing shoreline at the -1.0 NAVD-88 foot contour from Superior Canal to the mouth of Catfish Lake. In addition, an optional plan is in place to extend the structure an additional 5,700 feet westward around Tebo Point and continuing southwest to protect the entire island (Figure 1). The crest elevation of the rock dike structure will be built at an approximate height of  $+3.0 \pm 0.25$  feet NAVD-88 (Figure 2). Settlement is expected to occur during construction. To offset this initial loss, the contractor will add rock material to the structure as needed to achieve the desired design height before demobilization. The breakwater will have front and back side-slopes of 1(V) on 1.5(H) and a crest width of 4 feet. All stone sizing will conform to standard 24 inch rock gradation placed on 200 pound/inch<sup>2</sup> geotextile fabric. Fish dips measuring 50 feet wide and lined with a layer of rock will be constructed every 1,000 feet to allow organism egress and ingress.

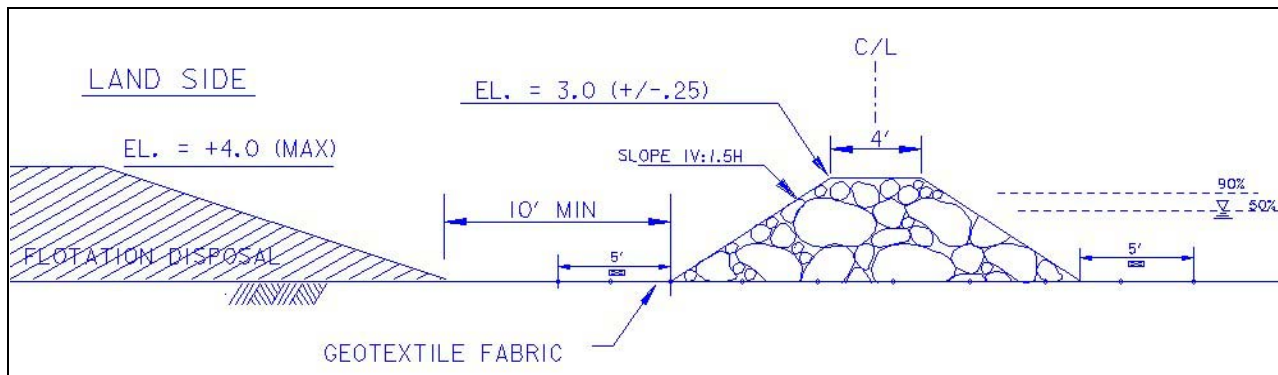


Figure 2: Typical dike section (USACE 2004).

Originally the crest elevation of the shoreline protection structure for the Grand Lake project was designed at +3.5 feet NAVD-88 which was calculated by adding the following three factors: mean water elevation, 90% wind setup, and 90% wave height. However, protecting against 90% of the wave height was considered a conservative estimation of the conditions in the Grand Lake project area. Project engineers felt that designing the rock dike to protect against ½ of the 90% wave height would reduce the cost and overall pressure on the soil foundation while still providing adequate shoreline protection. As a result, the current structure elevation design of +3.0 feet NAVD-88 was determined through the addition of the Grand Lake mean water level (+1.45 feet), 90% wind setup (0.50 feet), and ½ of the 90% wave height (0.85 feet). This design technique results in 0.2 feet of the rock dike remaining sub-aerial during storm conditions.

The geotechnical analysis (USACE 2003) revealed a relatively poor soil foundation in the project area. The soils near the southern bank of Grand Lake consist of soft and organic clays with occasional lenses of soft clay, silt, silty sand and occasional wood. Pleistocene deposits reside nine feet underneath the upper swampy marsh deposits and consist of interbedded, highly oxidized, stiff clays. The geotechnical analysis indicated that the foundation clays are over consolidated and little consolidation settlement is expected to occur (USACE 2003). After

construction, lateral spreading will cause settlement of approximately 1.76 feet with a second lift expected in three years to maintain a crest elevation of +3.25 NAVD-88. It is estimated that after the three year maintenance lift the structure will ultimately settle to a crest height of +2.56 feet NAVD-88 by year twenty. The initial placement elevation for a the Grand-White Lakes Landbridge Protection (ME-19) project, which is in the vicinity of the Grand Lake Shoreline Protection project, was built at an elevation of +2.5 NAVD-88.

According to the settlement consolidation curves, the structure elevation will fall below mean water level (+1.45 feet NAVD-88) two years post-construction, one full year before the scheduled maintenance lift planned for year three (Figure 3). It is conceivable that once submerged the foreshore rock dike will become somewhat less effective as a shoreline protection structure, and a possible threat to navigation. However, project team members determined that the benefits of the shoreline protection structure would not be significantly reduced in view of the fact that the structure would be submerged for a relatively short period of time. In addition, the dredged material placed on the landward side of the rock dike would offer further protection to the Grand Lake shoreline. To avoid possible threats to navigation, the structure will be adequately marked.

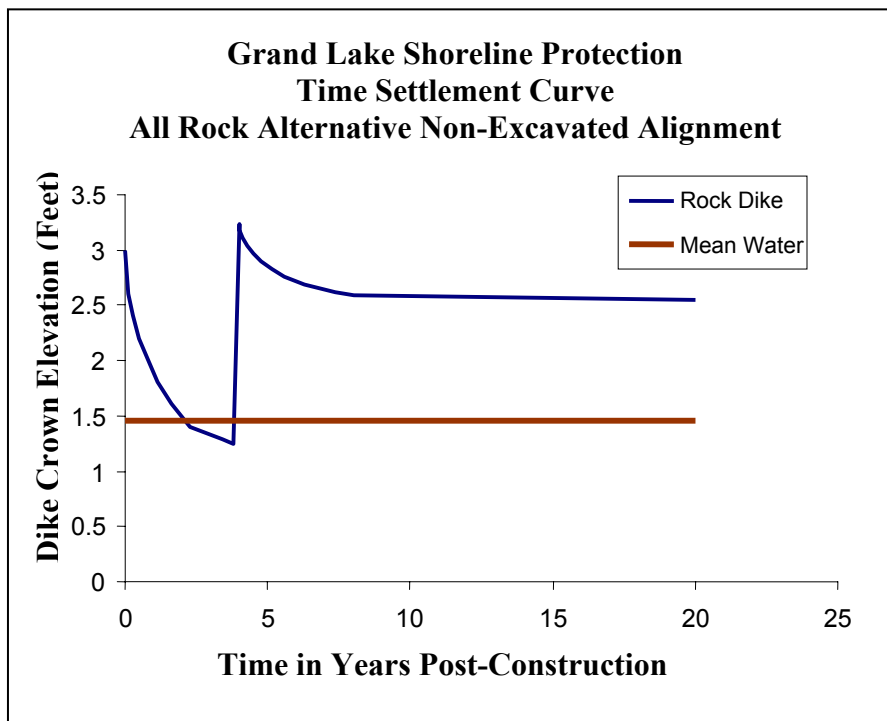


Figure 3. Time settlement curve for proposed Grand Lake foreshore rock dike after construction.

The need for a flotation canal to allow access for construction barges and equipment will produce a significant amount of dredged spoil. It is estimated that approximately 120 acres of fresh emergent marsh will be created through the beneficial use of the dredged material. Maximum allowable dredging depth of the flotation channel will be -5.0 feet NAVD-88. The spoil will be stacked at a target elevation of +3.0 feet NAVD-88 and at a maximum elevation of +4.0 feet NAVD-88. The material will be placed at a minimum of 10 feet landward from the toe

of the foreshore rock dike and 50 feet seaward of the shoreline. It is expected that the dredged spoil, through the dewatering and consolidation process, will settle to a final elevation of +1.5 to +1.9 feet NAVD-88 at year twenty. This elevation is considered optimal for healthy unbroken marsh and is consistent with the surrounding marsh elevation in the Grand Lake project areas (USACE 2004).

A possible cultural resource site (Indian midden mound) exists near the western most edge of Tebo Point. At the 30% Design Review meeting for the Grand Lake Shoreline Protection project, it was believed that dredging a flotation canal near Tebo Point could destroy valuable cultural artifacts. However, a recent United States Army Corps of Engineers archeological survey of the area determined that the footprint of the midden mound at Tebo point was not as large as originally estimated. As a result, the dredging of the flotation canal for placement of the rock material around the shoreline of Tebo Point would not likely endanger any cultural resources. Construction of the rock dike at the shoreline of Tebo Point would likely preserve any cultural resources from erosional forces while providing protection to the western flank of the Grand Lake shoreline (Figure 1). The placement of the shoreline protection structure around Tebo Point is considered optional since the increment was not included in the original project plans or Wetland Value Assessment. The decision to exercise any part of the option will be made by the Contracting Officer of Record, during construction, provided the Coastal Wetlands Conservation and Restoration Task Force approves the project to the maximum length.

## **VI. Assessment of Goal Attainability**

Environmental data and scientific literature documenting the effects of the proposed project features in field application are evaluated below to assess whether or not, and to what degree the project features will the desired ecological response.

### Armor Shoreline Protection

A number of projects using traditional shoreline protection structures have been implemented in Louisiana coastal areas to protect lake, bay, and navigational channel shorelines (Table 1). Published results of projects funded under CWPPRA and through the State of Louisiana that have used rock shoreline protection structures constructed in environments similar to the Grand Lake Shoreline Protection project are discussed below.

- The Boston Canal/Vermilion Bay Bank Protection (TV-09) project was designed to abate wind-driven wave erosion along Vermilion Bay and at the mouth of Boston Canal (Thibodeaux 1998). To accomplish that goal a 1,405 foot foreshore rock dike was constructed in 1995 at an elevation of +3.8 feet NGVD-29 along the bank of Boston Canal extending into Vermilion Bay. In 1997, two years after construction, the project was estimated to have protected 57.4 acres of marsh and 1.4 to 4.5 feet of sediment was deposited behind the breakwater while the reference area continued to erode. The rock breakwater at the mouth of Boston Canal was successful in stabilizing the shoreline (Thibodeaux 1998).
- Lake Salvador Shoreline Protection Demonstration (BA-15) project evaluated a series of shoreline protection measures at Lake Salvador, St. Charles Parish, Louisiana. Phase two of this project was conducted in 1998 and evaluated the effectiveness of a rock berm to protect the lake shoreline from higher energy wave erosion. Shoreline

surveys conducted behind the berm five months after construction indicated that the shoreline was still eroding. Subsequent surveys were not conducted due to poor weather conditions (LDNR 2000). The rock structure itself appears to be holding up well, showing little sign of deterioration and subsidence. The structure was designed to be constructed with a crest elevation of +4.0 feet NAVD-88. However, a 2002 survey of the rock dike determined that the average height of the structure was +2.51 feet NAVD-88. The average settlement of the structure, measured from 1998 to 2002, was approximately 0.29 feet. It was concluded that the rock dike was built to an inadequate crest elevation of +2.75 feet NAVD-88 (Darin Lee, LDNR, Personal Communications, July 19, 2002).

**Table 1. Design Parameters of Constructed Shoreline Protection Projects (Sorted by Construction Date).**

Project Name	Project Number	Region	Construction Date	Depth Contour (NAVD-88)	Length of Structure (feet)	Height	Distance From Shoreline (feet)
Blind Lake	N/A* (State)	4	1989	N/A	2,339	4.0 ft NAVD-88	70
Cameron Prairie National Wildlife Refuge Shoreline Protection	ME-09	4	1994	-1.0 ft	13,200	3.7 ft NAVD-88	0-50
The Freshwater Bayou Bank Protection	TV-11 (State)	3	1994	N/A	25,800	4.0 ft NAVD-88	N/A
Turtle Cove	PO-10 (State)	1	1994	N/A	1,640 (rock gabion)	3 ft (MWL)	300
Bayou Segnette	BA-16 (State)	2	1994,1998	N/A	6,800	3.0-5.0 ft NAVD-88	N/A
Boston Canal/Vermilion Bay Bank Protection	TV-09	3	1995	N/A	1,405	3.8 ft NGVD-29	N/A
Clear Marias Bank Protection	CS-22	4	1997	-1.2 ft	35,000	3.0 ft NGVD-29	0-50
Freshwater Bayou Wetlands Protection	ME-04	4	1998	-1.0 ft	28,000	4.0 ft NAVD-88	0-150
Freshwater Bayou Bank Stabilization	ME-13	4	1998	N/A	23,193	3.7-4.0 ft NAVD-88	N/A
Lake Salvador Shoreline Protection Demonstration	BA-15 Phase II	2	1998	-1.0 to 1.4 ft	8,000	Designed at 4.0 ft NAVD-88 built at 2.75 ft NAVD-88	100
Perry Ridge Shore Protection	CS-24	4	1999	N/A	12,000	3.7 to 4.0 ft NAVD-88	60
Jonathan Davis Wetland Protection	BA-20	2	2001	N/A	34,000	3.5 ft NAVD-88	N/A
Bayou Chevee Shoreline Protection	PO-22	1	2001	N/A	5,690	3.5 ft NGVD-29	300

\*N/A indicates that information was not available.

- Intracoastal Waterway Bank Stabilization and Cutgrass Planting project at Blind Lake was a state only wetland restoration project constructed to prevent the Gulf Intracoastal Waterway (GIWW) and Sweet Lake from coalescing with Blind Lake (LDNR 1992). A limestone foreshore rock dike built at an elevation of +4.0 feet



NGVD-29 was placed 70 feet from the edge of the main channel along 2,339 feet of bank on a six-inch layer of shell and filter cloth. Large stones were used to prevent movement of rocks and to allow sediments and organisms passage. In 1991, two years after project completion an average increase in elevation of 0.32 feet in the area behind the dike was observed along transects from the deposition of suspended sediments. Data indicate that the project was successful in protecting the shoreline at Blind Lake and maintaining the hydrology of the Cameron-Creole watershed.

- The Turtle Cove Shoreline Protection (PO-10) was initiated in 1993 to protect a narrow strip of land in the Manchac Wildlife Management Area which separates Lake Pontchartrain from an area known as “the Prairie” (O’Neil and Snedden 1999). Wind induced waves contributed to a shoreline erosion rate of 12.5 feet per year. A 1,642 foot rock filled gabion was constructed 300 feet from shore at an elevation of 3 feet above mean water level with the goal of reducing erosion and increasing sediment accretion behind the structure. Post construction surveys conducted during the period of October 1994 to December 1997 revealed that the shoreline had prograded at a rate of 3.47 feet per year in the project area. The rate of sediment accretion, as determined from elevation surveys conducted in January 1996 and January 1997, was 0.26 feet per year.

The soils in The Prairie and Turtle Cove area consist of Allemands-Carlin peat which is described as highly erodible organic peat and muck soils (USDA 1972). Due to the weak and compressible nature of the subsurface soils, the gabions settled 0.59 feet in just over two years (October 1994 to January 1997) (O’Neil and Snedden 1999). Also, five years after construction the rock filled gabion structure exhibited numerous breaches and required extensive maintenance (LDNR 1999).

There are also several examples of successful projects involving the use of shoreline protection to stop erosion along navigation channel banks.

- The Freshwater Bayou Wetlands Protection (ME-04) project is positioned on the western bank of Freshwater Bayou Canal across from the proposed TV-11b project (Vincent et al. 1999). Construction of this project was initiated in January 1995 and includes construction of water control structures and a 28,000 linear foot foreshore rock dike designed with a crown elevation of +4.0 feet NAVD-88. Penland et al. (1990) estimated relatively low rates of subsidence and sea level rise, at 0.13 inches per year. Analysis of initial monitoring data suggests that the rock dike reduced wave-induced shoreline erosion after construction. The average rate of shore progradation between June 1995 and July 1996 was measured at 2.2 feet per year while the reference area continued to erode at an average rate of 6.7 feet per year (Raynie and Visser 2002). In contrast, between March 1998 and May 2001, the protected shoreline eroded an average of 2.6 feet per year while the reference area eroded at an average of 10.0 feet per year (Raynie and Visser 2002). Substandard recycled construction material and inadequate funds for maintenance of the structure, which were not disbursed in a timely manner, are believed to be the reason for the increase in erosion rates in the project area (Raynie and Visser 2002).

- The Cameron Prairie National Wildlife Refuge Shoreline Protection (ME-09) project, constructed in 1994, is located in north-central Cameron Parish and includes 350 acres of freshwater wetlands (Barrilleaux and Clark 2002). A 13,200-foot rock breakwater was constructed at an elevation of +3.7 feet NAVD-88, 50 feet from (and parallel to) the northern shore of the GIWW to prevent wave action from eroding the bank and breaching into the interior marsh. Aerial photography and survey points were used to monitor any changes in land to water ratio and shoreline position. Three years after construction results indicate that the project area shoreline advanced  $9.8 \pm 7.1$  feet per year while the reference area retreated  $4.1 \pm 3.1$  feet per year. A two-sample t-test revealed a significant difference was detected between the shoreline change rate and the project reference areas ( $P < 0.001$ ).
- The Clear Marais Bank Protection (CS-22) project was constructed in 1997 at an elevation of +3.0 feet NGVD-29 to prevent breaches in the GIWW shoreline and subsequent erosion of the interior marsh while preventing saltwater intrusion (Miller Draft Report 2001). Approximately 35,000 linear feet of rip-rap was placed 50 feet from the northern shoreline of the GIWW. Results indicate that the foreshore rock dike has been effective in preventing erosion of the GIWW shoreline. A net gain of 13 feet per year occurred behind the rock structure while the reference area continued to erode (Raynie and Visser 2002).

#### Submerged Aquatic Vegetation

Submerged Aquatic Vegetation plays a crucial role in the littoral zone of aquatic ecosystems (Wetzel 1983). Submerged Aquatic Vegetation dissipates the energy of wind and wave action, reduces the amount of bottom sediment resuspension, serves as effective traps for inorganic and organic particulates, and provides suitable forage for ducks, invertebrates and larval fish (Spence 1982, Foote and Kadlec 1988, Lodge 1991). It is widely understood that the limiting factor controlling the recovery of SAV in lakes is light attenuation (Sager et al. 1998). Submerged aquatic vegetation habitat creation is expected to occur behind the shoreline protection structure in White Lake due to the reduction of turbidity in the shallow open water areas and the resulting increase in overall light penetration.

#### Summary/Conclusions

Projects such as TV-09, BA-15, CS-22 and ME-09, that were designed to an adequate elevation and located in areas with relatively good soil foundations, were successful in reducing erosion and promoting accretion due to occasional overwash of waves and subsequent deposition of sediment. However, ME-04 and PO-10 were not as successful over the long term due to poor soil foundations, improper design, the use of substandard materials, and/or inadequate maintenance funds.

According to the geotechnical report (USACE 2004) the soil foundation in the Grand Lake Shoreline Protection project area is considered poor. In an effort to reduce the overall pressure on the soil foundation, the structure will initially be built at an elevation of +3.0 feet NAVD-88. A maintenance lift, which will raise the structure elevation to an approximate height of +3.25 feet NAVD-88, is expected three years post-construction. There is some concern that two years after initial construction the structure will sink below mean water level (+1.45 ft

NAVD-88), one year prior to the scheduled maintenance lift (year three). However, the structure will be submerged for a relatively short period of time before the scheduled lift at year three is implemented and it was determined by the project team that the benefits of the project would not be significantly reduced. In addition, the dredged spoil placed landward of the structure during construction will offer additional protection to the Grand Lake shoreline.

## **VII 95% Design Review Recommendations**

Based on information gathered from similar restoration projects, engineering designs and related literature, the proposed strategies in the Grand Lake Shore Protection project will likely achieve the desired goals. At this time, the Louisiana Department of Natural Resources, Coastal Restoration Division recommends that the Grand Lake Shoreline Protection project be considered for CWPPRA Phase 2 authorization.

This document reflects the current project design as of the 95% Design Review meeting, incorporates all comments and recommendations received following the meeting, and is current as of August 31, 2004.

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# Enclosure 4-J

Section 303(e) Determination

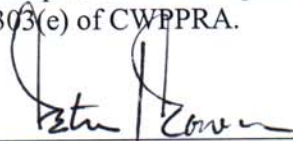
SECTION 303(e) DETERMINATION, CWPPRA

Project: Grand Lake Shoreline Protection Project, Cameron Parish, Louisiana

In accordance with section 303(e) of the Coastal Wetlands Planning, Protection and Planning Act, it has been determined that appropriate land rights will be acquired for construction, operation and maintenance of the project, subject to such terms and conditions as necessary to ensure that wetlands restored, enhanced or managed through this project will be administered for the long-term conservation of the lands and waters and the dependent fish and wildlife population. The proposed real estate rights to be acquired are legally sufficient and meet the long-term conservation objectives discussed above.

By letter dated July 6, 2004, Mr. W. Britt Paul of the Natural Resources Conservation Service advised that overgrazing does not occur on project lands or lands affected thereby, nor does he see the potential for grazing. If overgrazing should occur in the future, a grazing plan must be established for the project.

Accordingly, by the authority delegated to me by the Secretary of the Army, and given compliance with the provisions set forth above, I approve the project in accordance with Section 303(e) of CWPPRA.



Peter J. Rowan  
Colonel, U.S. Army  
District Engineer

Date: 17 Aug 04

# Enclosure 4-K

Overgrazing Determination





Natural Resources Conservation Service  
3737 Government Street  
Alexandria, LA 71302

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July 6, 2004

Mr. Chris Monnerjahn  
U.S. Army Corps of Engineers  
New Orleans District  
Planning and Project Management  
Coastal Restoration Branch  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Dear Mr. Monnerjahn:

RE: Grand Lake Shoreline Protection (ME-21)

I am in receipt of your request for an overgrazing determination for the Grand Lake Shoreline Protection (ME-21). I contacted our local district conservationist and our state resource conservationist to discuss the grazing in the project area. Currently, livestock are not grazing in the area nor do we see a potential for grazing once the project is installed. Therefore, it is our opinion that overgrazing is not a problem in this project area. If you have any questions, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read "W. Britt Paul".

W. Britt Paul  
Assistant State Conservationist  
for Water Resources and Rural Development

cc: Bruce Lehto, Area Conservationist, NRCS, Leesville, Louisiana  
Charles Starkovich, District Conservationist, NRCS, Lake Charles, Louisiana  
Kevin Blomquist, State Grazing Lands Specialist, NRCS, Alexandria, Louisiana  
John Jurgensen, Civil Engineer, NRCS, Alexandria, Louisiana

# Enclosure 4-L

Revised Fully-Funded Cost Estimate

# Enclosure 4-N

Prioritization Fact Sheet

## PRIORITIZATION FACT SHEET

Updated November 21, 2006

**Project Name and Number:** Grand Lake Shoreline Protection; ME-21



**Goals:** 1) stop shoreline erosion along the South Shore of Grand Lake from Superior Canal to Tebo Point. 2) promote accretion between the breakwater and the shore.

### Proposed Solution:

A final design has been developed and is recommended for construction. That design consists of approximately 37,800 linear feet of stone dike stretching from Superior Canal to the mouth of Catfish Lake with an option to place up to an additional 5,700 feet of dike to the west of the base project footprint (option reach). The Technical Committee and Task Force will be given the option to fund the increased length. This prioritization fact sheet covers both funding alternatives up for consideration. The rock dike will be situated along the -1.0-ft NAVD 88 contour in approximately 2.0 feet to 3.0 feet of water, stage dependant. The dike crown will be constructed to an elevation of +3.0 NAVD88 (+/-0.25') and have a width of approximately 4.0 feet. The dike will have front and back side-slopes of 1.0-foot vertical on 1.5-foot horizontal. The 37,800 lf of rock dike will benefit 445 acres of existing fresh marsh and 717 acres of open water (total 1,162 acres). Shoreline loss will be prevented and some marsh will accrete south of the breakwater so at the end of 20 years, 495 acres of marsh will be protected/created. The proposed extension around Tebo Point will benefit an additional 45 acres of fresh marsh and an additional 32 acres of open water. At the end of 20 years, an additional 45 acres will be protected/created. There will be a low degree of risk associated with this project because monitoring has indicated that breakwaters significantly reduce erosion. The project should continue providing benefits more than 20 years after construction because there is a scheduled maintenance event in year 3 and year 15.

## **Proposed Prioritization Criteria Scores and Justification**

### **I. Cost Effectiveness** (cost/net acre)

#### **Grand Lake SP without extension:**

The estimated total fully funded project cost provided by Mr. Allan Hebert, chair of the Economics Workgroup, on November 17, 2006 is \$24,117,374. The project benefits 495 total acres. Therefore, the cost per acre for this project is \$48,722/acre.

**The proposed score for this criterion is 5.**

#### **Grand Lake SP with extension:**

The estimated total fully funded project cost provided by Mr. Allan Hebert, chair of the Economics Workgroup, on November 17, 2006 is \$21,737,859. The project benefits 540 (495+45) total acres. Therefore, the cost per acre for this project is \$40,255/acre.

**The proposed score for this criterion is 5.**

### **II. Area of Need, High Loss Area**

According to a comparison of the 1978-79 aerial photography with 1997-98 photography, shoreline erosion rates in this area vary from 11 to 32 feet per year. The project is located in the Mermentau Basin. According to Kevin Roy's spreadsheet, the FWOP loss rate is 25 ft/year. The score will be the same with or without the extension.

**Grand Lake SP without extension: The proposed score for this criterion is 7.5.**

**Grand Lake SP with extension: The proposed score for this criterion is 7.5.**

### **III. Implementability**

The project has no obvious issues affecting implementability. The score will be the same with or without the extension.

**Grand Lake SP without extension: The proposed score for this criterion is 10.**

**Grand Lake SP with extension: The proposed score for this criterion is 10.**

### **IV. Certainty of Benefits**

The project is an inland shoreline protection project. The score will be the same with or without the extension.

**Grand Lake SP without extension: The proposed score for this criterion is 10.**

**Grand Lake SP with extension: The proposed score for this criterion is 10.**

**V. Sustainability of Benefits**

According to the prioritization procedures, the full project benefits are not expected to continue beyond TY 20 because the breakwater would not be maintained beyond the end of the CWPPRA project life. It is, however, anticipated that the breakwater would continue to perform fully from TY21 - TY27, would only prevent 75% of the shoreline erosion between TY28 and TY30.

Grand Lake SP without extension:

TY21-TY27 0 ft/yr eroded = 0 ft/yr X 37,800 ft = 0 acres

TY28-TY30 6.15 ft/yr eroded = 6.15 ft/yr X 37,800 ft = 232,470 ft<sup>2</sup> ÷ 43560 = 5.34 ac/yr

Target Year	Baseline Erosion 24.6 ft/yr
20	495 acres
21	495 acres
22	495 acres
23	495 acres
24	495 acres
25	495 acres
26	495 acres
27	495 acres
28	495 ac - 5.34 ac = 489.66 acres
29	489.66 ac - 5.34 ac = 484.32 acres
30	484.32 ac - 5.34 ac = 478.98 acres

The net change in acres of marsh from TY 20 to TY 30 = -16.02 (495-478.98), which is a 3.24% decrease (16.02 acres/495 acres = 0.0324).

Grand Lake SP without extension: **The proposed score for this criterion is 10.**

Grand Lake SP with extension:

TY21-TY27 0 ft/yr eroded = 0 ft/yr X 43,500 ft = 0 acres

TY28-TY30 6.15 ft/yr eroded = 6.15 ft/yr X 43,500 ft = 267,525 ft<sup>2</sup> ÷ 43560 = 6.14 ac/yr

Target Year	Baseline Erosion 24.6 ft/yr
20	540 acres
21	540 acres
22	540 acres
23	540 acres
24	540 acres
25	540 acres
26	540 acres
27	540 acres

28	540 ac – 6.14 ac = 533.86 acres
29	533.86 ac – 6.14 ac = 527.72 acres
30	527.72 ac – 6.14 ac = 521.58 acres

The net change in acres of marsh from TY 20 to TY 30 = -18.42 (540-521.58), which is a 3.41% decrease (18.42 acres/540 acres = 0.0341).

Grand Lake SP with extension:    **The proposed score for this criterion is 10.**

**VI. Increasing riverine input in the deltaic plain or freshwater input and saltwater penetration limiting in the Chenier plain**

The project will not affect freshwater inflow or salinity. The score will be the same with or without the extension.

Grand Lake SP without extension:    **The proposed score for this criterion is 0.**

Grand Lake SP with extension:    **The proposed score for this criterion is 0.**

**VII. Increased sediment input**

The project will not increase sediment input over that presently occurring. The score will be the same with or without the extension.

Grand Lake SP without extension:    **The proposed score for this criterion is 0.**

Grand Lake SP with extension:    **The proposed score for this criterion is 0.**

**VIII. Maintaining or establishing landscape features critical to a sustainable ecosystem structure and function**

The project serves to protect, for at least the 20-year life of the project, the Grand Lake shoreline (a landscape feature), which is critical to the mapping unit. See prioritization criteria. The score will be the same with or without the extension.

Grand Lake SP without extension:    **The proposed score for this criterion is 5.**

Grand Lake SP with extension:    **The proposed score for this criterion is 5.**

**Weighting per Criteria:**

**Grand Lake SP without extension:**

Total Prioritization Score: 61.25

<b>CRITERION</b>		<b>Weight</b>	<b>Score</b>	<b>Weighted Score</b>
<b>I</b>	Cost-Effectiveness	2.0	5	10
<b>II</b>	Area of Need	1.5	7.5	11.25
<b>III</b>	Implementability	1.5	10	15
<b>IV</b>	Certainty of Benefits	1.0	10	10
<b>V</b>	Sustainability	1.0	10	10
<b>VI</b>	HGM Riverine Input	1.0	0	0
<b>VII</b>	HGM Sediment Input	1.0	0	0
<b>VIII</b>	HGM Structure and Function	1.0	5	5
<b>TOTAL</b>				61.25

**Grand Lake SP with extension:**

Total Prioritization Score: 61.25

<b>CRITERION</b>		<b>Weight</b>	<b>Score</b>	<b>Weighted Score</b>
<b>I</b>	Cost-Effectiveness	2.0	5	10
<b>II</b>	Area of Need	1.5	7.5	11.25
<b>III</b>	Implementability	1.5	10	15
<b>IV</b>	Certainty of Benefits	1.0	10	10
<b>V</b>	Sustainability	1.0	10	10
<b>VI</b>	HGM Riverine Input	1.0	0	0
<b>VII</b>	HGM Sediment Input	1.0	0	0
<b>VIII</b>	HGM Structure and Function	1.0	5	5
<b>TOTAL</b>				61.25

**Preparers of Fact Sheet**

Chris Monnerjahn, USACE PM, 504-862-2415, [christopher.j.monnerjahn@mvn02.usace.army.mil](mailto:christopher.j.monnerjahn@mvn02.usace.army.mil)

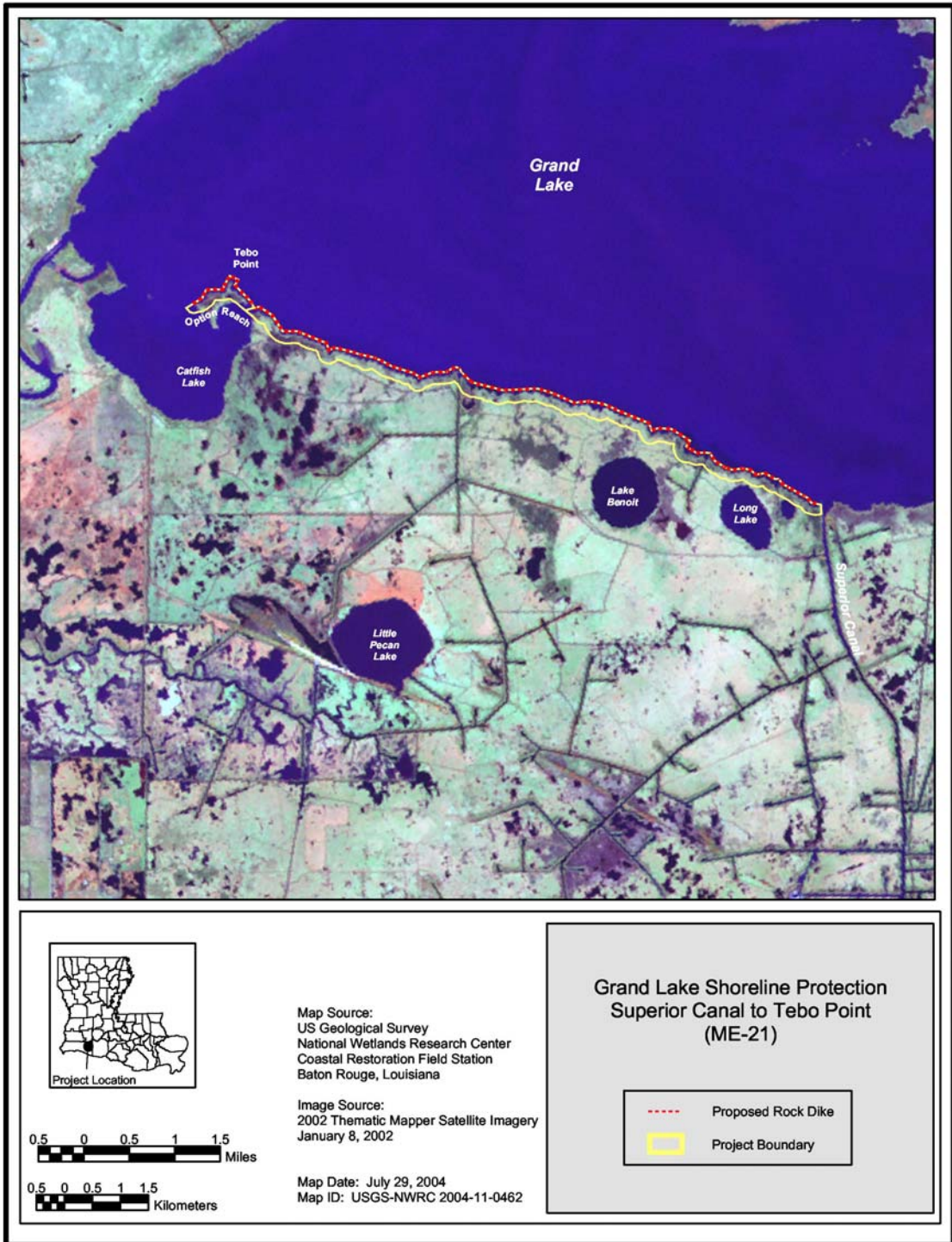
Kenneth Duffy, LDNR PM, 225-342-4106, [kend@dnr.state.la.us](mailto:kend@dnr.state.la.us)

**References**

None cited



# Project Map



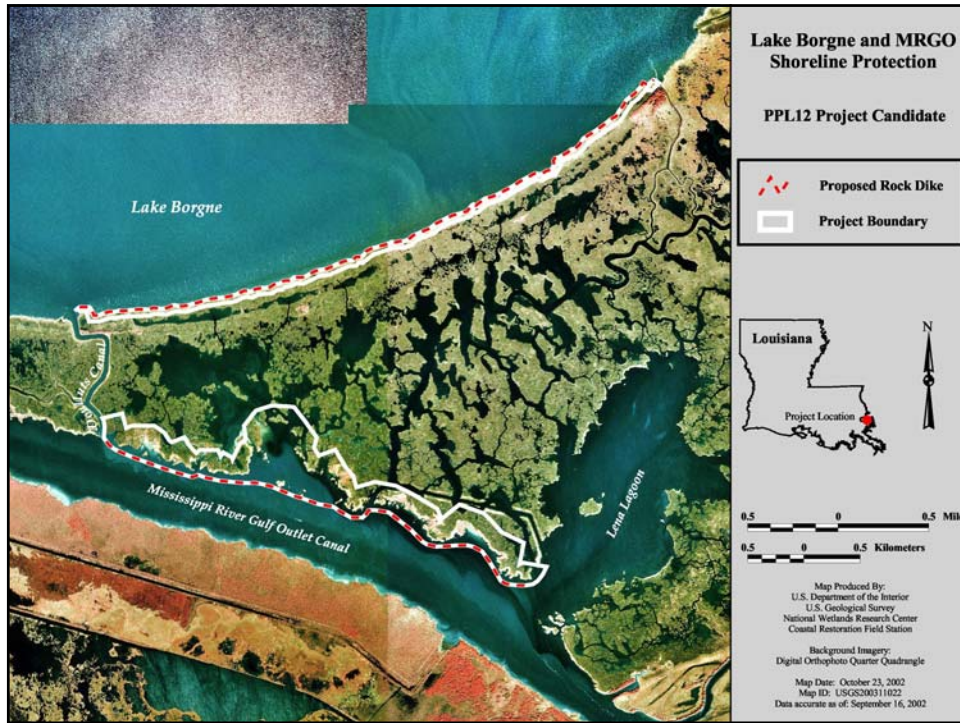
PO-32b - Lake Borgne & MRGO Shoreline Prot - MRGO\*\*

\*\* Lake Borgne segment of the Lake Borgne & MRGO Shoreline Protection  
Project constructed under Corps funding



## Project Background

- Authorized in January 2003 by Breaux Act (CWPPRA) Task Force on PPL12
- Originally two segments totaling ~32,750 linear feet of rock dike to stop shoreline erosion along the southern shoreline of Lake Borgne and the north bank of the Mississippi River Gulf Outlet
- Task Force directed that the projects be designed as separable reaches in Phase I
- USACE building Lake Borgne segment with hurricane recovery funds Congress provided in the 3<sup>rd</sup> Supplemental



## Wetlands Loss Problems

- The northern shoreline of the MRGO experiences high rates of erosion
- Rate has been estimated at 24ft/yr and higher in some places
- Due mainly to vessel wakes from the ship channel and bank sloughing

## Benefits and Costs

### MRGO segment

- 14,360 ft offbank breakwater
- Crown of breakwater set at +5.0 ft high
- Protects 173 acres of brackish marsh
- Fully funded cost estimate \$35,985,438
- Phase II increment 1 request is \$31,924,591

## Project Considerations

- Combined project would prevent erosion of a critical marsh peninsula separating Lake Borgne and the MRGO
- Area fell directly within the eye path of Hurricane Katrina
- Area of marsh protected fronts the community of Hopedale and properties along roadway near channel, cultural resources midden, and oak ridge

# *Questions*



Doullut's Canal  
St. Bernard Parish, LA

ME-18 - Rockefeller Refuge

**CWPPRA**  
**Rockefeller Gulf Shoreline Stabilization**  
**(ME-18)**  
**Phase II Request**

**Technical Committee Meeting**

December 5, 2006

Baton Rouge, LA

**Project Overview**

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**Project Location:** Region 4, Calcasieu - Sabine Basin, Cameron Parish, Gulf shoreline between Joseph Harbor and Beach Prong.

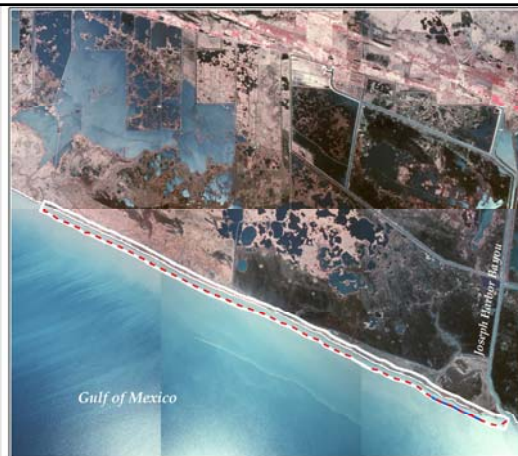
**Problem:** Shoreline erosion rates within the project area vary from 30 to 40 feet per year, with areas near the eastern end of the project approaching 100 feet per year.



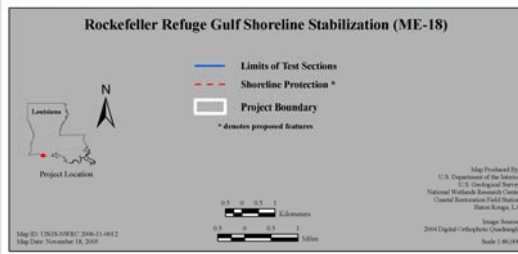
## Project Goals

- Halt gulf shoreline retreat and direct marsh loss from Beach Prong to Joseph Harbor
- Protect Saline Marsh Habitat
- Enhance Fish and Wildlife Habitat

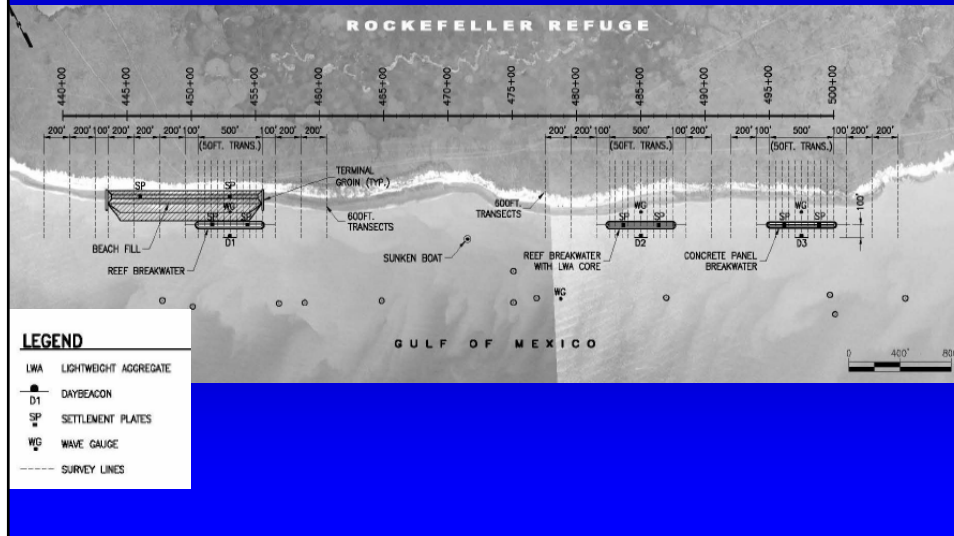
## Project Map



Rockefeller Refuge Gulf Shoreline Stabilization (ME-18)



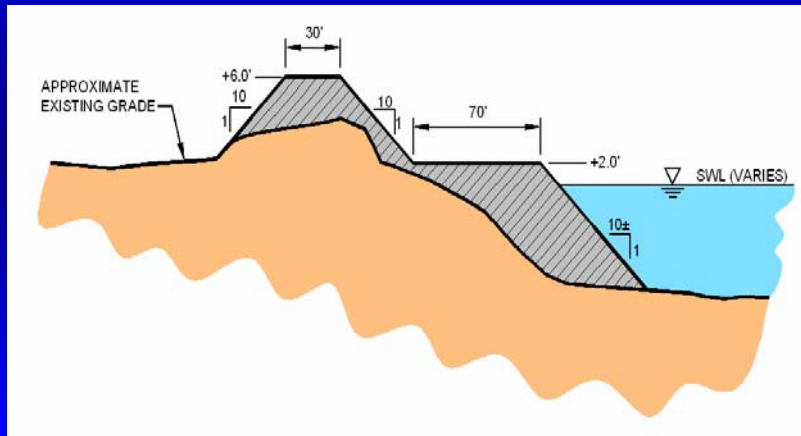
# Layout



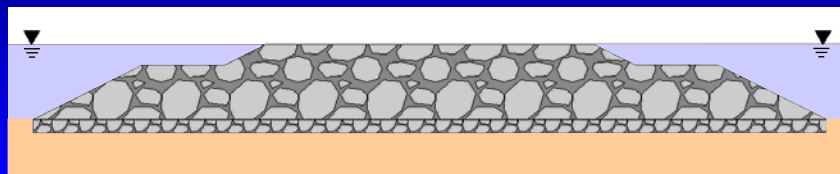
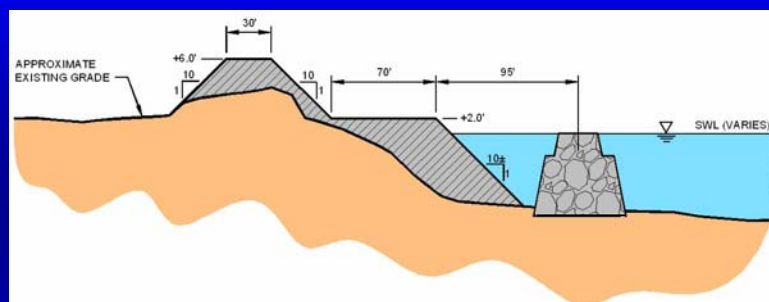
# Project Features Overview

- Construct and monitor four (4) test sections to determine their constructability, wave attenuation characteristics and the associated shoreline response to each section. The test sections are:
  - Gravel/Crushed Rock Beach Fill
  - Reef Breakwater with Beach Fill
  - Reef Breakwater with Light Weight Aggregate Core
  - Concrete Panel Breakwater

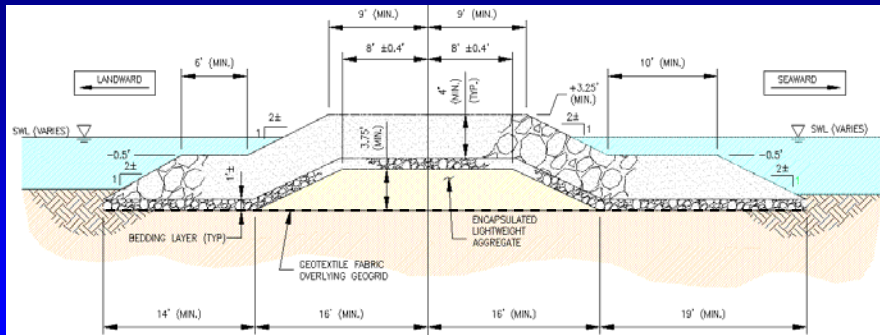
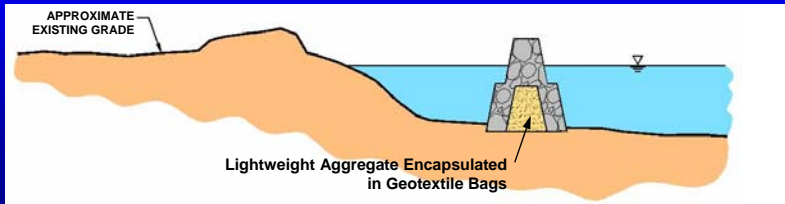
## Gravel/Crushed Rock Beach Fill



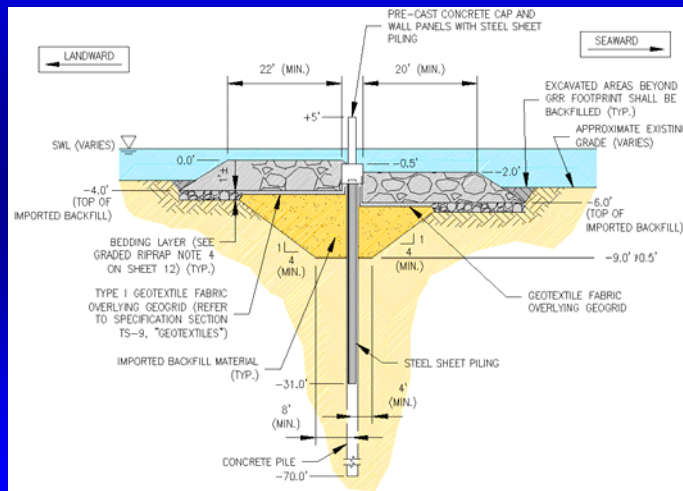
## Reef Breakwater with Beach Fill



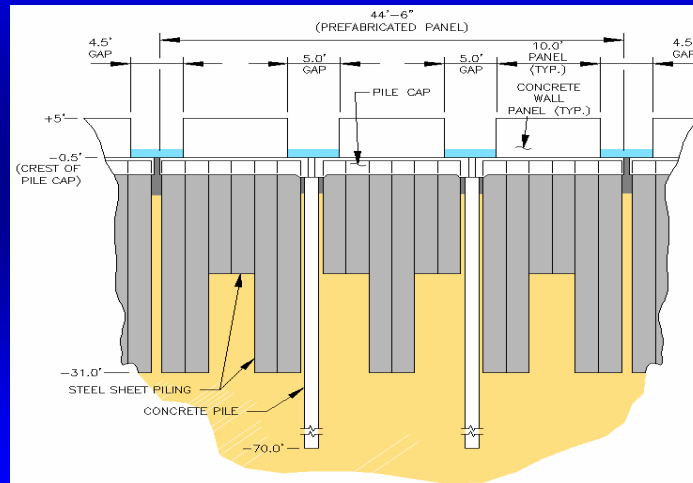
# Reef Breakwater with LWA Core



# Concrete Panel Breakwater



## Concrete Panel Breakwater



## Project Benefits & Costs

- Given the lack of proven design alternatives available for the conditions at Rockefeller Refuge, the analysis of test sections is the only viable option. The performance of these test sections will allow the Project Team to select one alternative for implementation over the full 9.2 mile project .
- The Fully Funded Cost of the Proposed Test Sections is approximately 12% of the Original Project Costs, or \$12,953,343
- The Prioritization Score is: 49.25

## **Project Comparison/Contrast**

The Present vs. PPL #10

---

### **Authorized Project - PPL 10**

- Single 9.2 mile continuous nearshore rock breakwater placed approximately 400' offshore at the -5' contour

### **Currently Proposed Project**

- Construct four (4) Test Sections to determine a preferred alternative for implementation over the entire project length

# **Questions?**



**UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE  
SEFC/Estuarine Habitats & Coastal Fisheries Center  
646 Cajundome Boulevard  
Lafayette, Louisiana 70506

DECEMBER 6, 2006

Mr. Tom Podany (Chairman)  
CWPPRA Technical Committee  
Assistant Chief of Planning, Programs and Projects Management  
U.S. Army Engineer District, New Orleans  
P.O. Box 60267  
New Orleans, LA 70160-0267

**Subject: Second Phase II Authorization Request for Rockefeller Refuge Shoreline Stabilization (ME-18).**

Dear Mr. Podany,

As the lead federal agency for the Rockefeller Refuge Shoreline Stabilization project the National Marine Fisheries Service (NMFS) hereby submit a second request for phase II authorization, in accordance with the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Standard Operating Procedure (SOP) Manual. The initial request from December 2005 is attached.

**1.) Description of Phase I Project**

This project was authorized under the Coastal Wetland Planning Protection and Restoration Act (CWPPRA) Project Priority List 10 for the protection of an estimated 9.2-mile stretch of shoreline at Rockefeller State Wildlife Refuge. Shoreline loss at Rockefeller averages 39 feet/yr, equivalent to the loss of marsh the size of a football field every week. Project costs were originally estimated to be 96 million (100% funding).

**2.) Overview of Phase I Tasks, Process and Issues**

Over 80 alternatives were considered during a feasibility study based on their ability to (1) prevent beach erosion for up to Category 1 hurricane conditions, estimated to have a return frequency of about 10 years at the project site, (2) be designed, constructed, monitored, and maintained over a 20-year design life for under \$50 million, and (3) where practicable, remain stable for more severe storm conditions up to a 100-year event. A key conclusion from the geotechnical investigation is that the subsurface consists of very soft clay to a depth of approximately 40 ft, which eliminated most conventional shoreline protection alternatives due to bearing capacity and settlement issues. This, coupled with budget limitations of the CWPPRA program, made finding viable alternatives that met these goals extremely challenging. Numerous alternatives were considered, both conventional and unconventional.

Given the unique challenges provided at the Rockefeller Refuge shoreline, questions remained on constructability, design, and performance of restoration features that would meet the project goals. At the February 17, 2005 Task Force meeting, 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. The test installations would allow detailed evaluation and comparison of each alternative in terms of constructability, ability to deal with the soft soils, wave attenuation, shoreline response, maintenance requirements, cost, and aesthetics. Enclosure 2 contains the fact sheet, updated

	Phase I Fully Funded Cost	Phase 2 Fully Funded Cost	AAC/AAHU	AAHU	Acres Protected/ Created
ORIGINAL	\$1,929,888	\$94,058,750	\$22,799	344	920 ac

Based on the opinion of the Environmental Working Group and Engineering Working Group, no revision of the WVA was made.

**N. Prioritization**

	Cost Effectiveness	Area of Need	Implementability	Certainty of Benefits	Sustainability	HGM Riverine Input	HGM Sediment Input	HGM Sturcute And Function
Score	10	11.25	15	6	2	0	0	5
Total	49.25							

Based on the opinion of the Environmental Working Group and Engineering Working Group, no revision in Prioritization was made

Sincerely,

*Erik Zobrist, Ph.D.*  
 Erik Zobrist, Ph. D.  
 NMFS Program  
 Manager







**UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration**

NATIONAL MARINE FISHERIES SERVICE  
SEFC/Estuarine Habitats & Coastal Fisheries Center  
646 Cajundome Boulevard  
Lafayette, Louisiana 70506

NOVEMBER 22, 2005

Mr. Tom Podany (Chairman)  
CWPPRA Technical Committee  
Assistant Chief of Planning, Programs and Projects Management  
U.S. Army Engineer District, New Orleans  
P.O. Box 60267  
New Orleans, LA 70160-0267

Dear Mr. Podany,

As the lead federal agency for the Rockefeller Refuge Shoreline Stabilization project authorized by the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Task Force on the 10<sup>th</sup> Project Priority List, the National Marine Fisheries Service (NMFS) is requesting, in accordance with CWPPRA's Standard Operating Procedure (SOP), approval to proceed with construction of this project.

This project was authorized for the protection of an estimated 9.2 mile stretch of shoreline at Rockefeller State Wildlife Refuge. Shoreline loss at Rockefeller averages 39 feet/yr, making the acreage lost every week equivalent to that of a football field. Project costs were originally estimated to be 96 million (100% funding). A feasibility study reviewed over 80 design alternatives based on their ability to (1) prevent beach erosion for up to Category 1 hurricane conditions, which were estimated to have a return frequency of about 10 years at the project site (2) be designed, constructed, monitored, and maintained over a 20-year design life for under \$50,000,000, and (3) where practicable, remain stable for more severe storm conditions up to a 100-year event. A key conclusion from the geotechnical investigation is that the subsurface consists of very soft clay to a depth of approximately 40 ft, which eliminated most conventional shoreline protection alternatives due to bearing capacity and settlement issues. This, coupled with budget limitations of the CWPPRA program, made finding viable alternatives that met these goals extremely challenging. Numerous alternatives were considered, both conventional and unconventional.

Given the unique challenges provided at the Rockefeller Refuge shoreline, questions remained on constructability, design, and performance of restoration features that would meet the project goals. At the February 17, 2005 Task Force meeting, 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. The test installations would allow detailed evaluation and comparison of each alternative in terms of constructability, ability to deal with the soft soils, wave attenuation, shoreline response, maintenance requirements, cost, and aesthetics.



ENCLOSURE

2

**FACT SHEET**  
November 20, 2006

**Project Name and Number:** Rockefeller Refuge Shoreline Stabilization (ME-18)  
(Project Priority List 10)

**Problem:** The average long-term coastal erosion rate in the project area is estimated to be 30.9 feet/year. Recent land loss rates are estimated at 50 feet/year (57 acres/year). Storms can create short-term rates that are much larger than this. For example, in 1998, Tropical Storm Frances caused an estimated 60-65 feet of erosion along this stretch during a four-day period according to anecdotal information. Intertidal marshes are among the most productive ecosystems on earth and their rapid disappearance may significantly impact the economy of South Louisiana. Action is needed to provide immediate protection to existing wetlands.

**Goals:** Halting Gulf shoreline retreat and direct marsh loss, protecting saline marsh habitat, and enhancing fish and wildlife habitat along a 9.2 mile stretch of Rockefeller refuge is the primary goal. With unproven methods of achieving that goal in this environment, an additional goal of the projects is to determine which of the four feasible alternatives would most economically and viably provide protection prior to construction of the entire length.

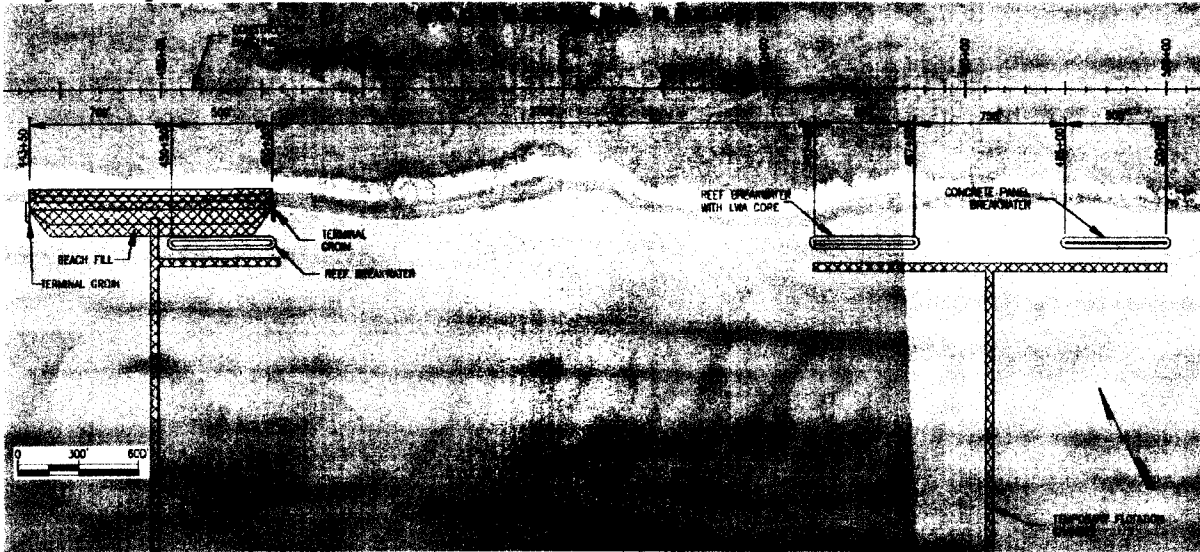
**Project Status:** Construction of the four feasible designs is awaiting permit and funding.

**Proposed Solution:** Evaluate four alternatives to compare how each alternative performs in terms of constructability, ability to deal with the soft soils, wave attenuation, shoreline response, maintenance requirements, cost, and aesthetics. The four test sections are: (1) Beach Fill with gravel/crushed stone, (2) Reef Breakwater with sand or gravel/crushed rock beach fill, (3) Reef Breakwater with light weight aggregate (LWA) core, and (4) Concrete Panel Breakwater.

**Issues:** Poor soil conditions and low bearing capacity severely limit the type of shoreline protection able to be constructed to provide the desired level of shoreline protection. After consideration of over 80 alternatives, and variations of alternatives for construction, most options were determined to be non-feasible for one or more of the following reasons: design parameters, constructability, cost, poor performance, unproven design for Gulf application, not effective for longer wave periods of open coast, unproven design, subject to debris punctures and deflation, soil load, and reflection over rock. Four alternatives are considered feasible, but are unproven for Gulf application.

**Estimated Costs and Benefits:** Fully funded the cost is estimated to be \$12,953,343.

**Project Map:**

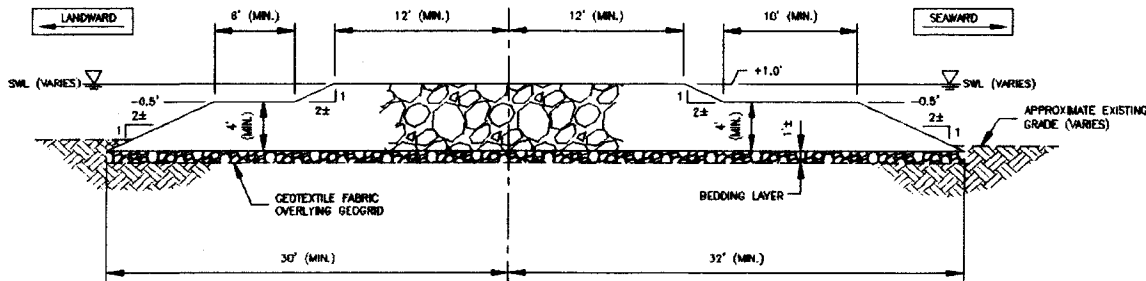


**Project Features:**

Construction of prototype test installations for four alternatives is proposed, as described in #2 above. Evaluation of the test installations will serve as the basis for implementation of the full 9.2 mile project based on constructability, ability to deal with the soft soils, wave attenuation, shoreline response, cost, maintenance requirements, and aesthetics.

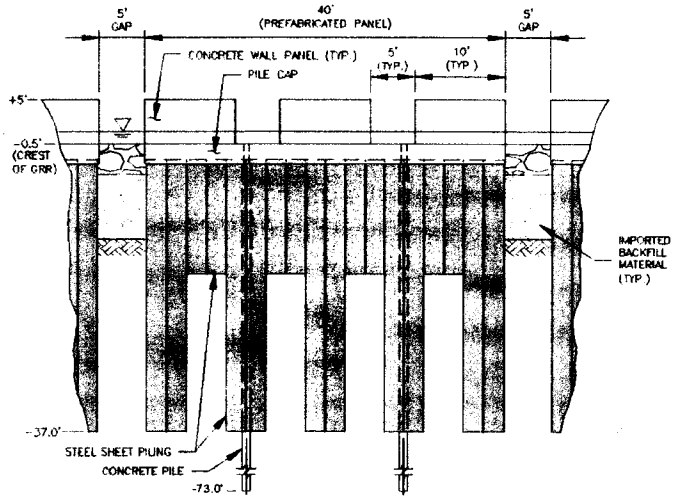
The location of the testing program was selected to be at the eastern end of the 9.2-mile project area a minimum of 2,000 ft from Joseph Harbor. The proposed layout for the testing program affects a total of 0.56 miles along the shoreline.

-The Beach Fill with Gravel/Crushed Stone (G/CS) section consists of adding gravel/crushed stone (G/CS) to the existing soft clay shoreline.



**Typical Section of a Reef Breakwater**

- The Reef Breakwater with G/CS Beach Fill consists of constructing a reef breakwater conjunction with a landward G/CS beach fill. The two beach fill alternatives would be joined to create a continuous 1,200 ft fill test section with a terminal groin at each end. The reef breakwater would be located within the eastern 500 ft of the fill area, with the remaining 700 ft being unprotected fill that comprises the Beach Fill with G/CS test section.



***Typical Elevation of Concrete Panel Breakwater Alternative***

ENCLOSURE

4-C

John Wrey

# State of Louisiana



M.J. "MIKE" FOSTER, JR.  
GOVERNOR

JACK C. CALDWELL  
SECRETARY

## DEPARTMENT OF NATURAL RESOURCES

November 28, 2001

### Memorandum

To: Greg Grandy, CRD Project Manager

From: V.J. Marretta, CRD Land Section

RE: Rockefeller Refuge Gulf Shoreline Stabilization Project ME-18  
Completion of Landrights

The CRD Land Section has completed all landrights necessary to proceed to construction contracting on the above referenced project. The following information has already been forwarded to you under separate memorandum:

- Servitude Agreements
- 1   Letter Agreement with the Department of Wildlife and Fisheries (DWF)
- Right-of-Passage Agreements
- 1   CWPPRA Section 303(e) approval
- N/A   Assignment of Rights to Federal Sponsoring Agency (No Assignment to NMFS)
- 1   Landrights Certification Letter

Note the following:

- 1) Comply with the requirements noted in the DWF Letter Agreement dated July 5, 2001, a copy of which has already been provided to you.
- 2) Coordinate all activities with Guthrie Perry, DWF Programs Manager at (337) 491-2593.

Please be sure to closely review the documents to note anything that may need to be included in contract specifications, such as notification periods, physical construction and/or maintenance servitude limits, or the addition of the landowner or the State as an additional insured on any existing insurance policies of the contractor. In cases where the federal sponsor is the contracting party, please notify the agency project

ENCLOSURE

4-E



*State of Louisiana*



**RECEIVED**

OCT 24 2005

**NMFS, LAFAYETTE**

**SCOTT A. ANGELLE**  
SECRETARY

**KATHLEEN BABINEAUX BLANCO**  
GOVERNOR

**DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT**

October 20, 2005

Dr. John Foret  
National Marine Fisheries Service  
Estuarine Habitats and Coastal Fisheries Center  
646 Cajun Dome Blvd, Rm. 175  
Lafayette, LA 70506

Re: 95% Design Review for Rockefeller Refuge Gulf Shoreline Stabilization  
Statement of Local Sponsor Concurrence

Dear Dr. Foret:

The 95% Design Review Conference was held on September 20<sup>th</sup>, 2005 for the Rockefeller Refuge Gulf Shoreline Stabilization project. Based on our review of the project information compiled to date, and, in response to your letter of support for the project, we, as local sponsor, concur with the 95% Design Package. LDNR recommends that Phase II funds be requested from the CWPPRA Task Force at the next available opportunity.

This request reflects the construction and monitoring of the designed test sections as documented in the Final Design Report. At the end of the prescribed monitoring period, the success of the individual test sections will be evaluated and a decision made whether to continue with a comprehensive design for the entire project limits.

ENCLOSURE

4-F



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
 NATIONAL MARINE FISHERIES SERVICE  
 1315 East-West Highway  
 Silver Spring, Maryland 20910  
 THE DIRECTOR

MEMORANDUM FOR: Rodney F. Weiher, Ph.D.  
 Chief Economist, NOAA Program Planning and Integration

FROM: William T. Hogarth, Ph.D. *[Signature]*  
 Assistant Administrator for Fisheries

SUBJECT: Finding of No Significant Impact (FONSI) for the Rockefeller  
 Refuge Gulf Shoreline Stabilization Project, Cameron Parish,  
 Louisiana

Based on the subject Environmental Assessment, I have determined that no significant environmental impacts will result from the proposed action. I request your concurrence in this determination by signing below. Please return this memorandum for our files.

1. I concur. *[Signature: R. Weiher]* 9/11/06  
 Date

2. I do not concur. \_\_\_\_\_  
 Date

Attachments



ENCLOSURE

4-G

## **Rockefeller Refuge Gulf Shoreline Stabilization (ME-18)**

### **Ecological Review Summary**

July 6, 2005

#### **Summary/Conclusions**

Soils found along the Louisiana coast are typically extremely soft, organic, silt-clays which are subject to high rates of erosion. These soils possess very poor load-bearing capacities and consequently are poor substrates for construction of rock dikes typically used in shoreline protection efforts (Howard et al. 1984). Therefore, it is important to test the effectiveness of alternative hard-structure techniques in protecting vulnerable shorelines. It should be noted that both the CS-01b and TE-29 projects were successful in part due to the availability of a source of sediment. However, conditions are different for this project; there is a lack of availability of sediment supply at the Rockefeller Wildlife Refuge site. Therefore, in the sediment-lean environment, any potential for longshore transport of sediment is not feasible. Consequently, there is no projection that any accretion of sediment will occur behind the various test shoreline protection structures. The design and layout of the test sections appear to be acceptable. In the Lake Salvador Shore Protection Demonstration project, the treatments were not randomly placed along the shoreline, and their close proximity to one another resulted in noticeable treatment interactions. As a result, statistical testing of the data was not possible and definitive conclusions regarding the treatments' influence on shoreline erosion rates could not be drawn. For the Rockefeller Refuge Gulf Shoreline Stabilization project test sections reviewed in this document, Shiner Moseley and Associates, Inc. (2005) considered wave diffraction for spacing of the breakwater alternatives, and estimated that a breakwater spacing that exceeds five times the wavelength will allow the breakwaters to function independently of each other. In addition, the excessive distance from the shoreline that led to the reduced effectiveness on past projects has been addressed in this project. Consideration was given to knowledge that to prevent any potential wave regeneration between the breakwater and the shoreline, a fetch of 200 feet or less would effectively limit the erosive waves that could harm an un-vegetated shoreline (Shiner Moseley and Associates, Inc. 2005). Random variability in local geological conditions may affect the test results more than would any differences among the competing designs. Without replication (building more than one of each design) the relative effectiveness of the designs is essentially unknowable. Monitoring a control area, although worthwhile, does not improve this data gap. Recent aerial surveys show that shoreline erosion rates vary by more than fifteen feet per year over short distances in the vicinity of the test area (Shiner Moseley and Associates, Inc. 2005). The geotechnical survey reports spatial variability in the mechanical properties of the soils that may affect subsidence more than would the differences in breakwater construction (Shiner Moseley and Associates, Inc. 2005). Therefore, limitations exist in interpreting the results of data obtained from monitoring the test sections of this endeavor.

#### **Recommendations**

Based on the evaluation of the conceptual design and confidence in goal attainability for Rockefeller Refuge Gulf Shoreline Stabilization, the project appears to be acceptable to proceed toward construction authorization pending a favorable 95% Design Review.

**ENCLOSURE**

**4-J**

**DEPARTMENT OF THE ARMY**

NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

P.O. BOX 60267

NEW ORLEANS, LOUISIANA 70160-0267

September 5, 2003

REPLY TO  
ATTENTION OF:

Real Estate Division  
Local Sponsor and Inleasing  
Acquisition Branch

Dr. Erik Zobrist  
NOAA CWPPRA Program Officer  
National Marine Fisheries Service  
Restoration Center, 7<sup>th</sup> Floor, Room 7120  
1335 East-West Highway  
Silver Spring, Maryland 20910

Dear Dr. Zobrist:

We have reviewed your request for Section 303(e) approval for the Rockefeller Refuge Gulf Shoreline Stabilization Project (ME-18), Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA).

Our Real Estate Division has examined the December 19, 2001, package, as supplemented by the Louisiana Department of Natural Resources (DNR) letter of August 20, 2003, addressed to you. This information includes an executed copy of a July 5, 2001, letter agreement (Letter Agreement), including a project map attached thereto as Exhibit A, between the Louisiana Department of Wildlife and Fisheries (DWF), the purported landowner within the project boundary, and DNR.

Please be advised that prior to construction of the project, appropriate land rights, subject to such terms and conditions as necessary to ensure that wetlands restored, enhanced or managed through this project will be administered for the long-term conservation of the lands and waters and the dependent fish and wildlife populations, must be acquired from all persons or entities with ownership or other property interests of affected land, including oyster leaseholders whose leases will be adversely affected by the project.

The project map indicates that a pipeline is located within the project boundary. If such pipeline is adversely affected by the project, requiring any relocation, alteration, or lowering of the pipeline, then appropriate land rights must be acquired

**ENCLOSURE**

**4-K**





United States  
Department of  
Agriculture

Natural Resources  
Conservation Service

3737 Government Street  
Alexandria, Louisiana  
71302

December 13, 2001

Mr. John D. Foret  
National Marine Fisheries Service  
Lafayette Office  
U.S.L., P.O. Box 42451  
Lafayette, LA 70504

Dear Mr. Foret:

RE: Rockefeller Refuge Gulf Shoreline Stabilization Project

I am in receipt of your request for an overgrazing determination for the referenced project. I contacted our local District Conservationist to discuss the grazing in the project area. He informed me that use of the Rockefeller Refuge for grazing by domestic animals is strictly controlled. Therefore, it is our opinion, overgrazing is not a problem in this project area. If you have any questions please let me know.

Sincerely,

W. Britt Paul  
Water Resources Staff Leader

cc: Bruce M. Lehto, Asst. State Conservationist/WR, NRCS, Alexandria, LA  
Clay Midkiff, District Conservationist, NRCS, Lake Charles, LA  
Randolph Joseph, Asst. State Conservationist/FO, NRCS, Lafayette, LA

ENCLOSURE

4-L

TE-47- Ship Shoal: Whiskey West Flank Restoration

**CWPPRA**  
**Ship Shoal: Whiskey West Flank**  
**Restoration (TE-47)**  
**Phase II Request**

**Technical Committee Meeting**

December 6, 2006

New Orleans, LA

**Project Overview**

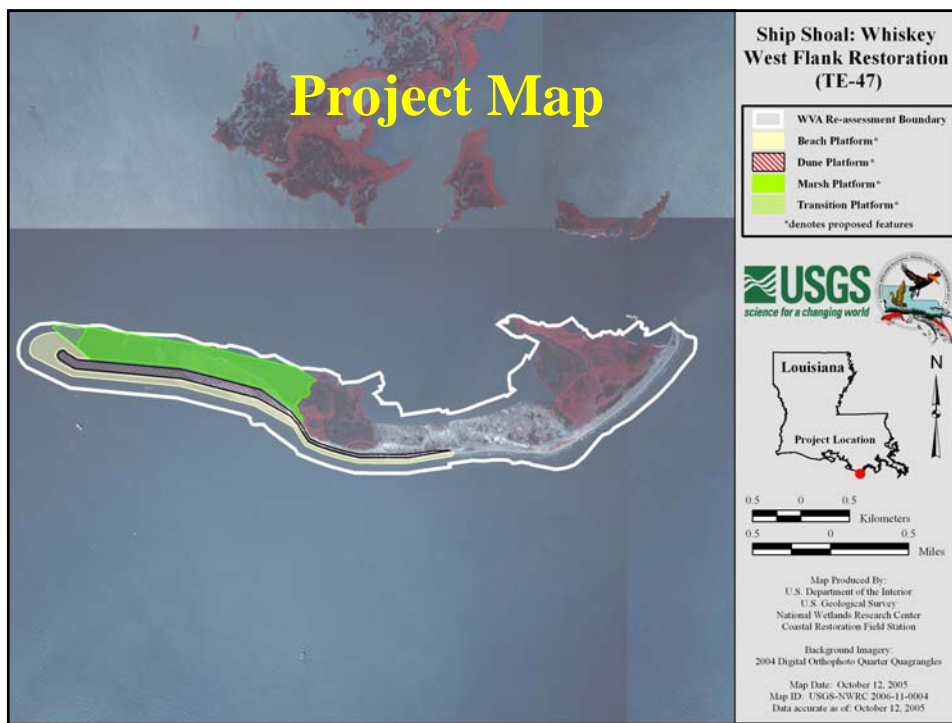
**Project Location:** Region 3 - Terrebonne Basin, Terrebonne Parish, west spit area Whiskey Island.

**Problem:** The Isles Dernieres Chain, which has been considered one of the most rapidly deteriorating barrier shorelines in the U.S., is losing its structural framework functions for the coastal/estuarine ecosystem including storm buffering capacity and protection for inland bays, estuary and wetlands, human populations and infrastructure. Whiskey Island changes from 1978 to 1988 include loss of 31.1 acres per year.

## Project Overview (cont.)

### Goals:

- **Demonstrate feasibility of mining Ship Shoal**
- **Restore the integrity of the West Flank**
- **Add offshore sediment**
- **Rebuild the natural structural framework**
- **Create a continuous protective barrier**
- **Reduce wave energies**
- **Strengthen the long-shore sediment transport**
- **Provide sustainable barrier island habitat, and**
- **Restore roughly 500 acres of barrier island**



## Project Features Overview

### West Flank –

- 415 Acres of intertidal, supratidal, and dune habitat
- 134 Acres of subtidal habitat.

### Project Extension -

- 85 Acres of intertidal, supratidal, and dune habitat
- 69 Acres of subtidal habitat



### Total Acreage -

- 500 Acres of intertidal, supratidal, and dune habitat
- 203 Acres of subtidal habitat
- 3.85 million cubic yards of sand, in place

## Project Benefits & Costs

- **Benefits include evaluation of the feasibility of using Ship Shoal sand for coastal restoration as well as, adding sediment to the longshore transport system. The project would benefit a total of 703 acres of barrier island and shallow water habitat. At the end of 20 years, there would be a net of 195 acres of island over the without-project condition.**
- **The Fully Funded Cost for the project is: \$52,925,372**
- **The Prioritization Score is: 60**

## Project Comparison/Contrast

The Present vs. PPL # 11

### Ship Shoal: Whiskey West Flank (TE-47)

	Phase 1 Authorization	Current Phase 2	Percent Difference
Net Acres	182	195	7.10%
AAHUs	191	269	40.80%
Fully Funded First Cost	\$38,985,100	\$52,603,881	34.90%
Total Fully Funded Cost (millions)	\$39,302,900	\$52,925,372	34.70%

## Why Should You Fund this Project Now?

- Barrier Islands are first line of defense against storm surge
- Determine the feasibility of mining Ship Shoal for future restoration projects
- Potential use of Ship Shoal Sand for levee base material
- Rapidly changing shoreline of the Isle Dernieres
- Infuses new sediment into system
- Limited Plans and Specifications shelf life

# Questions?



Brad Crawford, P.E.  
US Environmental  
Protection Agency  
(214) 665 - 7255



Brad Miller,  
Project Manager  
LA Dept. of Natural  
Resources  
(225) 342 - 4122





**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

November 21, 2006

Mr. Greg Breerwood, P.E.  
Deputy District Engineer  
U.S. Army Corps of Engineers, New Orleans District  
Office of the Chief  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Dear Mr. Breerwood:

The Environmental Protection Agency (EPA) and the Louisiana Department of Natural Resources (LDNR) hereby resubmit our request for Phase 2 approval and funding of the Ship Shoal: Whiskey West Flank project (TE-47). The project was authorized by the Coastal Wetland Planning, Protection, and Restoration Act (CWPPRA) Task Force to proceed with Phase 1, Engineering and Design on Priority Project List 11. A summary of information required for the Phase 2 Authorization Request including the Phase 2 Checklist is included in Enclosure A.

The project is substantively the same as submitted last year with the exception that the cost estimate has been updated to reflect current market conditions. EPA and LDNR re-surveyed the island in August 2006 to verify the validity of the current design. While the island has rolled back on itself slightly, the quantity of sediment needed for the design is still within design parameters.

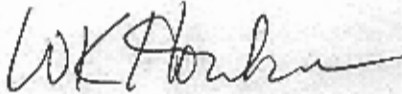
As noted in last year's request, because project modeling indicated a difference in the project's estimated performance coupled with the increase in scope with the inclusion of the dune extension, EPA performed a revised Wetland Value Assessment (WVA) using the information obtained thru the E&D process. A summary of the project benefits and cost, both Phase 1 and Phase 2, are as follows:

	<b>Phase 1 Authorization</b>	<b>Current Phase 2</b>	<b>Percent Difference</b>
<b>Net Acres</b>	182	195	+7.1%
<b>AAHUs</b>	191	269	+40.8%
<b>Fully Funded First Cost (millions)</b>	\$38,985,100	\$52,604,450	+34.9%
<b>Total Fully Funded Cost (millions)</b>	\$39,302,900	\$52,925,941	+33.8%

Also enclosed herein are the original Fact Sheet and Project Map, the revised Fact Sheet and Project Map, and, the revised Cost estimate spreadsheet required in Appendix C of the CWPPRA Standard Operating Procedures.

If you have any questions or need additional information, please contact Brad Crawford, P.E., at (214) 665-7255.

Sincerely,

A handwritten signature in black ink, appearing to read "WK Honker". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

William K. Honker, P.E.  
Deputy Director  
Water Quality Protection Division

Enclosures:

cc: (See Next Page)

c: via electronic copies

Mr. Troy Constance (Acting Chairman)  
Chief, Restoration Branch  
U.S. Army Corps of Engineers, New Orleans District  
Office of the Chief  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Mr. Darryl Clark  
Senior Field Biologist  
U.S. Fish and Wildlife Service  
646 Cajundome Blvd.  
Suite 400  
Lafayette, Louisiana 70506

Mr. Gerry Duszynski  
Acting Asst. Secretary  
Dept. of Natural Resources  
P.O. Box 44027, Capital Station  
Baton Rouge, Louisiana 70804-4027

Mr. Rick Hartman  
Fishery Biologist  
Chief, Baton Rouge Field Office  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
c/o Louisiana State University  
Baton Rouge, Louisiana 70803-7535

Ms. Sharon Parrish  
Acting Chief, Marine & Wetlands Section  
Environmental Protection Agency, Region VI  
Water Quality Protection Division (6WQ-EM)  
1445 Ross Avenue  
Dallas, Texas 75202-2733

Mr. Britt Paul, P.E.  
Assistant State Conservationist/Water Resources  
Natural Resources Conservation Service  
3737 Government Street  
Alexandria, Louisiana 71302

Ms. Julie Z. LeBlanc, P.E.  
Senior Project Manager  
U.S. Army Corps of Engineers, New Orleans District  
Planning & Project Management - Coastal Restoration  
Branch  
P.O. Box 60267  
New Orleans, Louisiana 70160-0267

Mr. Kevin Roy  
Senior Field Biologist  
U.S. Fish and Wildlife Service  
646 Cajundome Blvd.  
Suite 400  
Lafayette, Louisiana 70506

Mr. Tim Landers  
CWPPRA Team Leader (Acting)  
Environmental Protection Agency, Region VI  
Water Quality Protection Division (6WQ-EMC)  
1445 Ross Avenue  
Dallas, Texas 75202-2733

Mr. John Jurgensen, P.E.  
Civil Engineer  
Natural Resources Conservation Service  
3737 Government Street  
Alexandria, Louisiana 71302

Mr. Dan Llewellyn  
Coastal Restoration Scientist Supervisor  
DNR/Coastal Restoration Division  
P.O. Box 44027, Capital Station  
Baton Rouge, Louisiana 70804-4027

Ms. Rachel Sweeney  
Ecologist  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
c/o Louisiana State University  
Baton Rouge, Louisiana 70803-7535

# **Enclosure**

**Phase 2 Authorization Information**

**(Appendix C of the SOP)**

## PHASE 2 CHECKLIST

### Phase 1 Project Description

Phase 1 was authorized by the CWPPRA Task Force on January 16, 2002, as part of Priority Project List 11. The candidate project included mining and placing Ship Shoal sand from the Minerals Management Service (MMS) Block 88 by cutterhead or hopper dredge to rebuild the west flank of Whiskey Island, a distance of about 8-10 miles. The area to be restored included 57 acres of dunes, 7 feet high and 150 feet wide, 114 acres of supratidal habitat at 4 feet in elevation, 208 acres of intertidal habitat at a 2 foot elevation, and 8 acres of subtidal habitat from 0 to minus 1.5 feet in elevation. All areas would be planted and sand fencing placed to trap wind-blown sediment. The original Phase 1 fact sheet, map, fully funded cost estimate and Wetland Value Assessment (WVA) results are included in Enclosure 1.

### Overview of Phase 1 Tasks, Process and Issues

LDNR contracted with the company of DMJM Harris for the Engineering and Design (E&D). DMJM Harris conducted the following tasks:

- Delineated a borrow area on Ship Shoal by conducting a geophysical investigation.
- Surveyed the project area.
- Applied the appropriate modeling to optimize the cross section and to ensure the project does not have a negative impact on adjacent areas.
- Developed project Plans, Specifications, Permit Drawings and Design Report.

Compliance with the National Environmental Policy Act (NEPA) is being addressed in two separate tracks. To address potential impacts to the dredging borrow site, the MMS completed an Environmental Assessment (EA) dated April 2004 addressing both this project and the Morganza to the Gulf Levee project. That EA included information regarding cultural resources obtained from the remote sensing survey completed by EPA in December 2003. NEPA compliance regarding the island fill site is being addressed in a separate EA developed by EPA. The Draft EA was posted along with the 95% E&D documents, and the NEPA documentation was completed with the issuance of a Finding of No Significant Impact dated December 1, 2005. LDNR and EPA investigated the potential for cultural resource areas and determined there are not any in the delineated borrow area or the project footprint.

The project site was affected by hurricanes Katrina and Rita in 2005. EPA and LDNR performed an aerial survey of the island after each event and re-surveyed the island in August 2006. While the storms disturbed the existing sediments, the quantities were not significantly affected. However, the cost estimates based on current market conditions have been revised.

### Description of the Phase 2 Project

The overall project objectives as enumerated in the 95% E&D report are:

- Demonstrate the feasibility of moving Ship Shoal sand to the Isles Dernieres for future restoration projects;
- Restore the integrity of the West Flank of Whiskey Island to retain its structural function;
- Add offshore sediment to the West Flank of Whiskey Island from Ship Shoal to increase sediment supply and strengthen island formation;
- Rebuild the natural structural framework within the coastal ecosystem to provide for separation of the gulf and the estuary;
- Create a continuous protective barrier for back bays and inland marshes;
- Reduce wave energies thereby helping to reduce land loss;
- Strengthen the longshore transport system of sediment for continuous island building;
- Provide a unique and sustainable barrier island habitat for numerous biological species;
- Restore roughly 500 acres of barrier island habitat on the island's West Flank.

The proposed restoration template would restore the west flank of Whiskey Island through the

direct creation of approximately 415 acres of new intertidal, supratidal, and dune habitat plus 134 acres of subtidal habitat. Once the project data was gathered and computer models developed, we realized the project may concentrate over-wash toward existing marsh. We therefore decided to extend the dune feature to protect this existing marsh. The project extension to the east will create approximately 85 acres of additional new intertidal, supratidal, and dune habitat plus 69 acres of additional subtidal habitat. Therefore, the total acreage created for the preferred alternative (Alternate "B" Extended) will be 500 acres of new intertidal, supratidal, and dune habitat plus 203 acres of subtidal habitat. The estimated volume of sand needed, based on fill volume, is 3.85 million cubic yards. A revised fact sheet and project map are included in Enclosure 3.

## **Phase 2 Checklist:**

A. List of Project Goals and Strategies.

- *Demonstrate the feasibility of moving Ship Shoal sands to the Isles Dernieres for future restoration projects;*
- *Restore the integrity of the West Flank of Whiskey Island to retain its structural function;*
- *Add offshore sediment to the West Flank of Whiskey Island from Ship Shoal to increase sediment supply and strengthen island formation;*
- *Rebuild the natural structural framework within the coastal ecosystem to provide for separation of the gulf and the estuary;*
- *Create a continuous protective barrier for back bays and inland marshes;*
- *Reduce wave energies thereby helping to reduce land loss;*
- *Strengthen the longshore transport system of sediment for continuous island building;*
- *Provide a unique and sustainable barrier island habitat for numerous biological species; and,*
- *Restore roughly 400 acres of barrier island habitat into the island's West Flank*

B. A Statement that the Cost Sharing Agreement between the Lead Agency and the Local Sponsor has been executed for Phase I.

*EPA and the LDNR entered into a cooperative agreement effective January 27, 2003, and revised on February 25, 2004.*

C. Notification from the State or the Corps that landrights will be finalized in a short period of time after Phase 2 approval.

*The project property is owned by the State of Louisiana and is managed by the Louisiana Department of Wildlife and Fisheries (LDWF). The landrights agreement between the Louisiana Department of Wildlife and Fisheries and the Louisiana Department of Natural Resources was sign and approved on October 26, 2005.*

D. A favorable Preliminary Design Review (30% Design Level). The Preliminary Design shall include completion of surveys, borings, geotechnical investigations, data analysis review, hydrologic data collection and analysis, modeling (if necessary), and development of preliminary designs.

*The 30% E&D review was held in LDNR offices on November 8, 2004. In an email dated January 12, 2005, EPA and LDNR informed the Technical Committee of the results of the 30% E&D and our intent to move forward with the project.*

- E. Final Project Design Review (95% Design Level). Upon completion of a favorable review of the preliminary design, the Project plans and specifications shall be developed and formalized to incorporate elements from the Preliminary Design and the Preliminary Design Review. Final Project Design Review (95%) must be successfully completed prior to seeking Technical Committee approval.

*The 95% E&D review was held in LDNR offices on September 28, 2005. The 95% concurrence letter from LDNR was transmitted to the Technical Committee and P&E Subcommittee on October 25, 2005.*

- F. A draft of the Environmental Assessment of the Project, as required under the National Environmental Policy Act must be submitted thirty days before the request for Phase 2 approval.

*The NEPA documentation was completed with the issuance of a "Finding of No Significant Impact" dated December 1, 2005.*

- G. A written summary of the findings of the Ecological Review.

*The final ER was posted as required prior to the 95% Design review. The document stated the following:*

*Based on information gathered from similar restoration projects, engineering designs and related literature, the proposed strategies in the Ship Shoal: Whiskey West Flank Restoration project will likely achieve all of the desired goals. It is therefore recommended that this project progress towards construction following a favorable 95% Design Review. However, prior to construction the following needs to be addressed.*

*It is believed that the sandy material used to create the back barrier marsh component will experience minimal settlement and consolidation over the life of the project. However, a settlement analysis may be useful to determine how long the restored area will remain at the intertidal target elevation range of 1.0-2.0 feet NAVD-88.*

- *Answer: The marsh construction elevation ranges from +2' NAVD 88 to a +1' NAVD. Instantaneous settlement of this high quality sand will occur prior to construction being complete. If the material settles beyond the range of marsh elevation more material can be placed to offset this settlement. Other barrier island processes such as island rollover and cross shore sediment transport will far out weigh settlement of the underlying materials. The question concerning settlement was raised after the field data was collected. The design team did not feel the cost to remobilize equipment out weighted the benefits from the data. Permitting and regulations prevent LDNR from constructing marsh platforms at significantly higher elevations than +2' in the anticipation of settlement of the underlying materials. Also, with no money for maintenance or re-nourishment, settlement of the marsh can not be addressed once it settles out of the healthy marsh range. Based on the quality of material being placed, and the minimal amount of material being placed (less than 2' on average) the design team did not feel a geotechnical investigation on the marsh platform was warranted.*

- H. Application for and/or issuance of the public notices for permits. If a permit has not been received by the agency, a notice from the Corps of when the permit may be issued.

*The LDWF will be the permit holder and LDNR will act as their agent. The permit has been sent*

*for processing and should be approved within 3 months.*

- I. A hazardous, toxic and radiological waste (HTRW) assessment, if required, has been prepared.

*An HTRW survey was not required.*

- J. Section 303(e) approval from the Corps.

*EPA sent the approval request along with the appropriate documentation to the USACE in a letter dated October 17, 2005. A Response is pending.*

- K. Overgrazing determination from the NRCS (if necessary).

*In a letter dated August 26, 2005, NRCS concluded that overgrazing is not of concern in this area.*

- L. Revised cost estimate of Phase 2 activities, based on the revised Project design.

*The island was re-surveyed in August 2006 and a revised cost estimate developed based on current conditions. The Fully Funded Cost (FFC) estimate was received from USACE on November 17, 2006. Attached as Enclosure 4L is the revised spreadsheet from Appendix C of the CWPPRA standard operating procedures (SOP). The revised estimate did not change the prioritization score.*

- M. A Wetland Value Assessment reviewed and approved by the Environmental Work Group.

*A revised WVA was completed by EPA and reviewed by the Environmental Work Group. As a result of that effort, EPA received revised benefit numbers from the chairman of the Environmental Work Group in an email dated August 25, 2005.*

- N. A breakdown of the Prioritization Criteria ranking score, finalized and agreed upon by all agencies during the 95% design review.

*A revised draft Prioritization Criterion ranking fact sheet and score was provided to the Engineering and Environmental Workgroups for review on October 5, 2005, less the fully funded cost information which had not yet been returned from the Economic Workgroup. The FFC estimate was received on October 21, 2005, and the Prioritization Fact Sheet was finalized and transmitted to the TC and P&E on October 25, 2005.*



## **Enclosure 1**

**Ship Shoal/Whiskey West Flank (TE-47)**

**Phase 1 - Fact Sheet, Map,  
Fully Funded Cost Estimate, and WVA**



# 11<sup>TH</sup> PRIORITY PROJECT LIST REPORT

PREPARED BY:

LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION  
TASK FORCE

JULY 2003

**Project Name** - Ship Shoal: Whiskey West Flank Restoration

**Coast 2050 Strategy** - Regional Ecosystem Strategy #14: Restore and maintain the Isles Dernieres barrier island chain.

**Project Location** - Region 3 - Terrebonne Basin, Terrebonne Parish, west spit area Whiskey Island.

**Problem** - The Isles Dernieres Chain, which has been considered one of the most rapidly deteriorating barrier shorelines in the U.S., is losing its structural framework functions for the coastal/estuarine ecosystem including storm buffering capacity and protection for inland bays, estuary and wetlands, human populations and infrastructure. Chain breakup has resulted from both major storm actions and from loss of nourishing sediment from the natural system due to human alterations. Whiskey Island changes from 1978 to 1988 include loss of 31.1 acres per year.

**Goals** - 1) restore the integrity of the west flank of Whiskey Island to retain its structural function to the coastal/estuary ecosystem; 2) add new offshore prime quality sediment into the west flank; 3) initially restore approximately 387 acres of barrier island habitat to the western flank.

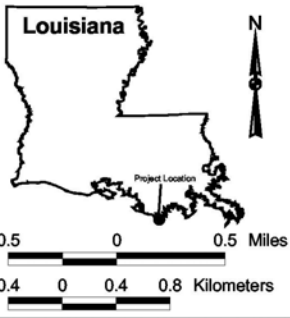
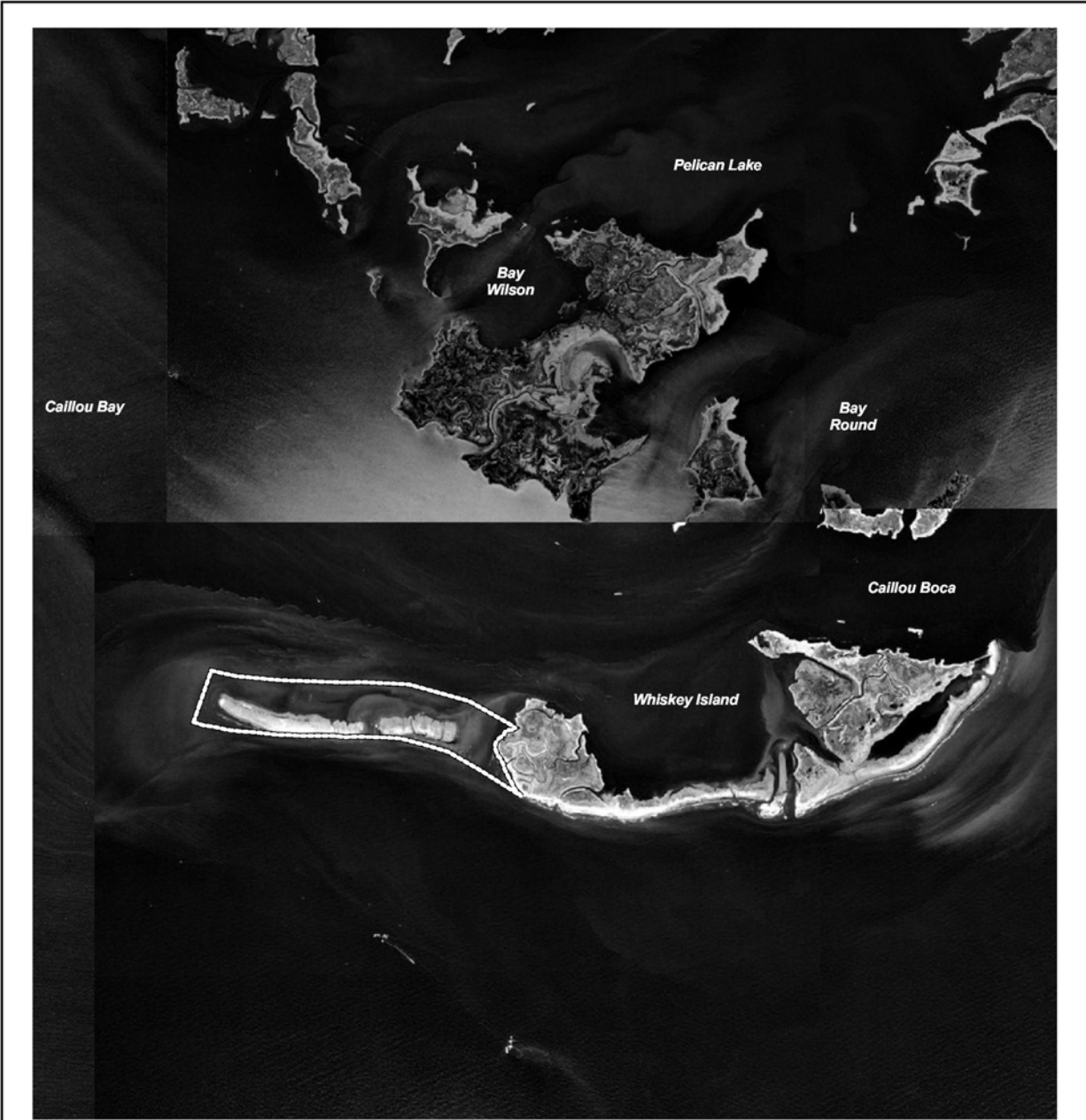
**Proposed Solution** - The project entails mining and placing Ship Shoal sand from the Minerals Management Service Block 88 by cutterhead or hopper dredge to rebuild the west flank of Whiskey Island, a distance of about 8 miles. The area to be restored includes 57 acres of dunes 7 feet high and 150 feet wide, 114 acres supratidal habitat at 4 feet in elevation, 208 acres intertidal habitat at a 2-foot elevation, and 8 acres subtidal habitat from 0 to minus 1.5 feet in elevation. All areas would be planted and sand fencing placed to trap wind-blown sediment.

**Project Benefits** - Benefits include prevention of loss of sediment from the system into deeper Gulf waters or into bayside deeper water. The project would benefit a total of 398 acres of barrier island and shallow water. At the end of 20 years, there would be a net of 182 acres of island over the without-project condition.

**Project Costs** - The fully funded first cost is \$38,985,100 and the total fully funded cost is \$39,302,900.

**Risk/Uncertainty and Longevity/Sustainability** - There is a moderate degree of risk associated with this project due to greater storm effects in this area of the coast and difficulty in engineering and construction. Benefits should continue for more than 20 years due to the high quality and compatibility of Ship Shoal sand.

**Sponsoring Agency/Contact Persons** - U.S. Environmental Protection Agency  
Jeanene Peckham (225) 389-0736; peckham.jeanene@epa.gov  
Wes Mcquiddy (214) 665-6722; mcquiddy.david@epa.gov  
Brad Crawford (214) 665-7255; crawford.brad@epa.gov



 Project area

Data Source:  
 U.S. Geological Survey  
 National Wetlands Research Center  
 Coastal Restoration Field Station

LA Department of Natural Resources  
 Coastal Restoration Division

Map Date: November 15, 2001  
 Map ID: 200204138

Image Data:  
 1998 Digital Orthophoto Quarter Quads (DOQQS)

CWPPRA PPL11  
 Region 3

**Whiskey Island West Flank Extension  
 (TE-14-1b)**

# WETLAND VALUE ASSESSMENT

## Benefits Summary Sheet

### Project Ship Shoal: West Flank Restoration

The WVA for this project includes 1 area. Total benefits for this project are as follows:

<u>Area</u>	<u>AAHUs</u>
A	191

<b>TOTAL BENEFITS =</b>	<b>191</b>	<b>AAHUS</b>
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# WETLAND VALUE ASSESSMENT COMMUNITY MODEL

## Barrier Island

Project: Ship Shoal: Whiskey Pass Closure and Whiskey Island West Flank  
West Flank Area

Condition: Future Without Project

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1a	% Dune	0	0.10	0	0.10	0	0.10
V1b	% Dune Vegetated	0	0.10	0	0.10	0	0.10
V2a	% Supratidal	47	0.90	47	0.90	47	0.90
V2b	% Supratidal Vegetated	5	0.17	5	0.17	30	0.49
V3a	% Intertidal	53	1.00	53	1.00	53	1.00
V3b	% Intertidal Vegetated	5	0.18	5	0.18	20	0.40
V4	% Subtidal	59	1.00	58	1.00	47	1.00
V5	% Woody Cover	0	0.10	0	0.10	0	0.10
V6	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	%   100	0.40	%   100	0.40	%   100	0.40
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		<b>HSI = 0.525</b>		<b>HSI = 0.525</b>		<b>HSI = 0.564</b>	

Project..... Ship Shoal: Whiskey Pass Closure and Whiskey Island West Flank  
FWOP

Variable		TY 11		TY 20		TY	
		Value	SI	Value	SI	Value	SI
V1a	% Dune	0	0.10	0	0.10		
V1b	% Dune Vegetated	0	0.10	0	0.10		
V2a	% Supratidal	47	0.90	47	0.90		
V2b	% Supratidal Vegetated	27	0.45	5	0.17		
V3a	% Intertidal	53	1.00	53	1.00		
V3b	% Intertidal Vegetated	18	0.37	5	0.18		
V4	% Subtidal	48	1.00	63	1.00		
V5	% Woody Cover	0	0.10	0	0.10		
V6	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	%   100	0.40	%   100	0.40	%	
V7	Beach/surf Zone	1	1.00	1	1.00		
		<b>HSI = 0.559</b>		<b>HSI = 0.525</b>		<b>HSI =</b>	

# WETLAND VALUE ASSESSMENT COMMUNITY MODEL

## Barrier Island

Project: Ship Shoal: Whiskey Pass Closure and Whiskey Island West Flank  
Area A

Condition: Future Without Project

Variable		TY 0		TY 1		TY 3	
		Value	SI	Value	SI	Value	SI
V1a	% Dune	0	0.10	15	1.00	15	1.00
V1b	% Dune Vegetated	0	0.10	25	0.48	60	1.00
V2a	% Supratidal	47	0.90	30	1.00	30	1.00
V2b	% Supratidal Vegetated	5	0.17	25	0.43	70	1.00
V3a	% Intertidal	53	1.00	55	1.00	55	1.00
V3b	% Intertidal Vegetated	5	0.18	25	0.48	60	1.00
V4	% Subtidal	59	1.00	5	0.33	5	0.33
V5	% Woody Cover	0	0.10	5	0.55	5	0.55
V6	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	%   100	0.40	%  100	0.60	%  100	0.60
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		<b>HSI = 0.525</b>		<b>HSI = 0.754</b>		<b>HSI = 0.861</b>	

Project..... Ship Shoal: Whiskey Pass Closure and Whiskey Island West Flank  
FWP

Variable		TY 5		TY 10		TY 11	
		Value	SI	Value	SI	Value	SI
V1a	% Dune	15	1.00	15	1.00	15	1.00
V1b	% Dune Vegetated	65	1.00	70	1.00	70	1.00
V2a	% Supratidal	30	1.00	29	1.00	29	1.00
V2b	% Supratidal Vegetated	75	1.00	50	0.75	70	1.00
V3a	% Intertidal	55	1.00	56	1.00	56	1.00
V3b	% Intertidal Vegetated	65	1.00	60	1.00	70	1.00
V4	% Subtidal	5	0.33	5	0.33	5	0.33
V5	% Woody Cover	10	1.00	10	1.00	10	1.00
V6	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	% 20  80	0.68	% 50 50	0.90	% 50 50	0.90
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		<b>HSI = 0.918</b>		<b>HSI = 0.939</b>		<b>HSI = 0.951</b>	

Project.....  
FWP

Variable		TY 20		TY		TY	
		Value	SI	Value	SI	Value	SI
V1a	% Dune	13	1.00				
V1b	% Dune Vegetated	60	1.00				
V2a	% Supratidal	27	1.00				
V2b	% Supratidal Vegetated	60	0.88				
V3a	% Intertidal	60	1.00				
V3b	% Intertidal Vegetated	65	1.00				
V4	% Subtidal	6	0.37				
V5	% Woody Cover	10	1.00				
V6	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	% 100	0.80	%		%	
V7	Beach/surf Zone	1	1.00				
		<b>HSI = 0.933</b>		<b>HSI =</b>		<b>HSI =</b>	

### AAHU CALCULATION

Project: Ship Shoal: Whiskey Pass Closure and Whiskey Island West Flank  
West Flank Area

Future Without Project		x HSI	Total HUs	Cumulative HUs
TY	Acres			
0	242	0.525	127.08	
1	246	0.525	129.18	128.13
10	280	0.564	157.89	1289.82
11	276	0.559	154.26	156.07
20	234	0.525	122.88	1245.01
			<b>AAHUs = 140.95</b>	

Future With Project		x HSI	Total HUs	Cumulative HUs
TY	Acres			
0	242	0.525	127.08	
1	398	0.754	299.99	207.59
3	387	0.861	333.30	633.69
5	379	0.918	348.02	681.47
10	372	0.939	349.22	1743.20
11	369	0.951	351.01	350.12
20	345	0.933	321.71	3026.58
			<b>AAHUs 332.13</b>	

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHUs =	332.13
B. Future Without Project AAHUs =	140.95
<b>Net Change (FWP - FWOP) =</b>	<b>191.18</b>



## **Enclosure 3**

**Ship Shoal/Whiskey West Flank (TE-47)**

**Revised Fact Sheet and Map**

**Ship Shoal: Whiskey West Flank Restoration**

**Eleventh Priority Project List  
of the  
Coastal Wetlands Planning, Protection and Restoration Act**



**Proposed by**

**U.S. Environmental Protection Agency**

**and**

**LA Department of Natural Resources**

**Contacts:** Brad Crawford - US EPA - (214) 665-7255

Kenneth Teague - US EPA - (214) 665-6687

Chris Williams - LDNR - (225) 342-7549

**Project Name** - Ship Shoal: Whiskey West Flank Restoration

**Coast 2050 Strategy** - Regional Ecosystem Strategy #14: Restore and maintain the Isles Dernieres barrier island chain.

**Project Location** - Region 3 - Terrebonne Basin, Terrebonne Parish, west spit area Whiskey Island.

**Problem** - The Isles Dernieres Chain, which has been considered one of the most rapidly deteriorating barrier shorelines in the U.S., is losing its structural framework functions for the coastal/estuarine ecosystem including storm buffering capacity and protection for inland bays, estuary and wetlands, human populations and infrastructure. Chain break up has resulted from both major storm actions and from loss of nourishing sediment from the natural system due to human alterations. Whiskey Island changes from 1978 to 1988 include loss of 31.1 acres per year.

**Goals** - 1) Demonstrate the feasibility of moving Ship Shoal sands to the Isles Dernieres for future restoration projects; 2) Restore the integrity of the West Flank of Whiskey Island to retain its structural function; 3) Add offshore sediment to the West Flank of Whiskey Island from Ship Shoal to increase sediment supply and strengthen island formation; 4) Rebuild the natural structural framework within the coastal ecosystem to provide for separation of the gulf and the estuary; 5) Create a continuous protective barrier for back bays and inland marshes; 6) Reduce wave energies thereby helping to reduce land loss; 7) Strengthen the long shore transport system of sediment for continuous island building; 8) Provide a unique and sustainable barrier island habitat for numerous biological species; and, 9) Restore roughly 500 acres of barrier island habitat into the island's West Flank.

**Proposed Solution** - The proposed conceptual restoration template would restore the west flank of Whiskey Island through the direct creation of approximately 415 acres of new intertidal, supratidal, and dune habitat plus 134 acres of subtidal habitat. In order to control flow training effects on the western most existing marsh lobe, the project footprint includes an extension the dune feature eastward. The project extension to the east would create approximately 85 acres of additional new intertidal, supratidal, and dune habitat plus 69 acres of additional subtidal habitat. Therefore, the total acreage created for the preferred alternate (Alternate "B"-Extended) would be 500 acres of new intertidal, supratidal, and dune habitat plus 203 acres of subtidal habitat.

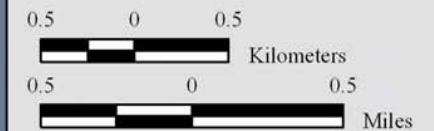
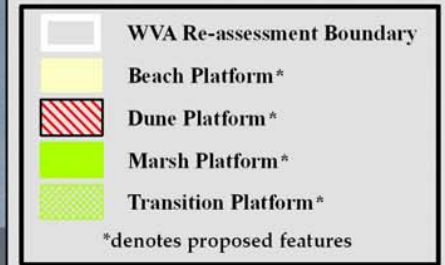
**Project Benefits** - Benefits include evaluation of the feasibility of using Ship Shoal sand for coastal restoration as well as, adding sediment to the longshore transport system. The project would benefit a total of 703 acres of barrier island and shallow water. At the end of 20 years, there would be a net of 195 acres of island over the without-project condition.

**Project Costs** - The fully funded first cost is \$42,613,143 and the total fully funded cost is \$42,918,821.

**Risk/Uncertainty and Longevity/Sustainability** - There is a moderate degree of risk associated with this project due to greater storm effects in this area of the coast and difficulty in construction. Benefits should continue for more than 20 years due to the high quality and compatibility of Ship Shoal sand.

**Sponsoring Agency/Contact Persons** - U.S. Environmental Protection Agency  
Brad Crawford, P.E., (214) 665-7255; crawford.brad@epa.gov  
Kenneth Teague (214) 665-6687: teague.kenneth@epa.gov  
Chris Williams P.E. (225)342-7549

# Ship Shoal: Whiskey West Flank Restoration (TE-47)



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

Background Imagery:  
2004 Digital Orthophoto Quarter Quagranges

Map Date: October 12, 2005  
Map ID: USGS-NWRC 2006-11-0004  
Data accurate as of: October 12, 2005



**Enclosure 4C**

**Ship Shoal/Whiskey West Flank (TE-47)**

**Landrights Agreement**

# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

SCOTT A. ANGELLE  
SECRETARY

DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

December 28, 2005

Mr. Wes McQuiddy  
U. S. Environmental Protection Agency  
Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, TX 75202-2733


Re: Ship Shoal - Whiskey Island West Flank Project TE-47  
DWF Letter Agreement  
Terrebonne Parish, Louisiana

Dear Mr. McQuiddy:

Enclosed for your records is a certified original of the captioned document between the Louisiana Department of Wildlife and Fisheries and the Louisiana Department of Natural Resources for the above captioned project. This document has been recorded and certified by the Terrebonne Parish Clerk of Court.

Should you have any questions, please contact me at 225-342-5068.

Sincerely,



Joyce M. Montgomery  
CRD Land Specialist III

JMM

c:(w/o attachment) Chris Williams, CRD Project Manager

Final distribution letter agreement dwf.wpd

# Terrebonne Parish Recording Page

I. Robert "Bobby" Boudreaux  
Clerk Of Court  
P.O. Box 1569  
Houma, La 70361-1569  
(985) 868-5660

**Received From :**  
COLLINS, DAN S CPL & ASSOCIATES INC  
P.O. BOX 66773  
BATON ROUGE, LA 70896

**First VENDOR**

LOUISIANA DEPARTMENT OF NATURAL RESOURCES

**First VENDEE**

LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

**Index Type :** Conveyances

**File # :** 1224363

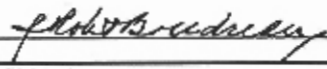
**Type of Document :** Agreement

**Book :** 1944      **Page :** 639

**Recording Pages :** 13

### Recorded Information

I hereby certify that the attached document was filed for registry and recorded in the Clerk of Court's office for Terrebonne Parish, Louisiana

  
Clerk Of Court

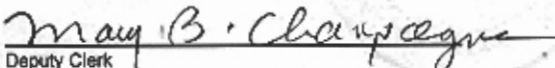
On (Recorded Date) : 11/23/2005

At (Recorded Time) : 11:11:34:000 AM

CLERK OF COURT  
I. ROBERT "BOBBY" BOUDREAUX  
Parish of Terrebonne  
I certify that this is a true copy of the attached  
document that was filed for registry and  
Recorded 11/23/2005 at 11:11:34  
Recorded in Book 1944 Page 639  
File Number 1224363



Doc ID - 004420600013

  
Deputy Clerk

**Return To :**

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P.O. BOX 66773  
BATON ROUGE, LA 70896

# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

SCOTT A. ANGELLE  
SECRETARY

**DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT**

August 23, 2005

Mr. Dwight Landreneau, Secretary  
Department of Wildlife and Fisheries  
Post Office Box 98000  
Baton Rouge, La. 70898-9000

RE: Letter Agreement  
Ship Shoal – Whiskey Island West Flank Project TE-47  
Isles Dernieres Barrier Islands Refuge  
Terrebonne Parish, Louisiana

Dear Mr. Landreneau:

When executed by you, this letter shall constitute an agreement (the "Agreement") by and between the Louisiana Department of Natural Resources ("DNR") and the Louisiana Department of Wildlife and Fisheries ("DWF") whereby DWF authorizes DNR to conduct construction and monitoring operations for the Ship Shoal – Whiskey Island West Flank Project TE-47 ("Project") being a portion of the Isles Dernieres Barrier Islands Refuge ("IDBIR") as shown on Exhibit B attached hereto and made a part hereof.

DWF has no objection to DNR, or its assigns, proceeding with the proposed Project for the purposes authorized by Federal (16 U.S.C. 3951, et seq.) and State (R.S. 49:213-214) law within the Project area shown on Exhibit A and pursuant to the Project Activity Summary on Exhibit C, both attached hereto and made a part hereof, provided however, that DNR complies with the following stipulations:

1. This Agreement pertains to the IDBIR as shown on Exhibit B.
2. Prior to any activities on the IDBIR, DNR shall contact Mr. Ed Mouton, or his assignee (Programs Manager), at (337) 373-0032 to coordinate Project details.
3. DNR shall abide by the IDBIR regulations as set forth in Exhibit B, attached hereto and made a part hereof, unless otherwise agreed to by DWF.



4. All equipment and routes shall be approved by the Programs Manager.
5. No activities will be allowed within 1500 feet of nesting bird colonies unless approved by the Programs Manager.
6. It shall be the responsibility of DNR to repair any damages which may occur as a result of the Project.
7. DNR agrees to defend, indemnify and hold DWF harmless from and against any and all claims, demands, expense and liability arising out of injury or death to any person or the damage, loss or destruction of any property which may occur or in any way grow out of the proposed Project.
8. This agreement allows DNR to make minor modifications to the Project, but only insofar as changes pertain to materials for project features and minor changes to project features locations, as may be deemed necessary to fully and properly implement and maintain the Project. Further, DNR will notify DWF of such modifications and allow DWF to comment on the modifications prior to the implementation of such modifications, and shall, when practicable, consider and include any comments by DWF.
9. DNR is responsible for all maintenance and repair of all project features. In the event DWF notifies DNR that project features require maintenance or repair, DNR will provide such maintenance or repair in a time frame that ensures that the objectives of the Project are not compromised.
10. DNR agrees that any use of mechanized equipment must be pre-approved by the DWF Programs Manager referenced in number 2 above.
11. DNR will provide a fulltime, onsite construction inspector to ensure compliance with the project plans, specs, and the terms and conditions of this Agreement. If, in the opinion of DWF, DNR's operations conflict with the plans, specs and/or the terms of this Agreement, DWF shall contact DNR fully describing what is in conflict. DNR will immediately contact the contractor to remedy said conflict. If the conflict is not remedied to DWF's satisfaction within 2 days, DWF may suspend DNR's operations until such time that conflict can be appropriately addressed and remedied.

12. In the event any change or condition should develop that affects IDBIR and that would affect DNR's ability to perform the activities granted under this Agreement, DWF agrees to notify DNR at the following address:

Department of Natural Resources  
Coastal Restoration Division  
P. O. Box 44027  
Baton Rouge, LA 70804-4027  
Phone: 225-342-7308  
Fax: 225-342-9417

13. The final plans will require approval by DWF and DNR, prior to construction.

*The terms of this Agreement, where applicable, and except for Paragraph 7 above, are subject to the availability of funds as stated in the CWPPRA Task Force Standard Operation Procedures. Should funds not be available to comply with the terms of this Agreement, DNR agrees to use its best efforts to secure funding to meet the terms stated herein.*

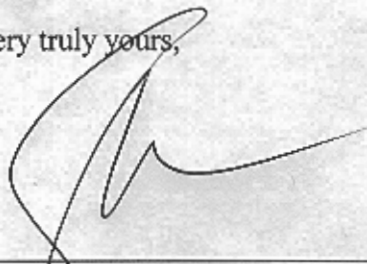
This Agreement shall become effective upon the signature of DWF and shall remain in effect for twenty (20) years from the date hereof unless sooner terminated by the mutual consent of DNR and DWF.

DNR may assign or transfer, in whole or in part, any or all of its rights hereunder, but only to the extent necessary to implement the purposes of the Project on the said Lands.

This Agreement shall be binding upon, and inure to the benefit of, the parties hereto, their successors in interest, transferees and assigns.

If the foregoing accurately reflects your understanding of the agreement between DNR and DWF relative to the referenced Project activities on the IDBIR, please evidence your approval by signing the three (3) originals and returning the executed originals to this office. The documents will be recorded in the public records of Terrebonne Parish, and a certified duplicate will be returned to your office upon completion. Thank you for your cooperation in this matter.

Very truly yours,



SCOTT A. ANGELLE  
SECRETARY  
DEPARTMENT OF NATURAL  
RESOURCES

WITNESSES:

Twana A. Bowman

Print Name: Twana A. Bowman

Brandi Rogers

Print Name: BRANDI ROGERS

ACCEPTED AND APPROVED THIS 26<sup>th</sup> DAY OF October 2005.

WITNESSES:

Cathy S. Greeson

Print Name: Cathy S. Greeson

Susan C. Falcon

Print Name: Susan C. Falcon

LOUISIANA DEPARTMENT OF  
WILDLIFE AND FISHERIES

By: Dwight Landreneau

DWIGHT LANDRENEAU  
Title: SECRETARY

**ACKNOWLEDGMENTS**

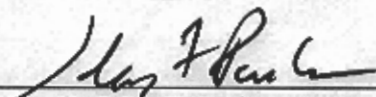
**STATE OF LOUISIANA**

**PARISH OF EAST BATON ROUGE**

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said Parish and State aforesaid, on this 3rd day of October, 2005, personally came and appeared Scott A. Angelle, to me known, who declared that he is the Secretary of the **Department of Natural Resources**, State of Louisiana, that he executed the foregoing instrument on behalf of said State Agency and that the instrument was signed pursuant to the authority granted to him by said State Agency and that he acknowledged the instrument to be the free act and deed of said State Agency.

Identification Number: 01117  
My commission expires: with life  
(SEAL)

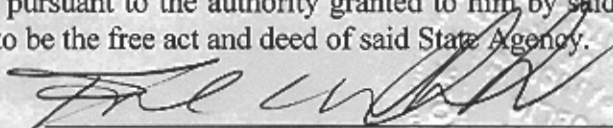
Print Name:

  
John F. Parker  
NOTARY PUBLIC

**STATE OF LOUISIANA**

**PARISH OF EAST BATON ROUGE**

BEFORE ME, the undersigned authority, duly commissioned and qualified in and for said Parish/County and State aforesaid, on this 26<sup>th</sup> day of October, 2005, personally came and appeared Dwight Landreneau, to me known, who declared that he is the Secretary of the **Department of Wildlife and Fisheries**, State of Louisiana, that he executed the foregoing instrument on behalf of said State Agency and that the instrument was signed pursuant to the authority granted to him by said State Agency and that he acknowledged the instrument to be the free act and deed of said State Agency.



Print Name: \_\_\_\_\_

Notary Number: \_\_\_\_\_  
My commission expires: with life  
(SEAL)

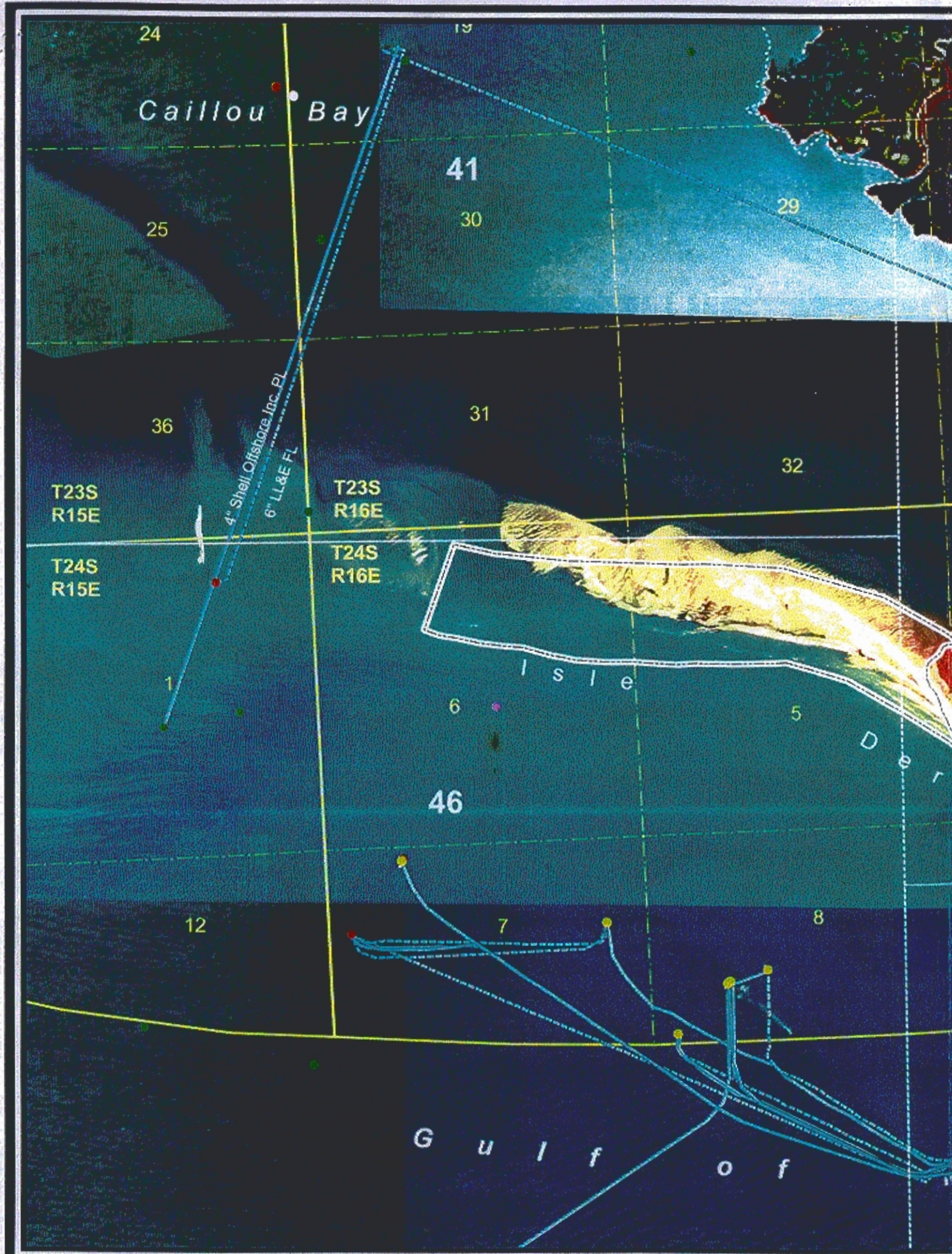
**NOTARY PUBLIC**  
**FREDERICK C. WHITROCK**  
Notary Public  
State of Louisiana  
State Bar Roll #18042  
My Commission Expires At Death

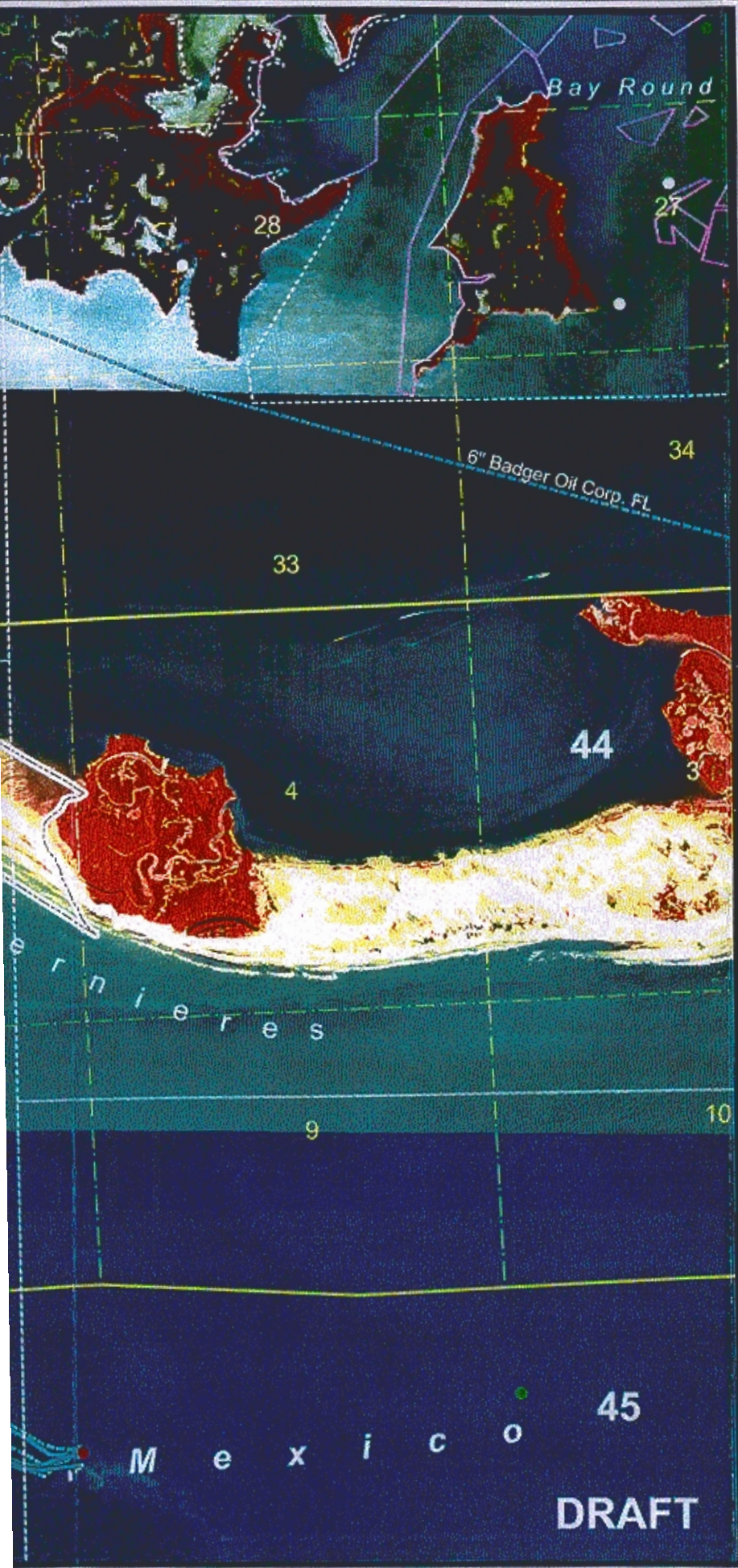
**FREDERICK C. WHITROCK**  
Notary Public  
State of Louisiana  
State Bar Roll #18042  
My Commission Expires At Death

c: DWF: Greg Linscombe  
DNR: Herbert Juneau, Helen Hoffpauir

## List of Exhibits

- |           |  |
|-----------|--|
| Exhibit A | Project Area   |
| Exhibit B | Regulations for Isles Dernieres Barrier Islands Refuge |
| Exhibit C | Project Summary  |


















# Exhibit A

## Ship Shoal: Whiskey West Flank Restoration (TE-47)

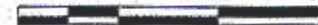
Terrebonne Parish, Louisiana

### Legend

-  Project Boundary
-  Township/Range Line
-  Section Line
-  Pipeline (CMD)
-  Flowline (CMD)
-  Oyster lease (04/04)
-  Inactive Well
-  Shut-In Well
-  Active Well
-  Other Well
-  SWD Well
-  Orphan Well
-  Well without status code (Tobin data)

All features are graphical representations only and may not reflect true location or dimension.

0.2 0.1 0 0.2 0.4 Miles



Data Source:  
 U.S. Department of the Interior  
 U.S. Geological Survey  
 National Wetlands Research Center  
 Coastal Restoration Field Station  
 Louisiana Department of Natural Resources  
 Coastal Restoration Division  
 Baton Rouge, Louisiana  
 2002 CIR Aerial Photograph  
 Map Date: June 30, 2004  
 Map ID: USGS-NWRC 2004-04-01

**DRAFT**



## EXHIBIT B

Louisiana Register Vol. 25, No. 5 May 20, 1999 {PAGE }

**DECLARATION OF EMERGENCY**  
**Department of Wildlife and Fisheries**  
**Wildlife and Fisheries Commission**

Isles Dernieres Barrier Islands Refuge  
(LAC 76:III.321 and 331)

The Wildlife and Fisheries Commission does hereby establish emergency regulations for the management of the Isles Dernieres Barrier Islands Refuge which includes Wine Island, East Island, Trinity Island, Whiskey Island, and Raccoon Island. Formerly, three of these islands, i.e., Wine, Whiskey, and Raccoon Islands, were included within the Terrebonne Barrier Islands Refuge and were regulated under provisions of LAC 76:III.321. By promulgation of this declaration of emergency, the Terrebonne Barrier Islands Refuge regulations found at LAC 76:III.321 are hereby repealed.

A declaration of emergency is necessary to regulate public access to the Isles Dernieres Barrier Islands Refuge in order to ensure that those members of the public utilizing the public use area on Trinity Island enjoy a clean and healthful environment and in order to minimize contact with the numerous species of colonial seabirds that utilize the islands as nesting habitat in the spring and summer months. This declaration of emergency will become effective on May 6, 1999 and shall remain in effect for the maximum period allowed under the Administrative Procedure Act or until adoption of the final rule.

### Title 76

### WILDLIFE AND FISHERIES

#### Part III. State Game and Fish Preserves and Sanctuaries

#### Chapter 3. Particular Game and Fish Preserves and Commission

#### §321. Terrebonne Barrier Islands Refuge Repealed.

AUTHORITY NOTE: Promulgated in accordance with R.S. 56:6(18), R.S. 56:761 and R.S. 56:785.

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Wildlife and Fisheries Commission, LR 19:910 (July 1993), repealed LR 25:

#### §331. Isles Dernieres Barrier Islands Refuge

##### A. Regulations for Isles Dernieres Barrier Islands Refuge

1. Regulations for Wine Island, East Island, Whiskey Island, and Raccoon Island a. Public access by any means to the exposed land areas, wetlands and interior waterways of these islands is prohibited.

c. Disturbing, injuring, collecting, or attempting to

Requests to access exposed land areas, wetlands and interior waterways shall be considered on a case-by-case basis and may be permitted by the Secretary or his designee in the interest of conducting research on fauna and flora, of advancing educational pursuits related to barrier islands, or of planning and implementing island restoration projects.

b. Disturbing, injuring, collecting, or attempting to disturb, injure, or collect any flora, fauna, or other property is prohibited, unless expressly permitted in writing by the Secretary or his designee for the uses provided for in Paragraph 1.a. above.

c. Boat traffic is allowed adjacent to the islands in the open waters of the Gulf and bays; however, boat traffic is prohibited in waterways extending into the interior of the islands or within any land-locked open waters or wetlands of the islands.

d. Fishing from boats along the shore and wade fishing in the surf areas of the islands is allowed.

e. Littering on the islands or in Louisiana waters or wetlands is prohibited.

f. Proposals to conduct oil and gas activities, including seismic exploration, shall be considered on a case-by-case basis and may be permitted by the Secretary or his designee, consistent with provisions of the Act of Donation executed by the Louisiana Land and Exploration Company on July 24, 1997.

##### 2. Regulations for Trinity Island

a. Public access is allowed in a designated public use area. An area approximately 3,000 linear feet by 500 linear feet is designated as a public use area, the boundaries of which will be marked and maintained by the Department. The designated public use area shall extend westward from the western boundary of the servitude area reserved by Louisiana Land and Exploration Company in the Act of Donation a distance of approximately 3,000 linear feet and northward from the southern shoreline within this area by a distance of approximately 500 linear feet. Public recreation such as bird-watching, picnicking, fishing and overnight camping is allowed in this area. Travel on or across this area shall be limited to foot or bicycle traffic only. No use of all-terrain vehicles or other vehicles powered by internal combustion engines or electric motors shall be allowed.

b. Public access to all exposed land areas of Trinity Island, other than the public use area, is prohibited. Requests to access these exposed land areas shall be considered on a case-by-case basis and may be permitted by the Secretary or his designee in the interest of conducting research on fauna and flora, of advancing educational pursuits related to barrier islands or of planning and implementing island restoration projects.

disturb, injure, or collect any flora, fauna, or other property is prohibited, unless expressly permitted in

writing by the Secretary or his designee for the uses provided for in Paragraph 2.b. above.

d. Any member of the public utilizing the designated public use area shall be required to have a portable waste disposal container to collect all human wastes and to remove same upon leaving the island. Discharge of human wastes, including that within the disposal container, onto the island or into Louisiana waters or wetlands is prohibited.

e. Littering on the island or in Louisiana waters or wetlands is prohibited.

f. Carrying, possessing, or discharging firearms, fireworks, or explosives in the designated public use area is prohibited.

g. Boat traffic is allowed adjacent to the island in open waters of the Gulf and bays and within the man-made canal commonly known as California Canal for its entire length to its terminus at the bulkhead on the

western end of the canal. No boat traffic is allowed in other man-made or natural waterways extending into the interior of the island or in any land-locked open waters or wetlands of the island.

h. Fishing from boats or wade fishing in the surf areas of the island is allowed.

i. Houseboats may be moored in designated areas along the California Canal. An annual permit shall be required to moor a houseboat in the canal. The required permit may be obtained from the Department of Wildlife and Fisheries New Iberia Office.

j. Proposals to conduct oil and gas activities, including seismic exploration, shall be considered on a case-by-case basis and may be permitted by the Secretary or his designee, consistent with provisions of the Act of Donation executed by the Louisiana Land and Exploration Company on July 24, 1997.

B. Violation of any provision of these regulations shall

be considered a Class Two Violation, as described in R.S.

56:115(D), 56:764, and 56:787.

AUTHORITY NOTE: Promulgated in accordance with R.S.

56:6(18), R.S. 56:109, and R.S. 56:781 et seq.

HISTORICAL NOTE: Promulgated by the Department of Wildlife and Fisheries, Wildlife and Fisheries Commission, LR 25:

Bill A. Busbice, Jr.  
Chairman

9905#041

## Exhibit "C"

### Project Summary

#### Ship Shoal – Whiskey Island West Flank Project TE-47 Terrebonne Parish, Louisiana

##### Location

The project is located on Whiskey Island, a barrier island in the Isles Dernieres chain in south Terrebonne Parish, Louisiana. The Whiskey West Flank project will extend Whiskey Island westward.

##### Problems

The Isles Dernieres barrier island chain, which is considered one of the most rapidly deteriorating barrier shorelines in the United States, is losing its structural functions for the coastal/estuarine ecosystem. Chief among these is the chain's storm buffering capacity and the protection it provides human populations, oil and gas infrastructure, inland bays, estuaries, and wetlands. Chain breakup has resulted from both major storm actions and, due to human alterations, the loss of nourishing sediment from the natural system.

Whiskey Island changes from 1978 to 1988 include the average loss of 31.1 acres per year.

##### Restoration Strategy

The project's objectives include: 1) restoring the integrity of the west flank of Whiskey Island to retain its structural function; 2) adding new offshore sediment into the west flank; and 3) restoring roughly 387 acres of barrier island habitat into the island's western flank.

One approach to the problem includes mining and importing offshore Ship Shoal sediment into the Louisiana coastal ecosystem to increase the sediment supply and strengthen island formation. Other approaches involve rebuilding the natural structural framework within the coastal ecosystem to provide for separation of the gulf and the estuary, and creating a continuous protective barrier for back bays and inland marshes to reduce wave energies, thereby helping to reduce land loss and restore the longshore transport system. One final approach towards meeting these goals is to provide a unique and sustainable barrier island habitat for numerous biological species, several of which are endangered, in areas that are presently open water.

Ship Shoal sand would be mined by a cutterhead hydraulic dredge and/or hopper dredge. It would then be transported approximately 8 miles to Whiskey Island. Restored areas will include: 1) 52 acres of 7-foot high, 150-foot wide dunes; 2) 114 acres of above-tide habitat at an elevation of 4 feet; 3) 208 acres of intertidal habitat at an elevation of 2 feet; 4) 8 acres of subtidal habitat. All areas will be planted and have sand fencing placed in order to trap wind-blown sediment.

Details for pipes and booster pumps or additional equipment for hopper dredge operations will be analyzed during engineering and design. Conventional equipment is expected to be used for earth moving to obtain island design elevations, widths, and slopes. Approximate design features for the west flank restoration include beach platform, dune, and marsh platform.

Maintenance is not proposed for this project. If a disastrous storm event should cause significant damage, a restoration project would be proposed.

### **Progress to Date**

This project was selected for Phase I (engineering and design) funding at the January 2002 Breaux Act Task Force meeting. It is included as part of Priority Project List 11.

## **Enclosure 4D&E**

**Ship Shoal/Whiskey West Flank (TE-47)**

**30% & 95% E&D Reviews**

# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

SCOTT A. ANGELLE  
SECRETARY

DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

October 20, 2005

Mr. Wes McQuiddy  
Team Leader  
Marine and Wetlands Section (6WQ-EM)  
Environmental Protection Agency  
1445 Ross Avenue  
Dallas, Texas 75202

**Via Facsimile**

(214) 665-6689

Re: 95% Design Review for Ship Shoal Whiskey Island West Flank, (TE-47)  
Statement of Local Sponsor Concurrence

Dear Mr. McQuiddy:

We are in receipt of your October 11, 2005 letter regarding the captioned project. In that letter you indicated that EPA has concluded the project is still viable and is recommending the advancement of the project to construction.

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 construction. We have instructed the engineering and design firm (DMJM+Harris) to generate the final construction bid documents.

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.  
Director

CPK:LCW:dpg

cc: John Hodnett, Engineer Manager  
Chris Williams, Project Manager  
Luke Le Bas, Engineer Manager

# State of Louisiana



KATHLEEN BABINEAUX BLANCO  
GOVERNOR

SCOTT A. ANGELLE  
SECRETARY

DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF COASTAL RESTORATION AND MANAGEMENT

December 28, 2004

Mr. Wes McQuiddy  
Acting Chief  
Marine and Wetlands Section (6WQ-EM)  
Environmental Protection Agency  
1445 Ross Avenue  
Dallas, Texas 75202

Via Facsimile

(214) 665-6689

Re: 30% Design Review for Ship Shoal Whiskey Island West Flank, (TE-47)  
Statement of Local Sponsor Concurrence

Dear Mr. McQuiddy:

We are in receipt of your November 29, 2004 letter regarding the captioned project. In that letter you indicated that EPA has concluded the project is still viable and is recommending the advancement of the project to the 95 Percent level. Questions were asked in the Ecological Review concerning the projects goals and objectives; these issues will be addressed in the 95 Percent Design report prior to holding the 95 Percent Design Review.

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. We have instructed the engineering and design firm (DMJM+Harris) to bring the project to the 95 Percent level.

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,

Handwritten signature of Christopher P. Knotts in black ink.

Christopher P. Knotts, P. E.  
Director

CPK:LCW:dpg

cc: John Hodnett, Engineer Manager  
Chris Williams, Project Manager  
Luke Le Bas, Engineer Manager

**Enclosure 4F**

**Ship Shoal/Whiskey West Flank (TE-47)**

**Final FONSI**





# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6  
1445 ROSS AVENUE, SUITE 1200  
DALLAS, TX 75202-2733

December 1, 2005

## FINDING OF NO SIGNIFICANT IMPACT

### To All Interested Agencies and Public Groups:

In accordance with the environmental review guidelines of the Council on Environmental Quality at 40 Code of Federal Regulations Part 1500, the U.S. Environmental Protection Agency (EPA) has performed a Supplemental Environmental Assessment for the following proposed action under the authority of the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) of November 1990, House Document 646, 101<sup>st</sup> Congress (Public Law 101-646).

**Project Name:** Ship Shoal Whiskey Island West Flank Restoration (TE-47)

**Sponsors:** U.S. Environmental Protection Agency, Region 6  
Louisiana Department of Natural Resources

**Total estimated funding** \$42,175,800

**Phase 1 (Engineering and Design) funding** \$ 2,999,000

**Phase 2 (Construction) funding** \$39,176,800

**Location:** The proposed project is located on Whiskey Island in the Isles Dernieres Barrier Island chain, centered at approximate coordinates 29° 03' 45" north latitude, and 90° 49' 41" west longitude. The proposed sand borrow site is located approximately 10 miles south-southwest of Whiskey Island in the Gulf of Mexico, entirely within Block 88 of Ship Shoal.

**Introduction.** The EPA prepared an Environmental Assessment (EA) in December 1993 for the restoration of Isles Dernieres Barrier Island which included Racoon Island, Whiskey Island, Trinity Island and East Island. On September 4, 1997, EPA issued an addendum to the EA and a Finding of No Significant Impact (FNSI) for the Whiskey Island Barrier Island Restoration and Coastal Wetland Creation (TE-27) project, addressing the direct creation of approximately 355 acres (ac) of emergent marsh platform, and four major breach closures, including the Coupe Nouvelle. The Statement of Findings was issued on November 6, 1997. In April 2004, the U.S. Department of the Interior, Minerals Management Service (MMS), prepared an EA analyzing the proposed action to dredge sand within Block 88 in the Ship Shoal area for placement on the west flank of Whiskey Island (TE-47). Based on the EA, the MMS concluded that the proposed action would not significantly affect the quality of the human environment and that preparation of an Environmental Impact Statement (EIS) was not warranted.

**Proposed Action.** The objective of project TE-47 is to continue the restoration of Isles Dernieres. Offshore Ship Shoal sand would be excavated and transported a distance of

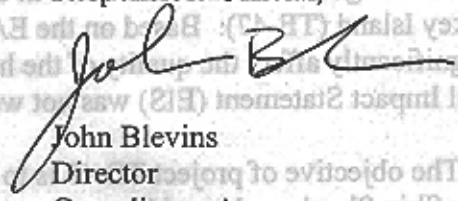
approximately 10 miles to restore the west flank of Whiskey Island. The restoration includes a 600-foot (ft) wide berm at +3 ft North American Vertical Datum of 1988 (NAVD), and 300-ft wide at +6 ft NAVD, and will require about 2.8 million cubic yards (cy) of sand. There is an existing east flank restoration area which includes a 450-ft wide berm at +3 ft NAVD, and a 100-ft wide dune transitioning from the west flank's +6 ft NAVD to the east flank's +4 ft NAVD. Approximately 1.1 million cy of sand will be required for the transition. The existing back barrier marsh habitat will be protected during the transition into the adjacent east dune to mitigate overwash-breaching (i.e., western marsh lobe) and to retain the island structural function.

After the construction, the west flank would be restored to approximately 415 ac of intertidal, supratidal, and dune habitat, and the extension to the east would be restored to approximately 85 ac of additional intertidal, supratidal, and dune habitat, for a total of 500 ac. The total benefits from the project would be the direct creation of approximately 85 ac of dune platform, a net increase of 98 ac of supratidal and a net increase of 131 ac of intertidal habitats. All areas will be planted and sand fencing placed to trap wind-blown sediment.

The proposed TE-47 project is part of and consistent with the Louisiana Coastal Wetlands Conservation and Restoration Task Force, and the Wetlands Conservation and Restoration Authority ecosystem strategy to restore barrier islands and gulf shorelines. CWPPRA provides Federal funds for planning and implementing projects that create, protect, restore and enhance wetlands in coastal Louisiana. Under CWPPRA, the project cost is shared by the Federal sponsoring agency and the State of Louisiana. The Federal government provides 85 percent of the project cost and the Louisiana Department of Natural Resources (LDNR) provides the remaining 15 percent.

**Finding.** On the basis of this Supplemental EA performed by the EPA of the proposed project, and other findings and available information, the Regional Administrator has determined that the proposed project is not a major Federal action significantly adversely affecting the quality of the human environment, and that preparation of an EIS is not warranted. This preliminary FNSI will become final 30 days after the issuance of the public notice if no new information is received to alter this finding. No administrative action will be taken on this decision during the 30-day comment period. Comments regarding this preliminary decision not to prepare an EIS, requests for copies of the EA, or review of the Administrative Record containing the information supporting this decision, may be submitted in writing to the U.S. Environmental Protection Agency; Office of Planning and Coordination (6EN-XP); 1445 Ross Avenue, Suite 1200; Dallas, Texas 75202-2733, or by telephone at (214) 665-8150.

Responsible Official,



John Blevins

Director

Compliance Assurance  
and Enforcement Division

## **Enclosure 4G**

**Ship Shoal/Whiskey West Flank (TE-47)**

**Ecological Review**

**E C O L O G I C A L R E V I E W**

**Ship Shoal: Whiskey West Flank Restoration**

CWPPRA Priority Project List 11

(State No. TE-47)

August 2005

Mark A. Stead  
Restoration Technology Section  
Coastal Restoration Division  
Louisiana Department of Natural Resources

## Ecological Review

### Ship Shoal: Whiskey West Flank Restoration (TE-47)

*In August 2000, the Louisiana Department of Natural Resources (LDNR) initiated the Ecological Review to improve the likelihood of restoration project success. This is a process whereby each restoration project's biotic benefits, goals, and strategies are evaluated prior to granting construction authorization. This evaluation utilizes environmental data and engineering information, as well as applicable scientific literature, to assess whether or not, and to what degree, the proposed project features will cause the desired ecological response.*

#### I. Introduction

The proposed Ship Shoal: Whiskey West Flank Restoration (TE-47) project is adjacent to the constructed Whiskey Island Restoration (TE-27) project located on the southernmost boundaries of Lake Pelto and Caillou Bay in the Terrebonne Basin (Figure 1). Whiskey Island is part of the Isles Dernieres barrier island chain which stretches for 20 miles along the Louisiana coast, approximately 63 miles west of the mouth of the Mississippi River and 75 miles southwest of New Orleans, Louisiana. The project area encompasses the western flank of Whiskey Island which is the second island from the western end of the Isle Dernieres barrier island chain. The total area of the Ship Shoal: Whiskey West Flank Restoration project is approximately 257 acres of open water and 152 acres of land (United States Environmental Protection Agency [EPA 2001]). Approximately 700 acres of dune, subtidal, intertidal, and subtidal habitat will be restored through the beneficial use of sand mined from the offshore bar known as Ship Shoal located 10 miles south of Whiskey Island.

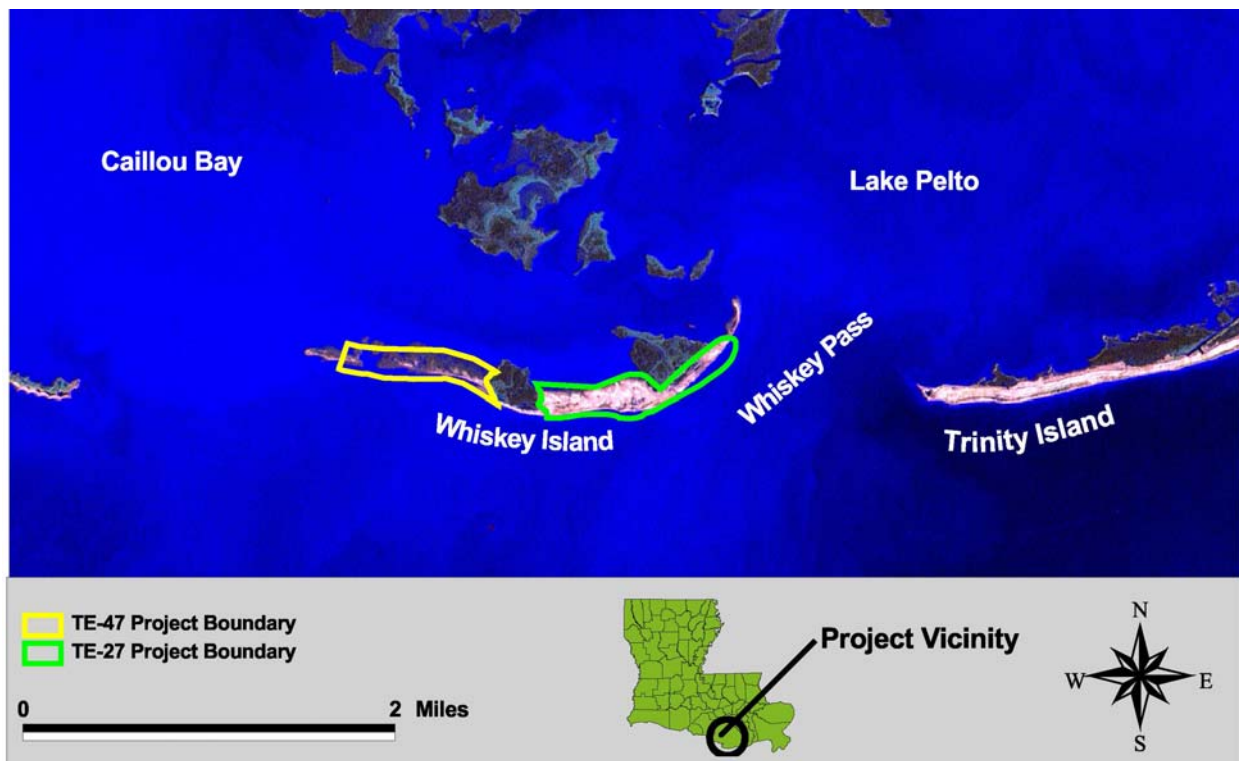


Figure 1. Ship Shoal: Whiskey West Flank Restoration (TE-47) project boundary

The Isles Dernieres barrier island chain shoreline is one of the most rapidly deteriorating barrier shorelines in the United States (Williams et al. 1992). It is estimated that most of Louisiana’s barrier islands have naturally decreased in land mass by approximately 40% over the last 100 years (Monteferrante and Mendelsohn 1982). Historically, tropical storms and hurricanes have caused beach erosion and overwash of these islands. In addition, winter storms and cold front passages contribute to the erosion of the islands, most notably the back barrier salt marsh shorelines (LCWCRTF & WCRA 1999). Erosion of the gulf and bay shorelines is causing the islands to narrow. From the 1890’s to 1988, island width had decreased approximately 2,612 feet (Williams et al. 1992). Historical landloss estimates in the area have averaged between 32.8 and 49.2 feet per year (LCWCRTF & WCRA 1999). Future landloss projections estimate that none of the Isles Dernieres chain will remain by 2050 and some of the islands will become sub-aqueous by 2007 (LCWCRTF & WCRA 1999). Mining of sand from the Ship Shoal and using this material to nourish the beaches on the western flank of Whiskey Island will aid in reducing storm surge and in protecting interior marsh and infrastructure (LCWCRTF & WCRA 1999). This objective is in accordance with *Coast 2050* Region 3 Ecosystem Strategies which include maintaining and restoring the Isles Dernieres barrier island chain.

**II. Goal Statement**

- Maintain approximately 125 acres of the created/restored dune, intertidal, and supratidal habitat by the end of the 20-year project life (Table 1).
- Prevent breaching of the barrier island throughout the 20-year project life.
- Assess the effectiveness of mining offshore Ship Shoal sand for use in future barrier island restoration projects.

**Table 1. Acreage targets for the west flank of Whiskey Island with and without project (EPA 2003)**

<b>Target Year</b>	<b>Future Without Project (Acres)</b>	<b>Future With Project (Acres)</b>
TY-0	<b>186</b>	<b>186</b>
TY-1 (as built)	<b>179</b>	<b>500</b>
TY-10	<b>126</b>	<b>322</b>
TY-20	<b>60</b>	<b>125</b>

**III. Strategy Statement**

- Create a 200-foot wide gulfside beach berm at an elevation of +3.0 feet NAVD-88 and a 100 to 300-foot wide dune at an elevation of +4.0 to +6.0 feet NAVD-88.
- Create back barrier marsh on the bay side of the island at an elevation of +2.0 feet NAVD-88 at the toe of the dune to +1.0 foot NAVD-88 at the toe of the platform.
- Sand fencing and vegetative plantings will be implemented to stabilize dune and back barrier components.

**IV. Strategy-Goal Relationship**

Project goals will be achieved by mining and transporting offshore Ship Shoal sand to restore the west flank of Whiskey Island. Material would be transported a distance of approximately 10 miles via pipeline and booster pumps to the island and used to create dune, marsh and intertidal habitat. Conventional earth moving equipment would be used to obtain design elevations, widths, and slopes. A design template which was selected through the numerical modeling of alternatives was used to achieve the goal of preventing island breaching over the life of the project.

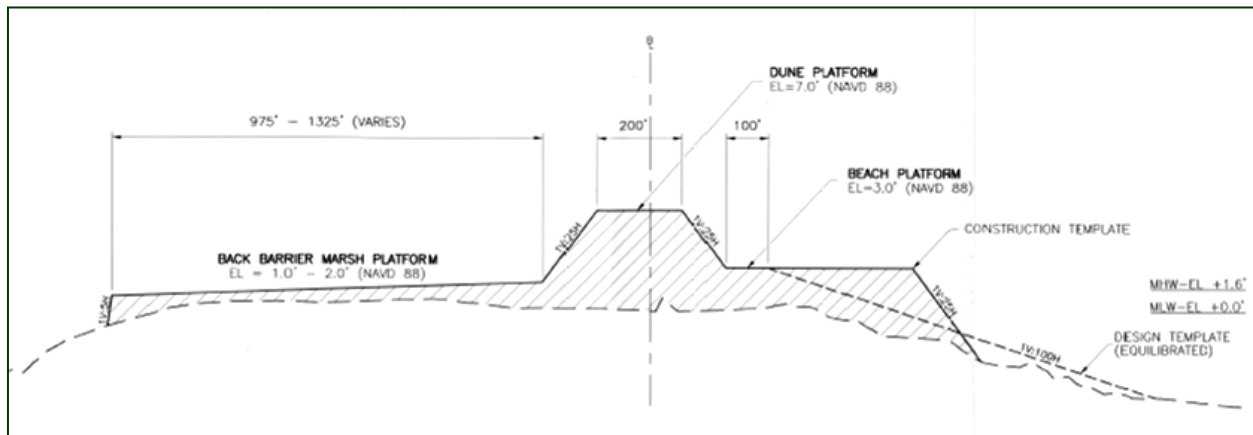
**V. Project Feature Evaluation**  
**Alternative Designs**

Three alternative island designs were modeled by Moffat & Nichol Engineers, Inc. (2004) to determine the best method for restoring the west flank of Whiskey Island. The alternatives include three designs of differing dune width and height, back barrier marsh width and height, and berm width and height are presented in detail below (Table 2).

**Table 2. Alternative design parameters for the west flank of Whiskey Island**

Alternatives	Berm Width (feet)	Berm Height (feet NAVD-88)	Dune Width (feet)	Dune Height (feet NAVD-88)	Back Barrier Marsh Width (feet)	Back Barrier Marsh Height (feet NAVD-88)	Total Acres Created
A	100	3.0	200	7.0	975-1325	1.0-2.0	547
B	200	3.0	300	6.0	825-1225	1.0-2.0	549
C	300	3.0	400	5.0	675-1025	1.0-2.0	542

Alternative A (Figure 2 and Appendix A) involves the construction of a marsh platform, beach berm, and dune. Because the design widths of the dune and beach berm are relatively small, this alternative design allows for the creation of more back barrier marsh habitat (204 acres) in lieu of beach and dune habitat (126 and 83 acres, respectively) and 134 acres of intertidal habitat. A total of 547 acres of subtidal gulf beach, dune, and intertidal marsh would be created and or restored using this design alternative.



**Figure 2. Alternative A (DMJM + HARRIS, Inc. 2005)**

Alternative B (Figure 3 and Appendix B) involves the same components as Alternative A except that dune height is at a slightly lower elevation and dune and beach berm widths are increased. This alternative will allow for the creation of more beach and dune habitat (144 and 90 acres, respectively) than Alternative A, but less back barrier marsh habitat (181 acres) and a similar acreage of intertidal habitat (134 acres). A total of 549 acres of subtidal, gulf beach, dune, and intertidal marsh would be created and or restored using this design alternative.

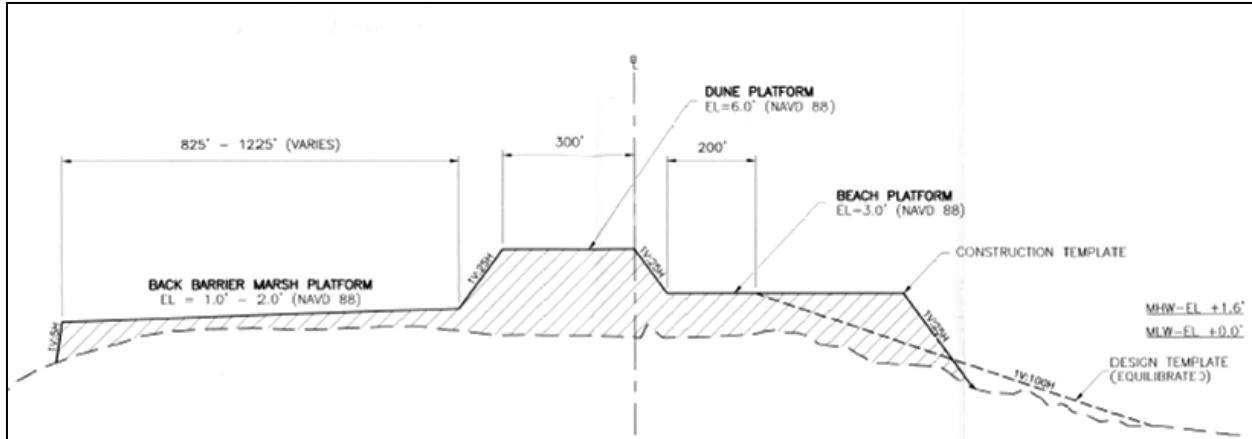


Figure 3. Alternative B (DMJM + HARRIS, Inc. 2005)

Alternative C (Figure 4 and Appendix C) also involves the same components as Alternatives A and B except dune height will be further reduced than Alternative B and the width of the beach berm and dune will be increased. Alternative C will result in the least amount of back barrier marsh creation (146 acres) but the largest acreage of beach berm and dune habitat (163 and 99 acres, respectively) and a similar total of intertidal habitat (134 acres). A total of 542 acres of subtidal gulf beach, dune, and intertidal marsh would be created and or restored using this design alternative.

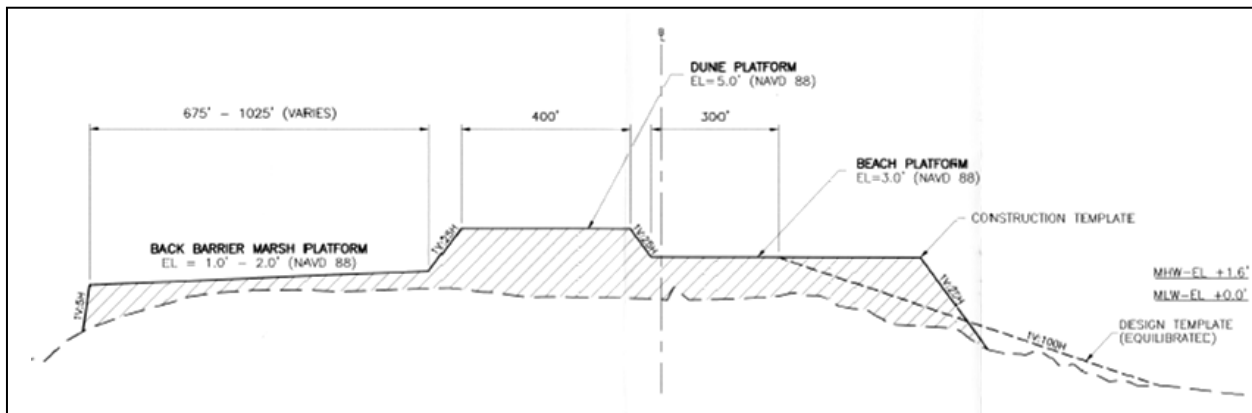


Figure 4. Alternative C (DMJM + HARRIS, Inc. 2005)

### Model Discussion

Numerical models were developed by Moffatt & Nichol Engineers, Inc. (2004) to examine hydrodynamics, waves, sediment transport, and morphological changes under “future with-project” and “future without-project” conditions. In addition, the models were used to compare the performance of the three alternatives under design storm conditions and during a series of other storm scenarios over the 20-year project life. The models were developed using the Delft3D modeling system, an integrated surface water modeling system by WL|Delft Hydraulics in the Netherlands (DMJM + HARRIS, Inc. 2005).

### *Design Storm and Alternative Performance*

Hurricanes and the associated storm surge play a large role in determining design parameters for barrier island restoration projects. Dune height and width often reduce the frequency of overwashing and breaching events that may occur and allow for the establishment



of back barrier marsh vegetation. Using a developed stage of storms versus frequency estimate for East Timbalier Island (Suhayda 1991) and Grand Isle (USACE 1979), Moffat & Nichol Engineers, Inc. estimated that a Category 2 storm was a reasonable design storm for this project. A design storm is essentially a storm that would recur over or near Whiskey Island once every thirty years and have an estimated storm surge of +5.0 feet NAVD-88. Storm surge combined with wave setup would increase the total height of surge to an estimated +7.0 feet NAVD-88. Moffat & Nichol Engineers, Inc. modeled the effects of the design storm and a major storm (Category 3-4), which is estimated to impact Whiskey Island once every 30 to 100 years, respectively, in the three alternative designs.

The model showed that the three alternatives would likely survive the design storm without catastrophic damage. However, Alternative C would experience overwashing and breaching and would be vulnerable to smaller tropical systems. In addition, Alternative C has an extremely wide dune, thereby reducing the acreage of the back barrier marsh. Alternative A was estimated to prevent breaching and experience less inundation and erosion than both Alternatives B and C during a design storm but caused increased flow-training effects on the central and eastern sections of Whiskey Island outside of the project area. Alternative B also prevented breaching but caused less flow-training effects, compared to Alternative A, on the central marsh lobe and eastern portions of the island. Also, the dune height of Alternative B (+6.0 feet NAVD-88) is consistent with the recommendations of Penland et al., (2003) that natural dune height (3.0-6.0 feet NAVD-88) results in a significant increase in biodiversity. Therefore, the Alternative B template was chosen by Moffat & Nichol Engineers, Inc. as a superior design for the reconstruction of the Whiskey Island western flank.

In the event of a major storm (Category 3-4), the hydrodynamic and morphological impacts on the restored western flank of Whiskey Island are significantly more severe (DMJM + HARRIS, Inc. 2005). It is estimated that the entire island would be under more than +7.0 feet NAVD-88 of water. Significant breaching and subsequent erosion of the restored island area would occur (DMJM + HARRIS, Inc. 2005).

#### *Alternative B-Extended*

As mentioned previously, modeling results of Alternatives A, B, and C showed that the central marsh lobe (Figure 5) would experience increased overwash and possible breaching (flow-training effects) if the island experienced a storm surge associated with a Category 2 hurricane. Therefore, a fourth alternative was formulated by Moffat & Nichol Engineers Inc. by modifying Alternative B (Appendix D) with the intention of protecting the central marsh lobe from inundation. This fourth alternative was called Alternative B-Extended. Modeling results show that by extending the beach berm and dune template of Alternative B eastward, flow over the marsh lobe in the middle section of the island would be reduced during a design storm. This extended beach berm and dune template (Figure 6) would tie in with the previously constructed TE-27 project. Additionally, this extension would, through longshore transport processes, act as a feeder beach for the western flank. Alternative B-Extended was chosen as the preferred alternative by the project team at the 30% Design Review Meetings.

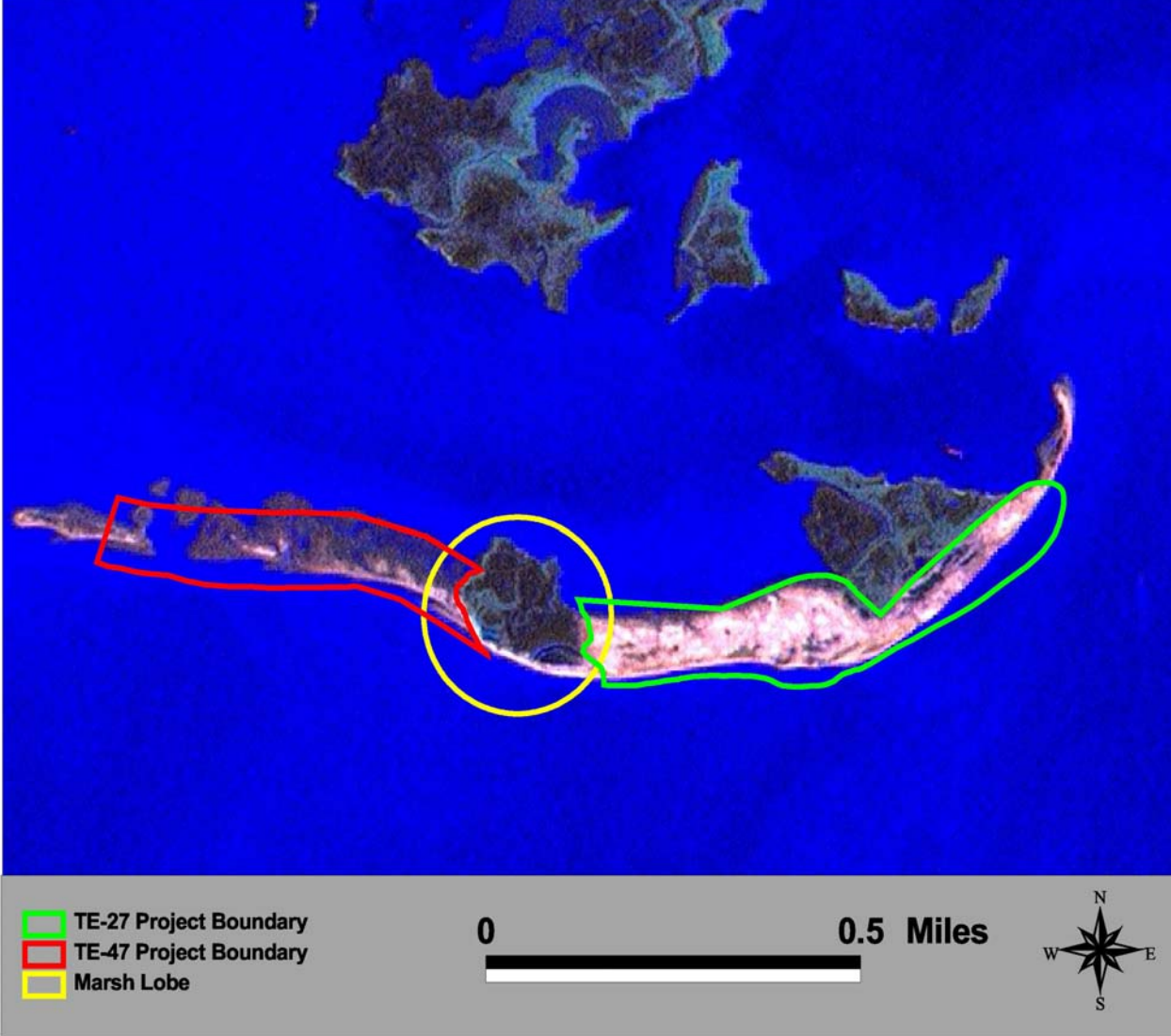


Figure 5. Whiskey Island marsh lobe

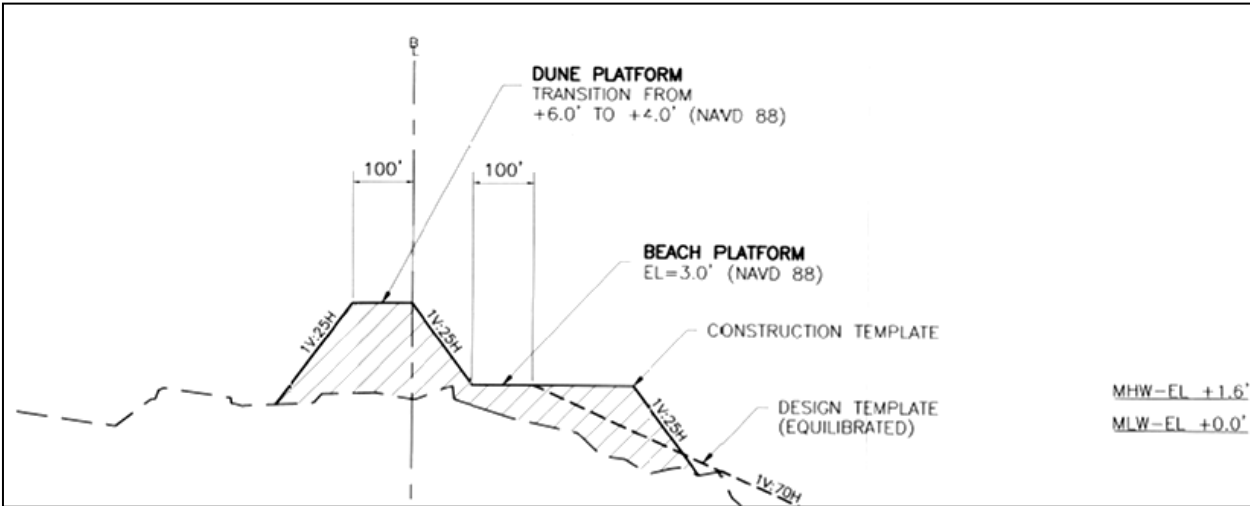


Figure 6. Alternative B-Extended portion to be constructed across the central marsh lobe (DMJM + HARRIS, Inc. 2005)

Alternative B-Extended involves the same components as Alternative B except that dune and beach berm length extends farther east and dune height transitions from +6.0 feet NAVD-88 to +4.0 feet NAVD-88 to protect the central marsh area of Whiskey Island (Table 3). This alternative will allow for more subtidal (203 acres), beach (198 acres), dune (121 acres), and intertidal marsh habitat creation (181 acres) compared to the other alternatives. A total of 703 acres of subtidal gulf beach, dune, and intertidal marsh would be created and/or restored using this design alternative.

**Table 3. Design parameters of Alternative B and Alternative B-Extended for the west flank of Whiskey Island (DMJM + HARRIS, Inc. 2005)**

Alternatives	Berm Width (feet)	Berm Height (feet NAVD-88)	Dune Width (feet)	Dune Height (feet NAVD-88)	Back Barrier Marsh Width (feet)	Back Barrier Marsh Height (feet NAVD-88)	Total Acres Created
B	200	3.0	300	6.0	825-1225	1.0-2.0	549
B-Extended	100-200	3.0	100-300	4.0-6.0	0-1225	1.0-2.0	703

The model also showed that significant losses of the restored western flank can be expected over the life of the project. At the end of the project life it is estimated that only 20-30%, or roughly 100 to 150 acres of the restored subaerial portion of the western flank using the Alternative B-Extended design will remain without a maintenance event (Moffatt & Nichol Engineers, Inc. 2004). In addition, the habitat type will change significantly over the life of the project. Following construction, the restored western flank will likely have a habitat distribution of 40% supratidal beach, 20% intertidal beach, and 40% intertidal marsh. At year 20 the distribution would be similar to conditions today in that 20% supratidal beach, 60% intertidal beach, and 20% intertidal marsh, would still exist. The relatively high loss of material is a direct result of overwash during storm events, longshore transport, and other natural erosional processes. Alternatives A, B, and C were estimated to have a similar percent of restored area remaining at the end of the project life (DMJM + HARRIS, Inc. 2005).

Geotechnical Analysis of Borrow Site

The proposed borrow site is located approximately 10 miles due south of Whiskey Island and is contained entirely within Ship Shoal-Block 88. Ship Shoal is an east-west linear offshore bank 31 miles long by 3 miles wide and up to 16 feet thick and submerged in approximately 10-30 feet of water (DMJM + HARRIS, Inc. 2005). In order to determine a suitable borrow site within Ship Shoal, a preliminary geophysical survey was conducted by C & C Technologies (2003). C & C Technologies determined that the west central section of Ship Shoal-Block 88 contained material suitable for restoring the west flank of Whiskey Island. A subsequent sand source investigation of Ship Shoal-Block 88 was conducted by Soil Testing Engineers, Inc. (STE) in late March and early April of 2004. The purpose of this investigation was to further assess the suitability of the offshore borrow site material within Block 88 for the restoration of the west flank of Whiskey Island (STE 2004). Thirty-five vibracores were collected from a 5,500-foot by 6,500-foot plan view area of the middle to southern half of Block 88. The depth at which the vibracores were collected ranged from 18 to 23 feet.

Analysis of grain size, Atterber limits determinations, moisture content determinations, and specific gravity revealed that the upper sands were the most suitable sediment type present within the area of Block 88 for island restoration. Typically, an upper fine sand layer was

located at the crest or top of the shoal while a central silty sand to sandy silt layer and a lower clay layer were contained underneath. It was determined that within the investigated area that the upper sands ranged in thickness from 4 feet at the northeast corner to 20 feet or greater at the northwest corner. A total of approximately 17,300,000 cubic yards of sand is contained within the investigated area of Block 88. Mean grain size of the upper crest of the shoal was determined to be 0.20 mm, with a 2.3 PHI value. These values were used to determine the compatibility of the sediments at the borrow site to those contained at the western flank of Whiskey Island.

#### Geotechnical Analysis of Whiskey Island West Flank

Soil Testing Engineers (STE 2004) performed a sampling investigation of the sediments on and around both the eastern and western flanks of Whiskey Island in May of 2004. The purpose of this sampling investigation was to compare the sediment characteristics of Whiskey Island to those of the borrow site using a sediment suitability assessment. Forty-nine “grab” samples were collected across the subaerial profile, south Gulf side, and back barrier of Whiskey Island. Grain size sieve analyses and moisture content determinations were performed by STE to classify sediments collected. Results of the geotechnical analysis indicated that the average grain size of the material collected at or above MLW from the west flank of Whiskey Island was approximately 0.20 mm.

#### Sediment Suitability Index

A sediment suitability assessment was conducted to determine how texturally similar the borrow material in Ship Shoal-Block 88 was compared to the native material on Whiskey Island’s western flank (STE 2004). If the material added to the western flank of Whiskey Island is coarser or finer than the native material the performance of the project will be significantly reduced. The borrow material placed on the beach of Whiskey Island will undergo a natural sorting process as a result of coastal processes and will eventually approach the native grain-size distribution. The finer material that does not match the native material will be lost offshore (USACE 2002).

The mean grain size of samples taken from at or above MLW of the west flank of Whiskey Island was approximately 0.20 mm, while deeper Gulf and bay subtidal samples were significantly finer. Therefore, it was determined that the samples collected in Ship Shoal-Block 88 were similar to those collected at Whiskey Island and contained primarily fine sand with a mean grain size of 0.20 mm. An overfill factor was used in order to estimate the volume of borrow material needed to produce a stable unit of usable fill material with similar grain size characteristics as the native material. If the overfill factor is estimated to be 1.0, the borrow and native material are nearly identical. Overfill factors were computed using data from each of the borrow area vibracores and samples from the MLW and shallow crest of the west flank. The average overfill factor was calculated to be 1.2, meaning 1.2 volumetric units of borrow material would be required to create 1.0 unit of stable Whiskey Island beach material.

#### Dredging Alternative Analysis

An estimated 2-4 million cubic yards of sand will be dredged and transported nearly 10 miles from Ship Shoal-Block 88. Dredging and transport alternatives were chosen based on several factors including production rates, transport distance, water depth, environmental factors, cost, and equipment availability (DMJM + HARRIS, Inc. 2005). Three dredging and transport

options were chosen for further evaluation after completion of the Preliminary 30% Design Review Meeting.

- Hydraulic suction cutterhead dredge with pipeline/booster station to shore: Transport of sediments will be accomplished by pumping material through twenty to thirty-six inch pipelines to shore. Floating and fixed booster pumps will be situated along the pipeline and spaced to optimize cost. Once the sediment is transported, the material will be placed along the front of the restoration project for final placement and grading.
- Hopper dredges to intermediate point for transfer to pipeline/booster station to shore: The pipeline to shore, with booster stations, would be similar to the first option but shorter in overall length. Dredges will be chosen based on the operating drafts and transfer points from the hopper dredge to pipeline to the shore of Whiskey Island.
- Hydraulic cutterhead dredge filling hopper barge for delivery to intermediate transfer point to pipeline/booster station to shore: This approach is similar to the second option substituting a cutterhead dredge and barges for the hopper dredges. This option offers more flexibility and assurance of production output by using multiple units as well as the ability to locate the transfer point in shallower water closer to shore.

Dredging cost estimates were computed based on a U.S. Army Corps of Engineers CEDEP estimating system, and included the costs of performing the dredging, transport and placement of material. Based on these cost estimates DMJM+HARRIS determined that the hydraulic suction cutterhead dredge with pipeline/booster station to shore is the most cost effective and efficient alternative for the construction of this project.

#### Borrow Site Impacts

The Moffat & Nichol Engineers, Inc. model evaluated the changes in shoal geometry and the resulting impacts on local wave conditions following mining of sediments from the shoal (DMJM + HARRIS, Inc. 2005). One concern with removing sand from Ship Shoal was the impacts on regional and local wave conditions. Stone et al. (2003) found that removal of the shoal (1.6 billion cubic yards) would increase significant wave heights during severe storms as much as 90-100% over the shoal and 50% in the lee of the shoal, but that shoal removal would not measurably increase near-shore wave energies or erosion on the Isles Dernieres. It can be expected that impacts from removing 2-4 million cubic yards of material for this project would be less severe than removal of the entire shoal.

Moffatt & Nichol Engineers, Inc. used SWAN for both existing and post-dredge conditions to better understand the hydrodynamic impacts of removing 17 million cubic yards of sediment (entire volume of Block 88) from the shoal, although only 2-4 million cubic yards would be required for the restoration of the western flank of Whiskey Island. It was determined that during a severe storm the change in wave height was estimated at 1.4 feet or a 7.0% increase compared to current conditions. However, the extent of these impacts were localized and limited to an area of approximately 4 miles wide by 6 miles long. Waves associated with fair weather conditions travel over the existing shoal without dissipating. It can therefore be assumed that

removing sand from Ship Shoal-Block 88 would have only a small localized impact on wave climate under storm conditions.

#### Back Barrier Marsh Creation

Back barrier marsh will be created using coarse material mined from Ship Shoal. The elevation of the back barrier will be +2.0 feet NAVD-88 at the back toe of the dune and +1.0 feet NAVD-88 at the bay shoreline. Vegetation will be used to further stabilize the material. No settlement analysis was conducted on the back barrier component but it is estimated that the coarse material being used will experience little dewatering and consolidation. The back barrier marsh elevation for this project is significantly lower than design elevations of similar barrier island projects. However, many of the previous constructed back barrier marsh components were built at an elevation too high to be considered function subtidal marsh (DMJM + HARRIS, Inc. 2005).

#### Sand Fencing

Sand fencing aids in the formation of dunes and traps sand that otherwise would be lost (Khalil and Lee 2004). The Barrier Island Comprehensive Monitoring (BICM) Program, recommends installing sand fencing 4 feet high with 50% porosity (i.e., ratio of area of open space to total projected area) placed parallel to shore along the entire length of the dune. The purpose of the sand fencing design is to capture wind-blown sand and help build and stabilize mounds. Sand fencing will be constructed on the western flank of Whiskey Island after the construction of the dune, intertidal and supratidal components of the project are completed.

#### Vegetation

The United States Department of Agriculture (USDA) recommended the use of both marshhay cordgrass (*Spartina patens*) and bitter panicum (*Panicum amarum*) in dune restoration projects (USDA 1992). These plants should stabilize sand particles when used in conjunction with sand fencing. A slightly altered protocol was recently formulated by LDNR's Coastal Engineering Division's Planting Section. This protocol is based on reviews of previous planting plans, specifications, and is meant to improve survival and coverage for the vegetative planting of future projects. The new planting strategy includes increasing the diversity of the plants used on berm and dune habitat and installing the plants earlier in the growing season. The added species are thought to better tolerate the dry harsh conditions found on the berm and dune areas of barrier islands during the summer months (Ken Balingher, LDNR, Personal Communication April 2005). By installing the dune plants earlier in the season (early spring), the vegetation will have time to establish root systems before summer begins and disturbances to bird nesting areas will be minimized.

### **VI. Assessment of Goal Attainability**

Environmental data and scientific literature documenting the effects of the proposed project features in field application are evaluated below to assess whether or not, and to what degree the project features will elicit the desired ecological response.

#### Dune Building

According to the Louisiana Gulf Shoreline Restoration Report (Campbell and Benedet 2003), the basic design for beach nourishment should place enough sediment in the island system to produce a volumetrically stable and sediment-rich barrier complex. The most important parameter when developing an optimal design is to compensate for the amount of sediment

typically lost naturally by the system. The initial increase in volume should also include natural components of barrier islands, such as berm, dune, and back barrier marsh.

Historically, the height of artificial dunes is a controversial subject. Some hold the view that dune height should mimic the natural surroundings and allow for overwash of the islands. Penland et al. (2003) recommends building dunes at an elevation that mimics natural barrier island conditions (+3.0 to +6.0 feet NAVD-88) to facilitate an increase in biodiversity. Others believe that dune height should be significantly higher than natural dunes to protect infrastructure and prevent overwashing during storm events (LGSRR 2003). Therefore, dune height should be a function of specific project goals. If the goal of the project is to prevent overwashing and breaches, higher dunes are needed. In contrast, if the goals of the project are to maximize island and marsh footprints while maintaining the island area and its environment, then lower and wider dunes should be constructed. The overall objective of the TE-47 project is to maintain island area and mimic natural barrier island habitat; therefore, lower wider dunes that allow some island rollover would be the favorable design specification.

There are several recently constructed Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) barrier island projects that have included the design and implementation of dune and marsh platforms. However, it is difficult to evaluate these projects due to the fact that environmental monitoring data are limited. A list of constructed projects along the Isle Dernieres barrier island chain and their respective design parameters are listed below.

#### Isles Dernieres Restoration East Island (TE-20)

- Approximately 242 acres of supratidal, intertidal, and dune habitat was created using sediments dredged from Whiskey Pass
- Marsh platform constructed to an elevation of +4 feet NAVD-88
- Dune elevation of +8 feet NAVD-88 with a dune width of 300 to 500 feet
- Construction completed in July 1999

#### Isles Dernieres Restoration Trinity Island (TE-24)

- Included the creation of approximately 353 acres of supratidal, intertidal, and dune habitat using sediments dredged from Whiskey Pass
- Marsh platform constructed to an elevation of +4 feet NAVD-88 and 800 feet wide
- Dune elevation of +8 feet NAVD-88 with a dune width of 300 feet
- Construction completed in July 1999

#### East Timbalier Island Sediment Restoration – Phase 1 (TE-25)

- Included the creation of approximately 226 acres of barrier island habitat.
- Marsh platform constructed to an elevation of +2.0 feet NAVD-88 and 500 feet wide
- Dune elevation of +5 feet NAVD-88 and dune width of 200 feet
- A 7,000 foot seawall was constructed along the Gulf shoreline.
- Construction was completed in May 2001

#### Whiskey Island Restoration (TE-27)

- Included the creation of approximately 355 acres of supratidal, intertidal, and dune habitat using sediments dredged from Whiskey Pass

- Dune and Marsh elevations ranging from +3 to +4 feet NAVD-88 with a width of 300-500 feet
- Construction completed in July 1999

#### Timbalier Island Dune and Marsh Creation (TE-40)

- Marsh platform constructed to an elevation of 1.4 feet NAVD-88 and 800 feet wide
- Dune elevation of +8 feet NAVD-88 and a dune width of 400 feet
- Construction recently completed

Preliminary observations show that these barrier island restoration projects were effective at reducing island erosion and initially succeeded in increasing the height and volume of the islands (West 2004). However, sampling trips after the arrival of Hurricane Isidore and Lili have shown that the previously mentioned barrier islands have sustained considerable loss of land on both the gulf and bay sides of the island to open water. Although a significant amount of sediment has been lost, the island chain has yet to become sub-aqueous due to the preventative sediment fill before the arrival of two major storms. Sand fencing and vegetation plantings have been shown to reduce sediment loss on the islands and should be installed as soon as possible following construction. Increasing species richness and vegetative cover may promote increased sediment stability and facilitate further synergistic effects of vegetation growth and volume maintenance (West 2004).

Although the previously listed projects differ in design, the general objectives of creating dune and marsh habitat, preventing breaching and overwashing and establishing vegetation are similar. Future performance evaluations are needed for each of these projects to determine an optimized design for island and marsh restoration in the barrier island systems.

#### Vegetation Plantings and Sand Fencing

Factors that may affect vegetative planting projects include soil characteristics, wave fetch, herbivore threats, and many other site specific conditions (Bahlinger 1995). The USDA recommends the use of both marshhay cordgrass (*Spartina patens*) and bitter panicum (*Panicum amarum*) in dune restoration projects (USDA 1992). The following studies support the use of vegetation plantings in barrier island restoration projects, when used in combination with sand fencing.

- Mendelssohn et al. (1991) demonstrated the success of effectively building dunes in low sediment supply systems such as Pass La Mer to Chalant Pass and Pelican Island by combining vegetation plantings with sand fencing to decrease wind velocity along the dune. The three species of plants used in the study were bitter panicum (*Panicum amarum*), sea oats (*Uniola paniculata*), and seashore paspalum (*Paspalum vaginatum*). In addition, Mendelssohn et al. (1991) concluded that straight fences with spurs were initially more successful at accumulating sand and promoting dune height. Additionally, straight fences arranged parallel to the shoreline were more effective overall when compared to those angled perpendicularly to the shoreline.
- The Timbalier Island Planting Demonstration (TE-18) project was a 5-year demonstration of sediment trapping fences used in conjunction with vegetative plantings to build dunes along the gulf shoreline of Timbalier Island, in Terrebonne Parish, Louisiana. Over 7,390 linear feet of sand fencing was constructed parallel to the Gulf of Mexico shoreline and each fence



site had perpendicular spurs added every 50 feet that extended 25 feet from the fence bayward. Marshhay cordgrass (*Spartina patens*) and Atlantic panicgrass (*Panicum amarum* var. *amarulum*) were planted on the bay side of the fences. Both *Panicum amarum* var. *amarulum* and *Spartina patens* displayed excellent transplant survival when sand fences remained intact, approximately 93% and 53% respectively. Fenced and planted sections of the project area experienced a 0.8 foot per year increase in average dune height between 1995 and 1999, while the reference areas experienced a 0.5 foot per year increase. Sand fencing along with vegetative plantings appeared to be successful in trapping sediment and increasing overall dune height particularly in the first one to two years after construction (Townson et al. 1999).

- In 1992, the LDNR performed a restoration study which incorporated the use of marshhay cordgrass (*Spartina patens*) planted on 1-foot centers at Trinity Island, one of the four islands within Isles Dernieres. By 1994, this and other native vegetation such as salicornia (*Salicornia virginica*), baccharis (*Baccharis halimifolia*), black mangrove (*Avicennia germinans*), and seaside goldenrod (*Solidago sempervirens*) had propagated and assisted in stabilizing the island (Bahlinger 1995).
- Preliminary analyses of data from two similar CWPPRA barrier island projects showed only a slight increase in vegetation cover two years following construction. At Isles Dernieres Restoration East Island (TE-20), there was a slight increase in vegetation from 1999 (immediate post-construction) to 2001 (2 year post-construction) for bay, spur, and areas left unplanted. Data for Isles Dernieres Restoration Trinity Island (TE-24) showed that vegetation slightly increased in cover between 1999 (immediate post-construction) and 2001 (2 year post-construction) for unplanted areas and for bay, dune, and spur areas planted (Krumrine and Brass 2003).
- Success of marshhay cordgrass (*Spartina patens*) has been demonstrated in many studies but high mortality rates occurred in plantings for TE-25 and TE-30 on East Timbalier Island. The drought conditions of 2001 could have negatively affected the vegetation in these projects. A site visit in 2001 revealed that bitter panicum (*Panicum amarum*) was vigorous in most areas. The advantages of bitter panicum as stabilizing vegetation far outweigh those of marshhay cordgrass, thus bitter panicum is planted more often (Keith Lovell, LDNR, Personal Communication, October 2003).
- The Whiskey Island Restoration (TE-27) project included vegetative plantings of dune, berm and back barrier marsh areas with smooth cordgrass (*Spartina patens*), bitter panicum (*Panicum amarum*) and marshhay cordgrass (*Spartina patens*). Initial monitoring indicated that vegetative survival one growing season after planting was very low (30.0%), possibly due to drought after planting (Khalil and Lee in press). Additionally, vegetative cover in planted areas was low (<15.0%), indicating alternate planting designs need to be considered in future projects to maximize cover of bare sediment faster (West 2003). In 2003, thirty of the fifty-six vegetation plots were underwater. Elevation models from the surveys indicated volume loss of sediment 1.5 years after deposition to be approximately 21,6000 cy, indicating the need for sand fencing used in conjunction with vegetative plantings soon after construction.

Vegetative plantings used in conjunction with sand fencing have been successfully implemented to conserve and stabilize barrier island material that might otherwise be lost through natural erosion processes. In most instances, vegetation plantings of bitter panicum (*Panicum amarum*) and marshay cordgrass (*Spartina patens*) appeared to be the most successful type of vegetation, in terms of survival and coverage, used on barrier islands. However, species diversity should be a consideration in future plantings. Both sand fencing and vegetation plantings should be installed soon after construction completion to conserve as much barrier island material as possible.

### Summary and Conclusion

The purpose of the Ship Shoal: Whiskey West Flank Restoration project is to rebuild and nourish the western end of Whiskey Island using sand mined from the offshore submerged bar known as Ship Shoal. Storm impacts, inadequate supply of sediments, and relative sea level rise have left the western flank of the island in a critical state. Future landloss projections estimate that none of the Isles Dernieres chain will remain in 2050 and that some of the islands will become sub-aqueous by 2007 (LCWCRTF & WCRA 1999).

Numerical models developed by Moffatt and Nichol Engineers Inc. were used to mimic surrounding hydrology, evaluate project design alternatives, and determine the effects of mining sand on the Ship Shoal borrow site. The model predicted that both Alternatives A and B would withstand a possible design storm (Category 2 hurricane). The model determined that Alternative A would experience less inundation and erosion during storm conditions, but previous literature has suggested the dune height of Alternative B would mimic natural dune height (+3.0-+6.0 feet NAVD-88) and result in an increase in biodiversity. Alternative B was selected as the most feasible means of restoring the western flank of Whiskey Island. However, in order to prevent water from inundating the central marsh lobe and eastern section of the island, an extension to Alternative B has been included in the designed. Analysis of model results indicated that the consequences of removing sand from Ship Shoal would be relatively insignificant and the hydrodynamic effects would be localized (Moffat and Nichol Engineers Inc. 2004).

Observations from past Isle Dernieres restoration projects have shown some initial success was achieved in reducing erosion and increasing the height and volume of these systems. Thus far, these projects have prevented the restored islands from becoming sub-aqueous despite impacts from two major hurricanes. However, narrowing on both the bay and gulf sides of the islands has been reported due to natural erosional forces, including longshore and crossshore losses and loss due to storm impacts.

Monitoring results and literature reviews have revealed that sand fencing and vegetation plantings aided in the formation of dunes and in conserving material that otherwise would be lost. In order to increase survival and percent coverage rates of vegetation on barrier islands the Coastal Engineering Division plans to increase the diversity of plants used on dune habitat and back barrier marsh areas and plant vegetation earlier in the season to allow root systems to develop before the harsh summer months (Ken Balingher, LDNR, Personal Communication April 2005). Monitoring reports have advised installing sand fencing and vegetation plantings as soon as possible after construction completion to conserve sediment (West 2005).

## VII. 95% Design Review Recommendations

Restoration of Louisiana's barrier islands using offshore borrow material has been used with great initial success, albeit at a high cost. Barrier islands will continue to erode, narrow and migrate landward and experience loss due to storm events over time. However, without the addition of new sand material to Louisiana's barrier island systems valuable oil infrastructure, coastal communities and interior marsh areas would be more vulnerable to flooding and wave energies associated with hurricanes. Alternative restoration techniques, including the use of rock shoreline protection structures on barrier islands, have proven largely ineffective. The exceptions to this statement are the rock breakwaters constructed to protect Raccoon Island. In this instance, a submerged shoal offshore of the island resulted in net accretion behind constructed breakwaters. In most cases, rock breakwaters used to protect barrier islands inhibit island rollover and in some cases interfere with longshore transport process resulting in increased erosion effects down drift of the shoreline protection structure.

Based on information gathered from similar restoration projects, engineering designs and related literature, the proposed strategies in the Ship Shoal: Whiskey West Flank Restoration project will likely achieve all of the desired goals. It is therefore recommended that this project progress towards construction following a favorable 95% Design Review. However, prior to construction, the following issue needs to be addressed.

- It is believed that the sandy material used to create the back barrier marsh component will experience minimal settlement and consolidation over the life of the project. However, a settlement analysis may be useful to determine how long the restored area will remain at the intertidal target elevation range of 1.0-2.0 feet NAVD-88.

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Appendix A  
 Alternative A-Plan View (DMJM + HARRIS, Inc. 2005)



ALTE PL FIG	SHIP SHOAL - WHISKEY ISLAND WEST FLANK RESTORATION	 1535 Poydras St., Suite 1800 New Orleans, Louisiana 70112 Phone: (504) 528-4533 FAX: (504) 322-2885 Drawn by: J. Schenckvayder Designed by: J. Llop	DATE: AUG 05
	STATE PROJECT NUMBER: TE-47 FEDERAL PROJECT NUMBER: TE-47 APPROVED BY: D. BOLINGER		PAGE 67 - a
REV	DATE	DESCRIPTION	BY

Appendix B  
 Alternative B-Plan View (DMJM + HARRIS, Inc. 2005)



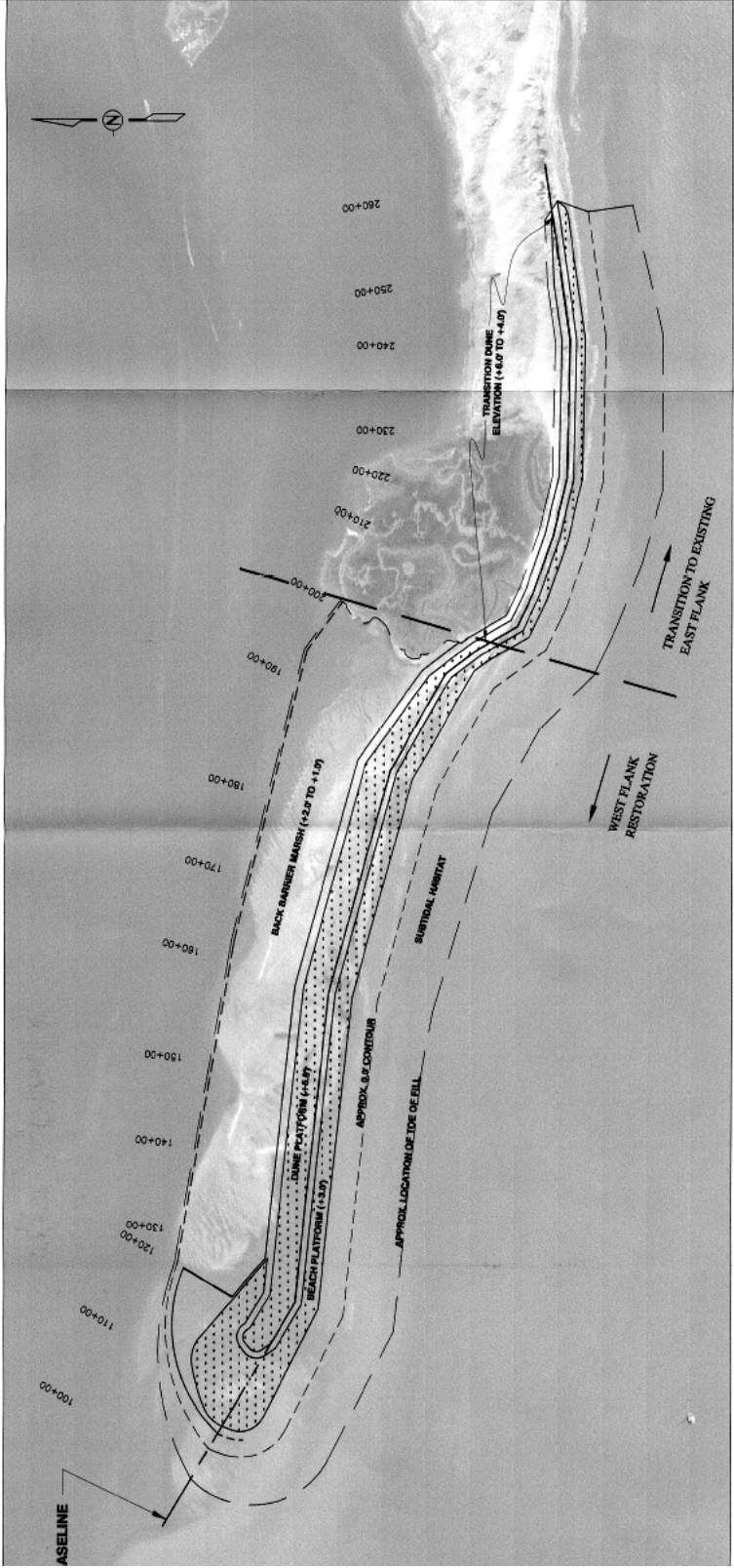


Appendix C  
 Alternative C-Plan View (DMJM + HARRIS, Inc. 2005)



 1531 POTTRASS ST., SUITE 1800 NEW ORLEANS, LOUISIANA 70112 PHONE: (504) 528-4533 FAX: (504) 522-2885		SHIP SHOAL - WHISKEY ISLAND WEST FLANK RESTORATION STATE PROJECT NUMBER: TE-47 FEDERAL PROJECT NUMBER: TE-47 APPROVED BY: D. HOFFMAN	ALTERNATE "C" PLAN VIEW FIGURE 14-3 DATE: AUGUST 2004 PAGE 07...
BY	DESCRIPTION	DESIGNED BY: J. SCHENKMEYER	
REV.	DATE	DRAWN BY: J. LOOP	

### Appendix D Alternative B-Extended Plan View (DMJM + HARRIS, Inc. 2005)



REV.	DATE	DESCRIPTION	BY				
				<p style="text-align: center;"><b>DMJM + HARRIS</b>                  1555 PONDAS ST. - SUITE 1860                  NEW ORLEANS, LOUISIANA 70112                  PHONE: (504) 294-4333    FAX: (504) 522-2885                  DRAWN BY: J. SCHIRMAYER    DESIGNED BY: J. LOOP</p>			
				<p style="text-align: center;">SHIP SHOAL - WHISKEY ISLAND                  WEST FLANK RESTORATION                  STATE PROJECT NUMBER: TE-47                  FEDERAL PROJECT NUMBER: TE-47                  APPROVED BY: D. BOLLINGER</p>			
				ALTERNATE "B-EXTENDED" PLAN VIEW FIGURE 15-1 DATE: AUGUST 2004 PAGE 09 of 8			



## **Enclosure 4K**

**Ship Shoal/Whiskey West Flank (TE-47)**

**Overgrazing Determination**



Natural Resources Conservation Service  
3737 Government Street  
Alexandria, LA 71302

August 26, 2005

Mr. Brad Crawford  
Environmental Protection Agency  
Region VI  
Water Quality Protection Division (6WQ-EMC)  
1445 Ross Avenue  
Dallas, Texas 75202-2733

Dear Mr. Crawford:

RE: Ship Shoal: Whiskey West Flank Restoration (TE-47)

I am in receipt of your request for an overgrazing determination for the Ship Shoal: Whiskey West Flank Restoration (TE-47). I contacted our local district conservationist and our state resource conservationist to discuss the grazing in the project area. Currently, livestock are not grazing in the area, nor do we see a potential for grazing once the project is installed. Therefore, it is our opinion, overgrazing is not a problem in this project area. If you have any questions please let me know.

Sincerely,

A handwritten signature in dark ink, appearing to read "W. Britt Paul".

W. Britt Paul  
Assistant State Conservationist  
for Water Resources and Rural Development

cc: Randolph Joseph, Area Conservationist, NRCS, Lafayette, Louisiana  
Michael Trusclait, District Conservationist, NRCS, Thibodaux, Louisiana  
Johanna Patc, State Grazing Lands Specialist, NRCS, Alexandria, Louisiana  
John Jurgensen, Civil Engineer, NRCS, Alexandria, Louisiana

## **Enclosure 4L**

**Ship Shoal/Whiskey West Flank (TE-47)**

**Revised FFC Estimate**

**Enclosure 4M**

**Ship Shoal/Whiskey West Flank (TE-47)**

**Revised WVA**

# WETLAND VALUE ASSESSMENT COMMUNITY MODEL

## Barrier Island

Project: Ship Shoal - Whiskey Island West Flank Restoration (TE-47)

Condition: Future Without Project

Variable		TY 0		TY 1		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Dune	0	0.10	0	0.10	0	0.10
V2	% Supratidal	30	1.00	30	1.00	28	1.00
V3	% Intertidal	70	1.00	70	1.00	72	0.94
V4	% Vegetative Cover	33	0.56	33	0.56	36	0.60
V5	% Woody Cover	15	1.00	15	1.00	16	1.00
V6	Interspersion	%	0.72	%	0.72	%	0.65
	Class 1	44		44		28	
	Class 2					15	
	Class 3	26		26		13	
	Class 4	30		30		44	
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		<b>HSI = 0.742</b>		<b>HSI = 0.742</b>		<b>HSI = 0.731</b>	

Project..... Ship Shoal - Whiskey Island West Flank Restoration (TE-47)

FWOP

Variable		TY 20		TY		TY	
		Value	SI	Value	SI	Value	SI
V1	% Dune	0	0.10				
V2	% Supratidal	22	1.00				
V3	% Intertidal	81	0.67				
V4	% Vegetative Cover	20	0.38				
V5	% Woody Cover	16	1.00				
V6	Interspersion	%	0.54	%		%	
	Class 1						
	Class 2	30					
	Class 3	10					
	Class 4	60					
V7	Beach/surf Zone	1	1.00				
		<b>HSI = 0.624</b>		<b>HSI =</b>		<b>HSI =</b>	

Project.....  
FWOP

Variable		TY		TY		TY	
		Value	SI	Value	SI	Value	SI
V1	% Dune						
V2	% Supratidal						
V3	% Intertidal						
V4	% Vegetative Cover						
V5	% Woody Cover						
V6	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	%		%		%	
V7	Beach/surf Zone						
		<b>HSI =</b>		<b>HSI =</b>		<b>HSI =</b>	



# WETLAND VALUE ASSESSMENT COMMUNITY MODEL

## Barrier Island

Project: Ship Shoal - Whiskey Island West Flank Restoration (TE-47)

Condition: Future With Project

Variable		TY 0		TY 1		TY 2	
		Value	SI	Value	SI	Value	SI
V1	% Dune	0	0.10	7	1.00	7	1.00
V2	% Supratidal	30	1.00	30	1.00	30	1.00
V3	% Intertidal	70	1.00	63	1.00	63	1.00
V4	% Vegetative Cover	33	0.56	24	0.43	29	0.50
V5	% Woody Cover	15	1.00	11	1.00	11	1.00
V6	Interspersion	%	0.72	%	0.69	%	0.70
	Class 1	44		24		26	
	Class 2						
	Class 3	26		73		70	
	Class 4	30		3		4	
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		<b>HSI = 0.742</b>		<b>HSI = 0.840</b>		<b>HSI = 0.854</b>	

Project..... Ship Shoal - Whiskey Island West Flank Restoration (TE-47)

FWP

Variable		TY 3		TY 5		TY 10	
		Value	SI	Value	SI	Value	SI
V1	% Dune	7	1.00	7	1.00	5	1.00
V2	% Supratidal	30	1.00	30	1.00	29	1.00
V3	% Intertidal	63	1.00	64	1.00	65	1.00
V4	% Vegetative Cover	30	0.51	45	0.72	46	0.73
V5	% Woody Cover	12	1.00	12	1.00	12	1.00
V6	Interspersion	%	0.70	%	0.82	%	0.75
	Class 1	27		40		30	
	Class 2			30		30	
	Class 3	68		30		25	
	Class 4	5				15	
V7	Beach/surf Zone	1	1.00	1	1.00	1	1.00
		<b>HSI = 0.858</b>		<b>HSI = 0.917</b>		<b>HSI = 0.909</b>	

Project.....  
FWP

Variable		TY 20		TY		TY	
		Value	SI	Value	SI	Value	SI
V1	% Dune	0	0.10				
V2	% Supratidal	28	1.00				
V3	% Intertidal	72	0.94				
V4	% Vegetative Cover	29	0.50				
V5	% Woody Cover	10	1.00				
V6	Interspersion	%	0.66	%		%	
	Class 1						
	Class 2	45					
	Class 3	40					
	Class 4	15					
	Class 5						
V7	Beach/surf Zone	1	1.00				
		<b>HSI =</b>	<b>0.713</b>	<b>HSI =</b>		<b>HSI =</b>	

# AAHU CALCULATION

Project: Ship Shoal - Whiskey Island West Flank Restoration (TE-47)

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HUs	HUs
0	1041	0.742	772.92	
1	1007	0.742	747.68	760.30
10	758	0.731	554.30	5854.69
20	437	0.624	272.73	4077.80
			<b>AAHUs =</b>	<b>534.64</b>

Future With Project			Total	Cummulative
TY	Acres	x HSI	HUs	HUs
0	1041	0.742	772.92	
1	1249	0.840	1048.84	907.51
2	1216	0.854	1039.00	1044.00
3	1181	0.858	1012.71	1025.87
5	1114	0.917	1021.76	2035.80
10	946	0.909	860.35	4704.19
20	608	0.713	433.41	6358.02
			<b>AAHUs</b>	<b>803.77</b>

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHUs =	803.77
B. Future Without Project AAHUs =	534.64
<b>Net Change (FWP - FWOP) =</b>	<b>269.13</b>

## **Enclosure 4N**

**Ship Shoal/Whiskey West Flank (TE-47)**

**Prioritization Score**

**PRIORITIZATION FACT SHEET**  
**Revised November 21, 2006**

**Project Name and Number:**

Ship Shoal: Whiskey West Flank Restoration (TE-47)

**Goals and Objectives:**

- Demonstrate the feasibility of moving Ship Shoal sands to the Isles Dernieres for future restoration projects;
- Restoring the integrity of the West Flank of Whiskey Island to retain its structural function;
- Adding offshore sediment to the West Flank of Whiskey Island from Ship Shoal to increase sediment supply and strengthen island formation;
- Rebuilding the natural structural framework within the coastal ecosystem to provide for separation of the gulf and the estuary;
- Creating a continuous protective barrier for back bays and inland marshes;
- To reduce wave energies thereby helping to reduce land loss;
- Strengthen the longshore transport system of sediment for continuous island building;
- Provide a unique and sustainable barrier island habitat for numerous biological species; and,
- Restoring roughly 500 acres of barrier island habitat into the island's West Flank

**Proposed Solution**

The Whiskey West Flank Restoration Project has completed the Phase 1 engineering and design evaluations. The project entails mining and transporting offshore Ship Shoal sediment to restore the west flank of Whiskey Island. A cutterhead suction dredge and/or hopper dredge would be used at Ship Shoal. Material would be transported a distance of approximately 8-10 miles with pipeline and booster pumps or as necessary to the island area. The proposed design features include: a 600 ft wide beach berm at +3 ft, a 300 ft wide dune at +6 ft elevation, and, a marsh platform which varies between 825 to 1225 ft wide. Transition to existing east flank restoration includes: a 450 ft wide berm at +3 ft and 100 ft wide dune that will transition in elevation from +6 ft from the west flank dune to +4 ft onto the adjacent east dune.

**Proposed Prioritization Criteria Scores and Justification**

**Cost Effectiveness (cost/net acre)**

**Score: 1**

Net wetland acres protected on the west flank of Whiskey Island: TY20 = 195 acres

Current total fully-funded cost estimate: \$ 52,925,941

\$52,925,941/195 acres = \$271,415/acre

### **Area of Need, High Loss Area**

#### **Score: 10**

Based on the Memo Dated May 27, 2005, from Moffatt & Nichol, the projected historic shoreline erosion rate for the West Flank for FWOP, is 80 ft/yr and 86 ft/yr for the dune extension. The FWOP modeled shoreline erosion rates are 30 ft/yr for both the West Flank and the extension. The project is in the Terrebonne basin, hence, the **score is 10**.

*An alternate method for estimating the existing erosion rate is as follows: Per the 95% E&D report, FWOP @ TY 0 (850 acres)/FWOP @ TY 20 (358 acres) = 42.1% remaining. Converting to an average annual loss rate;  $(1 - \text{Loss Rate})^{20} = 42.1\%$ , hence, the average annual loss rate = 4.23%.*

### **Implementability**

#### **Score: 10**

No known serious impediments that would preclude the project's timely implementation have emerged.

### **Certainty of Benefits**

#### **Score: 7**

Traditional barrier island project

### **Sustainability of Benefits**

#### **Score: 1**

Based on information in the 95% E&D report, for FWP, the area remaining at TY20 = 553 acres of the original 1135 acres, (i.e. 48.72% remaining). Since the FWP loss rate is based on the quality of sand, the FWP loss rates are used for this calculation rather than converting back to the FWOP loss rate. Converting to an average annual loss rate is as follows:

*$(1 - \text{Loss Rate})^{20} = 48.72\%$ , results in a land loss rate of 3.53%. Applying a 3.53% loss rate to TY21-TY30 results in  $(1 - 0.0353)^{10} = 69.8\%$  remaining, or a 30.2% loss. This is a relatively conservative method to calculating % loss, hence, other methods would likely result in an even greater loss, all indicating a score of 1. (Converting back to the FWOP loss rate would still result in a score of 1).*

### **Increasing riverine input in the deltaic plain or freshwater input and saltwater penetration limiting in the Chenier plain**

#### **Score: 0**

The project will not result in increases in riverine flows.

### **Increased sediment input**

**Score: 10**

The project will result in the significant placement of sediment from an offshore source. The proposed project would input approximately 3.85 MCY (in place) of Ship Shoal sediment into the Louisiana nearshore system.

**Maintaining landscape features critical to a sustainable ecosystem structure and function**

**Score: 10**

The project serves to protect, for at least the 20 year life of the project, features which are critical to maintaining the integrity of the Terrebonne Basin (e.g., barrier islands).

**Preparer of Fact Sheet**

Brad Crawford, EPA, 214-665-7255,

**Resulting Score:**

$$(1*2.0) + (10*1.5) + (10*1.5) + (7*1.0) + (1*1.0) + (0*1.0) + (10*1.0) + (10*1.0) = 60$$

**References**

**U.S. Environmental Protection Agency. October 2001.** *Ship Shoal: Whiskey Pass Closure and Whiskey Island West Flank: Wetland Value Assessment Project Information Sheet.*

**DMJM+Harris, Inc. 2005.** *Ship Shoal: Whiskey Island West Flank Restoration (TE-47) Design Report. Revised for 95% Submittal. New Orleans, LA. 88 pp.*

TE-39 - South Lake DeCade - CU 1



*Coastal Wetlands Planning,  
Protection and Restoration Act*



**SOUTH LAKE DECADE  
FRESHWATER INTRODUCTION  
(TE-39)**

**Phase II Request**

*Technical Committee Meeting  
December 6, 2006*

## **Project Overview**

---

**Project Location:** Region 3, Terrebonne Basin, Terrebonne Parish, south shore of Lake Decade.

**Problem:** Interior marshes have suffered dramatic losses of emergent vegetation and currently consists of fragmented wetlands surrounded by open water areas. Shoreline erosion along the south shore of Lake Decade threatens to breach the existing levee that separates the lake from degraded marshes.

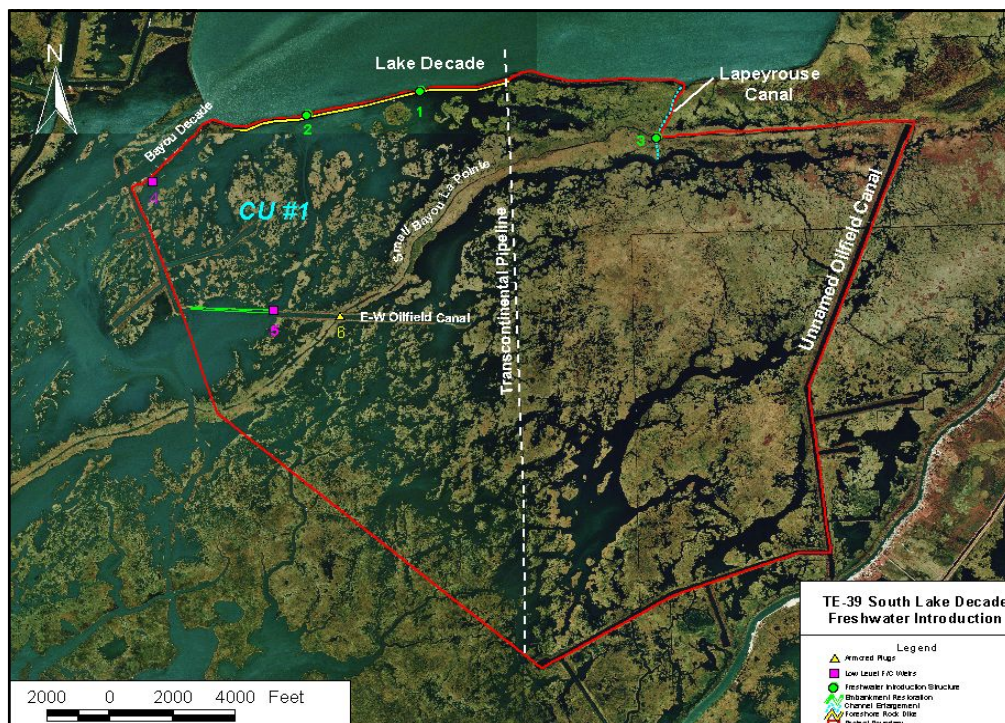
**Goals:**

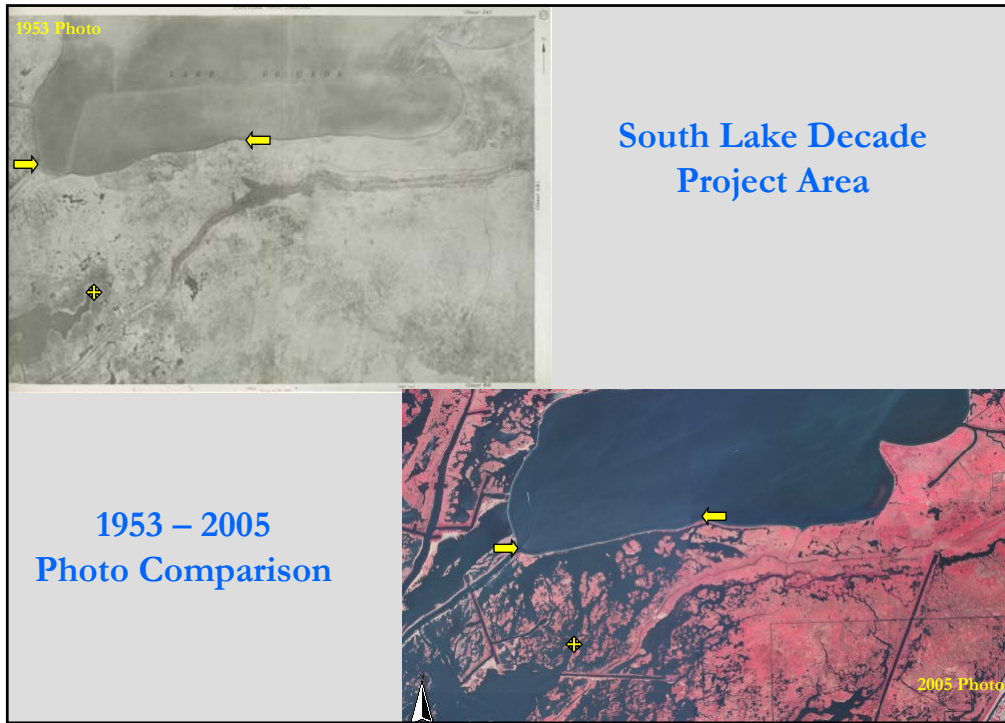
- 1) Reduce interior marsh loss rates.
- 2) Increase the occurrence and abundance of SAV's.

## SOUTH LAKE DECADE – CU #1

### PROJECT FEATURES

- Construction of 8,700 LF of Shoreline Rock Revetment along the south existing embankment of Lake Decade from the Transcontinental Pipeline crossing extending westward to the mouth of Bayou Decade.
- The revetment will have a crest elevation of (+)3.5 ft. NAVD88, blanket width of 2 feet, 2:1 side slope, and an average height of 4 feet.





## **SOUTH LAKE DECADE – CU #1**

### **Project Benefits & Costs**

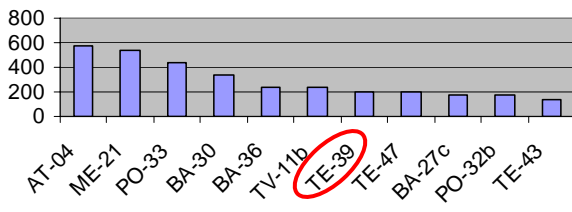
- The 8,700 LF of rock revetment will benefit 823 acres of intermediate/brackish marsh and 862 acres of open water (total 1685 ac.).
- Within the 20 year life of the project (@ TY20), interior marsh loss rates will be reduced and it's projected that 202 acres will be protected.
- The fully funded cost of the project is \$3,841,826. The Phase II request amount is \$2,221,042.
- The Prioritization Score is 74.95.

## **SOUTH LAKE DECADE – CU #1**

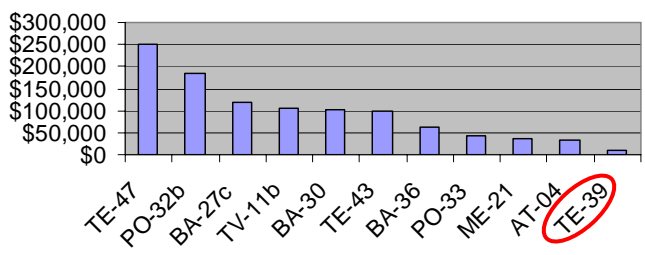
### *Why Should this Project be Funded This Year?*

- Rapid Loss of Fresh/Interm/Brackish Marsh
- Immediate Need
- Initial Attention to a Critically Eroding Area
- 100% Landowner Support
- Low Cost <\$2,221,042>
- High Prioritization Score <74.95>
- Ready for Implementation

### ACRES BENEFITTED

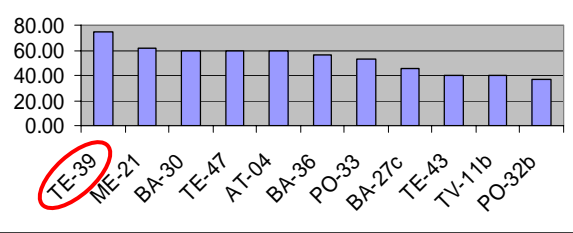


### COST PER ACRE



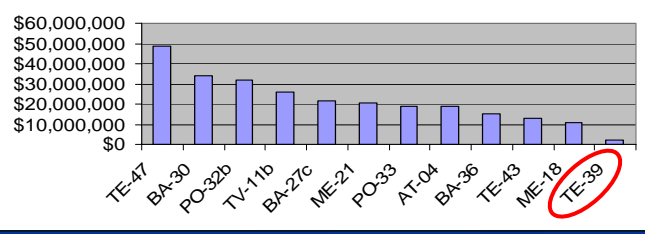
<Lowest>

### PRIORITIZATION SCORE



<Highest>

### Incr 1 Funds Requested



<Lowest>





# Questions?







Natural Resources Conservation Service  
3737 Government Street  
Alexandria, LA 71302

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December 3, 2006

Mr. Troy Constance, Acting Chairman  
CWPPRA Technical Committee  
U.S. Army Corps of Engineers  
P.O. Box 60267  
New Orleans, LA 70160-0267

Dear Mr. Constance:

RE: South Lake Decade Freshwater Introduction Project (TE-39)  
Phase Two Authorization Request

Pursuant to Revision 11.0 of the CWPPRA Standard Operating Procedures (Section 6.j. and Appendix C), please find enclosed the Phase Two Authorization Request package. This request is for the construction of Construction Unit 1 (CU #1) of the South Lake Decade Freshwater Introduction Project (TE-39). This project was authorized in January 2000 under Priority Project List 9 (PPL9) by the Louisiana Coastal Wetlands Conservation Task Force under the authority of the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA).

If you or any members of the Planning and Evaluation Subcommittee, Technical Committee or Task Force have any questions regarding this matter, please contact Loland Broussard at (337) 291-3060.

Sincerely,

/s/ W. Britt Paul  
Assistant State Conservationist  
for Water Resources and Rural Development

Enclosures

## 2006 Phase II Authorization Request

### South Lake Decade Freshwater Introduction Project (TE-39) Construction Unit 1

#### Description of Phase I Project

The South Lake Decade Freshwater Introduction Project (TE-39) was approved for Phase 1 funding by the CWPPRA Task Force on the 9<sup>th</sup> Priority Project List. This project is located in Terrebonne Parish, Louisiana, within the Terrebonne Hydrologic Basin, approximately ten miles southeast of the community of Theriot. The project is bordered on the north by the southern bank of Lake Decade and Small Bayou LaPointe ridge, to the east and southeast by an unnamed oilfield location canal, on the south and southwest by undifferentiated marsh, and to the west by an unnamed north - south oilfield canal and Bayou Decade. The purpose of the project is to reduce current interior marsh loss rates and increase the occurrence and abundance of submerged aquatic vegetation (SAV).

The proposed project, as selected for Phase I authorization, featured the construction of 5,200 linear feet of shoreline protection along the southern bank of Lake Decade, the installation of a freshwater introduction structure in the southern bank of Lake Decade, and removal of an existing weir in Lapeyrouse Canal. The Wetland Value Assessment (WVA) benefits attributed to these features were a net increase of 201 acres by the end of the 20 year project life.

The total fully funded cost of the project at the time of Task Force approval was \$3,968,577. The estimated amount for Phase 1 costs was \$396,489 and for Phase II costs was \$3,572,088. Individual budget item costs are listed in the second column in the table on page 9.

During the Phase I planning process, NRCS conducted several field trips with an interdisciplinary team of technical specialists to survey, evaluate, and collect data on vegetative marsh types, emergent/submergent vegetative communities and predominance of each, wildlife usage and habitat conditions, hydrologic conditions, and other physical and biological parameters. As a result of this planning effort, the revision of and addition to initial project features were identified (refer to Figure 1). The current proposed features for the TE-39 Project are as follows:

- (A) 3 Multi-gated Diversion Structures on south perimeter of Lake Decade;
- (B) Approximately 8,700 ft. of rock revetment along south shoreline of Lake Decade;
- (C) Enlargement of Lapeyrouse Canal from Lake Decade southward to interior open water areas;
- (D) Approximately 2,900 ft. of oilfield canal embankment restoration;
- (E) Installation of 2 low-level rock weirs;
- (F) Installation of 1 armored plug closure;
- (G) Vegetative protection.

## **Overview of Phase I Tasks, Process and Issues**

It was proposed by NRCS and approved by the Engineering & Environmental Workgroups and Technical Committee (26 Mar 2003) to separate the TE-39 Project into two “independent” construction units. The purpose was to accelerate the E&D timetable on those project components requiring less planning and design effort. Construction Unit No. 1 (CU #1) involves the shoreline protection component of the project and Construction Unit No. 2 (CU #2) will encompass the remaining freshwater introduction and outfall management features.

To-date the following tasks have been completed for the Phase 1 portion of Construction Unit No. 1:

- 1) Plan of Work
- 2) Cost Share Agreement between NRCS and DNR
- 3) Cultural Resources & Oyster Investigations & Assessment
- 4) Landrights Work Plan
- 5) Prioritization Evaluation
- 6) Plan/Environmental Assessment & FONSI
- 7) Section 303(e) Approval
- 8) NRCS Overgrazing Determination
- 9) Draft Ecological Review
- 10) Design Surveys – NRCS
- 11) Geotechnical Investigation, Analysis, & Report
- 12) 30% Design Review
- 13) Draft Construction Plans & Specifications
- 14) Current Construction Cost Estimate
- 15) 95% Design Review
- 16) 404 and CUP Permits

### Engineering and Design Tasks

Design surveys were completed by NRCS Construction Survey Crews and are included in the 95% Design Report posted on LDNR’s ftp server at the following link:

<ftp://ftp.dnr.state.la.us/pub/CED%20Project%20Management/NRCS/TE-39-CU1%20SLD/Phase2Request%20TC2005-12-07/>

The surveys were completed using Ashtech Z-Extreme Dual Frequency Receivers operating in RTK (Real-Time Kinematic) mode. The survey occupied DNR benchmark “TE-39-SM-A” for control. Design survey cross sections were taken at approximately 200’ intervals along the proposed earthen embankment and at 250’ intervals along the lake rim of the project area. From the survey data, an alignment was developed for the revetment and embankment. The survey cross sections, survey profiles, and proposed alignment were used for calculating quantities.

Initial pipeline investigations have been initiated with known pipeline companies as shown on the design drawings. Refer to the Design Drawings and LDNR Landrights Memo in the 95% Design Report for established pipeline information.

Geotechnical investigation and analyses have been performed. The geotechnical reports are included in the 95% Design Report. The initial geotechnical report (August 2001) prepared by Soil Testing Engineers, Inc. (STE) contains all boring and soils analysis along with predicted settlement and stability for the proposed project features. A supplemental report (May 2004) was provided by Burns Cooley Dennis, Inc. (BCD) with respect to additional settlement and stability analysis on a rock/lightweight aggregate weir section for the proposed fixed crested weir and rock revetment on the earthen embankment.

Evaluation of the two reports cited above resulted in a design decision to utilize the proposed armored earthen embankment to configure the geometry of a proposed weir section with a solid rock over flow section. A consideration given in the selection of the proposed weir design was that the structure could be easily modified in the event an O&M contingency plan must be implemented. The plan would be put in effect if the monitoring of interior wetland conditions showed progressive land loss and deterioration due to increased water levels.

The shoreline protection feature for the south bank of Lake Decade was changed to a foreshore dike during phase 1 planning and was analyzed in the STE report. However, after conducting additional site visits to the project area, an observation was made that the foundation area of the existing earthen embankment is pre-consolidated from the many years of direct loading applied by the embankment. Therefore, a revetment of the existing embankment was chosen as the preferred approach for shoreline protection.

Hydrologic and hydraulic calculations were performed by NRCS to insure that the proposed embankment restoration and weir project features would not adversely affect the marsh interior within construction unit number 1 (CU #1). A conservative approach was taken in the calculations. Only existing significant hydraulic conveyance openings within the system were used to compute discharge. The discharge area of the proposed weir was neglected. The calculations confirm that the existing additional openings along the perimeter of the marsh interior would adequately convey selected storm event capacities. Conversely, it was also determined that the discharge capacity of the weir alone is sufficient to provide adequate drainage for the identified watershed.

30% Design Review Meetings were held on September 17, 2003, and July 19, 2004. NRCS received a letter from LDNR, dated August 2, 2004, stating they concur with proceeding with the design of the project to the 95% design level. A 95% Design Review Meeting was held on September 2, 2004. No outstanding engineering issues were identified and minor comments were made regarding supporting data included in the 95% Design Report.

On October 13, 2004 the CWPPRA Task Force held their first annual funding cycle meeting to select projects for Phase 2 funding. The TE-39-1 South Lake Decade Project was submitted for funding consideration but was not selected. However, the TE-44 North Lake Mechant Project, sponsored by USFWS and serves as a southwest extension of the TE-39 Project, was selected for Phase 2 funding. It's anticipated that the TE-44 Project will have a synergistic effect in abating salinity and tidally induced problems that have direct impact to the CU #1 project area. The two lower structural components in CU #1 (i.e. weir & embankment restoration) were targeted to prohibit the same problems as stated above. As such, NRCS, DNR and landowner representatives have agreed to remove the two lower components from 2005 Phase 2 approval consideration for CU #1. These structural measures however, will remain as components of the project due to their "potential" need as outfall management features for construction unit no. 2.

## Supplemental Tasks

Preliminary landrights have been executed with the landowner (Apache Louisiana Minerals Inc.). The landowner has acknowledged intent to sign necessary documents once the project has obtained Phase II Task Force approval. Landrights with affected utilities and pipelines are proceeding without interruption and are expected to be finalized in the near future. LDNR has determined that no oyster seed grounds or leases will be affected by project implementation.

A review of the Louisiana Department of Culture, Recreation & Tourism, Office of Cultural Development files indicated that two (2) cultural resource sites are located within the boundaries of the TE-39 Project. Both of the sites are described as shell middens experiencing deterioration due to many of the same impacts causing marsh loss (i.e. wave wash, scouring, subsidence, and physical disturbance from canal dredging). A letter, dated May 24, 2001, was received from the Louisiana Department of Culture, Recreation & Tourism stating that, due to the nature of this project the sites will not be affected, therefore they have no objections to its implementation.

Comments relative to other significant task items are addressed in the attached "Checklist of Phase Two Requirements".

## Construction Unit No. 1 Project Issues

At the September 17, 2004, 30% Design Review Meeting, concerns were raised and post-meeting comments were received regarding the negative hydrologic impact the proposed embankment restoration and low level weir may have on affected wetlands (i.e. increased water levels). NRCS conducted an engineering survey of the CU #1 area which identified existing perimeter boundary conditions and normal marsh elevations within the interior. An onsite field trip was held on October 22, 2003, with various agency personnel to visually survey the perimeter and interior conditions of the area. NRCS conducted hydrologic and hydraulic mathematical modeling assessments on the proposed project features in question based on collected survey data. Results of these assessments indicated that discharge removal rates of the CU #1 area, with the proposed features in place, would not cause impoundment conditions that would in turn negatively impact emergent wetland vegetation.

A second 30% Design Review Meeting was held on July 19, 2004. DNR and attending federal agencies acknowledged their acceptance of NRCS's modeling assessments. Agency comments and NRCS responses, as a result of the 30% meeting are included in the 95% Design Report posted on LDNR's ftp server.

The 95% Design Review meeting for this candidate project was held on September 2, 2004. At this meeting, reviewing agencies had the opportunity to provide comments regarding the 95% Design Report and supporting documents that were posted on DNR's ftp server on August 19, 2004. No significant outstanding issues were identified at the meeting and only minor comments were made regarding Plans and Specifications in the Final Design Report.

NRCS consulted with DNR regarding the project changes made for CU #1 since the September 2004, 95% Design Review meeting. It was decided that another 95% Design Review meeting was not necessary due to the revisions made were only exclusions to the prior reviewed project. At NRCS's request, DNR has re-posted the 95% Design Report along with updated project plans and specifications at the following link:

## **Description of Phase II Candidate Project**

The Phase II candidate project consists of constructing an 8,700 linear foot shoreline protection feature along the southern bank of Lake Decade (Figure 2). This shoreline protection feature shall be a rock revetment that is built upon the existing embankment along the lake shoreline. The revetment shall have 2(H):1(V) side slopes and be built to an elevation of +3.5' NAVD88 with a minimum rock thickness of 2 feet. All rock used in this construction shall be ASTM 6092-97 R-300 gradation.

### Phase II Funding

Construction for this project is tentatively scheduled to commence in August 2007 and proceed for approximately 6 months. The estimated Phase II cost of the project at the 100% funding level is \$3,171,215. Individual budget item costs are listed in the seventh column in the table on page 9.

NRCS will formally request permission for Phase 2 approval and funding at the December 6, 2006 Technical Committee Meeting and subsequent approval from the Task Force at their January 31, 2007 meeting. The total 2006 funding request will be \$2,221,042. Individual budget item costs are listed in the eighth column in the table on page 9.

## **Sponsoring Agency and Contact Person**

“USDA – Natural Resources Conservation Service”

Loland Broussard  
Project Manager  
646 Cajundome Blvd – Suite 180  
Lafayette, LA 70506  
(337) 291-3060 offc  
(337) 291-3085 fax  
[Loland.broussard@la.usda.gov](mailto:Loland.broussard@la.usda.gov)

“La. Department of Natural Resources”

Ismail Merhi  
Project Manager  
P. O. Box 44027  
Baton Rouge, LA 70804-4027  
(225) 342-4127 offc  
(225) 342-6801 fax  
[ismailm@dnr.state.la.us](mailto:ismailm@dnr.state.la.us)

## **Checklist of Phase II Requirements**

### **South Lake Decade Freshwater Introduction (TE-39) CU# 1**

#### **A. List of Project Goals and Strategies.**

The goals of this project are to reduce interior marsh loss rates and increase the occurrence and abundance of submerged aquatic vegetation (SAV). The strategy proposed to accomplish these goals is the construction of a rock revetment along the south shoreline of Lake Decade.

#### **B. A statement that the Cost Sharing Agreement between the Lead Agency and Local Sponsor has been Executed for Phase I.**

A Cost Sharing Agreement has been executed between NRCS (NRCS Agreement No. CWPPRA-00-01) and DNR (DNR Agreement No. 2511-01-02), dated July 25, 2000.

#### **C. Notification from the State or the Corps that landrights will be finalized in a short period of time after Phase II approval.**

LDNR-CRD Land Manager sent a letter to the Chairman of the Planning and Evaluation Subcommittee, dated September 2, 2004, which stated substantial progress had been made regarding landrights acquisition, that no significant landrights acquisition problems are anticipated, and that DNR is confident that landrights will be finalized in a reasonable period of time after Phase Two Approval. A copy of the letter can be obtained by contacting one of the sponsoring agency persons listed on page 5.

NRCS re-confirmed the above with LDNR Landrights Section via email correspondence on November 9, 2005.

#### **D. A favorable Preliminary Design Review (30% Design Level).**

A 30% Design Review meeting was held on September 17, 2003. Issues were raised by DNR and some federal agencies concerning the hydrologic impact that the proposed project measures may have on interior wetlands. NRCS addressed these issues by conducting hydrologic and hydraulic mathematical modeling assessments which concluded no negative impacts are anticipated as a result of project construction. A second 30% Design Review Meeting was held on July 19, 2004, in which DNR and participating agencies concurred with NRCS's assessments. Concurrence to proceed with project designs to the 95% level was received by DNR in a letter dated August 2, 2004. A copy of the letter can be obtained by contacting one of the sponsoring agency persons listed on page 5. All written comments received from the 30% Design Review are addressed in the 95% Design Review Package posted on DNR's ftp server.

**E. Final Project Design Review (95% Design Level).**

A 95% Design Review Meeting was held on September 2, 2004. No substantial outstanding issues were identified and minor comments were made regarding supporting data to the Final Design Report. In 2005, NRCS revised the project plans, specifications, and construction cost estimate to reflect recent project changes. Revised data and the 95% Design Report are available on DNR's ftp server.

**F. A draft of the Environmental Assessment of the Project, as required under the National Environmental Policy Act, must be submitted two weeks before the Technical Committee meeting at which Phase 2 approval is requested.**

A Final Environmental Assessment of the TE-39 Project was released for public review on June 2001. The Final EA was developed after comments were received and incorporated in the draft Environmental Assessment which was submitted for interagency review in April 2001. A Finding of No Significant Impact (FONSI) was published in the Federal Register on July 25, 2001, and in the local newspaper on July 31, 2001. No comments were received regarding the FONSI. A copy of the Final Environmental Assessment can be obtained by contacting one of the sponsoring agency personnel listed on page 5 of this package.

**G. A written summary of the findings of the Ecological Review.**

A draft Ecological Review, submitted August 2004, stated that the "proposed strategies of the South Lake Decade Freshwater Introduction - CU 1 Project will likely achieve the desired ecological goals." A revised draft Ecological Review was submitted in August 2005, in which Section VII – Recommendations of the report concluded "At this time, the level of design of the project's physical effects and confidence in goal attainability warrant continued progress toward construction authorization (pending a second favorable 95% Design Review meeting, if required)".

**H. Application for and/or issuance of the public notices for permits.**

A Joint Permit Application with appropriate attachments, dated November 4, 2005, was submitted to LDNR-Coastal Management Division (CMD) for processing. A letter, dated January 19, 2006, was received from CMD stating the TE-39-1 Project was reviewed for consistency with the approved Louisiana Coastal Resources Program (LCRP) and complies. The COE 404 Permit was issued on July 17, 2006. The letter of consistency and 404 Permit are available upon request at the sponsoring agency offices listed on page 5.

**I. A hazardous, toxic and radiological waste (HTRW) assessment, if required, has been prepared.**

NRCS has determined that an HTRW assessment is not required.



**J. Section 303(e) approval from the Corps.**

Section 303e approval was granted by the Corps Real Estate Division on August 4, 2004. A copy of the approval letter can be obtained by contacting one of the sponsoring agency personnel listed on page 5 of this package.

**K. Overgrazing determination from the NRCS (if necessary).**

NRCS has determined that overgrazing is not a problem within the project area, nor is there future potential for such problem.

**L. Revised fully funded cost estimate, approved by the Economic Work Group, based on the revised Project design and the specific Phase 2 funding request as outlined in below spreadsheet.**

REFER TO ATTACHED FILE "South Lake Decade\_PhII Revised\_30 Nov 2006.xls"

- 1) The specific Phase 2 funding request (updated Phase 2 costs, three years of Corps Administration and O&M) is \$2,221,042.
- 2) The current estimated fully funded cost for TE-39 CU #1 is \$3,841,825. This cost was provided by Bill Waits (EconWG) and Loland Broussard (EngWG), and confirmed by John Petitbone (EngWG Chairman) and Allan Hebert (EconWG Chairman) on November 17, 2006. The revised fully funded budget spreadsheets, with the anticipated schedule of expenditures, are provided as an attachment.

**M. A Wetland Value Assessment, reviewed and approved by the Environmental Work Group.**

A Wetland Value Assessment (WVA) was specifically prepared for the CU #1 portion of the TE-39 South Lake Decade Project on March 20, 2003. A revised WVA was not necessary at the 30% or 95% level of review because no changes were made in project features that would have resulted in a change in projected project benefits.

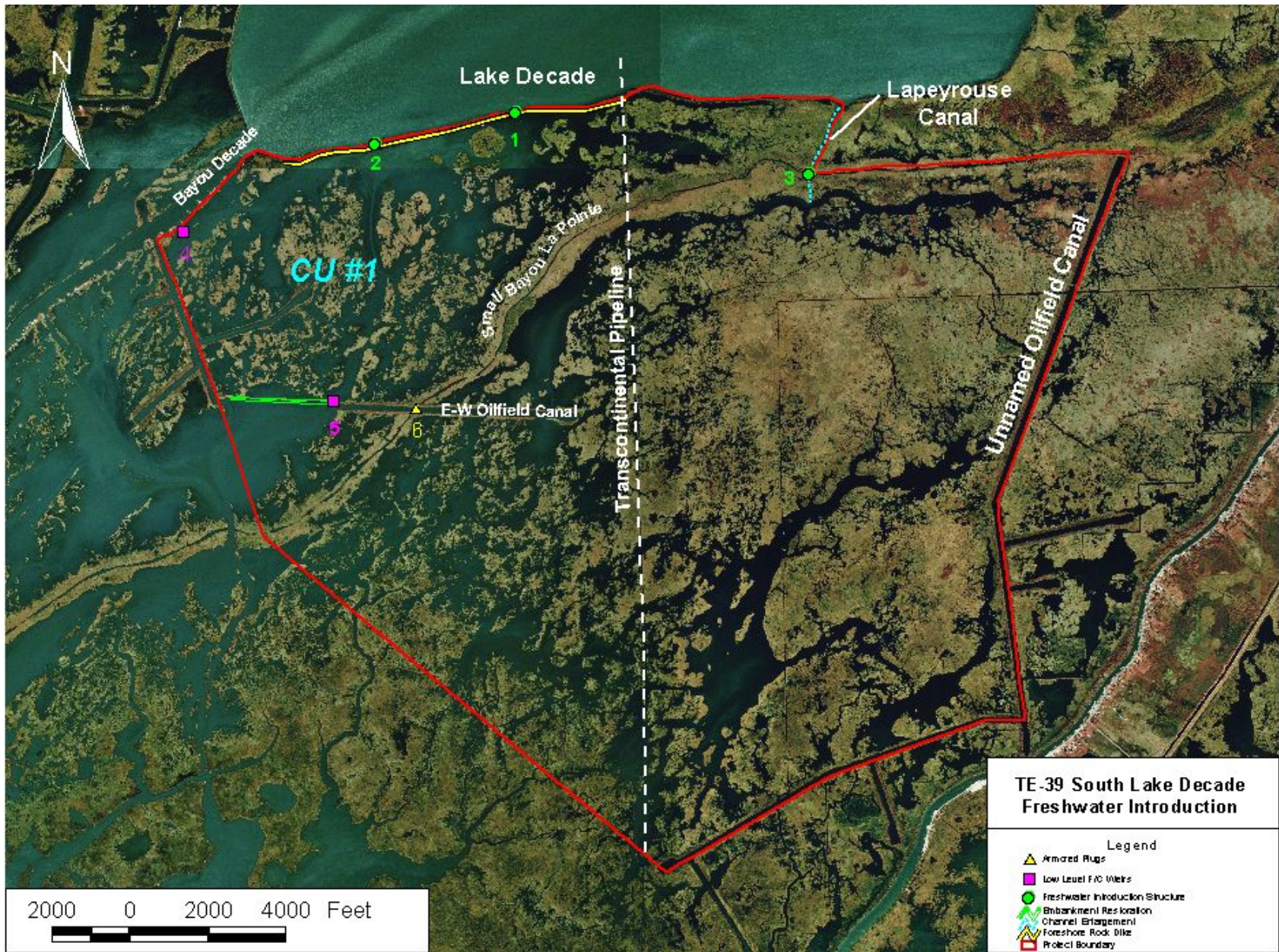
Due to the removal of 2 structural components from CU #1 in 2005, NRCS revised the 2003 Wetland Value Assessment (WVA) accordingly. The result was a reduction in net acreage from 207 to 202 acres. Kevin Roy, Environmental Workgroup (EnvWG) Chairman, assisted in the re-assessment and determined the WVA revisions were minor enough to negate a review by the EnvWG. A copy of the revised WVA is available upon request by contacting the NRCS Lafayette Water Resources office at (337)291-3060.

**N. A breakdown of the Prioritization Criteria ranking score, finalized and agreed upon by all agencies during the 95% review.**

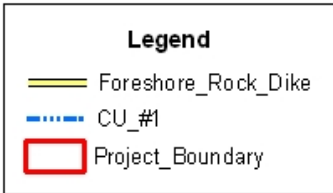
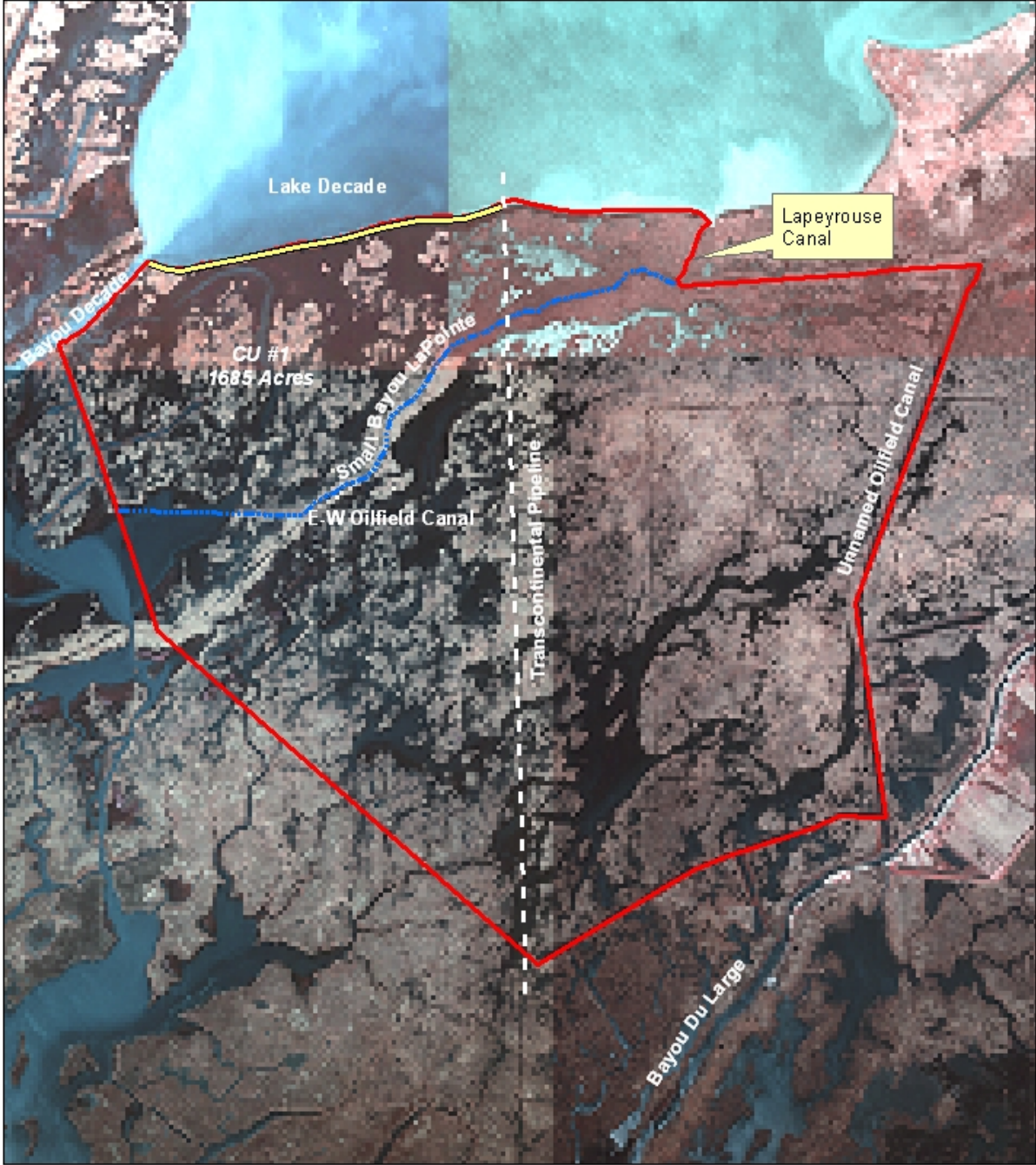
A revised Prioritization Fact Sheet was submitted to CWPPRA agencies for review on November 4, 2005. Based on comments received, no corrections to the submitted fact sheet were made. A final fully funded cost for the 2006 Phase II request was confirmed by the Economic Work Group on November 17th, therefore the Prioritization Fact Sheet dated 30 November 2005 was revised to reflect such cost.

Listed below are current prioritization criterion and associated scores for the TE-39 CU #1 Project:

<b>Criteria</b>	<b>Score</b>	<b>Weight</b>	<b>Final Score</b>
Cost Effectiveness	10	2	20
Area of Need	9.3	1.5	13.95
Implementability	10	1.5	15
Certainty of Benefits	8	1	8
Sustainability of Benefits	8	1	8
HGM – Riverine Input	0	1	0
HGM – Sediment Input	0	1	0
HGM – Landscape Features	10	1	10
<b>Total Score</b>			<b>74.95</b>



**Figure 1**



**TE-39 South lake Decade  
Freshwater Introduction  
(CU #1)  
Project Plan Map**



**Figure 2**

REFER TO ATTACHED FILE “phase-2-Approval South Lake Decade-CU#1(TE-39-1) (3).xls”



2000 POST OAK BOULEVARD / SUITE 100 / HOUSTON, TEXAS 77058-4400

(713) 298 8000  
WWW.APACHECORP.COM

December 1, 2005

Col. Richard Wagenaar  
Department of the Army  
New Orleans District, Corps of Engineers  
Western Evaluation Section  
P. O. Box 60267  
New Orleans, Louisiana 70160-0267

RE: CWPBRA TE-39  
South Lake Decade Project  
Terrebonne Parish, Louisiana

Dear Colonel:

Apache Corporation owns approximately 267,000 acres of coastal marsh lands throughout south Louisiana in Cameron, Vermilion, Iberia, Terrebonne, Lafourche and Plaquemines parishes. These lands are managed and operated through the Apache Louisiana Minerals, Inc. office located in Houma, LA. This office staff has consistently conducted activities, with technical assistance from state and federal agencies, to develop and implement comprehensive marsh protection and enhancement programs for over 40 years throughout these properties. A portion of this activity has been to annually refurbish the perimeter shoreline levee of Lake DeCade in an effort to protect the adjacent fragile marshes from saltwater intrusion and erosion.

The extents and features of the subject CWPBRA project will positively affect our lands surrounding Lake DeCade. This Company is committed to the preservation of these fragile wetlands and would like to see this Project implemented as soon as possible. We are so excited about the positive aspects of this Project that we are willing to provide financial assistance to it. I am pleased to pledge Apache's commitment to assume the State's 15% of the cost share for Phase II funding of Conservation Unit #1 for this project.

We are respectfully requesting that this project be approved and implemented at the earliest time frame possible. Your favorable consideration of this request will be greatly appreciated.

Sincerely,  
APACHE CORPORATION

Jon Jeppesen  
Sr. Vice President - Gulf Coast Region

Jjja  
TE-39 Apache Funding for Project - COE.doc:1  
CC: Sam Hamilton - USFWS  
Don Gohmert - NRCS  
William Hooker - EPA  
Dr. Erik Zobrist - NMFS  
Sidney Coffee - LA Governor's Office

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**DISCUSSION/DECISION: TRANSITIONING PROJECTS TO OTHER  
AUTHORITIES**



## **CWPPRA Project Transfer to other Authorities and Programs Discussion on recommended Draft Procedures**

December 5, 2006

The P&E was delegated by the Technical Committee at their 13 September 2006 meeting to continue work initiated by the LCA program on transitioning projects from CWPPRA to other authorities. The goal of the continued work has been to refine and streamline the process and make it less bureaucratic compared to what has been provided to date by the Corps. The P&E evaluated and modified the document prepared by the Corps as directed, and produce a draft appendix to the CWPPRA.

A preliminary draft was prepared and reviewed, and a subsequent first draft dated and sent 22 November 2006, to the P&E for review and comment.

The NMFS, NRCS, USFWS, EPA and DNR concurred with the first draft. This first draft provided that the Task Force would vote on whether or not to transfer projects that are specifically authorized by Congress. However, some experts at the Corps advised that CWPPRA projects that become specifically authorized under a different program/authority by Congress may have overriding precedence and that the Task Force would not have discretionary authority on whether or not to transfer the project from the CWPPRA Program. Conversely, the Corps Office of Counsel advised that they are not aware of any draft legislation that would require CWPPRA to transfer a project per se.

In the interim between the two opinions from the Corps, a second alternate draft transfer procedure was sent by the Corps to the P&E. This second draft, dated 4 December 2006, modified the how the Task Force would respond to a "Directed Transfer". Minor grammatical changes were also made through out the document to better clarify roles and intent. The fundamental differences in the two documents are in Section 1.a. and are compared below:

1. Principles Governing Transfers:

a. Directed Transfers:

**First Draft:** Task Force votes on whether or not to transfer if a project is specifically authorized by congress.

**Second Draft:** Task Force transfers automatically if a project becomes specifically authorized by congress.

The other minor edits are described as follows:

Introduction paragraph:

a. reversed order of second two sentences to correspond with the order they are addressed in the body of the document.

## 1. Principles Governing Transfers:

a. Added "specifically to first sentence. If a project becomes specifically authorized by congress, it automatically supersedes other authorities. As such, deleted "determine by vote whether or not to".

b. Revised paragraph to read similarly in structure to "a.". i.e. In the event/on the occasion. Also added "specifically authorized and the lead agency for that authority or program wishes to take on the project" to make it clear that the project is not specifically authorized and that the receiving agency is electing (even though it should be evident by the section title). Also added "including reasonable justification" so that letters of intent can provide information for that the Task Force can use to weigh the request.

## 2. Transfer Procedures:

a. First sentence: changed "votes" to "is directed", inserted CWPPRA, removed sponsor after Federal and combined "federal and state sponsors". Also added "receiving authority to the list of entities to notify. Last Sentence: Since the CWPPRA SOP for deauthorizing projects was revised to include Transferring projects, deleted "and subsequently deauthorized by the CWPPRA program" and added "from CWPPRA.

e. First sentence" changed deauthorized to transfer. Second sentence, changed "deauthorization" to "transfer". Removed quotes from "close out".

November 22, 2006

## Appendix I

### Transfer of Projects from CWPPRA to another Agency or Authority for Further Action

*Several circumstances may result in projects being considered by the CWPPRA Task Force for transfer to other authorities. Such transfers may be appropriate in cases where alternate project planning, engineering, or construction authorities are identified as potentially more suitable than CWPPRA. Such transfers may also include cases where specific or programmatic Congressional authorization or funding has been provided for projects authorized under the CWPPRA program. This appendix is intended to provide general guidance regarding project transfers.*

#### 1. Principles Governing Transfers

a. **Directed Transfers:** In the event that a CWPPRA project is authorized by another Congressional authority or Federal program, the CWPPRA Task Force shall determine by vote whether or not to transfer the project to the alternate authority.

b. **Elective Transfers:** On occasion, there may be circumstances where a CWPPRA project would be more appropriately placed in another authority or program. In such a case, the receiving authority shall provide the CWPPRA Task Force with a letter of intent to transfer the project to its authority. The CWPPRA Task Force shall determine by vote whether or not to transfer the project to the alternate authority.

#### 2. Transfer Procedures

a. In the event the Task Force votes to transfer a project, the Federal Sponsor and the Local Sponsor shall notify the Louisiana Congressional delegation, the State House and Senate Natural Resources Committee chairs, the State Senator (s) and State Representative (s) in whose district the project falls, senior parish officials in the parish (es) where the project is located, any landowners whose property would be directly affected by the project, and any interested parties. The purpose of the letter is to notify all parties that the project will be transferred to the receiving authority and subsequently deauthorized by the CWPPRA program.

b. The federal and local sponsor shall provide a chronological summary of all work completed to date, identify any outstanding issues, and provide all project information to the receiving authority, including acquired data, engineering and design analyses, and project documents. In cases where the project has

undergone significant engineering and design efforts, it is anticipated that significant quantities of hard copy and digital information will be provided.

- c. The Federal and Local sponsors shall host an information transfer meeting with appropriate representatives of the receiving authority. The purpose of the meeting is to review project status and details regarding work accomplished to date.
- d. Expenditures of CWPPRA funds to re-package project information, conduct additional analyses or acquire new data or information are not anticipated and shall require explicit approval by the CWPPRA Task Force.
- e. Subsequent to the information transfer meeting, the project will be deauthorized from the CWPPRA program in accordance with Section 6.p. of the CWPPRA SOP. Upon de-authorization, the Federal and Local sponsors shall proceed to an accounting of final costs and “close out” the project in accordance with Section 6.o. of the SOP.

December 4, 2006

## Appendix I

### Transfer of Projects from CWPPRA to another Agency or Authority for Further Action

*Several circumstances may result in projects being considered by the CWPPRA Task Force for transfer to other authorities. Such transfers may include cases where specific or programmatic Congressional authorization or funding has been provided for projects authorized under the CWPPRA program. Such transfers may also be appropriate in cases where alternate project planning, engineering, or construction authorities are identified as potentially more suitable than CWPPRA. This appendix is intended to provide general guidance regarding project transfers.*

#### 1. Principles Governing Transfers

- a. **Directed Transfers:** In the event that a CWPPRA project is specifically authorized by another Congressional authority or Federal program, the CWPPRA Task Force shall transfer the project to the alternate authority.
- b. **Elective Transfers:** On the occasion when a CWPPRA project would be more appropriately placed in another authority or program under which the project is not specifically authorized and the lead agency for that authority or program wishes to take on the project, that lead agency shall provide the CWPPRA Task Force with a letter of intent to transfer the project to its authority, including reasonable justification for such transfer. The CWPPRA Task Force shall determine by vote whether or not to transfer the project to the alternate authority.

#### 2. Transfer Procedures

- a. In the event the Task Force is directed to transfer a project, the CWPPRA Federal and Local Sponsors shall notify the receiving authority, the Louisiana Congressional delegation, the State House and Senate Natural Resources Committee chairs, the State Senator (s) and State Representative (s) in whose district the project falls, senior parish officials in the parish (es) where the project is located, any landowners whose property would be directly affected by the project, and any interested parties. The purpose of the letter is to notify all parties that the project will be transferred from CWPPRA to the receiving authority.
- b. The federal and local sponsor shall provide a chronological summary of all work completed to date, identify any outstanding issues, and provide all

project information to the receiving authority, including acquired data, engineering and design analyses, and project documents. In cases where the project has undergone significant engineering and design efforts, it is anticipated that significant quantities of hard copy and digital information will be provided.

- c. The Federal and Local sponsors shall host an information transfer meeting with appropriate representatives of the receiving authority. The purpose of the meeting is to review project status and details regarding work accomplished to date.
- d. Expenditures of CWPPRA funds to re-package project information, conduct additional analyses or acquire new data or information are not anticipated and shall require explicit approval by the CWPPRA Task Force.
- e. Subsequent to the information transfer meeting, the project will be transferred from the CWPPRA program in accordance with Section 6.p. of the CWPPRA SOP. Upon transfer, the Federal and Local sponsors shall proceed to an accounting of final costs and close out the project in accordance with Section 6.o. of the SOP.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**DISCUSSION: FUNDING OF ENVIRONMENTAL IMPACT STATEMENTS  
(EIS)/NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) FOR  
TRANSFERABLE CWPPRA PROJECTS**

## **Funding CWPPRA NEPA Compliance Activities for Projects it Cannot Construct**

**Discussion: Continued CWPPRA Program Funding of NEPA Compliance Activities, Especially EIS's for Projects that are, or will be, Recommended for Transfer to Other Programs. (Clark)** The Technical Committee will discuss the issue of funding NEPA activities, including EIS's for projects recommended to be transferred to other programs. Such actions have already begun on two projects that CWPPRA is considering transferring to another program for construction because they will exceed CWPPRA's funding capabilities. Should the Program fund the total costs of developing NEPA-compliance for projects it cannot construct? If not, to what stage should the program fund the NEPA-compliance process?

The issue of CWPPRA funding the total costs of EIS's and other NEPA activities for projects intended for transfer to other programs becomes timely, due to the July and October 2006 Task Force actions concerning the Bayou Lafourche and Myrtle Grove projects. The Task Force did not agree to allow funding to complete the Bayou Lafourche EIS with CWPPRA funds at its October meeting. For consistency, a discussion is in order to explore the extent to which CWPPRA should fund NEPA-compliance activities for the Myrtle Grove project, and other such projects in the future, in light of their possible transfer to the LCA or another program.

The Technical Committee can recommend that the Task Force fund all, part, or none of EIS/NEPA development for transferable projects; however, the issue is also one of consistency with the NEPA regulations.

### **Current NEPA Policy**

Current National Environmental Policy Act regulations (40 CFR Parts 1500-1508) state that an Environmental Assessment and Finding of No Significant Impact (FONSI) are required for activities without significant impacts, unless categorically excluded. An Environmental Impact Statement (EIS), with a Record of Decision, is required for projects that propose significant environmental impacts.

### **EIS Process**

After the decision that an EIS is required is made, the following steps should be followed: Issue Notice of Intent in the Federal Register (40 CFR 1501.7), Begin the Scoping Process (40 CFR 1501.7), Prepare Preliminary Draft EIS (40 CFR 1502), Review of Preliminary DEIS, Prepare DEIS, Distribute DEIS (minimum 60-day review period) for comment and public meeting (if appropriate) (40 CFR 1506.9), Respond to DEIS and prepare preliminary Final EIS, review preliminary FEIS, Prepare FEIS, File and distribute FEIS (minimum 30 days to decision) (40 CFR 1506.10), Make decision and Prepare Record of Decision (40 CFR 1505.2), and finally, Implement the Action (30 days after public notification).

### **EIS Content**



An EIS should include the following: Summary, Purpose and Need for the Action, Alternatives Including the Proposed or Preferred Action, Affected Environment, Environmental Consequences (of Alternatives), Preparers, Agencies and persons copied, Appendices. [40 CFR Part 1502.10; National Environmental Policy Act (NEPA) of 1970; 42 USC 4371 et seq.].

### **CWPPRA EIS Funding Recommendation**

CWPPRA cannot build projects it intends to transfer to other authorities for construction because the project costs are greater than available CWPPRA funding. The CWPPRA program should not bear the total burden of preparing the EIS for transferable projects for the following reasons.

- CWPPRA should not select the preferred alternative and complete the EIS, prior to the project being transferred to the constructing program, because once the project has been transferred, it is out of CWPPRA's control and the preferred alternative and EIS could (and likely would) be modified to meet construction agency program requirements.
- If the non-CWPPRA constructing program modifies the project after transfer, a supplemental EIS may be required at added government expense. If EIS preparation were delayed until the selection of the preferred alternative by the constructing program, costs would be reduced.
- The CWPPRA Program could expend public funds to prepare a document that would likely have to be modified after project transfer; thus duplicating expenditures.

### **CWPPRA May Fund Part of EIS Development**

If the CWPPRA Task Force approves funding part of EIS development for projects planned to be transferred to another program, the question becomes to what stage CWPPRA funds could be used for NEPA-compliance activities. Depending on the individual project-related circumstances, CWPPRA could potentially fund, if requested; preliminary DEIS development up to, but not including, the selection of the Preferred Alternative. This would include, Notice of Intent, Scoping Meetings and Summaries, Purpose and Need for the Action, Describing the Affected Environment, Alternative Development and Discussion (not to include selection of the "preferred alternative"), and some development of Environmental Consequences of the Alternatives (without identifying or favoring a "preferred alternative"). Thus, a majority of the preliminary DEIS preparations could potentially be funded by CWPPRA without CWPPRA funding the total EIS that would include selecting and analyzing a preferred alternative that may be modified later by a program that will construct the project.

**Recommendation: It is recommended that the CWPPRA Program be authorized to fund NEPA activities associated with preliminary DEIS development, up to - but**

**not including - selection of the preferred alternative, prior to project transfer to a constructing program.**

dc 11-13-06

## PART 1500--PURPOSE, POLICY, AND MANDATE

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- Sec. [1500.1 Purpose.](#)  
[1500.2 Policy.](#)  
[1500.3 Mandate.](#)  
[1500.4 Reducing paperwork.](#)  
[1500.5 Reducing delay.](#)  
[1500.6 Agency authority.](#)

Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609) and E.O. 11514, Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

Source: 43 FR 55990, Nov. 28, 1978, unless otherwise noted.

### Sec. 1500.1 Purpose.

(a) The National Environmental Policy Act (NEPA) is our basic national charter for protection of the environment. It establishes policy, sets goals (section 101), and provides means (section 102) for carrying out the policy. Section 102(2) contains "action-forcing" provisions to make sure that federal agencies act according to the letter and spirit of the Act. The regulations that follow implement section 102(2). Their purpose is to tell federal agencies what they must do to comply with the procedures and achieve the goals of the Act. The President, the federal agencies, and the courts share responsibility for enforcing the Act so as to achieve the substantive requirements of section 101.

(b) NEPA procedures must insure that environmental information is available to public officials and citizens before decisions are made and before actions are taken. The information must be of high quality. Accurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA. Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail.

(c) Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork--even excellent paperwork--but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment. These regulations provide the direction to achieve this purpose.

### Sec. 1500.2 Policy.

Federal agencies shall to the fullest extent possible:

(a) Interpret and administer the policies, regulations, and public laws of the United States in accordance with the policies set forth in the Act and in these regulations.

(b) Implement procedures to make the NEPA process more useful to decisionmakers and the public; to reduce paperwork and the accumulation of extraneous background data; and to emphasize real environmental issues and alternatives. Environmental impact statements shall be concise, clear, and to the point, and shall be supported by evidence that agencies have made the necessary environmental analyses.

(c) Integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively.

(d) Encourage and facilitate public involvement in decisions which affect the quality of the human environment.

(e) Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.

(f) Use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment.

### **Sec. 1500.3 Mandate.**

Parts 1500 through 1508 of this title provide regulations applicable to and binding on all Federal agencies for implementing the procedural provisions of the National Environmental Policy Act of 1969, as amended (Pub. L. 91-190, 42 U.S.C. 4321 et seq.) (NEPA or the Act) except where compliance would be inconsistent with other statutory requirements. These regulations are issued pursuant to NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.) section 309 of the Clean Air Act, as amended (42 U.S.C. 7609) and Executive Order 11514, Protection and Enhancement of Environmental Quality (March 5, 1970, as amended by Executive Order 11991, May 24, 1977). These regulations, unlike the predecessor guidelines, are not confined to sec. 102(2)(C) (environmental impact statements). The regulations apply to the whole of section 102(2). The provisions of the Act and of these regulations must be read together as a whole in order to comply with the spirit and letter of the law. It is the Council's intention that judicial review of agency compliance with these regulations not occur before an agency has filed the final environmental impact statement, or has made a final finding of no significant impact (when such a finding will result in action affecting the environment), or takes action that will result in irreparable injury. Furthermore, it is the Council's intention that any trivial violation of these regulations not give rise to any independent cause of action.

### **Sec. 1500.4 Reducing paperwork.**

Agencies shall reduce excessive paperwork by:

(a) Reducing the length of environmental impact statements (Sec. 1502.2(c)), by means such as setting appropriate page limits (Secs.

1501.7(b)(1) and 1502.7).

(b) Preparing analytic rather than encyclopedic environmental impact statements (Sec. 1502.2(a)).

(c) Discussing only briefly issues other than significant ones (Sec. 1502.2(b)).

(d) Writing environmental impact statements in plain language (Sec. 1502.8).

(e) Following a clear format for environmental impact statements (Sec. 1502.10).

(f) Emphasizing the portions of the environmental impact statement that are useful to decisionmakers and the public (Secs. 1502.14 and 1502.15) and reducing emphasis on background material (Sec. 1502.16).

(g) Using the scoping process, not only to identify significant environmental issues deserving of study, but also to deemphasize insignificant issues, narrowing the scope of the environmental impact statement process accordingly (Sec. 1501.7).

(h) Summarizing the environmental impact statement (Sec. 1502.12) and circulating the summary instead of the entire environmental impact statement if the latter is unusually long (Sec. 1502.19).

(i) Using program, policy, or plan environmental impact statements and tiering from statements of broad scope to those of narrower scope, to eliminate repetitive discussions of the same issues (Secs. 1502.4 and 1502.20).

(j) Incorporating by reference (Sec. 1502.21).

(k) Integrating NEPA requirements with other environmental review and consultation requirements (Sec. 1502.25).

(l) Requiring comments to be as specific as possible (Sec. 1503.3).

(m) Attaching and circulating only changes to the draft environmental impact statement, rather than rewriting and circulating the entire statement when changes are minor (Sec. 1503.4(c)).

(n) Eliminating duplication with State and local procedures, by providing for joint preparation (Sec. 1506.2), and with other Federal procedures, by providing that an agency may adopt appropriate environmental documents prepared by another agency (Sec. 1506.3).

(o) Combining environmental documents with other documents (Sec. 1506.4).

(p) Using categorical exclusions to define categories of actions which do not individually or cumulatively have a significant effect on the human environment and which are therefore exempt from requirements to prepare an environmental impact statement (Sec. 1508.4).

(q) Using a finding of no significant impact when an action not otherwise excluded will not have a significant effect on the human environment and is therefore exempt from requirements to prepare an environmental impact statement (Sec. 1508.13).

[43 FR 55990, Nov. 29, 1978; 44 FR 873, Jan. 3, 1979]

### **Sec. 1500.5 Reducing delay.**

Agencies shall reduce delay by:

- (a) Integrating the NEPA process into early planning (Sec. 1501.2).
- (b) Emphasizing interagency cooperation before the environmental impact statement is prepared, rather than submission of adversary comments on a completed document (Sec. 1501.6).
- (c) Insuring the swift and fair resolution of lead agency disputes (Sec. 1501.5).
- (d) Using the scoping process for an early identification of what are and what are not the real issues (Sec. 1501.7).
- (e) Establishing appropriate time limits for the environmental impact statement process (Secs. 1501.7(b)(2) and 1501.8).
- (f) Preparing environmental impact statements early in the process (Sec. 1502.5).
- (g) Integrating NEPA requirements with other environmental review and consultation requirements (Sec. 1502.25).
- (h) Eliminating duplication with State and local procedures by providing for joint preparation (Sec. 1506.2) and with other Federal procedures by providing that an agency may adopt appropriate environmental documents prepared by another agency (Sec. 1506.3).
- (i) Combining environmental documents with other documents (Sec. 1506.4).
- (j) Using accelerated procedures for proposals for legislation (Sec. 1506.8).
- (k) Using categorical exclusions to define categories of actions which do not individually or cumulatively have a significant effect on the human environment (Sec. 1508.4) and which are therefore exempt from requirements to prepare an environmental impact statement.
- (l) Using a finding of no significant impact when an action not otherwise excluded will not have a significant effect on the human environment (Sec. 1508.13) and is therefore exempt from requirements to prepare an environmental impact statement.

**Sec. 1500.6 Agency authority.**

Each agency shall interpret the provisions of the Act as a supplement to its existing authority and as a mandate to view traditional policies and missions in the light of the Act's national environmental objectives. Agencies shall review their policies, procedures, and regulations accordingly and revise them as necessary to insure full compliance with the purposes and provisions of the Act. The phrase "to the fullest extent possible" in section 102 means that each agency of the Federal Government shall comply with that section unless existing law applicable to the agency's operations expressly prohibits or makes compliance impossible.

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## PART 1501--NEPA AND AGENCY PLANNING

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[1501.2 Apply NEPA early in the process.](#)  
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[1501.7 Scoping.](#)  
[1501.8 Time limits.](#)

Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609, and E.O. 11514 (Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

Source: 43 FR 55992, Nov. 29, 1978, unless otherwise noted.

### **Sec. 1501.1 Purpose.**

The purposes of this part include:

- (a) Integrating the NEPA process into early planning to insure appropriate consideration of NEPA's policies and to eliminate delay.
- (b) Emphasizing cooperative consultation among agencies before the environmental impact statement is prepared rather than submission of adversary comments on a completed document.
- (c) Providing for the swift and fair resolution of lead agency disputes.
- (d) Identifying at an early stage the significant environmental issues deserving of study and deemphasizing insignificant issues, narrowing the scope of the environmental impact statement accordingly.
- (e) Providing a mechanism for putting appropriate time limits on the environmental impact statement process.

### **Sec. 1501.2 Apply NEPA early in the process.**

Agencies shall integrate the NEPA process with other planning at the earliest possible time to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts. Each agency shall:

- (a) Comply with the mandate of section 102(2)(A) to "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment," as specified by Sec. 1507.2.
- (b) Identify environmental effects and values in adequate detail so they can be compared to economic and technical analyses.



Environmental documents and appropriate analyses shall be circulated and reviewed at the same time as other planning documents.

(c) Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources as provided by section 102(2)(E) of the Act.

(d) Provide for cases where actions are planned by private applicants or other non-Federal entities before Federal involvement so that:

1. Policies or designated staff are available to advise potential applicants of studies or other information foreseeably required for later Federal action.
2. The Federal agency consults early with appropriate State and local agencies and Indian tribes and with interested private persons and organizations when its own involvement is reasonably foreseeable.
3. The Federal agency commences its NEPA process at the earliest possible time.

#### **Sec. 1501.3 When to prepare an environmental assessment.**

(a) Agencies shall prepare an environmental assessment (Sec. 1508.9) when necessary under the procedures adopted by individual agencies to supplement these regulations as described in Sec. 1507.3. An assessment is not necessary if the agency has decided to prepare an environmental impact statement.

(b) Agencies may prepare an environmental assessment on any action at any time in order to assist agency planning and decisionmaking.

#### **Sec. 1501.4 Whether to prepare an environmental impact statement.**

In determining whether to prepare an environmental impact statement the Federal agency shall:

(a) Determine under its procedures supplementing these regulations (described in Sec. 1507.3) whether the proposal is one which:

1. Normally requires an environmental impact statement, or
2. Normally does not require either an environmental impact statement or an environmental assessment (categorical exclusion).

(b) If the proposed action is not covered by paragraph (a) of this section, prepare an environmental assessment (Sec. 1508.9). The agency shall involve environmental agencies, applicants, and the public, to the extent practicable, in preparing assessments required by Sec. 1508.9(a)(1).

- (c) Based on the environmental assessment make its determination whether to prepare an environmental impact statement.
- (d) Commence the scoping process (Sec. 1501.7), if the agency will prepare an environmental impact statement.
- (e) Prepare a finding of no significant impact (Sec. 1508.13), if the agency determines on the basis of the environmental assessment not to prepare a statement.
1. The agency shall make the finding of no significant impact available to the affected public as specified in Sec. 1506.6.
  2. certain limited circumstances, which the agency may cover in its procedures under Sec. 1507.3, the agency shall make the finding of no significant impact available for public review (including State and areawide clearinghouses) for 30 days before the agency makes its final determination whether to prepare an environmental impact statement and before the action may begin. The circumstances are:
    - (i) The proposed action is, or is closely similar to, one which normally requires the preparation of an environmental impact statement under the procedures adopted by the agency pursuant to Sec. 1507.3, or
    - (ii) The nature of the proposed action is one without precedent.

#### **Sec. 1501.5 Lead agencies.**

- (a) A lead agency shall supervise the preparation of an environmental impact statement if more than one Federal agency either:
1. Proposes or is involved in the same action; or
  2. Is involved in a group of actions directly related to each other because of their functional interdependence or geographical proximity.
- (b) Federal, State, or local agencies, including at least one Federal agency, may act as joint lead agencies to prepare an environmental impact statement (Sec. 1506.2).
- (c) If an action falls within the provisions of paragraph (a) of this section the potential lead agencies shall determine by letter or memorandum which agency shall be the lead agency and which shall be cooperating agencies. The agencies shall resolve the lead agency question so as not to cause delay. If there is disagreement among the agencies, the following factors (which are listed in order of descending importance) shall determine lead agency designation:
1. Magnitude of agency's involvement.
  2. Project approval/disapproval authority.
  3. Expertise concerning the action's environmental effects.

4. Duration of agency's involvement.
5. Sequence of agency's involvement.

(d) Any Federal agency, or any State or local agency or private person substantially affected by the absence of lead agency designation, may make a written request to the potential lead agencies that a lead agency be designated.

(e) If Federal agencies are unable to agree on which agency will be the lead agency or if the procedure described in paragraph (c) of this section has not resulted within 45 days in a lead agency designation, any of the agencies or persons concerned may file a request with the Council asking it to determine which Federal agency shall be the lead agency. A copy of the request shall be transmitted to each potential lead agency. The request shall consist of:

1. A precise description of the nature and extent of the proposed action.
2. A detailed statement of why each potential lead agency should or should not be the lead agency under the criteria specified in paragraph (c) of this section.

(f) A response may be filed by any potential lead agency concerned within 20 days after a request is filed with the Council. The Council shall determine as soon as possible but not later than 20 days after receiving the request and all responses to it which Federal agency shall be the lead agency and which other Federal agencies shall be cooperating agencies.

[43 FR 55992, Nov. 29, 1978; 44 FR 873, Jan. 3, 1979]

#### **Sec. 1501.6 Cooperating agencies.**

The purpose of this section is to emphasize agency cooperation early in the NEPA process. Upon request of the lead agency, any other Federal agency which has jurisdiction by law shall be a cooperating agency. In addition any other Federal agency which has special expertise with respect to any environmental issue, which should be addressed in the statement may be a cooperating agency upon request of the lead agency. An agency may request the lead agency to designate it a cooperating agency.

(a) The lead agency shall:

1. Request the participation of each cooperating agency in the NEPA process at the earliest possible time.
2. Use the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise, to the maximum extent possible consistent with its responsibility as lead agency.
3. Meet with a cooperating agency at the latter's request.

(b) Each cooperating agency shall:

1. Participate in the NEPA process at the earliest possible time.
2. Participate in the scoping process (described below in Sec. 1501.7).
3. Assume on request of the lead agency responsibility for

developing information and preparing environmental analyses including portions of the environmental impact statement concerning which the cooperating agency has special expertise.

4. Make available staff support at the lead agency's request to enhance the latter's interdisciplinary capability.
5. Normally use its own funds. The lead agency shall, to the extent available funds permit, fund those major activities or analyses it requests from cooperating agencies. Potential lead agencies shall include such funding requirements in their budget requests.

(c) A cooperating agency may in response to a lead agency's request for assistance in preparing the environmental impact statement (described in paragraph (b)(3), (4), or (5) of this section) reply that other program commitments preclude any involvement or the degree of involvement requested in the action that is the subject of the environmental impact statement. A copy of this reply shall be submitted to the Council.

**Sec. 1501.7 Scoping.** There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This process shall be termed scoping. As soon as practicable after its decision to prepare an environmental impact statement and before the scoping process the lead agency shall publish a notice of intent (Sec. 1508.22) in the Federal Register except as provided in Sec. 1507.3(e).

(a) As part of the scoping process the lead agency shall:

1. Invite the participation of affected Federal, State, and local agencies, any affected Indian tribe, the proponent of the action, and other interested persons (including those who might not be in accord with the action on environmental grounds), unless there is a limited exception under Sec. 1507.3(c). An agency may give notice in accordance with Sec. 1506.6.
2. Determine the scope (Sec. 1508.25) and the significant issues to be analyzed in depth in the environmental impact statement.
3. Identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (Sec. 1506.3), narrowing the discussion of these issues in the statement to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere.
4. Allocate assignments for preparation of the environmental impact statement among the lead and cooperating agencies, with the lead agency retaining responsibility for the statement.
5. Indicate any public environmental assessments and other environmental impact statements which are being or will be prepared that are related to but are not part of the scope of the impact statement under consideration.
6. Identify other environmental review and consultation requirements so the lead and cooperating agencies may prepare other required analyses and studies concurrently with, and integrated with, the environmental impact statement as provided in Sec. 1502.25.

7. Indicate the relationship between the timing of the preparation of environmental analyses and the agency's tentative planning and decisionmaking schedule.

(b) As part of the scoping process the lead agency may:

1. Set page limits on environmental documents (Sec. 1502.7).
2. Set time limits (Sec. 1501.8).
3. Adopt procedures under Sec. 1507.3 to combine its environmental assessment process with its scoping process.
4. Hold an early scoping meeting or meetings which may be integrated with any other early planning meeting the agency has. Such a scoping meeting will often be appropriate when the impacts of a particular action are confined to specific sites.

(c) An agency shall revise the determinations made under paragraphs (a) and (b) of this section if substantial changes are made later in the proposed action, or if significant new circumstances or information arise which bear on the proposal or its impacts.

### **Sec. 1501.8 Time limits.**

Although the Council has decided that prescribed universal time limits for the entire NEPA process are too inflexible, Federal agencies are encouraged to set time limits appropriate to individual actions (consistent with the time intervals required by Sec. 1506.10). When multiple agencies are involved the reference to agency below means lead agency.

(a) The agency shall set time limits if an applicant for the proposed action requests them: Provided, That the limits are consistent with the purposes of NEPA and other essential considerations of national policy.

(b) The agency may:

1. Consider the following factors in determining time limits:
  - (i) Potential for environmental harm.
  - (ii) Size of the proposed action.
  - (iii) State of the art of analytic techniques.
  - (iv) Degree of public need for the proposed action, including the consequences of delay.
  - (v) Number of persons and agencies affected.
  - (vi) Degree to which relevant information is known and if not known the time required for obtaining it.
  - (vii) Degree to which the action is controversial.
  - (viii) Other time limits imposed on the agency by law, regulations, or executive order.
2. Set overall time limits or limits for each constituent part of the NEPA process, which may include:
  - (i) Decision on whether to prepare an environmental impact statement (if not already decided).
  - (ii) Determination of the scope of the environmental impact statement.
  - (iii) Preparation of the draft environmental impact

statement.

(iv) Review of any comments on the draft environmental impact statement from the public and agencies.

(v) Preparation of the final environmental impact statement.

(vi) Review of any comments on the final environmental impact statement.

(vii) Decision on the action based in part on the environmental impact statement.

3. Designate a person (such as the project manager or a person in the agency's office with NEPA responsibilities) to expedite the NEPA process.

(c) State or local agencies or members of the public may request a Federal Agency to set time limits.

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## PART 1502--ENVIRONMENTAL IMPACT STATEMENT

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Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and E.O. 11514 (Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

Source: 43 FR 55994, Nov. 29, 1978, unless otherwise noted.

### **Sec. 1502.1 Purpose.**

The primary purpose of an environmental impact statement is to serve as an action-forcing device to insure that the policies and goals defined in the Act are infused into the ongoing programs and actions of the Federal Government. It shall provide full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. Agencies shall focus on significant environmental issues and alternatives and shall reduce paperwork and the accumulation of extraneous background data. Statements shall be concise, clear, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses. An environmental impact statement is more than a disclosure document. It shall be used by Federal officials in conjunction with other relevant material to plan actions and make decisions.

**Sec. 1502.2 Implementation.**

To achieve the purposes set forth in Sec. 1502.1 agencies shall prepare environmental impact statements in the following manner:

- (a) Environmental impact statements shall be analytic rather than encyclopedic.
- (b) Impacts shall be discussed in proportion to their significance. There shall be only brief discussion of other than significant issues. As in a finding of no significant impact, there should be only enough discussion to show why more study is not warranted.
- (c) Environmental impact statements shall be kept concise and shall be no longer than absolutely necessary to comply with NEPA and with these regulations. Length should vary first with potential environmental problems and then with project size.
- (d) Environmental impact statements shall state how alternatives considered in it and decisions based on it will or will not achieve the requirements of sections 101 and 102(1) of the Act and other environmental laws and policies.
- (e) The range of alternatives discussed in environmental impact statements shall encompass those to be considered by the ultimate agency decisionmaker.
- (f) Agencies shall not commit resources prejudicing selection of alternatives before making a final decision (Sec. 1506.1).
- (g) Environmental impact statements shall serve as the means of assessing the environmental impact of proposed agency actions, rather than justifying decisions already made.

**Sec. 1502.3 Statutory requirements for statements.**

As required by sec. 102(2)(C) of NEPA environmental impact statements (Sec. 1508.11) are to be included in every recommendation or report.

- On proposals (Sec. 1508.23).
- For legislation and (Sec. 1508.17).
- Other major Federal actions (Sec. 1508.18).
- Significantly (Sec. 1508.27).
- Affecting (Secs. 1508.3, 1508.8).
- The quality of the human environment (Sec. 1508.14).

**Sec. 1502.4 Major Federal actions requiring the preparation of environmental impact statements.**

- (a) Agencies shall make sure the proposal which is the subject of an environmental impact statement is properly defined. Agencies shall use the criteria for scope (Sec. 1508.25) to determine which proposal (s) shall be the subject of a particular statement. Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact



statement.

(b) Environmental impact statements may be prepared, and are sometimes required, for broad Federal actions such as the adoption of new agency programs or regulations (Sec. 1508.18). Agencies shall prepare statements on broad actions so that they are relevant to policy and are timed to coincide with meaningful points in agency planning and decisionmaking.

(c) When preparing statements on broad actions (including proposals by more than one agency), agencies may find it useful to evaluate the proposal(s) in one of the following ways:

1. Geographically, including actions occurring in the same general location, such as body of water, region, or metropolitan area.
2. Generically, including actions which have relevant similarities, such as common timing, impacts, alternatives, methods of implementation, media, or subject matter.
3. By stage of technological development including federal or federally assisted research, development or demonstration programs for new technologies which, if applied, could significantly affect the quality of the human environment. Statements shall be prepared on such programs and shall be available before the program has reached a stage of investment or commitment to implementation likely to determine subsequent development or restrict later alternatives.

(d) Agencies shall as appropriate employ scoping (Sec. 1501.7), tiering (Sec. 1502.20), and other methods listed in Secs. 1500.4 and 1500.5 to relate broad and narrow actions and to avoid duplication and delay.

### **Sec. 1502.5 Timing.**

An agency shall commence preparation of an environmental impact statement as close as possible to the time the agency is developing or is presented with a proposal (Sec. 1508.23) so that preparation can be completed in time for the final statement to be included in any recommendation or report on the proposal. The statement shall be prepared early enough so that it can serve practically as an important contribution to the decisionmaking process and will not be used to rationalize or justify decisions already made (Secs. 1500.2(c), 1501.2, and 1502.2). For instance:

(a) For projects directly undertaken by Federal agencies the environmental impact statement shall be prepared at the feasibility analysis (go-no go) stage and may be supplemented at a later stage if necessary.

(b) For applications to the agency appropriate environmental assessments or statements shall be commenced no later than immediately after the application is received. Federal agencies are encouraged to begin preparation of such assessments or statements

earlier, preferably jointly with applicable State or local agencies.

(c) For adjudication, the final environmental impact statement shall normally precede the final staff recommendation and that portion of the public hearing related to the impact study. In appropriate circumstances the statement may follow preliminary hearings designed to gather information for use in the statements.

(d) For informal rulemaking the draft environmental impact statement shall normally accompany the proposed rule.

#### **Sec. 1502.6 Interdisciplinary preparation.**

Environmental impact statements shall be prepared using an interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts (section 102(2)(A) of the Act). The disciplines of the preparers shall be appropriate to the scope and issues identified in the scoping process (Sec. 1501.7).

#### **Sec. 1502.7 Page limits.**

The text of final environmental impact statements (e.g., paragraphs (d) through (g) of Sec. 1502.10) shall normally be less than 150 pages and for proposals of unusual scope or complexity shall normally be less than 300 pages.

#### **Sec. 1502.8 Writing.**

Environmental impact statements shall be written in plain language and may use appropriate graphics so that decisionmakers and the public can readily understand them. Agencies should employ writers of clear prose or editors to write, review, or edit statements, which will be based upon the analysis and supporting data from the natural and social sciences and the environmental design arts.

#### **Sec. 1502.9 Draft, final, and supplemental statements.**

Except for proposals for legislation as provided in Sec. 1506.8 environmental impact statements shall be prepared in two stages and may be supplemented.

(a) Draft environmental impact statements shall be prepared in accordance with the scope decided upon in the scoping process. The lead agency shall work with the cooperating agencies and shall obtain comments as required in Part 1503 of this chapter. The draft statement must fulfill and satisfy to the fullest extent possible the requirements established for final statements in section 102(2)(C) of the Act. If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion. The agency shall make every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives including the proposed action.

(b) Final environmental impact statements shall respond to comments as required in Part 1503 of this chapter. The agency shall discuss at appropriate points in the final statement any responsible opposing view which was not adequately discussed in the draft statement and shall indicate the agency's response to the issues raised.

(c) Agencies:

1. Shall prepare supplements to either draft or final environmental impact statements if:
  - (i) The agency makes substantial changes in the proposed action that are relevant to environmental concerns; or
  - (ii) There are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.
2. May also prepare supplements when the agency determines that the purposes of the Act will be furthered by doing so.
3. Shall adopt procedures for introducing a supplement into its formal administrative record, if such a record exists.
4. Shall prepare, circulate, and file a supplement to a statement in the same fashion (exclusive of scoping) as a draft and final statement unless alternative procedures are approved by the Council.

#### **Sec. 1502.10 Recommended format.**

Agencies shall use a format for environmental impact statements which will encourage good analysis and clear presentation of the alternatives including the proposed action. The following standard format for environmental impact statements should be followed unless the agency determines that there is a compelling reason to do otherwise:

- (a) Cover sheet.
- (b) Summary.
- (c) Table of contents.
- (d) Purpose of and need for action.
- (e) Alternatives including proposed action (sections 102(2)(C)(iii) and 102(2)(E) of the Act).
- (f) Affected environment.
- (g) Environmental consequences (especially sections 102(2)(C)(i), (ii), (iv), and (v) of the Act).
- (h) List of preparers.
- (i) List of Agencies, Organizations, and persons to whom copies of the statement are sent.
- (j) Index.
- (k) Appendices (if any).

If a different format is used, it shall include paragraphs (a), (b), (c), (h), (i), and (j), of this section and shall include the substance of paragraphs (d), (e), (f), (g), and (k) of this section, as further described in Secs. 1502.11 through 1502.18, in any appropriate format.

**Sec. 1502.11 Cover sheet.**

The cover sheet shall not exceed one page. It shall include:

- (a) A list of the responsible agencies including the lead agency and any cooperating agencies.
- (b) The title of the proposed action that is the subject of the statement (and if appropriate the titles of related cooperating agency actions), together with the State(s) and county(ies) (or other jurisdiction if applicable) where the action is located.
- (c) The name, address, and telephone number of the person at the agency who can supply further information.
- (d) A designation of the statement as a draft, final, or draft or final supplement.
- (e) A one paragraph abstract of the statement.
- (f) The date by which comments must be received (computed in cooperation with EPA under Sec. 1506.10).

The information required by this section may be entered on Standard Form 424 (in items 4, 6, 7, 10, and 18).

**Sec. 1502.12 Summary.**

Each environmental impact statement shall contain a summary which adequately and accurately summarizes the statement. The summary shall stress the major conclusions, areas of controversy (including issues raised by agencies and the public), and the issues to be resolved (including the choice among alternatives). The summary will normally not exceed 15 pages.

**Sec. 1502.13 Purpose and need.**

The statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.

**Sec. 1502.14 Alternatives including the proposed action.**

This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (Sec. 1502.15) and the Environmental

Consequences (Sec. 1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section agencies shall:

- (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
- (d) Include the alternative of no action.
- (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

### **Sec. 1502.15 Affected environment.**

The environmental impact statement shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration. The descriptions shall be no longer than is necessary to understand the effects of the alternatives. Data and analyses in a statement shall be commensurate with the importance of the impact, with less important material summarized, consolidated, or simply referenced. Agencies shall avoid useless bulk in statements and shall concentrate effort and attention on important issues. Verbose descriptions of the affected environment are themselves no measure of the adequacy of an environmental impact statement.

### **Sec. 1502.16 Environmental consequences.**

This section forms the scientific and analytic basis for the comparisons under Sec. 1502.14. It shall consolidate the discussions of those elements required by sections 102(2)(C)(i), (ii), (iv), and (v) of NEPA which are within the scope of the statement and as much of section 102(2)(C)(iii) as is necessary to support the comparisons. The

discussion will include the environmental impacts of the alternatives including the proposed action, any adverse environmental effects which cannot be avoided should the proposal be implemented, the relationship between short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and any irreversible or irretrievable commitments of resources which would be involved in the proposal should it be implemented. This section should not duplicate discussions in Sec. 1502.14. It shall include discussions of:

- (a) Direct effects and their significance (Sec. 1508.8).
- (b) Indirect effects and their significance (Sec. 1508.8).
- (c) Possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned. (See Sec. 1506.2(d).)
- (d) The environmental effects of alternatives including the proposed action. The comparisons under Sec. 1502.14 will be based on this discussion.
- (e) Energy requirements and conservation potential of various alternatives and mitigation measures.
- (f) Natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures.
- (g) Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures.
- (h) Means to mitigate adverse environmental impacts (if not fully covered under Sec. 1502.14(f)).

[43 FR 55994, Nov. 29, 1978; 44 FR 873, Jan. 3, 1979]

### **Sec. 1502.17 List of preparers.**

The environmental impact statement shall list the names, together with their qualifications (expertise, experience, professional disciplines), of the persons who were primarily responsible for preparing the environmental impact statement or significant background papers, including basic components of the statement (Secs. 1502.6 and 1502.8). Where possible the persons who are responsible for a particular analysis, including analyses in

background papers, shall be identified. Normally the list will not exceed two pages.

### **Sec. 1502.18 Appendix.**

If an agency prepares an appendix to an environmental impact statement the appendix shall:

- (a) Consist of material prepared in connection with an environmental impact statement (as distinct from material which is not so prepared and which is incorporated by reference (Sec. 1502.21)).
- (b) Normally consist of material which substantiates any analysis fundamental to the impact statement.
- (c) Normally be analytic and relevant to the decision to be made.
- (d) Be circulated with the environmental impact statement or be readily available on request.

### **Sec. 1502.19 Circulation of the environmental impact statement.**

Agencies shall circulate the entire draft and final environmental impact statements except for certain appendices as provided in Sec. 1502.18(d) and unchanged statements as provided in Sec. 1503.4(c). However, if the statement is unusually long, the agency may circulate the summary instead, except that the entire statement shall be furnished to:

- (a) Any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved and any appropriate Federal, State or local agency authorized to develop and enforce environmental standards.
- (b) The applicant, if any.
- (c) Any person, organization, or agency requesting the entire environmental impact statement.
- (d) In the case of a final environmental impact statement any person, organization, or agency which submitted substantive comments on the draft.

If the agency circulates the summary and thereafter receives a timely request for the entire statement and for additional time to comment,

the time for that requestor only shall be extended by at least 15 days beyond the minimum period.

### **Sec. 1502.20 Tiering.**

Agencies are encouraged to tier their environmental impact statements to eliminate repetitive discussions of the same issues and to focus on the actual issues ripe for decision at each level of environmental review (Sec. 1508.28). Whenever a broad environmental impact statement has been prepared (such as a program or policy statement) and a subsequent statement or environmental assessment is then prepared on an action included within the entire program or policy (such as a site specific action) the subsequent statement or environmental assessment need only summarize the issues discussed in the broader statement and incorporate discussions from the broader statement by reference and shall concentrate on the issues specific to the subsequent action. The subsequent document shall state where the earlier document is available. Tiering may also be appropriate for different stages of actions. (Section 1508.28).

### **Sec. 1502.21 Incorporation by reference.**

Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested persons within the time allowed for comment. Material based on proprietary data which is itself not available for review and comment shall not be incorporated by reference.

### **Sec. 1502.22 Incomplete or unavailable information.**

When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.

(a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.

(b) If the information relevant to reasonably foreseeable



significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known, the agency shall include within the environmental impact statement:

1. A statement that such information is incomplete or unavailable;
2. a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment;
3. a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and
4. the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

(c) The amended regulation will be applicable to all environmental impact statements for which a Notice of Intent (40 CFR 1508.22) is published in the Federal Register on or after May 27, 1986. For environmental impact statements in progress, agencies may choose to comply with the requirements of either the original or amended regulation.

[51 FR 15625, Apr. 25, 1986]

### **Sec. 1502.23 Cost-benefit analysis.**

If a cost-benefit analysis relevant to the choice among environmentally different alternatives is being considered for the proposed action, it shall be incorporated by reference or appended to the statement as an aid in evaluating the environmental consequences. To assess the adequacy of compliance with section 102(2)(B) of the Act the statement shall, when a cost-benefit analysis is prepared, discuss the relationship between that analysis and any analyses of unquantified environmental impacts, values, and amenities. For purposes of complying with the Act, the weighing of the merits and drawbacks of the various alternatives need not be displayed in a

monetary cost-benefit analysis and should not be when there are important qualitative considerations. In any event, an environmental impact statement should at least indicate those considerations, including factors not related to environmental quality, which are likely to be relevant and important to a decision.

### **Sec. 1502.24 Methodology and scientific accuracy.**

Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement. An agency may place discussion of methodology in an appendix.

### **Sec. 1502.25 Environmental review and consultation requirements.**

(a) To the fullest extent possible, agencies shall prepare draft environmental impact statements concurrently with and integrated with environmental impact analyses and related surveys and studies required by the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.), the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), and other environmental review laws and executive orders.

(b) The draft environmental impact statement shall list all Federal permits, licenses, and other entitlements which must be obtained in implementing the proposal. If it is uncertain whether a Federal permit, license, or other entitlement is necessary, the draft environmental impact statement shall so indicate.

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## PART 1503--COMMENTING

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- Sec. [1503.1 Inviting comments.](#)  
[1503.2 Duty to comment.](#)  
[1503.3 Specificity of comments.](#)  
[1503.4 Response to comments.](#)

Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and E.O. 11514 (Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

Source: 43 FR 55997, Nov. 29, 1978, unless otherwise noted.

### Sec. 1503.1 Inviting comments.

(a) After preparing a draft environmental impact statement and before preparing a final environmental impact statement the agency shall:

1. Obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved or which is authorized to develop and enforce environmental standards.
2. Request the comments of:
  - (i) Appropriate State and local agencies which are authorized to develop and enforce environmental standards;
  - (ii) Indian tribes, when the effects may be on a reservation; and
  - (iii) Any agency which has requested that it receive statements on actions of the kind proposed.

Office of Management and Budget Circular A-95 (Revised), through its system of clearinghouses, provides a means of securing the views of State and local environmental agencies. The clearinghouses may be used, by mutual agreement of the lead agency and the clearinghouse, for securing State and local reviews of the draft environmental impact statements.

3. Request comments from the applicant, if any.
4. Request comments from the public, affirmatively soliciting comments from those persons or organizations who may be interested or affected.

(b) An agency may request comments on a final environmental impact statement before the decision is finally made. In any case other agencies or persons may make comments before the final decision unless a different time is provided under Sec. 1506.10.

### **Sec. 1503.2 Duty to comment.**

Federal agencies with jurisdiction by law or special expertise with respect to any environmental impact involved and agencies which are authorized to develop and enforce environmental standards shall comment on statements within their jurisdiction, expertise, or authority. Agencies shall comment within the time period specified for comment in Sec. 1506.10. A Federal agency may reply that it has no comment. If a cooperating agency is satisfied that its views are adequately reflected in the environmental impact statement, it should reply that it has no comment.

### **Sec. 1503.3 Specificity of comments.**

(a) Comments on an environmental impact statement or on a proposed action shall be as specific as possible and may address either the adequacy of the statement or the merits of the alternatives discussed or both.

(b) When a commenting agency criticizes a lead agency's predictive methodology, the commenting agency should describe the alternative methodology which it prefers and why.

(c) A cooperating agency shall specify in its comments whether it needs additional information to fulfill other applicable environmental reviews or consultation requirements and what information it needs. In particular, it shall specify any additional information it needs to comment adequately on the draft statement's analysis of significant site-specific effects associated with the granting or approving by that cooperating agency of necessary Federal permits, licenses, or entitlements.

(d) When a cooperating agency with jurisdiction by law objects to or expresses reservations about the proposal on grounds of environmental impacts, the agency expressing the objection or reservation shall specify the mitigation measures it considers

necessary to allow the agency to grant or approve applicable permit, license, or related requirements or concurrences.

#### **Sec. 1503.4 Response to comments.**

(a) An agency preparing a final environmental impact statement shall assess and consider comments both individually and collectively, and shall respond by one or more of the means listed below, stating its response in the final statement. Possible responses are to:

1. Modify alternatives including the proposed action.
2. Develop and evaluate alternatives not previously given serious consideration by the agency.
3. Supplement, improve, or modify its analyses.
4. Make factual corrections.
5. Explain why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response.

(b) All substantive comments received on the draft statement (or summaries thereof where the response has been exceptionally voluminous), should be attached to the final statement whether or not the comment is thought to merit individual discussion by the agency in the text of the statement.

(c) If changes in response to comments are minor and are confined to the responses described in paragraphs (a)(4) and (5) of this section, agencies may write them on errata sheets and attach them to the statement instead of rewriting the draft statement. In such cases only the comments, the responses, and the changes and not the final statement need be circulated (Sec. 1502.19). The entire document with a new cover sheet shall be filed as the final statement (Sec. 1506.9).

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## **PART 1504--PREDECISION REFERRALS TO THE COUNCIL OF PROPOSED FEDERAL ACTIONS DETERMINED TO BE ENVIRONMENTALLY UNSATISFACTORY**

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- Sec. [1504.1 Purpose.](#)  
[1504.2 Criteria for referral.](#)  
[1504.3 Procedure for referrals and response.](#)

Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and E.O. 11514 (Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

Source: 43 FR 55998, Nov. 29, 1978, unless otherwise noted.

### **Sec. 1504.1 Purpose.**

(a) This part establishes procedures for referring to the Council Federal interagency disagreements concerning proposed major Federal actions that might cause unsatisfactory environmental effects. It provides means for early resolution of such disagreements.

(b) Under section 309 of the Clean Air Act (42 U.S.C. 7609), the Administrator of the Environmental Protection Agency is directed to review and comment publicly on the environmental impacts of Federal activities, including actions for which environmental impact statements are prepared. If after this review the Administrator determines that the matter is "unsatisfactory from the standpoint of public health or welfare or environmental quality," section 309 directs that the matter be referred to the Council (hereafter "environmental referrals").

(c) Under section 102(2)(C) of the Act other Federal agencies may make similar reviews of environmental impact statements, including judgments on the acceptability of anticipated environmental impacts. These reviews must be made available to the President, the Council and the public.

### **Sec. 1504.2 Criteria for referral.**

Environmental referrals should be made to the Council only after concerted, timely (as early as possible in the process), but unsuccessful attempts to resolve differences with the lead agency. In determining what environmental objections to the matter are appropriate to refer to the Council, an agency should weigh potential adverse environmental impacts, considering:

- (a) Possible violation of national environmental standards or policies.
- (b) Severity.
- (c) Geographical scope.
- (d) Duration.

- (e) Importance as precedents.
- (f) Availability of environmentally preferable alternatives.

### **Sec. 1504.3 Procedure for referrals and response.**

(a) A Federal agency making the referral to the Council shall:

1. Advise the lead agency at the earliest possible time that it intends to refer a matter to the Council unless a satisfactory agreement is reached.
2. Include such advice in the referring agency's comments on the draft environmental impact statement, except when the statement does not contain adequate information to permit an assessment of the matter's environmental acceptability.
3. Identify any essential information that is lacking and request that it be made available at the earliest possible time.
4. Send copies of such advice to the Council.

(b) The referring agency shall deliver its referral to the Council not later than twenty-five (25) days after the final environmental impact statement has been made available to the Environmental Protection Agency, commenting agencies, and the public. Except when an extension of this period has been granted by the lead agency, the Council will not accept a referral after that date.

(c) The referral shall consist of:

1. A copy of the letter signed by the head of the referring agency and delivered to the lead agency informing the lead agency of the referral and the reasons for it, and requesting that no action be taken to implement the matter until the Council acts upon the referral. The letter shall include a copy of the statement referred to in (c)(2) of this section.
2. A statement supported by factual evidence leading to the conclusion that the matter is unsatisfactory from the standpoint of public health or welfare or environmental quality. The statement shall:
  - (i) Identify any material facts in controversy and incorporate (by reference if appropriate) agreed upon facts,
  - (ii) Identify any existing environmental requirements or policies which would be violated by the matter,
  - (iii) Present the reasons why the referring agency believes the matter is environmentally unsatisfactory,
  - (iv) Contain a finding by the agency whether the issue raised is of national importance because of the threat to national environmental resources or policies or for some other reason,
  - (v) Review the steps taken by the referring agency to bring its concerns to the attention of the lead agency at

the earliest possible time, and

(vi) Give the referring agency's recommendations as to what mitigation alternative, further study, or other course of action (including abandonment of the matter) are necessary to remedy the situation.

(d) Not later than twenty-five (25) days after the referral to the Council the lead agency may deliver a response to the Council, and the referring agency. If the lead agency requests more time and gives assurance that the matter will not go forward in the interim, the Council may grant an extension. The response shall:

1. Address fully the issues raised in the referral.
2. Be supported by evidence.
3. Give the lead agency's response to the referring agency's recommendations.

(e) Interested persons (including the applicant) may deliver their views in writing to the Council. Views in support of the referral should be delivered not later than the referral. Views in support of the response shall be delivered not later than the response. (f) Not later than twenty-five (25) days after receipt of both the referral and any response or upon being informed that there will be no response (unless the lead agency agrees to a longer time), the Council may take one or more of the following actions:

1. Conclude that the process of referral and response has successfully resolved the problem.
2. Initiate discussions with the agencies with the objective of mediation with referring and lead agencies.
3. Hold public meetings or hearings to obtain additional views and information.
4. Determine that the issue is not one of national importance and request the referring and lead agencies to pursue their decision process.
5. Determine that the issue should be further negotiated by the referring and lead agencies and is not appropriate for Council consideration until one or more heads of agencies report to the Council that the agencies' disagreements are irreconcilable.
6. Publish its findings and recommendations (including where appropriate a finding that the submitted evidence does not support the position of an agency).
7. When appropriate, submit the referral and the response together with the Council's recommendation to the President for action.

(g) The Council shall take no longer than 60 days to complete the actions specified in paragraph (f)(2), (3), or (5) of this section.

(h) When the referral involves an action required by statute to be



determined on the record after opportunity for agency hearing, the referral shall be conducted in a manner consistent with 5 U.S.C. 557(d) (Administrative Procedure Act).

[43 FR 55998, Nov. 29, 1978; 44 FR 873, Jan. 3, 1979]

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## PART 1505--NEPA AND AGENCY DECISIONMAKING

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- Sec. [1505.1 Agency decisionmaking procedures.](#)  
[1505.2 Record of decision in cases requiring environmental impact statements.](#)  
[1505.3 Implementing the decision.](#)

Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and E.O. 11514 (Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

Source: 43 FR 55999, Nov. 29, 1978, unless otherwise noted.

### **Sec. 1505.1 Agency decisionmaking procedures.**

Agencies shall adopt procedures (Sec. 1507.3) to ensure that decisions are made in accordance with the policies and purposes of the Act. Such procedures shall include but not be limited to:

- (a) Implementing procedures under section 102(2) to achieve the requirements of sections 101 and 102(1).
- (b) Designating the major decision points for the agency's principal programs likely to have a significant effect on the human environment and assuring that the NEPA process corresponds with them.
- (c) Requiring that relevant environmental documents, comments, and responses be part of the record in formal rulemaking or adjudicatory proceedings.
- (d) Requiring that relevant environmental documents, comments, and responses accompany the proposal through existing agency review processes so that agency officials use the statement in making decisions.
- (e) Requiring that the alternatives considered by the decisionmaker are encompassed by the range of alternatives discussed in the relevant environmental documents and that the decisionmaker consider the alternatives described in the environmental impact statement. If another decision document accompanies the relevant environmental documents to the decisionmaker, agencies are encouraged to make available to the public before the decision is made any part of that document that relates to the comparison of alternatives.

### **Sec. 1505.2 Record of decision in cases requiring environmental impact statements.**

At the time of its decision (Sec. 1506.10) or, if appropriate, its recommendation to Congress, each agency shall prepare a concise public record of decision. The record, which may be integrated into any other record prepared by the agency, including that required by OMB Circular A-95 (Revised), part I, sections 6(c) and (d), and Part II, section 5(b)(4), shall:

(a) State what the decision was.

(b) Identify all alternatives considered by the agency in reaching its decision, specifying the alternative or alternatives which were considered to be environmentally preferable. An agency may discuss preferences among alternatives based on relevant factors including economic and technical considerations and agency statutory missions. An agency shall identify and discuss all such factors including any essential considerations of national policy which were balanced by the agency in making its decision and state how those considerations entered into its decision.

(c) State whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted, and if not, why they were not. A monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation.

### **Sec. 1505.3 Implementing the decision.**

Agencies may provide for monitoring to assure that their decisions are carried out and should do so in important cases. Mitigation (Sec. 1505.2(c)) and other conditions established in the environmental impact statement or during its review and committed as part of the decision shall be implemented by the lead agency or other appropriate consenting agency. The lead agency shall:

(a) Include appropriate conditions in grants, permits or other approvals.

(b) Condition funding of actions on mitigation.

(c) Upon request, inform cooperating or commenting agencies on progress in carrying out mitigation measures which they have proposed and which were adopted by the agency making the decision.

(d) Upon request, make available to the public the results of relevant monitoring.

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## PART 1506--OTHER REQUIREMENTS OF NEPA

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- Sec. [1506.1 Limitations on actions during NEPA process.](#)  
[1506.2 Elimination of duplication with State and local procedures.](#)  
[1506.3 Adoption.](#)  
[1506.4 Combining documents.](#)  
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[1506.9 Filing requirements.](#)  
[1506.10 Timing of agency action.](#)  
[1506.11 Emergencies.](#)  
[1506.12 Effective date.](#)

Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and E.O. 11514 (Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

Source: 43 FR 56000, Nov. 29, 1978, unless otherwise noted.

### Sec. 1506.1 Limitations on actions during NEPA process.

(a) Until an agency issues a record of decision as provided in Sec. 1505.2 (except as provided in paragraph (c) of this section), no action concerning the proposal shall be taken which would:

1. Have an adverse environmental impact; or
2. Limit the choice of reasonable alternatives.

(b) If any agency is considering an application from a non-Federal entity, and is aware that the applicant is about to take an action within the agency's jurisdiction that would meet either of the criteria in paragraph (a) of this section, then the agency shall promptly notify the applicant that the agency will take appropriate action to insure that the objectives and procedures of NEPA are achieved.

(c) While work on a required program environmental impact statement is in progress and the action is not covered by an existing program statement, agencies shall not undertake in the interim any major Federal action covered by the program which may significantly affect the quality of the human environment unless such action:

1. Is justified independently of the program;
2. Is itself accompanied by an adequate environmental impact statement;  
and
3. Will not prejudice the ultimate decision on the program. Interim action prejudices the ultimate decision on the program when it tends to determine subsequent development or limit alternatives.

(d) This section does not preclude development by applicants of plans or designs or performance of other work necessary to support an application

for Federal, State or local permits or assistance. Nothing in this section shall preclude Rural Electrification Administration approval of minimal expenditures not affecting the environment (e.g. long leadtime equipment and purchase options) made by non-governmental entities seeking loan guarantees from the Administration.

### **Sec. 1506.2 Elimination of duplication with State and local procedures.**

(a) Agencies authorized by law to cooperate with State agencies of statewide jurisdiction pursuant to section 102(2)(D) of the Act may do so.

(b) Agencies shall cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and State and local requirements, unless the agencies are specifically barred from doing so by some other law. Except for cases covered by paragraph (a) of this section, such cooperation shall to the fullest extent possible include:

1. Joint planning processes.
2. Joint environmental research and studies.
3. Joint public hearings (except where otherwise provided by statute).
4. Joint environmental assessments.

(c) Agencies shall cooperate with State and local agencies to the fullest extent possible to reduce duplication between NEPA and comparable State and local requirements, unless the agencies are specifically barred from doing so by some other law. Except for cases covered by paragraph (a) of this section, such cooperation shall to the fullest extent possible include joint environmental impact statements. In such cases one or more Federal agencies and one or more State or local agencies shall be joint lead agencies. Where State laws or local ordinances have environmental impact statement requirements in addition to but not in conflict with those in NEPA, Federal agencies shall cooperate in fulfilling these requirements as well as those of Federal laws so that one document will comply with all applicable laws.

(d) To better integrate environmental impact statements into State or local planning processes, statements shall discuss any inconsistency of a proposed action with any approved State or local plan and laws (whether or not federally sanctioned). Where an inconsistency exists, the statement should describe the extent to which the agency would reconcile its proposed action with the plan or law.

### **Sec. 1506.3 Adoption.**

(a) An agency may adopt a Federal draft or final environmental impact statement or portion thereof provided that the statement or portion thereof meets the standards for an adequate statement under these regulations.

(b) If the actions covered by the original environmental impact statement and the proposed action are substantially the same, the agency adopting another agency's statement is not required to

recirculate it except as a final statement. Otherwise the adopting agency shall treat the statement as a draft and recirculate it (except as provided in paragraph (c) of this section).

(c) A cooperating agency may adopt without recirculating the environmental impact statement of a lead agency when, after an independent review of the statement, the cooperating agency concludes that its comments and suggestions have been satisfied.

(d) When an agency adopts a statement which is not final within the agency that prepared it, or when the action it assesses is the subject of a referral under Part 1504, or when the statement's adequacy is the subject of a judicial action which is not final, the agency shall so specify.

#### **Sec. 1506.4 Combining documents.**

Any environmental document in compliance with NEPA may be combined with any other agency document to reduce duplication and paperwork.

#### **Sec. 1506.5 Agency responsibility.**

(a) Information. If an agency requires an applicant to submit environmental information for possible use by the agency in preparing an environmental impact statement, then the agency should assist the applicant by outlining the types of information required. The agency shall independently evaluate the information submitted and shall be responsible for its accuracy. If the agency chooses to use the information submitted by the applicant in the environmental impact statement, either directly or by reference, then the names of the persons responsible for the independent evaluation shall be included in the list of preparers (Sec. 1502.17). It is the intent of this paragraph that acceptable work not be redone, but that it be verified by the agency.

(b) Environmental assessments. If an agency permits an applicant to prepare an environmental assessment, the agency, besides fulfilling the requirements of paragraph (a) of this section, shall make its own evaluation of the environmental issues and take responsibility for the scope and content of the environmental assessment.

(c) Environmental impact statements. Except as provided in Secs. 1506.2 and 1506.3 any environmental impact statement prepared pursuant to the requirements of NEPA shall be prepared directly by or by a contractor selected by the lead agency or where appropriate under Sec. 1501.6(b), a cooperating agency. It is the intent of these regulations that the contractor be chosen solely by the lead agency, or by the lead agency in cooperation with cooperating agencies, or where appropriate by a cooperating agency to avoid any conflict of interest. Contractors shall execute a disclosure statement prepared by the lead agency, or where appropriate the cooperating agency, specifying that they have no financial or other interest in the outcome of the project. If the document is prepared by contract, the responsible Federal official shall furnish guidance and participate in the preparation and shall independently evaluate the statement prior to its approval and take responsibility for its scope and contents. Nothing in this section is intended to prohibit any agency from

requesting any person to submit information to it or to prohibit any person from submitting information to any agency.

### **Sec. 1506.6 Public involvement.**

Agencies shall:

(a) Make diligent efforts to involve the public in preparing and implementing their NEPA procedures.

(b) Provide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents so as to inform those persons and agencies who may be interested or affected.

1. In all cases the agency shall mail notice to those who have requested it on an individual action.
2. In the case of an action with effects of national concern notice shall include publication in the Federal Register and notice by mail to national organizations reasonably expected to be interested in the matter and may include listing in the 102 Monitor. An agency engaged in rulemaking may provide notice by mail to national organizations who have requested that notice regularly be provided. Agencies shall maintain a list of such organizations.
3. In the case of an action with effects primarily of local concern the notice may include:

(i) Notice to State and areawide clearinghouses pursuant to OMB Circular A- 95 (Revised).

(ii) Notice to Indian tribes when effects may occur on reservations.

(iii) Following the affected State's public notice procedures for comparable actions.

(iv) Publication in local newspapers (in papers of general circulation rather than legal papers).

(v) Notice through other local media.

(vi) Notice to potentially interested community organizations including small business associations.

(vii) Publication in newsletters that may be expected to reach potentially interested persons.

(viii) Direct mailing to owners and occupants of nearby or affected property.

(ix) Posting of notice on and off site in the area where the action is to be located.

(c) Hold or sponsor public hearings or public meetings whenever appropriate or in accordance with statutory requirements applicable to the agency. Criteria shall include whether there is:

1. Substantial environmental controversy concerning the proposed action or substantial interest in holding the hearing.
2. A request for a hearing by another agency with jurisdiction over the action supported by reasons why a hearing will be helpful. If a draft environmental impact statement is to be considered at a public hearing, the agency should make the statement available to the public at least 15 days in advance (unless the purpose of the hearing is to provide information for the draft environmental impact statement).

(d) Solicit appropriate information from the public.

(e) Explain in its procedures where interested persons can get information or status reports on environmental impact statements and other elements of the NEPA process.

(f) Make environmental impact statements, the comments received, and any underlying documents available to the public pursuant to the provisions of the Freedom of Information Act (5 U.S.C. 552), without regard to the exclusion for interagency memoranda where such memoranda transmit comments of Federal agencies on the environmental impact of the proposed action. Materials to be made available to the public shall be provided to the public without charge to the extent practicable, or at a fee which is not more than the actual costs of reproducing copies required to be sent to other Federal agencies, including the Council.

#### **Sec. 1506.7 Further guidance.**

The Council may provide further guidance concerning NEPA and its procedures including:

(a) A handbook which the Council may supplement from time to time, which shall in plain language provide guidance and instructions concerning the application of NEPA and these regulations.

(b) Publication of the Council's Memoranda to Heads of Agencies.

(c) In conjunction with the Environmental Protection Agency and the publication of the 102 Monitor, notice of:

1. Research activities;
2. Meetings and conferences related to NEPA; and
3. Successful and innovative procedures used by agencies to implement NEPA.

#### **Sec. 1506.8 Proposals for legislation.**

(a) The NEPA process for proposals for legislation (Sec. 1508.17) significantly affecting the quality of the human environment shall be integrated with the legislative process of the Congress. A legislative environmental impact statement is the detailed statement required by law to be included in a recommendation or report on a legislative proposal to Congress. A legislative environmental impact statement



shall be considered part of the formal transmittal of a legislative proposal to Congress; however, it may be transmitted to Congress up to 30 days later in order to allow time for completion of an accurate statement which can serve as the basis for public and Congressional debate. The statement must be available in time for Congressional hearings and deliberations.

(b) Preparation of a legislative environmental impact statement shall conform to the requirements of these regulations except as follows:

1. There need not be a scoping process.
2. The legislative statement shall be prepared in the same manner as a draft statement, but shall be considered the "detailed statement" required by statute; Provided, That when any of the following conditions exist both the draft and final environmental impact statement on the legislative proposal shall be prepared and circulated as provided by Secs. 1503.1 and 1506.10.
  - (i) A Congressional Committee with jurisdiction over the proposal has a rule requiring both draft and final environmental impact statements.
  - (ii) The proposal results from a study process required by statute (such as those required by the Wild and Scenic Rivers Act (16 U.S.C. 1271 et seq.) and the Wilderness Act (16 U.S.C. 1131 et seq.)).
  - (iii) Legislative approval is sought for Federal or federally assisted construction or other projects which the agency recommends be located at specific geographic locations. For proposals requiring an environmental impact statement for the acquisition of space by the General Services Administration, a draft statement shall accompany the Prospectus or the 11(b) Report of Building Project Surveys to the Congress, and a final statement shall be completed before site acquisition.
  - (iv) The agency decides to prepare draft and final statements.

(c) Comments on the legislative statement shall be given to the lead agency which shall forward them along with its own responses to the Congressional committees with jurisdiction.

#### **Sec. 1506.9 Filing requirements.**

Environmental impact statements together with comments and responses shall be filed with the Environmental Protection Agency, attention Office of Federal Activities (A-104), 401 M Street SW., Washington, DC 20460. Statements shall be filed with EPA no earlier than they are also transmitted to commenting agencies and made available to the public. EPA shall deliver one copy of each statement to the Council, which shall satisfy the requirement of availability to the President. EPA may issue guidelines to agencies to implement its responsibilities under this section and Sec. 1506.10.

#### **Sec. 1506.10 Timing of agency action.**

(a) The Environmental Protection Agency shall publish a notice in the Federal Register each week of the environmental impact statements filed during the preceding week. The minimum time periods set forth in this section shall be calculated from the date of publication of this notice.

(b) No decision on the proposed action shall be made or recorded under Sec. 1505.2 by a Federal agency until the later of the following dates:

1. Ninety (90) days after publication of the notice described above in paragraph (a) of this section for a draft environmental impact statement.
2. Thirty (30) days after publication of the notice described above in paragraph (a) of this section for a final environmental impact statement. An exception to the rules on timing may be made in the case of an agency decision which is subject to a formal internal appeal. Some agencies have a formally established appeal process which allows other agencies or the public to take appeals on a decision and make their views known, after publication of the final environmental impact statement. In such cases, where a real opportunity exists to alter the decision, the decision may be made and recorded at the same time the environmental impact statement is published.

This means that the period for appeal of the decision and the 30-day period prescribed in paragraph (b)(2) of this section may run concurrently. In such cases the environmental impact statement shall explain the timing and the public's right of appeal. An agency engaged in rulemaking under the Administrative Procedure Act or other statute for the purpose of protecting the public health or safety, may waive the time period in paragraph (b)(2) of this section and publish a decision on the final rule simultaneously with publication of the notice of the availability of the final environmental impact statement as described in paragraph (a) of this section.

(c) If the final environmental impact statement is filed within ninety (90) days after a draft environmental impact statement is filed with the Environmental Protection Agency, the minimum thirty (30) day period and the minimum ninety (90) day period may run concurrently. However, subject to paragraph (d) of this section agencies shall allow not less than 45 days for comments on draft statements.

(d) The lead agency may extend prescribed periods. The Environmental Protection Agency may upon a showing by the lead agency of compelling reasons of national policy reduce the prescribed periods and may upon a showing by any other Federal agency of compelling reasons of national policy also extend prescribed periods, but only after consultation with the lead agency. (Also see Sec. 1507.3(d).) Failure to file timely comments shall not be a sufficient reason for extending a period. If the lead agency does not concur with the extension of time, EPA may not extend it for more than 30 days. When the Environmental Protection Agency reduces or extends any period of time it shall notify the Council.

[43 FR 56000, Nov. 29, 1978; 44 FR 874, Jan. 3, 1979]

#### **Sec. 1506.11 Emergencies.**

Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these regulations, the Federal agency taking the action should consult with the Council about alternative arrangements. Agencies and the Council will limit such arrangements to actions necessary to control the immediate impacts of the emergency. Other actions remain subject to NEPA review.

**Sec. 1506.12 Effective date.**

The effective date of these regulations is July 30, 1979, except that for agencies that administer programs that qualify under section 102(2)(D) of the Act or under section 104(h) of the Housing and Community Development Act of 1974 an additional four months shall be allowed for the State or local agencies to adopt their implementing procedures.

(a) These regulations shall apply to the fullest extent practicable to ongoing activities and environmental documents begun before the effective date. These regulations do not apply to an environmental impact statement or supplement if the draft statement was filed before the effective date of these regulations. No completed environmental documents need be redone by reasons of these regulations. Until these regulations are applicable, the Council's guidelines published in the Federal Register of August 1, 1973, shall continue to be applicable. In cases where these regulations are applicable the guidelines are superseded. However, nothing shall prevent an agency from proceeding under these regulations at an earlier time.

(b) NEPA shall continue to be applicable to actions begun before January 1, 1970, to the fullest extent possible.

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## PART 1507--AGENCY COMPLIANCE

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- Sec. [1507.1 Compliance.](#)  
[1507.2 Agency capability to comply.](#)  
[1507.3 Agency procedures.](#)

Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and E.O. 11514 (Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

Source: 43 FR 56002, Nov. 29, 1978, unless otherwise noted.

### **Sec. 1507.1 Compliance.**

All agencies of the Federal Government shall comply with these regulations. It is the intent of these regulations to allow each agency flexibility in adapting its implementing procedures authorized by Sec. 1507.3 to the requirements of other applicable laws.

### **Sec. 1507.2 Agency capability to comply.**

Each agency shall be capable (in terms of personnel and other resources) of complying with the requirements enumerated below. Such compliance may include use of other's resources, but the using agency shall itself have sufficient capability to evaluate what others do for it. Agencies shall:

- (a) Fulfill the requirements of section 102(2)(A) of the Act to utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on the human environment. Agencies shall designate a person to be responsible for overall review of agency NEPA compliance.
- (b) Identify methods and procedures required by section 102(2)(B) to insure that presently unquantified environmental amenities and values may be given appropriate consideration.
- (c) Prepare adequate environmental impact statements pursuant to section 102(2)(C) and comment on statements in the areas where the agency has jurisdiction by law or special expertise or is authorized to develop and enforce environmental standards.
- (d) Study, develop, and describe alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources. This requirement of section 102(2)(E) extends to all such proposals, not just the more limited scope of section 102(2)(C)(iii) where the discussion of alternatives is confined to impact statements.
- (e) Comply with the requirements of section 102(2)(H) that the agency initiate and utilize ecological information in the planning and development of resource-oriented projects.

(f) Fulfill the requirements of sections 102(2)(F), 102(2)(G), and 102(2)(I), of the Act and of Executive Order 11514, Protection and Enhancement of Environmental Quality, Sec. 2.

### **Sec. 1507.3 Agency procedures.**

(a) Not later than eight months after publication of these regulations as finally adopted in the Federal Register, or five months after the establishment of an agency, whichever shall come later, each agency shall as necessary adopt procedures to supplement these regulations. When the agency is a department, major subunits are encouraged (with the consent of the department) to adopt their own procedures. Such procedures shall not paraphrase these regulations. They shall confine themselves to implementing procedures. Each agency shall consult with the Council while developing its procedures and before publishing them in the Federal Register for comment. Agencies with similar programs should consult with each other and the Council to coordinate their procedures, especially for programs requesting similar information from applicants. The procedures shall be adopted only after an opportunity for public review and after review by the Council for conformity with the Act and these regulations. The Council shall complete its review within 30 days. Once in effect they shall be filed with the Council and made readily available to the public. Agencies are encouraged to publish explanatory guidance for these regulations and their own procedures. Agencies shall continue to review their policies and procedures and in consultation with the Council to revise them as necessary to ensure full compliance with the purposes and provisions of the Act.

(b) Agency procedures shall comply with these regulations except where compliance would be inconsistent with statutory requirements and shall include:

1. Those procedures required by Secs. 1501.2(d), 1502.9(c)(3), 1505.1, 1506.6(e), and 1508.4.
2. Specific criteria for and identification of those typical classes of action:
  - (i) Which normally do require environmental impact statements.
  - (ii) Which normally do not require either an environmental impact statement or an environmental assessment (categorical exclusions (Sec. 1508.4)).
  - (iii) Which normally require environmental assessments but not necessarily environmental impact statements.

(c) Agency procedures may include specific criteria for providing limited exceptions to the provisions of these regulations for classified proposals. They are proposed actions which are specifically authorized under criteria established by an Executive Order or statute to be kept secret in the interest of national defense or foreign policy and are in fact properly classified pursuant to such Executive Order or statute. Environmental assessments and environmental impact statements which address classified proposals may be safeguarded and restricted from public dissemination in accordance

with agencies' own regulations applicable to classified information. These documents may be organized so that classified portions can be included as annexes, in order that the unclassified portions can be made available to the public.

(d) Agency procedures may provide for periods of time other than those presented in Sec. 1506.10 when necessary to comply with other specific statutory requirements.

(e) Agency procedures may provide that where there is a lengthy period between the agency's decision to prepare an environmental impact statement and the time of actual preparation, the notice of intent required by Sec. 1501.7 may be published at a reasonable time in advance of preparation of the draft statement.

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## PART 1508--TERMINOLOGY AND INDEX

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Authority: NEPA, the Environmental Quality Improvement Act of 1970, as amended (42 U.S.C. 4371 et seq.), sec. 309 of the Clean Air Act, as amended (42 U.S.C. 7609), and E.O. 11514 (Mar. 5, 1970, as amended by E.O. 11991, May 24, 1977).

Source: 43 FR 56003, Nov. 29, 1978, unless otherwise noted.

### **Sec. 1508.1 Terminology.**

The terminology of this part shall be uniform throughout the Federal Government.

### **Sec. 1508.2 Act.**

"Act" means the National Environmental Policy Act, as amended (42 U.S.C. 4321, et seq.) which is also referred to as "NEPA."

### **Sec. 1508.3 Affecting.**

"Affecting" means will or may have an effect on.

### **Sec. 1508.4 Categorical exclusion.**

"Categorical exclusion" means a category of actions which do not individually or cumulatively have a significant effect on the human environment and which have been found to have no such effect in procedures adopted by a Federal agency in implementation of these regulations (Sec. 1507.3) and for which, therefore, neither an environmental assessment nor an environmental impact statement is required. An agency may decide in its procedures or otherwise, to prepare environmental assessments for the reasons stated in Sec. 1508.9 even though it is not required to do so. Any procedures under this section shall provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect.

#### **Sec. 1508.5 Cooperating agency.**

"Cooperating agency" means any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment. The selection and responsibilities of a cooperating agency are described in Sec. 1501.6. A State or local agency of similar qualifications or, when the effects are on a reservation, an Indian Tribe, may by agreement with the lead agency become a cooperating agency.

#### **Sec. 1508.6 Council.**

"Council" means the Council on Environmental Quality established by Title II of the Act.

#### **Sec. 1508.7 Cumulative impact.**

"Cumulative impact" is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

#### **Sec. 1508.8 Effects.**

"Effects" include:

(a) Direct effects, which are caused by the action and occur at the same time and place.

(b) Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Effects and impacts as used in these regulations are synonymous. Effects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic,



historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial.

#### **Sec. 1508.9 Environmental assessment.**

"Environmental assessment":

(a) Means a concise public document for which a Federal agency is responsible that serves to:

1. Briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact.
2. Aid an agency's compliance with the Act when no environmental impact statement is necessary.
3. Facilitate preparation of a statement when one is necessary.

(b) Shall include brief discussions of the need for the proposal, of alternatives as required by section 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.

#### **Sec. 1508.10 Environmental document.**

"Environmental document" includes the documents specified in Sec. 1508.9 (environmental assessment), Sec. 1508.11 (environmental impact statement), Sec. 1508.13 (finding of no significant impact), and Sec. 1508.22 (notice of intent).

#### **Sec. 1508.11 Environmental impact statement.**

"Environmental impact statement" means a detailed written statement as required by section 102(2)(C) of the Act.

#### **Sec. 1508.12 Federal agency.**

"Federal agency" means all agencies of the Federal Government. It does not mean the Congress, the Judiciary, or the President, including the performance of staff functions for the President in his Executive Office. It also includes for purposes of these regulations States and units of general local government and Indian tribes assuming NEPA responsibilities under section 104(h) of the Housing and Community Development Act of 1974.

#### **Sec. 1508.13 Finding of no significant impact.**

"Finding of no significant impact" means a document by a Federal agency briefly presenting the reasons why an action, not otherwise excluded (Sec. 1508.4), will not have a significant effect on the human environment and for

which an environmental impact statement therefore will not be prepared. It shall include the environmental assessment or a summary of it and shall note any other environmental documents related to it (Sec. 1501.7(a)(5)). If the assessment is included, the finding need not repeat any of the discussion in the assessment but may incorporate it by reference.

**Sec. 1508.14 Human environment.**

"Human environment" shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment. (See the definition of "effects" (Sec. 1508.8).) This means that economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.

**Sec. 1508.15 Jurisdiction by law.**

"Jurisdiction by law" means agency authority to approve, veto, or finance all or part of the proposal.

**Sec. 1508.16 Lead agency.**

"Lead agency" means the agency or agencies preparing or having taken primary responsibility for preparing the environmental impact statement.

**Sec. 1508.17 Legislation.**

"Legislation" includes a bill or legislative proposal to Congress developed by or with the significant cooperation and support of a Federal agency, but does not include requests for appropriations. The test for significant cooperation is whether the proposal is in fact predominantly that of the agency rather than another source. Drafting does not by itself constitute significant cooperation. Proposals for legislation include requests for ratification of treaties. Only the agency which has primary responsibility for the subject matter involved will prepare a legislative environmental impact statement.

**Sec. 1508.18 Major Federal action.**

"Major Federal action" includes actions with effects that may be major and which are potentially subject to Federal control and responsibility. Major reinforces but does not have a meaning independent of significantly (Sec. 1508.27). Actions include the circumstance where the responsible officials fail to act and that failure to act is reviewable by courts or administrative tribunals under the Administrative Procedure Act or other applicable law as agency action.

(a) Actions include new and continuing activities, including projects and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies; new or revised agency rules, regulations, plans, policies, or procedures; and legislative

proposals (Secs. 1506.8, 1508.17). Actions do not include funding assistance solely in the form of general revenue sharing funds, distributed under the State and Local Fiscal Assistance Act of 1972, 31 U.S.C. 1221 et seq., with no Federal agency control over the subsequent use of such funds. Actions do not include bringing judicial or administrative civil or criminal enforcement actions.

(b) Federal actions tend to fall within one of the following categories:

1. Adoption of official policy, such as rules, regulations, and interpretations adopted pursuant to the Administrative Procedure Act, 5 U.S.C. 551 et seq.; treaties and international conventions or agreements; formal documents establishing an agency's policies which will result in or substantially alter agency programs.
2. Adoption of formal plans, such as official documents prepared or approved by federal agencies which guide or prescribe alternative uses of Federal resources, upon which future agency actions will be based.
3. Adoption of programs, such as a group of concerted actions to implement a specific policy or plan; systematic and connected agency decisions allocating agency resources to implement a specific statutory program or executive directive.
4. Approval of specific projects, such as construction or management activities located in a defined geographic area. Projects include actions approved by permit or other regulatory decision as well as federal and federally assisted activities.

#### **Sec. 1508.19 Matter.**

"Matter" includes for purposes of Part 1504: (a) With respect to the Environmental Protection Agency, any proposed legislation, project, action or regulation as those terms are used in section 309(a) of the Clean Air Act (42 U.S.C. 7609). (b) With respect to all other agencies, any proposed major federal action to which section 102(2)(C) of NEPA applies.

#### **Sec. 1508.20 Mitigation.**

"Mitigation" includes:

- (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
- (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- (c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

(e) Compensating for the impact by replacing or providing substitute resources or environments.

#### **Sec. 1508.21 NEPA process.**

"NEPA process" means all measures necessary for compliance with the requirements of section 2 and Title I of NEPA.

#### **Sec. 1508.22 Notice of intent.**

"Notice of intent" means a notice that an environmental impact statement will be prepared and considered. The notice shall briefly:

- (a) Describe the proposed action and possible alternatives.
- (b) Describe the agency's proposed scoping process including whether, when, and where any scoping meeting will be held.
- (c) State the name and address of a person within the agency who can answer questions about the proposed action and the environmental impact statement.

#### **Sec. 1508.23 Proposal.**

"Proposal" exists at that stage in the development of an action when an agency subject to the Act has a goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated. Preparation of an environmental impact statement on a proposal should be timed (Sec. 1502.5) so that the final statement may be completed in time for the statement to be included in any recommendation or report on the proposal. A proposal may exist in fact as well as by agency declaration that one exists.

#### **Sec. 1508.24 Referring agency.**

"Referring agency" means the federal agency which has referred any matter to the Council after a determination that the matter is unsatisfactory from the standpoint of public health or welfare or environmental quality.

#### **Sec. 1508.25 Scope.**

Scope consists of the range of actions, alternatives, and impacts to be considered in an environmental impact statement. The scope of an individual statement may depend on its relationships to other statements (Secs. 1502.20 and 1508.28). To determine the scope of environmental impact statements, agencies shall consider 3 types of actions, 3 types of alternatives, and 3 types of impacts. They include:

- (a) Actions (other than unconnected single actions) which may be:
  - 1. Connected actions, which means that they are closely related and therefore should be discussed in the same impact

statement. Actions are connected if they:

- (i) Automatically trigger other actions which may require environmental impact statements.
  - (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
  - (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.
2. Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.
  3. Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement.

(b) Alternatives, which include:

1. No action alternative.
2. Other reasonable courses of actions.
3. Mitigation measures (not in the proposed action).

(c) Impacts, which may be: (1) Direct; (2) indirect; (3) cumulative.

#### **Sec. 1508.26 Special expertise.**

"Special expertise" means statutory responsibility, agency mission, or related program experience.

#### **Sec. 1508.27 Significantly.**

"Significantly" as used in NEPA requires considerations of both context and intensity:

(a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

(b) Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
2. The degree to which the proposed action affects public health or safety.
3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.
5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.
9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

[43 FR 56003, Nov. 29, 1978; 44 FR 874, Jan. 3, 1979]

#### **Sec. 1508.28 Tiering.**

"Tiering" refers to the coverage of general matters in broader environmental impact statements (such as national program or policy statements) with subsequent narrower statements or environmental analyses (such as regional or basinwide program statements or ultimately site-specific statements) incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared. Tiering is appropriate when the sequence of statements or

analyses is:

(a) From a program, plan, or policy environmental impact statement to a program, plan, or policy statement or analysis of lesser scope or to a site- specific statement or analysis.

(b) From an environmental impact statement on a specific action at an early stage (such as need and site selection) to a supplement (which is preferred) or a subsequent statement or analysis at a later stage (such as environmental mitigation). Tiering in such cases is appropriate when it helps the lead agency to focus on the issues which are ripe for decision and exclude from consideration issues already decided or not yet ripe.

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FISH AND WILDLIFE SERVICE  
NEPA PROCESS FLOWCHART-PHASE 2

EIS Required

↓  
Issue Notice of Intent (40 CFR 1501.7)

↓  
Commence Scoping Process (40 CFR 1501.7)

↓  
Prepare Preliminary DEIS (Reiterate above process in written detail (40 CFR 1502))

↓  
Review of preliminary DEIS

↓  
Prepare DEIS

↓  
File DEIS with EPA (40 CFR 1506.9) and distribute DEIS (concurrent distribution to other agencies, public, WO, and DOI). Minimum 90 days to decision

↓  
DEIS Review Period, minimum 60 day formal review period (40 CFR 1506.10, 516 DM 4.24), and public meeting, if deemed appropriate (40 CFR 1506.6) (516 DM 4.25).

EA Required

↓  
Prepare EA (Reiterate above process in writing) (40 CFR 1508.9)

↓  
Distribute EA for Review and Comment (if deemed appropriate) (Section 1506.6)

↓  
Finalize EA

↓  
Determine if the Preferred Alternative Constitutes a Major Federal Action Significantly Affecting the Quality of the Human Environment (40 CFR 1508.18 & 1508.27)

↙  
EIS Required (Follow Procedures in adjacent column)

↘  
EIS Not Required Prepare FONSI (40 CFR 1508.13)

↓  
Initiate Action



Respond to Comments on DEIS  
(40 CFR 1503.4) and Prepare  
Preliminary FEIS



Review of Preliminary FEIS



Prepare FEIS



File FEIS with EPA (40 CFR 1506.9)  
and distribute FEIS (concurrent  
distribution to other agencies,  
public, WO, and DOI). Minimum  
30 days to decision (40 CFR 1506.10)



Make Decision and Prepare Record  
of Decision (40 CFR 1505.2)



Implement Action 30 Days After  
Notifying Public

## FORMAT FOR FWS ENVIRONMENTAL ASSESSMENTS

The EA should be brief and to the point (usually 15 pages or less) and will follow the format shown below.

## 1. COVER SHEET

Give a descriptive title for the proposed action, what unit of the FWS is proposing it, what legal mandate it will be carried out under, where the action is located, and who authored the document.

## 2. PURPOSE AND NEED FOR ACTION

The need must be defined clearly and care taken to be sure that the subsequent analysis addresses underlying causes, not just symptoms. The relationship of identified FWS goals and objectives to the purpose and need for action should be made clear in this section.

## 3. ALTERNATIVES INCLUDING THE PROPOSED ACTION

The practicable alternatives, including the proposed action and the "no action" alternative must be included in the EA. The alternatives should be described in sufficient detail to permit the comparison of their merits, especially if their impacts vary (e.g. in kind, location, intensity, or duration). A matrix comparing the general consequences and impacts of each alternative is recommended. Alternatives suggested and dismissed as impractical or not feasible should be discussed only briefly.

## 4. AFFECTED ENVIRONMENT

Succinctly describe the area in which the proposed action is to occur. Page-sized maps of the general area and the project site are required for site-specific proposals. Carefully selected photographs can be helpful in some cases. Particular mention should be made of the presence (or absence) of any endangered or threatened species, cultural resources (historical, architectural, or archaeological sites), and wetlands and floodplains. Description of the environment should be limited to two or three pages.

## 5. ENVIRONMENTAL CONSEQUENCES

Effects should be identified and briefly analyzed without passing judgment as to their being beneficial or adverse. The effects upon those environmental features of special legal or policy significance should be highlighted. Such features would include: threatened or endangered species or critical habitats, wetlands, 100-year floodplains, cultural resources, or specially designated areas (e.g., research natural areas or wilderness areas).

6. CONSULTATION AND COORDINATION WITH OTHERS

Include a record of contacts made in an effort to consult and coordinate with others early in the planning process in order to identify effects of the proposal and practicable alternatives.

ITEMS TO BE CONSIDERED IN ENVIRONMENTAL ASSESSMENT

## PHYSICAL CONSIDERATIONS

- |  |   |
|--|---|
| <p>A. Meteorology</p> <ol style="list-style-type: none"> <li>1. Climate</li> <li>2. Air Quality</li> </ol> <p>B. Topography</p> <ol style="list-style-type: none"> <li>1. Relief</li> <li>2. Cuts/Fills</li> </ol> <p>C. Geology</p> <ol style="list-style-type: none"> <li>1. Earthquake/Landslide</li> <li>2. Minerals</li> <li>3. Energy Resource Depletion/Conservation</li> <li>4. Radioactive &amp; Toxic Substances/Heavy Metals</li> </ol> | <p>D. Soils</p> <ol style="list-style-type: none"> <li>1. Erosion/Deposition</li> <li>2. Siltation</li> <li>3. Soil Quality</li> </ol> <p>E. Hydrology</p> <ol style="list-style-type: none"> <li>1. Surface &amp; Ground Water Quality/Quantity</li> <li>2. Absorption/Drainage</li> <li>3. Flooding</li> <li>4. Hydro/Geothermal Energy Source</li> </ol> |
|--|---|

## BIOLOGICAL CONSIDERATIONS

- |  |  |
|--|--|
| <p>A. Vegetation</p> <ol style="list-style-type: none"> <li>1. Species of Special Concern</li> <li>2. Critical Wildlife Habitat</li> <li>3. Species Diversity/Abundance</li> <li>4. Noxious Weeds/Exotic Plants/Pathogens</li> </ol> | <p>B. Wildlife</p> <ol style="list-style-type: none"> <li>1. Species of Special Concern</li> <li>2. Species Diversity/Abundance</li> <li>3. Game/Non-Game Species</li> <li>4. Pests/Pathogens/Vectors/Predators/Feral or Exotic Animals</li> </ol> |
|--|--|

## SOCIAL CONSIDERATIONS

- |  |  |
|--|--|
| <p>A. Cultural</p> <ol style="list-style-type: none"> <li>1. Archaeologic/Historic Sites</li> <li>2. Educational/Recreational Opportunities</li> <li>3. Public Access</li> </ol> <p>C. Land Use</p> <ol style="list-style-type: none"> <li>1. Plans/Policies/Controls</li> <li>2. Development/Growth</li> <li>3. Farmland/Open Space, Natural Areas</li> <li>4. Transportation Facilities/Public Utilities</li> </ol> <p>E. Aesthetics</p> <ol style="list-style-type: none"> <li>1. Scenery</li> <li>2. Noise</li> <li>3. Odor</li> </ol> | <p>B. Economic</p> <ol style="list-style-type: none"> <li>1. Cost</li> <li>2. Employment</li> <li>3. Commercial/Industrial Buildings</li> <li>4. Taxes/Property Values</li> </ol> <p>D. Social</p> <ol style="list-style-type: none"> <li>1. Quality of Life</li> <li>2. Community Cohesion</li> <li>3. Residents/Residences</li> <li>4. Population Change</li> <li>5. Human Health/Safety</li> <li>6. Public Services</li> <li>7. National Defense</li> </ol> |
|--|--|

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**DISCUSSION: STATUS OF UNCONSTRUCTED PROJECTS**

## Creel, Travis J MVN-Contractor

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**To:** LeBlanc, Julie Z MVN  
**Subject:** RE: Draft agenda for the Dec 6, 2006 Technical Committee Meeting (UNCLASSIFIED)

-----Original Message-----

From: LeBlanc, Julie Z MVN  
Sent: Wednesday, November 29, 2006 7:52 PM  
To: 'Amelia\_vincent@ursCorp.com'; 'betty.jones@la.usda.gov'; Hicks, Billy J MVN; 'britt.paul@la.usda.gov'; 'charles.Killebrew@LA.GOV'; 'cheryl.walters@la.usda.gov'; 'chrisk@dnr.state.la.us'; 'comvss@lsu.edu'; 'daniel.llewellyn@la.gov'; 'darryl\_clark@fws.gov'; 'deetra.washington@gov.state.la.us'; 'diane.smith@la.gov'; 'edh@dnr.state.la.us'; 'erik.zobrist@noaa.gov'; 'gabrielle\_bodin@usgs.gov'; Browning, Gay B MVN; 'gerryd@dnr.state.la.us'; Breerwood, Gregory E MVN; 'gsteyer@usgs.gov'; 'honorab@dnr.state.la.us'; 'jimmy\_johnston@usgs.gov'; Petitbon, John B MVN; 'john.jurgensen@la.usda.gov'; 'jonathan.porthouse@la.gov'; 'Karim Belhadjali [karimb@dnr.state.la.us]'; 'kevin\_roy@fws.gov'; 'kirk.rhinehart@la.gov'; 'kirkr@dnr.state.la.us'; 'Landers.Timothy@epamail.epa.gov'; 'parrish.sharon@epa.gov'; 'pat.forbes@GOV.STATE.LA.US'; 'quin.kinler@la.usda.gov'; 'rachel.sweeney@noaa.gov'; 'randyh@dnr.state.la.us'; 'richard.hartman@noaa.gov'; 'rickr@dnr.state.la.us'; 'russell\_watson@fws.gov'; 'scott\_wilson@usgs.gov'; Hawes, Suzanne R MVN; 'Taylor.Patricia-A@epamail.epa.gov'; Podany, Thomas J MVN; 'tom\_denes@URSCorp.com'; Creel, Travis J MVN-Contractor; Unger, Audrey C MVN-Contractor; 'finley\_h@wlf.state.la.us'; Rauber, Gary W MVN; Miller, Gregory B MVN; 'jonathanp@dnr.state.la.us'; Goodman, Melanie L MVN; 'ruiz\_mj@wlf.state.la.us'; Browning, Gay B MVN; Goodman, Melanie L MVN; Constance, Troy G MVN; Martinez, Wanda R MVN; Rauber, Gary W MVN; Miller, Gregory B MVN; Hennington, Susan M MVN; Lachney, Fay V MVN; Hawes, Suzanne R MVN; Browning, Gay B MVN; Goodman, Melanie L MVN; Constance, Troy G MVN; Martinez, Wanda R MVN; !Ambiguous Address - DONOT USE  
Subject: RE: Draft agenda for the Dec 6, 2006 Technical Committee Meeting (UNCLASSIFIED)

Classification: UNCLASSIFIED  
Caveats: NONE

CWPPRA Technical Committee:

Ms. Gay Browning has brought up an item that the Corps would like to discuss further under the "Status of Unconstructed Projects" agenda item. There are two projects that have been approved for Phase II funding, started construction on ONE of TWO construction units, and are awaiting construction start on the 2nd construction unit under the project:

North Lake Mechant (CU2) - Phase II approval for CU2 is 13 Oct 04 Barataria Barrier Island (CU2) - Phase II approval for entire project is 28 Jan 04

While these projects WERE included on the list of "delayed projects", the sponsoring agency requested that they NOT be included on the list of projects to be discussed during the meeting. The Corps would like to include these projects for discussion.

While the SOP may lend itself to various interpretations, Section 6.j.(4) states: "If construction award has not occurred within 2 years of Phase 2 approval, the Phase 2 funds will be placed on a revocation list for consideration by the Task Force at the next Task Force meeting." Even though one contract has been awarded on each of these projects, there still remains one contract that has not been awarded (within 2 years of Phase II approval). While these projects may meet the letter of the SOP and may not appear to be delayed because they show a "construction start" date, there has been a delay of at least 2 years on at least a portion of each of the projects. The Corps believes this warrants discussion. The Corps would also like to consider whether these 2 projects will need to officially ask for an extension of the 2 year requirement (for recommendation by the Technical Committee and final decision by the Task Force).

This also brings up an entirely different topic of how we track projects with multiple

construction units. The Corps contends that if a project is going to have more than one construction contract awarded, it really should be tracked as two separate projects. This may not have been the intent with Baratavia Barrier Island since I believe that the initial intent was to construct the repair of both islands with one contract; however, North Lake Mechant received funding approval at two different times (CU1 was approved for Phase II on 7 Aug 02 and CU2 was approved for Phase II on 13 Oct 04). The Corps recommends tracking single projects with multiple construction units as separate projects. This is more efficient and effective for tracking funding and start and completion dates.

Comments?

Julie Z. LeBlanc  
U. S. Army Corps of Engineers  
(504) 862-1597

## Creel, Travis J MVN-Contractor

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**From:** LeBlanc, Julie Z MVN  
**Sent:** Tuesday, November 28, 2006 7:04 PM  
**To:** 'Amelia\_vincent@ursCorp.com'; 'betty.jones@la.usda.gov'; Hicks, Billy J MVN; 'britt.paul@la.usda.gov'; 'charles.Killebrew@LA.GOV'; 'cheryl.walters@la.usda.gov'; 'chrisk@dnr.state.la.us'; 'comvss@lsu.edu'; 'daniel.llewellyn@la.gov'; 'darryl\_clark@fws.gov'; 'deetra.washington@gov.state.la.us'; 'diane.smith@la.gov'; 'edh@dnr.state.la.us'; 'erik.zobrist@noaa.gov'; 'gabrielle\_bodin@usgs.gov'; Browning, Gay B MVN; 'gerryd@dnr.state.la.us'; Breerwood, Gregory E MVN; 'gsteyer@usgs.gov'; 'honorab@dnr.state.la.us'; 'jimmy\_johnston@usgs.gov'; Petitbon, John B MVN; 'john.jurgensen@la.usda.gov'; 'jonathan.porthouse@la.gov'; 'Karim Belhadjali [karimb@dnr.state.la.us]'; 'kevin\_roy@fws.gov'; 'kirk.rhinehart@la.gov'; 'kirkr@dnr.state.la.us'; 'Landers.Timothy@epamail.epa.gov'; 'parrish.sharon@epa.gov'; 'pat.forbes@GOV.STATE.LA.US'; 'quin.kinler@la.usda.gov'; 'rachel.sweeney@noaa.gov'; 'randyh@dnr.state.la.us'; 'richard.hartman@noaa.gov'; 'rickr@dnr.state.la.us'; 'russell\_watson@fws.gov'; 'scott\_wilson@usgs.gov'; Hawes, Suzanne R MVN; 'Taylor.Patricia-A@epamail.epa.gov'; Podany, Thomas J MVN; 'tom\_denes@URSCorp.com'; Creel, Travis J MVN-Contractor; Unger, Audrey C MVN-Contractor; 'finley\_h@wlf.state.la.us'; Rauber, Gary W MVN; Miller, Gregory B MVN; 'jonathanp@dnr.state.la.us'; Goodman, Melanie L MVN; 'ruiz\_mj@wlf.state.la.us'; Browning, Gay B MVN; Goodman, Melanie L MVN; Constance, Troy G MVN; Martinez, Wanda R MVN; Rauber, Gary W MVN; Miller, Gregory B MVN; Hennington, Susan M MVN; Lachney, Fay V MVN; Hawes, Suzanne R MVN; Browning, Gay B MVN; Goodman, Melanie L MVN; Constance, Troy G MVN; Martinez, Wanda R MVN; !Ambiguous Address - DONOT USE  
**Subject:** RE: Draft agenda for the Dec 6, 2006 Technical Committee Meeting  
**Attachments:** 6Dec06TC-DelayedProjectDiscussion-updated28Nov06.xls



6Dec06TC-Delayed  
ProjectDiscuss...

Technical Committee:

Thanks to all agencies for providing feedback on the status of your unconstructed projects (Agenda Item #7). I've incorporated the agency comments into the "delayed project" spreadsheet (attached). This spreadsheet can be used for the committee's discussion of this agenda item on Wednesday. There are about 19 project remaining on the list "to be discussed". I've left the remaining projects in the spreadsheet in case anyone had questions on any projects that agencies indicated are not delayed.

I will mention that I noted quite a few outdated completion dates in the database. Agencies are reminded to keep the database up-to-date. Once a completion date is past, an asterick (\*) will show up adjacent to the date. This is a red flag that a milestone has been missed. There are quite a few completion dates that I edited by hand in this spreadsheet (shown in bold and noted as "updated"). Agencies MUST make these changes in the database.

This spreadsheet will be included in the Technical Committee binder.

Julie Z. LeBlanc  
U. S. Army Corps of Engineers  
(504) 862-1597

-----Original Message-----

**From:** LeBlanc, Julie Z MVN  
**Sent:** Saturday, November 11, 2006 3:27 PM  
**To:** 'Amelia\_vincent@ursCorp.com'; 'betty.jones@la.usda.gov'; Hicks, Billy J MVN; 'britt.paul@la.usda.gov'; 'charles.Killebrew@LA.GOV'; 'cheryl.walters@la.usda.gov'; 'chrisk@dnr.state.la.us'; 'comvss@lsu.edu'; 'daniel.llewellyn@la.gov'; 'darryl\_clark@fws.gov'; 'deetra.washington@gov.state.la.us'; 'diane.smith@la.gov';



'edh@dnr.state.la.us'; 'erik.zobrist@noaa.gov'; 'gabrielle\_bodin@usgs.gov'; Browning, Gay B MVN; 'gerryd@dnr.state.la.us'; Breerwood, Gregory E MVN; 'gsteyer@usgs.gov'; 'honorab@dnr.state.la.us'; 'jimmy\_johnston@usgs.gov'; Petitbon, John B MVN; 'john.jurgensen@la.usda.gov'; 'jonathan.porthouse@la.gov'; 'Karim Belhadjali [karimb@dnr.state.la.us]'; 'kevin\_roy@fws.gov'; 'kirk.rhinehart@la.gov'; 'kirkr@dnr.state.la.us'; 'Landers.Timothy@epamail.epa.gov'; 'parrish.sharon@epa.gov'; 'pat.forbes@GOV.STATE.LA.US'; 'quin.kinler@la.usda.gov'; 'rachel.sweeney@noaa.gov'; 'randyh@dnr.state.la.us'; 'richard.hartman@noaa.gov'; 'rickr@dnr.state.la.us'; 'russell\_watson@fws.gov'; 'scott\_wilson@usgs.gov'; Hawes, Suzanne R MVN; 'Taylor.Patricia-A@epamail.epa.gov'; Podany, Thomas J MVN; 'tom\_denes@URSCorp.com'; Creel, Travis J MVN-Contractor; Unger, Audrey C MVN-Contractor; 'finley\_h@wlf.state.la.us'; Rauber, Gary W MVN; Miller, Gregory B MVN; 'jonathanp@dnr.state.la.us'; Goodman, Melanie L MVN; 'ruiz\_mj@wlf.state.la.us'; Browning, Gay B MVN; Goodman, Melanie L MVN; Constance, Troy G MVN; Martinez, Wanda R MVN; Gary Rauber; Gregory Miller; Hennington, Susan M MVN; Lachney, Fay V MVN; Suzanne Hawes; Gay Browning; Melanie Goodman; Troy Constance; Wanda Martinez; ! Ambiguous Address - DONOT USE

Subject: Draft agenda for the Dec 6, 2006 Technical Committee Meeting

Technical Committee/P&E Subcommittee:

In support of upcoming Technical Committee meeting Agenda Item #5 "Discussion: Status of Un-constructed Projects" the Corps has compiled a preliminary spreadsheet to support this Task Force-requested discussion item. The purpose of this agenda item is to discuss the status of CWPRPA projects that may be experiencing delays (and to recommend potential solutions). In putting together the spreadsheet the following criteria were used to decide if a project should/should not be on this preliminary list. Those criteria were:

1. Complex projects not yet approved for Phase I funding should be included.
2. PPL1-8 projects without a construction completion date should be included.
3. De-authorized projects should not be included.
4. PPLs 13-16 projects should not be included (PPL13 projects were approved in January 2004 - less than 3 years ago, PPLs 14-16 were approved in 2005 and 2006).
5. Projects requesting Phase II funding in Dec 06/Jan 07 should not be included.
6. Projects with an "\*" in the construction complete column (meaning the project construction end date has past) should be included to capture any projects that are experiencing delays during construction.

I will note again that this list is a preliminary list of projects, or starting place, for the agencies to begin the Technical Committee discussion via email prior to the meeting on Dec 6th. There are 49 projects on the list so it will need to be whittled down to only those projects that are truly experiencing "delays". As such, the Corps asks that the Technical Committee members (or their designees) review the attached project list and provide feedback on which of their additional projects should be eliminated from the project list that will be discussed on Dec 6th. In addition, if a project is not listed that should be listed, please let us know. Responses are requested from all agencies by Friday, 17 Nov 06.

Please note that the "Status" column in the spreadsheet is from the program database; however, it is truncated. Once we have a final list of "delayed" projects that should be discussed by the Technical Committee on Dec 6th, the Corps will ask agencies to provide an update to the spreadsheet to include the most recent project status. This will be requested over the week of Thanksgiving, so please ensure that someone will be available to respond to this request, OR provide your status input by 17 Nov 06 with the above request.

Thank you for your prompt attention to this request. Your cooperation and assistance will

allow the Corps to whittle down the list of 49 projects prior to the Dec 6th meeting, thus reducing the amount of time that the committee will spend discussing projects during the meeting.

Julie Z. LeBlanc

U. S. Army Corps of Engineers

(504) 862-1597

Keep on List?	PROJECT	AGENCY	PL	Authorization Date	CSA Execution	Deauthorization Date	Phase I Approval	Phase II Approval	Const Start	Const Compl	STATUS
Yes	Central and Eastern Terrebonne Freshwater Delivery (Complex Project)	FWS		10/1/1999 as complex project							<u>Response from Darryl Clark: Keep on list.</u> Complex project receiving Phase 0 funds in October 1999.
Yes	Fort Jackson Sediment Diversion (Complex Project)	COE		10/1/1999 as complex project							<u>Response from Corps: Keep on list for discussion.</u> Updated status: No additional action from LDNR since the project was tabled prior to consideration of Phase I approval back in 2003.
Yes	Brown Lake Hydrologic Restoration	NRCS	2	19-Oct-92	28-Mar-94	A			1-Feb-07	1-Jan-08	<u>Response from Britt Paul: Keep on list for discussion. reported status is accurate.</u> Status: Current design is being revised for the Crab Gully area. Project is scheduled to request approval for construction at the July 2007 Task Force meeting.
Yes	West Pointe a la Hache Outfall Management	NRCS	3	01-Oct-93	5-Jan-95	A					<u>Response from Britt Paul: Keep on list for discussion. reported status is accurate.</u> Status: Project team decision regarding proposed project features is pending a revised operation plan of siphon between Parish and State. No schedule is available until decision is made.
Yes	Grand Bayou Hydrologic Restoration	FWS	5	28-Feb-96	28-May-04	A			1-Mar-08	1-Dec-08	<u>Response from Darryl Clark: Keep on list.</u> The contractor has been working on model calibration and verification. Once that step is completed, with-project model runs will be begin.
Yes	Lake Boudreaux Freshwater Introduction	FWS	6	24-Apr-97	22-Oct-98	A			1-May-08	1-May-09	<u>Response from Darryl Clark: Keep on list.</u> Updated status: Landrights have been obtained from 35 persons. The remaining 3 persons appear unwilling to sign. Options for acquiring those landrights are being explored.
Yes	Penchant Basin Natural Resources Plan, Increment 1	NRCS	6	24-Apr-97	23-Apr-02	A			1-Feb-07	1-Jan-08	<u>Response from Britt Paul: Keep on list for discussion. reported status is accurate.</u> Status: Design on preferred project alternative began in October 2006. Project is scheduled to request construction approval in July 2007, with an anticipated construction start date of February 2008. Construction completion date is scheduled for January 2009.
Yes	Little Pecan Bayou Hydrologic Restoration	NRCS	9	11-Jan-00	25-Jul-00	A	11-Jan-00	30-Jan-08	1-Aug-08	1-Jul-09	<u>Response from Britt Paul: Keep on list for discussion. reported status is accurate.</u> Status: Landrights issues have caused design revisions to current features. Current schedule is for a 30% review meeting in June 2007, with anticipated construction beginning in August 2008 and ending in March 2009, pending funding approval.
Yes	Opportunistic Use of the Bonnet Carre Spillway	COE	9	11-Jan-00	31-Jan-07		11-Jan-00	31-Jan-08	1-May-08	1-Nov-08	<u>Response from Corps: Keep on list for discussion.</u> Updated status: On hold pending outcome of WRDA.
Yes	Periodic Intro of Sediment and Nutrients at Selected Diversion Sites Demo (DEMO)	COE	9	11-Jan-00	15-May-06	*	11-Jan-00	11-Jan-00	1-Apr-07	1-Apr-08	<u>Response from Corps: Keep on list for discussion.</u> Updated status: Sediment capacities of the Caernarvon Diversion Outfall Canal have been developed. Several methods of introducing the sediment into the diversion are were investigated by the team. Coordinating with Corps' 4th Supplemental "Modification to Caernarvon" project manager.
Yes	Weeks Bay MC and SP/Commercial Canal/Freshwater Redirection	COE	9	11-Jan-00			11-Jan-00				<u>Response from Corps: Keep on list for discussion.</u> Updated status: Fully funded Phase 1 cost for this project is \$1,229,337. The project area includes approximately 2,900 acres of fresh to brackish marsh habitat. The project kick-off was in April 2001 with the COE and DNR. Initial surveys, soils investigations, gage data, and hydrologic investigations indicate that few project benefits can be obtained without greatly increasing the scope and cost (currently estimated at \$30M, fully funded; originally estimated at 15M, fully funded at time of inclusion on PPL9) of the project. Attempts to deauthorize have been met with resistance from local stakeholders. The project has remained on hold pending the determination of the disposition of the Port of Iberia Channel Project. A revised deposition of dredged materials from that project could greatly reduce the costs of the Weeks Bay Project.

Keep on List?	PROJECT	AGENCY	PL	Authorization Date	CSA Execution	Deauthorization Date	Phase I Approval	Phase II Approval	Const Start	Const Compl	STATUS
Yes	Benneys Bay Diversion	COE	10	10-Jan-01	30-Jan-07		10-Jan-01 A	31-Jan-08	1-Mar-08	1-Nov-09	<u>Response from Corps: Keep on list for discussion.</u> Updated status: Disagreement about the overall funding (O&M) approach for this project will delay its consideration for construction funding this cycle. Uncertainty regarding the induced shoaling amounts resulted in a \$10 million cost cap for O&M, which would fund only one cycle of O&M (versus 10 cycles). The revised fully funded cost for the project, including construction, monitoring and once cycle of O&M, is \$29,077,261. The fully funded costs for 10 cycles of O&M over 20 years would be \$115,395,910. Approximately 4,800 acres of marsh would be created through natural deltaic accretion. Approximately 170 acres of marsh would be created during construction and approximately 100 acres would result a single cycle of maintenance dredging of induced shoaling. The difference in benefits would be 5,070 (one O&M cycle) versus 5903 acres (10 cycles).
Yes	Lake Borgne Shoreline Protection	EPA	10	10-Jan-01	2-Oct-01 A		10-Jan-01 A	8-Feb-06 A	20-Feb-07	31-Dec-07	<u>Response from Sharon Parrish: Retain on list.</u> Updated status: LDNR has revised the cost estimate. Additional construction funds will be needed due to storm-related price increases. This project is at the top of DNR's oyster appraisal list. Anticipate advertising for construction in early 2007, with construction taking place May to September 2007 in order to accommodate the endangered species issue.
Yes	Small Freshwater Diversion to the Northwestern Barataria Basin	EPA	10	10-Jan-01	8-Oct-01 A		10-Jan-01 A	31-Jan-10	1-May-10	1-May-12	<u>Response from Sharon Parrish: Retain on list, status description is accurate.</u> Status: Difficulties with land rights combined with recent cypress logging activity require EPA and LDNR to re-evaluate the future of the current benefit area/potential diversion alignments considered to date.
Yes	Terrebonne Bay Shore Protection Demonstration (DEMO)	FWS	10	10-Jan-01	24-Jul-01 A		10-Jan-01 A	10-Jan-01 A	1-Apr-07	30-Sep-07	<u>Response from Darryl Clark: Keep on list.</u> Updated status: The bids that were received from the 7/6/06 bid package were all well over the cost estimated for this project. The project is being scaled down and re-designed to accommodate the higher costs. Three replicates with three treatments will be constructed. The revised project should be ready to be re-bid in January 2007. Project has been re-bid three times. Twice because contractors were not available due to hurricanes, and one other time.
Yes	River Reintroduction into Maurepas Swamp	EPA	11	16-Jan-02	4-Apr-02 A		07-Aug-01 A	30-Jan-09	1-Jun-09	1-Jun-11	<u>Response from Sharon Parrish: Retain on list.</u> Updated status: Modeling for the feasibility study has been delayed from the end of September to the end of December. No additional delays of this modeling effort are anticipated.
Yes	South Grand Chenier Hydrologic Restoration	FWS	11	16-Jan-02	3-Apr-02 A		16-Jan-02 A	30-Jan-08	1-Jun-07	1-May-08	<u>Response from Darryl Clark: Keep on list.</u> Updated status: Hydrologic modeling was completed in April 2005. Project landowners coordination delayed by Hurricane Rita and after effects. All Grand Chenier landowners lost their homes and were displaced as a result of the hurricane. Modeling results were presented to landowners March 9, 2006 with mixed but optimistic results. Sponsoring agencies are currently meeting with key landowners and planning surveying and geotechnical investigations to determine route of freshwater across Hwy 82 to benefit marshes south of that highway.
Yes	Avoca Island Diversion and Land Building	COE	12	16-Jan-03	1-Jan-07		16-Jan-03 A	31-Jan-08	15-Jul-08	15-Jun-09	<u>Response from Corps: Keep on list for discussion.</u> Updated status: Draft 30% design report submitted prepared. Project scope has changed and nearby borrow site is being tested. Additional borrow site consideration would cost funds the project does not have budgeted.
Yes	Bayou Dupont Sediment Delivery System	EPA	12	16-Jan-03	21-Mar-04 A		16-Jan-03 A	30-Jan-08	1-Mar-08	1-Sep-08	<u>Response from Sharon Parrish: Retain on list, status description is accurate.</u> Status: As of June 06, all geotech data has been collected. Current work w/COE to ensure project complies w/all dredging/navigation procedures. All landowners are in full support; formal landright agreements are being drafted for final approval.
Yes	Mississippi River Sediment Trap	COE	12	16-Jan-03	30-Jan-07		07-Aug-02 A	31-Jan-08	1-Aug-08	1-Mar-09	<u>Response from Corps: Keep on list for discussion.</u> Updated status: We have been seeking input from LDNR since 2002 on additional alternatives.

Keep on List?	PROJECT	AGENCY	PL	Authorization Date	CSA Execution	Deauthorization Date	Phase I Approval	Phase II Approval	Const Start	Const Compl	STATUS
No	Jonathan Davis Wetland Restoration	NRCS	2	19-Oct-92	5-Jan-95	A			22-Jun-98	A	(updated) 3/1/2008 <u>Response from Britt Paul: Does this one need to be on the list for discussion?</u> Revised status: Construction Units 1, 2 and 3 are completed Construction Unit#4 was revised due to hurricane related causes. Revised schedule is for the construction contract to be advertised in December 2006 and construction to begin in April 2007 with a completion date anticipated for March 2008.
No	West Belle Pass Headland Restoration	COE	2	19-Oct-92	27-Dec-96	A			10-Feb-98	A	(updated) 1 Mar 06 <u>Response from Corps: Remove from list of projects to discuss. Construction contract awarded for work to Weeks Bay, to be completed in next few months.</u> Project Status: Original project construction completed July 1998. Supplemental disposal for wetland creation anticipated September 2006.
No	Cameron-Creole Maintenance	NRCS	3	01-Oct-93	9-Jan-97	A			30-Sep-97	A	<u>Response from Britt Paul: Remove from List.</u> Revised status: This project was constructed prior to becoming a CWPPRA project. As stated in spreadsheet, CWPPRA has performed 3 maintenance events. In October 2006, the Task Force approved additional O&M funds to allow repair of storm damages. This project is not "delayed".
No	Bayou Lafourche Siphon	EPA	5	28-Feb-96	19-Feb-97	A					<u>Response from Sharon Parrish: This project should be removed from list. It has been deobligated.</u>
No	Myrtle Grove Siphon	NMFS	5	28-Feb-96	20-Mar-97	A					<u>Response from Erik Zobrist: This project should not be listed.</u> Updated status: With the concurrence of DNR, the NOAA grant for the project was closed out and funds returned to the program. At LDNR's request, de-authorization procedures were not initiated because DNR wished to keep the project on the CWPPRA books for possible future funding depending on the development of Delta Building Diversion at Myrtle Grove (BA-33).
No	Mississippi River Reintroduction into Bayou Lafourche	EPA	5.1	25-Oct-01	23-Jul-03	A					<u>Response from Sharon Parrish: This project should be removed from the list. It is in the process of being shut down.</u>
No	Delta Wide Crevasses	NMFS	6	24-Apr-97	28-May-98	A			21-Jun-99	A	31-Dec-14 <u>Response from Erik Zobrist: This project should not be listed.</u> Updated status: The project recently completed the second of four project construction (dredging) cycles to create or maintain crevasses. NOAA is closing out the grant and meeting with DNR to schedule the next round on construction.
No	Barataria Basin Landbridge Shoreline Protection, Phase 1 and 2	NRCS	7	16-Jan-98	16-Jul-99	A			1-Dec-00	A	1-May-07 <u>Response from Britt Paul: Does this one need to be on the list for discussion?</u> Revised status: Construction Units 1 and 2 are completed. Construction Unit #4 began construction on May 26, 2005. Construction was halted due to hurricane related causes, and resumed on July 24, 2006. Revised anticipated completion date is October 2007. Initial bids for Construction Unit 5 were extremely high due to post-hurricane cost increases; contract has been re-advertised; bid opening is scheduled for December 29, 2006.
No	Sabine Refuge Marsh Creation, Cycle 2	COE	8	20-Jan-99	17-Feb-05	A			1-Jun-07	A	1-Jun-08 <u>Response from Corps: Remove from list of projects to discuss.</u> Updated status: This project was broken into five construction cycles. Cycle 2 includes installation of a permanent sediment delivery pipeline that has required substantial real estate investigations and negotiations. Negotiations were well advanced prior to, but were interrupted by hurricanes Katrina and Rita. Negotiations have resumed and are on track Project scheduled to undergo BCOE review by December 1st with contract advertisement by April/May 07. Construction start of the permanent pipeline anticipated for summer 2007. A portion of the containment levees for the Cycle II marsh creation are currently under construction under the same contract for Cycle III construction.

Keep on List?	PROJECT	AGENCY	PL	Authorization Date	CSA Execution	Deauthorization Date	Phase I Approval	Phase II Approval	Const Start	Const Compl	STATUS
No	Sabine Refuge Marsh Creation, Cycle 4	COE	8	20-Jan-99							Response from Corps: Remove from list of projects to discuss. Updated status: This project was broken into five construction cycles. Cycle 4 Engineering and Design 95% is complete along with Environmental Compliance. The CWPPRA Task Force has deferred construction funding approval for Cycles 4 and 5 until construction of cycles 2 and 3 are complete. Request for construction approval for Cycle 4 is planned to meet the Calcasieu River Ship Channel FY 09 maintenance dredging cycle.
No	Sabine Refuge Marsh Creation, Cycle 5	COE	8	20-Jan-99							Response from Corps: Remove from list of projects to discuss. Updated status: This project was broken into five construction cycles. Cycle 5 Engineering and Design 95% is complete along with Environmental Compliance. The CWPPRA Task Force has deferred construction funding approval for Cycles 4 and 5 until construction of cycles 2 and 3 are complete. Request for construction approval for Cycle 5 is planned to meet the Calcasieu River Ship Channel FY 10 maintenance dredging cycle.
No	Black Bayou Culverts Hydrologic Restoration	NRCS	9	11-Jan-00	25-Jul-00 A		11-Jan-00 A	14-Aug-03 A	25-May-05 A	(updated) 3/1/2007	Response from Britt Paul: Remove from list - project is under construction. Revised status: Construction began May 25, 2005. Construction was delayed due to hurricane related causes. Revised anticipated completion date is March 2007.
No	Freshwater Introduction South of Highway 82	FWS	9	11-Jan-00	12-Sep-00 A		11-Jan-00 A	13-Oct-04 A	1-Sep-05 A	(updated) 11/1/2006	Response from Darryl Clark: Project is not delayed, remove from list. Updated status: Semi-final inspection was held Oct 31, 2006. Contractor has until Dec 1, 2006 to make minor modifications.
No	LaBranche Wetlands Terracing, Planting, and Shoreline Protection	NMFS	9	11-Jan-00	21-Sep-00 A		11-Jan-00 A				Response from Erik Zobrist: This project should not be listed. Updated status: With the concurrence of DNR, the NOAA grant for the project was closed out and funds returned to the program. At LDNR's request, de-authorization procedures were not initiated because we were waiting to see what the landowners eventually decided to do with the project area.
No	New Cut Dune and Marsh Restoration	EPA	9	11-Jan-00	1-Sep-00 A		11-Jan-00 A	10-Jan-01 A	1-Oct-06 A	1-Oct-07	Response from Sharon Parrish: This project should be removed from the list. Updated status: Construction contract awarded. Notice to Proceed issued for October 1, 2006. Dredging work expected to begin end of Dec 06 (dredge expected to be available at this time), with the same dredge currently working on a NMFS sponsored barrier island restoration project.
No	Timbalier Island Dune and Marsh Restoration	EPA	9	11-Jan-00	5-Oct-00 A		11-Jan-00 A	16-Jan-03 A	1-Jun-04 A	31-Oct-06 *	Response from Sharon Parrish: This project should be removed from the list, project status is correct. Updated status: Awaiting confirmation from State of Louisiana regarding contract completion activities. As soon as the State completes contracting actions and returns remaining funds, the project will be closed out.
No	Delta Building Diversion at Myrtle Grove	COE	10	10-Jan-01			10-Jan-01 A				Response from Corps: Remove from list of projects to discuss. Updated status: Under consideration for transfer to LCA.
No	Delta Building Diversion North of Fort St. Philip	COE	10	10-Jan-01	1-Mar-07		10-Jan-01 A	31-Jan-08	1-Nov-08		Response from Corps: Remove from list of projects to discuss. Updated status: 95% design review anticipated by end of February 2007. Project engineering and design was delayed by Hurricanes Rita and Katrina and residual impacts.
No	Delta Management at Fort St. Philip	FWS	10	10-Jan-01	16-May-01 A		10-Jan-01 A	7-Aug-02 A	19-Jun-06 A	(updated) 11/18/2006	Response from Darryl Clark: Project is not delayed, remove from list. Updated status: This project is currently under construction and is expected to be completed by Nov 18, 2006.

Keep on List?	PROJECT	AGENCY	PL	Authorization Date	CSA Execution	Deauthorization Date	Phase I Approval	Phase II Approval	Const Start	Const Compl	STATUS
No	East Sabine Lake Hydrologic Restoration	FWS	10	10-Jan-01	17-Jul-01	A	10-Jan-01	12-Nov-03	1-Dec-04	1-Jul-08	<u>Response from Darryl Clark: Project is not delayed, remove from list.</u> Updated status: CU 1 construction is completed as of October 3, 2006. CU 2 will be discontinued as of the October 18, 2006, Task Force meeting. The Task Force authorized 50,000 lf of additional terraces for CU 1 plus gaps in the foreshore dike in October 2006. Permit modifications and drawings of additional terraces and gaps are currently being prepared.
No	North Lake Mechant Landbridge Restoration	FWS	10	10-Jan-01	16-May-01	A	10-Jan-01	7-Aug-02	1-Apr-03	1-Feb-07	<u>Response from Darryl Clark: Project is no longer delayed, remove from list.</u> Updated status: Project is on track for construction in early 2007. Settlement column test to be performed prior to soliciting construction bids early next year.
No	Barataria Barrier Island: Pelican Island and Pass La Mer to Chalant Pass	NMFS	11	16-Jan-02	6-Aug-02	A	16-Jan-02	28-Jan-04	25-Mar-06	1-Sep-06 *	<u>Response from Erik Zobrist: This project should not be listed.</u> Updated status: The project is under construction with the first island (Chaland Headland) due for completion by the end of the year. Construction for the other island (Pelican Island) is scheduled for construction in 2007, thus the entire project is 1/2 complete.
No	Barataria Basin Landbridge Shoreline Protection, Phase 4	NRCS	11	16-Jan-02	9-May-02	A	16-Jan-02	28-Jan-04	27-Apr-05	(updated) 4/26/2006 A	<u>Response from Britt Paul: Remove from list - construction is complete.</u> Revised status: Construction Unit #6 was completed on April 26, 2006.
No	Little Lake Shoreline Protection/Dedicated Dredging near Round Lake	NMFS	11	16-Jan-02	6-Aug-02	A	16-Jan-02	12-Nov-03	4-Aug-05	31-Jan-07	<u>Response from Erik Zobrist: This project should not be listed.</u> Updated status: Project is well under construction with only some rock work remaining. Construction will be complete in early 2007.
No	Pass Chalant to Grand Bayou Pass Barrier Shoreline Restoration	NMFS	11	16-Jan-02	6-Aug-02	A	16-Jan-02	8-Feb-06	1-Apr-07	1-Oct-07	<u>Response from Erik Zobrist: This project should not be listed.</u> Updated status: Project was approved for construction in January 2006 but NOAA has just received an application from LDNR. NOAA processing should be complete very soon with the start of the new FY and LDNR should be in a position to commence construction in 2007.
No	Raccoon Island Shoreline Protection/Marsh Creation, Ph 2	NRCS	11	16-Jan-02	23-Apr-02	A	16-Jan-02	13-Oct-04	13-Dec-05	1-Jul-08	<u>Response from Britt Paul: Does this one need to be on the list for discussion? Reported status is accurate.</u> Status: Construction is on-going for Unit #1, and is scheduled for completion in November 2006.
No	West Lake Boudreaux Shoreline Protection and Marsh Creation	FWS	11	16-Jan-02	3-Apr-02	A	16-Jan-02	8-Feb-06	1-Apr-07	1-Feb-08	<u>Response from Darryl Clark: Project is not delayed.</u> Updated status: NRCS has finished their Final Plans and Specs and are awaiting a final signature once the final landrights are completed. DNR is still wrapping-up some landrights issues and estimates completion in early-to-mid December. The Final EA has been submitted and a permit from the Corps has been received. Construction is imminent within the next 3 months.
No	Freshwater Floating Marsh Creation Demonstration (DEMO)	NRCS	12	16-Jan-03	12-Jun-03	A	16-Jan-03	16-Jan-03	1-Jul-04	(updated) 4/1/2009 A	<u>Response from Britt Paul: Remove from list - construction is complete.</u> Revised status: Project construction was completed in April 2006.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

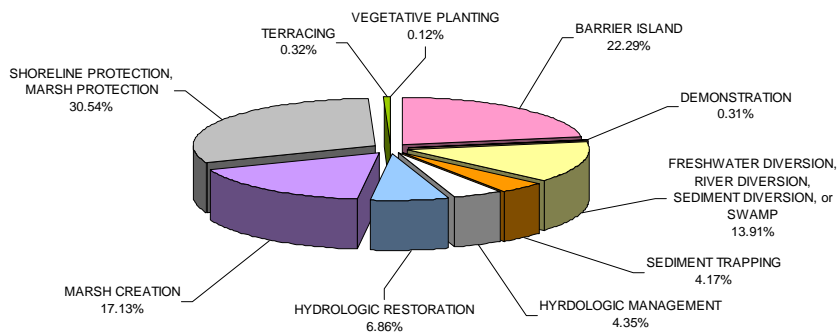
TECHNICAL COMMITTEE MEETING

December 6, 2006

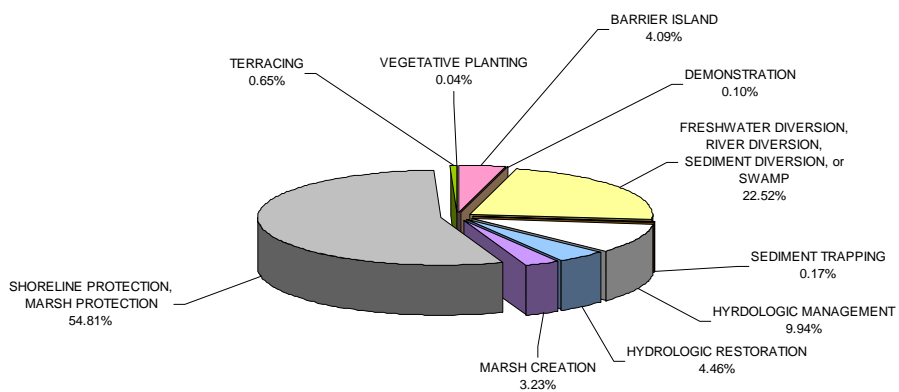
**DISCUSSION: LONG-TERM O&M OF CWPPRA PROJECTS INCLUDING A  
BREAKDOWN OF O&M BY PROJECT TYPE**

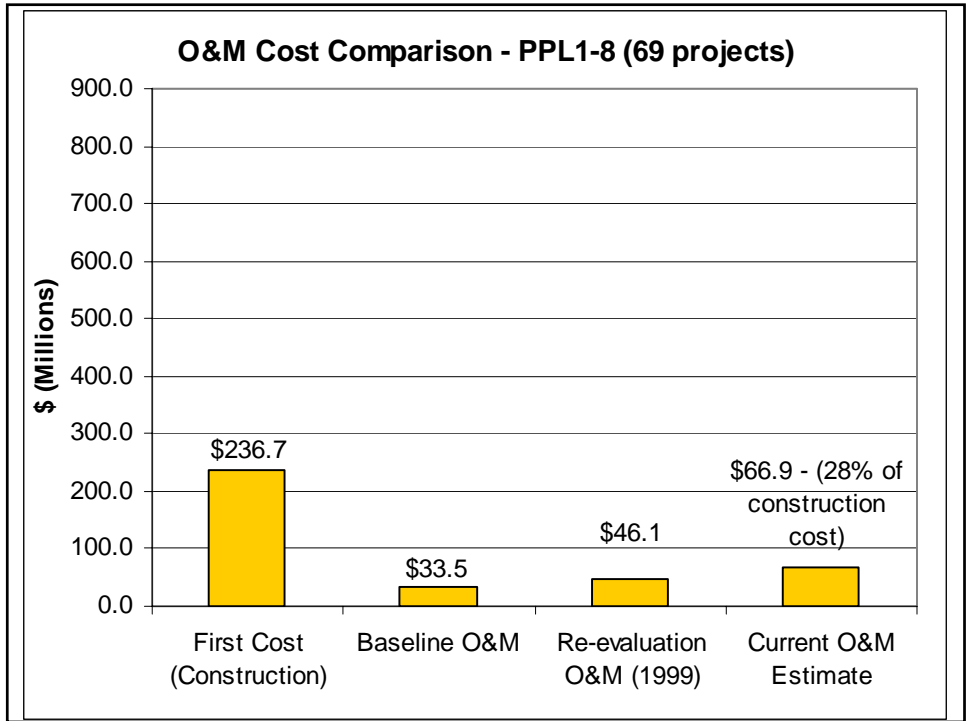
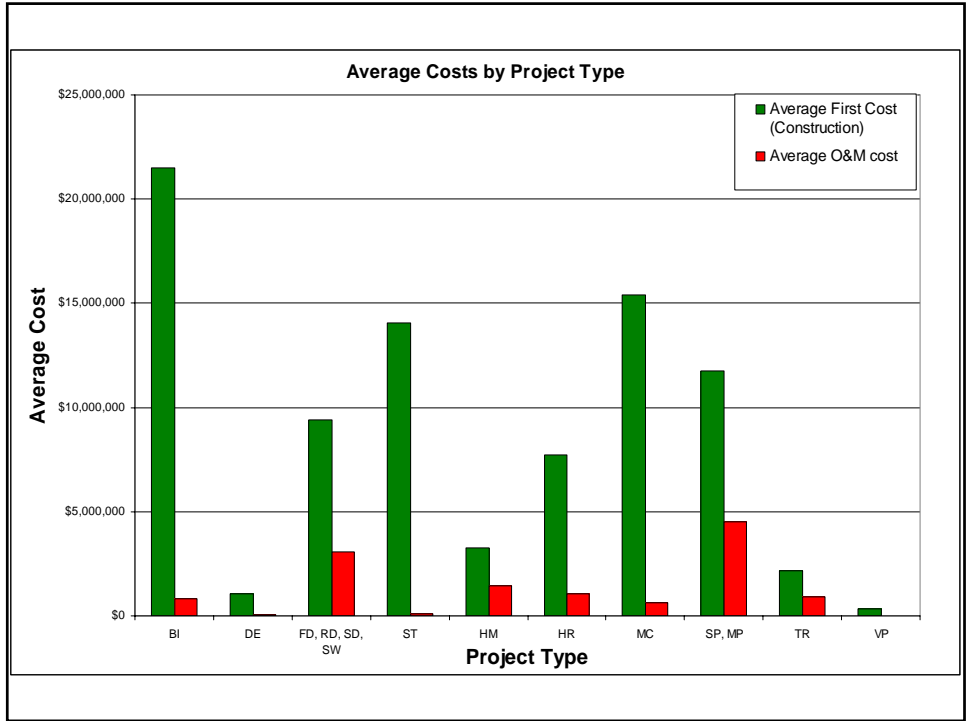


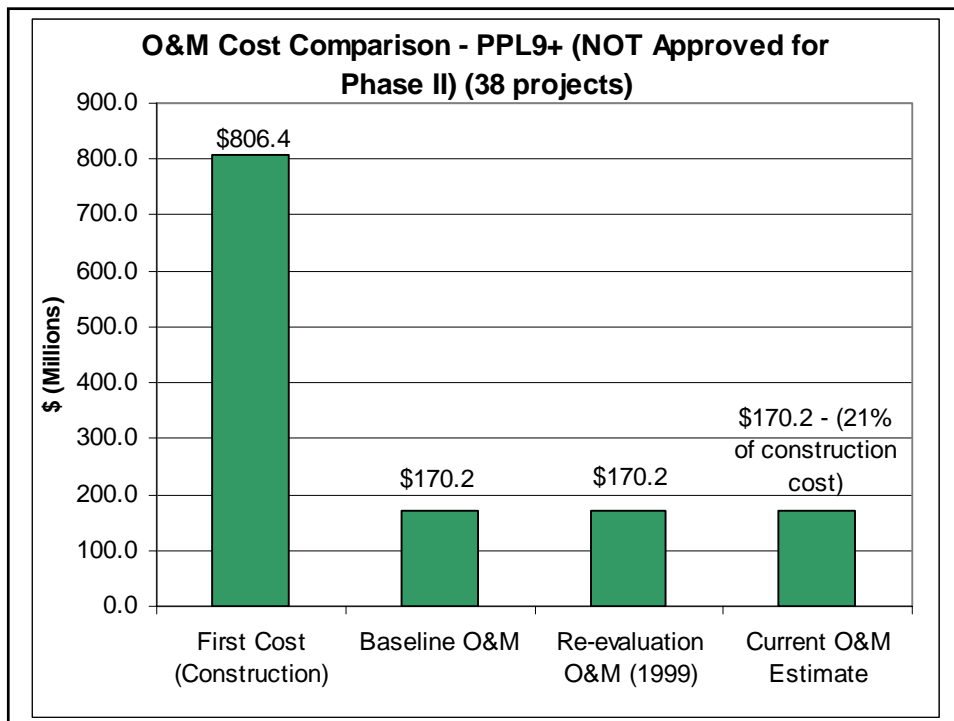
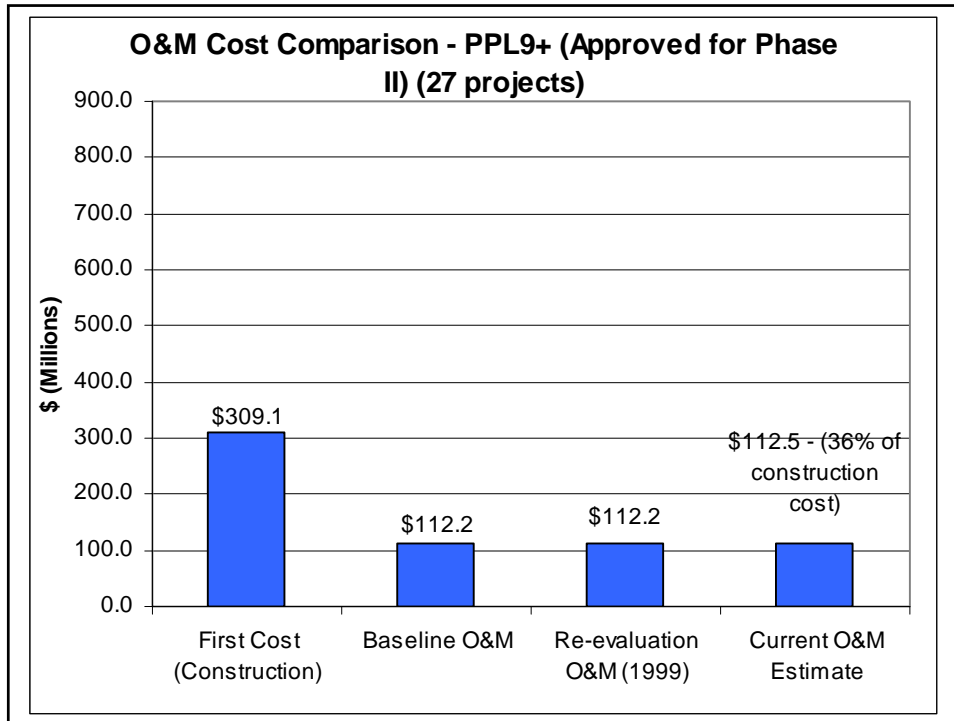
**First Construction Cost by Project Type**  
 (Percentage of Total First Construction Cost - \$1,352.2M)

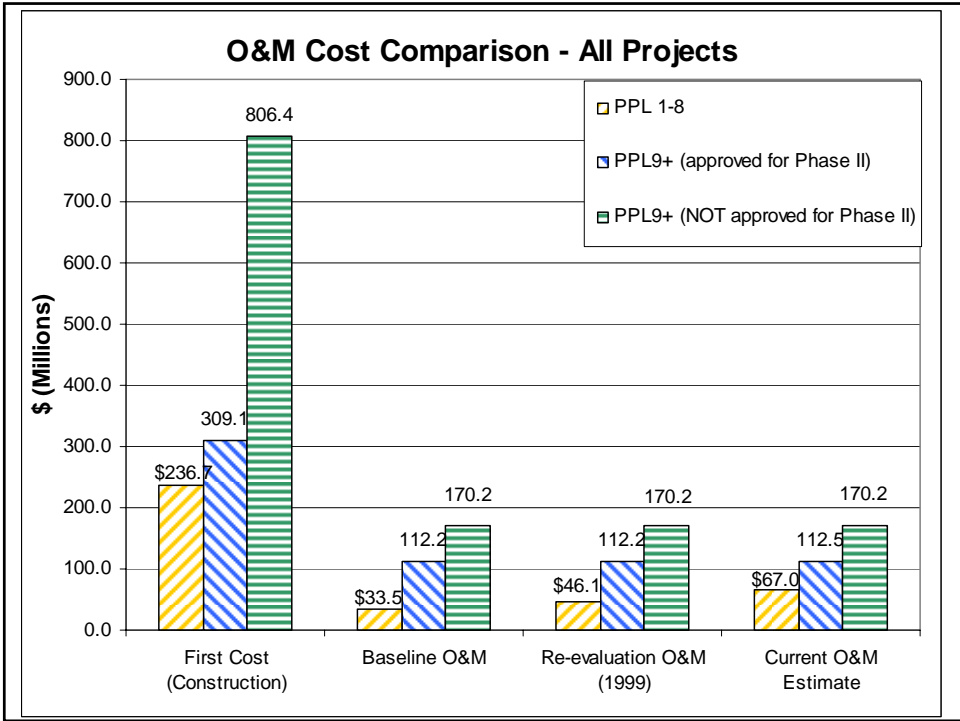


**O&M Cost by Project Type**  
 (Percentage of Total O&M Cost - \$349.7M)









**From:** LeBlanc, Julie Z MVN

**Sent:** Friday, November 17, 2006 6:57 PM

**To:** 'Amelia\_vincent@ursCorp.com'; 'betty.jones@la.usda.gov'; Hicks, Billy J MVN; 'britt.paul@la.usda.gov'; 'charles.Killebrew@LA.GOV'; 'cheryl.walters@la.usda.gov'; 'chrisk@dnr.state.la.us'; 'comvss@lsu.edu'; 'daniel.llewellyn@la.gov'; 'darryl\_clark@fws.gov'; 'deetra.washington@gov.state.la.us'; 'diane.smith@la.gov'; 'edh@dnr.state.la.us'; 'erik.zobrist@noaa.gov'; 'gabrielle\_bodin@usgs.gov'; Browning, Gay B MVN; 'gerryd@dnr.state.la.us'; Breerwood, Gregory E MVN; 'gsteyer@usgs.gov'; 'honorab@dnr.state.la.us'; 'jimmy\_johnston@usgs.gov'; Petitbon, John B MVN; 'john.jurgensen@la.usda.gov'; 'jonathan.porthouse@la.gov'; 'Karim Belhadjali [karimb@dnr.state.la.us]'; 'kevin\_roy@fws.gov'; 'kirk.rhinehart@la.gov'; 'kirkr@dnr.state.la.us'; 'Landers.Timothy@epamail.epa.gov'; 'parrish.sharon@epa.gov'; 'pat.forbes@GOV.STATE.LA.US'; 'quin.kinler@la.usda.gov'; 'rachel.sweeney@noaa.gov'; 'randyh@dnr.state.la.us'; 'richard.hartman@noaa.gov'; 'rickr@dnr.state.la.us'; 'russell\_watson@fws.gov'; 'scott\_wilson@usgs.gov'; Hawes, Suzanne R MVN; 'Taylor.Patricia-A@epamail.epa.gov'; Podany, Thomas J MVN; 'tom\_denes@URSCorp.com'; Creel, Travis J MVN-Contractor; Unger, Audrey C MVN-Contractor; 'finley\_h@wlf.state.la.us'; Rauber, Gary W MVN; Miller, Gregory B MVN; 'jonathanp@dnr.state.la.us'; Goodman, Melanie L MVN; 'ruiz\_mj@wlf.state.la.us'; Browning, Gay B MVN; Goodman, Melanie L MVN; Constance, Troy G MVN; Martinez, Wanda R MVN; !Ambiguous Address - DONOT USE; Amelia\_vincent@ursCorp.com; betty.jones@la.usda.gov; Billy Hicks; britt.paul@la.usda.gov; charles.Killebrew@LA.GOV; cheryl.walters@la.usda.gov; chrisk@dnr.state.la.us; comvss@lsu.edu; daniel.llewellyn@la.gov; darryl\_clark@fws.gov; deetra.washington@gov.state.la.us; diane.smith@la.gov; edh@dnr.state.la.us; erik.zobrist@noaa.gov; gabrielle\_bodin@usgs.gov; Gay Browning; gerryd@dnr.state.la.us; Gregory Breerwood; gsteyer@usgs.gov; Hennington, Susan M MVN; honorab@dnr.state.la.us; jimmy\_johnston@usgs.gov; John Petitbon; john.jurgensen@la.usda.gov; jonathan.porthouse@la.gov; Karim Belhadjali [karimb@dnr.state.la.us]; kevin\_roy@fws.gov; kirk.rhinehart@la.gov; kirkr@dnr.state.la.us; Lachney, Fay V MVN; Landers.Timothy@epamail.epa.gov; parrish.sharon@epa.gov; pat.forbes@GOV.STATE.LA.US; quin.kinler@la.usda.gov; rachel.sweeney@noaa.gov; randyh@dnr.state.la.us; richard.hartman@noaa.gov; rickr@dnr.state.la.us; russell\_watson@fws.gov; scott\_wilson@usgs.gov; Suzanne Hawes; Taylor.Patricia-A@epamail.epa.gov; Thomas Podany; tom\_denes@URSCorp.com; Travis Creel; Unger, Audrey C MVN-Contractor; finley\_h@wlf.state.la.us; Gary Rauber; Gregory Miller; jonathanp@dnr.state.la.us; Melanie Goodman; ruiz\_mj@wlf.state.la.us; Gay Browning; Melanie Goodman; Troy Constance; Wanda Martinez

**Subject:** RE: Draft agenda for the Dec 6, 2006 Technical Committee Meeting

Technical Committee/P&E Subcommittee:

In support of upcoming Technical Committee meeting **Agenda Item #8 "Discussion: Long-Term O&M of CWPPRA Projects Including a Breakdown of O&M by Project Type"** the Corps has compiled a spreadsheet that lays out the "breakdown of O&M by project type". The attached spreadsheet will be provided in your binders and can be discussed/presented at the start of the agenda item on the day of the meeting, if so desired.

A bullet list of some of the questions/issues raised at the October Task Force meeting includes:

- What process/evaluation should the program use to determine if increasing individual project O&M funding is "justifiable" based on a project's observed benefits, performance (effectiveness), and total costs.
- Performing an analysis of O&M costs by project type to determine if O&M can be better planned in project design and construction phases to minimize the program O&M burden (*attached spreadsheet addresses this analysis*)

- Could the program contract out a scientific and technically based assessment that may allow the program to reduce O&M costs?
- Are there legal issues with landrights agreements that force CWPPRA to fund O&M for the 20-year project life?

Julie Z. LeBlanc  
U. S. Army Corps of Engineers  
(504) 862-1597

## Creel, Travis J MVN-Contractor

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**From:** Darryl\_Clark@fws.gov  
**Sent:** Tuesday, November 21, 2006 5:25 PM  
**To:** LeBlanc, Julie Z MVN  
**Cc:** Browning, Gay B MVN  
**Subject:** RE: O & M Spreadsheet and Materials

Julie,

Thanks for incorporating the recommendations.

I realize that a lot of work has gone into the development of the O & M spreadsheets and figures. I do not know what is in the database you are speaking of, but those project types I discussed in the first e-mail are problematic. Sometimes certain things get into a databases that aren't correct later. For example, "swamp" is definitely not a project type, the project depicted, the Maurepas Diversion, is a freshwater diversion project. CWPPRA project types are listed in the SOP (under the Prioritization scoring, p 49), past reports to congress, and PPL reports. Swamp and Hydrologic Management are not listed in those reports nor have we used them over the years. We did have "Outfall Management" defined as projects with features that manage the outfall of freshwater diversions. Keeping the types as they are will cause some difficulties in clearly separating those project types that have higher O & M.

There are 10 CWPPRA project types are -

- 1) Shoreline protection,
- 2) River (or sediment) diversions (same as sediment diversions),
- 3) Freshwater diversions,
- 4) Hydrologic restoration,
- 5) Outfall Management,
- 6) Sediment trapping [problematic because most are terraces (i.e., Vermilion Bay, Little Verm. Bay terraces)],
- 7) Terracing,
- 8) Marsh creation,
- 9) Barrier island projects, and
- 10) Vegetative plantings.

All of the above but sediment trapping and outfall management are in the SOP. That is because outfall management is a subset of hydrologic restoration and sediment trapping, except for MR sediment trap, is done via terraces. I could add "sediment trapping" (but that is the same as terracing for many projects), and as I mentioned above, Outfall Management (Hydrologic Management is the same thing, but outfall management is more descriptive). I would recommend that "swamp" be removed as one category (and the Maurepas Swamp Diversion placed with FW diversions), and that "hydrologic management" be combined with hydrologic restoration of called outfall management. The rest of the O& M project type categories are fine.

Project types as reported in the PPL 15 report to Congress (page 6), "Type codes: FD=Freshwater Diversion; HR=Hydrologic Restoration; MC=Marsh Creation; OM= Outfall Management; SP=Shoreline Protection; TR=Terracing."  
Sediment diversions (from Mississippi River), Barrier Island, and vegetative plantings were not included in the footnote because no projects in those categories were reviewed for PPL 15.

The CWPPRA SOP (Page 49) includes the following project types under the  
"certainty of benefits"  
calculations for  
Prioritization scoring.

"Certainty of Benefits - Project Type Table

Inland shoreline protection - Chenier plain  
River diversions - deltaic plain  
Terracing - chenier plain  
Inland shoreline protection - deltaic plain  
Marsh creation - chenier plain  
Marsh creation - deltaic plain  
Barrier island projects  
Gulf shoreline protection - chenier plain  
Gulf shoreline protection - deltaic plain  
Freshwater diversion -chenier plain  
Freshwater diversion - deltaic plain  
Hydrologic restoration - chenier plain  
Vegetative plantings (low energy area)  
Terracing - deltaic plain  
Hydrologic restoration - deltaic plain  
Vegetative plantings (high energy area)"

If the redundancies in the above list are removed, the list becomes, 1) shoreline protection, 2) river diversions (same as sediment diversions), 3) freshwater diversions, 4) hydrologic restoration, 5) terracing, 6) marsh creation, 7) barrier island projects, and 8) vegetative plantings.

Darryl

"LeBlanc, Julie Z  
MVN"  
<Julie.Z.LeBlanc@  
mvn02.usace.army.  
mil>  
11/20/2006 03:38  
PM

<Darryl\_Clark@fws.gov>  
"Browning, Gay B MVN"  
<Gay.B.Browning@mvn02.usace.army.mi  
l>  
Subject  
RE: O & M Spreadsheet and Materials

To  
cc

Darryl:

I will incorporate your changes (regarding combining types and including average cost per project type) into what goes out in the binders. I won't be able to get to it this week.

As far as project types - I used what was in the database for individual projects. As far as I can tell, these are the types being "officially" carried. We may need to address this separately (and not part of the update) to the spreadsheet. Gay is out all this week. I will talk to her about this more when she is back in town.

Julie

-----Original Message-----  
From: Darryl\_Clark@fws.gov [mailto:Darryl\_Clark@fws.gov]



Sent: Monday, November 20, 2006 3:34 PM  
To: LeBlanc, Julie Z MVN  
Cc: Browning, Gay B MVN  
Subject: O & M Spreadsheet and Materials

Julie,

I have reviewed the O& M materials for the TC meeting. You and your staff did a very thorough job as usual. I can see Gay's calculations on the pages, and the graphics are good. I believe that Hydrologic Management, and Swamp are not project types we have used before. I would recommend that HM be combined with HR, swamp with FD (freshwater diversions), and river diversions combined with either freshwater or sediment diversions. If you look at the "official" list of projects presented in the PPL reports (i.e., PPL 14, page 6), as well as past Reports to Congress those "types" are not listed. Freshwater diversions, sediment diversions, and sediment trapping should be listed separately. A freshwater or sediment diversion off the Mississippi River is in a very different category from the Chenier au Tigre "sediment trapping" project (which is really a shoreline protection demo project), or any of the sediment trapping projects listed.

As I read through the material, I was looking for average O & M cost per project type. I calculated them separately and shoreline protection (\$4.49 M/project), and Freshwater Diversions (\$2.6 M/project) have the highest O&M cost per project. I would recommend that average costs per project type be depicted on the spreadsheet (and accompanying graph) after the project types are revised.

Thanks,

Darryl  
337-291-3111

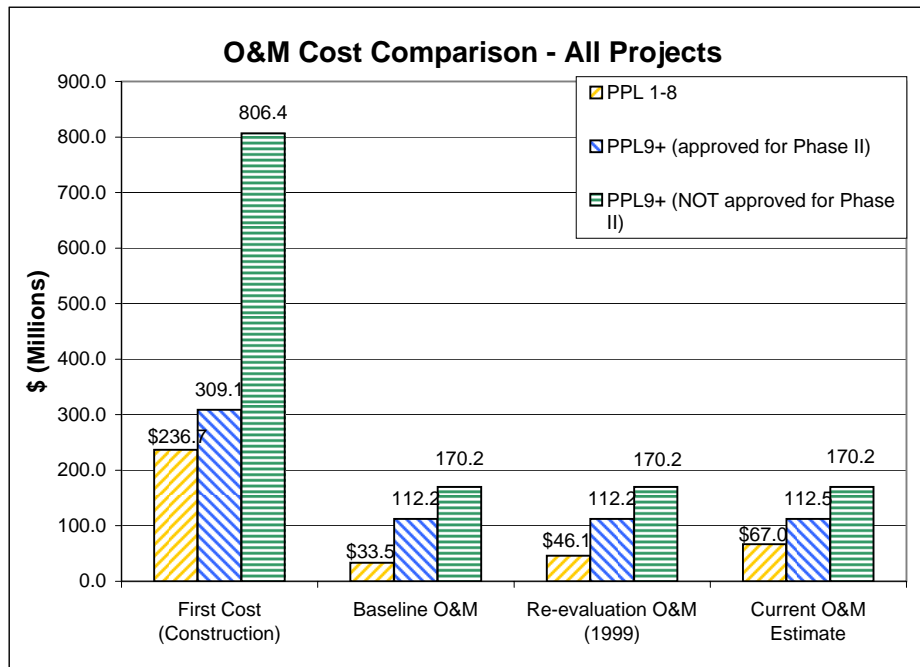
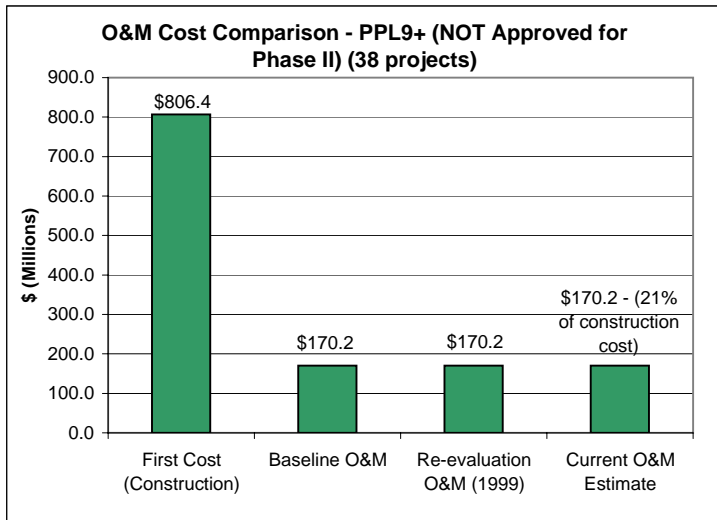
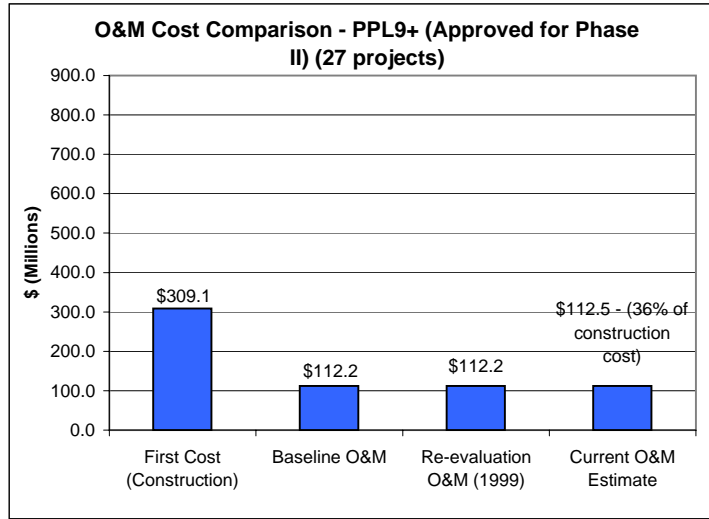
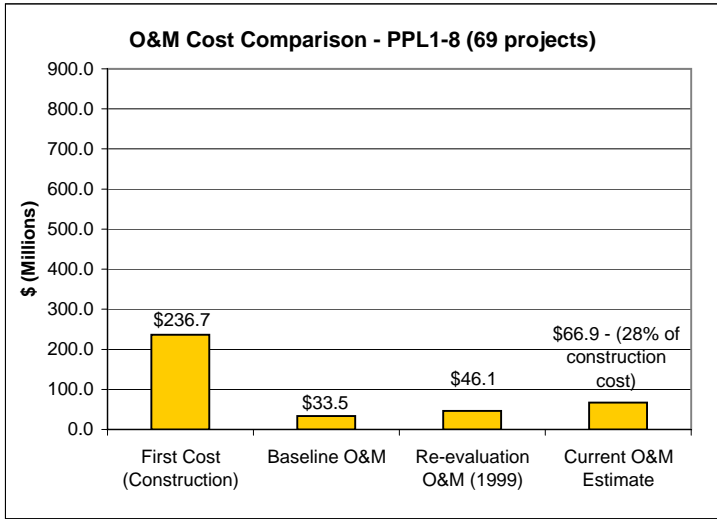
**STATUS OF MONITORING AND O&M WORK ITEMS**

PPL	Proj No.	Agency	Project Type	Project	Project Auth Date	Phase II Approval	Const Compl	First Cost	Baseline O&M Estimate	Re-evaluation \$36,180	Increase 1	Increase 2	Baseline + Increases and Future Increments	Current	Future Increments	Unexpended
<b>Non-Cash Flow Projects</b>																
1	BA-02	NRCS	HM	BA-2 GIWW to Clovelly	Oct-91		Oct-00	\$6,444,428	\$1,952,936	\$1,235,079			\$1,235,079	\$1,235,079		\$1,151,179
1	BA-19	COE	MC	Barataria Bay Marsh Creation	Oct-91		Oct-96	\$1,102,832	\$1,390,602							
1	PO-17	COE	MC	Bayou LaBranche	Oct-91		Apr-94	\$3,543,345			\$560		\$560	\$560		
1	PO-16	FWS	HM	Bayou Sauvage #1	Oct-91		May-96	\$975,501	\$290,087	\$294,364			\$294,364	\$294,364		\$176,170
1	CS-17	FWS	HM	Cameron Creole	Oct-91		Jan-97	\$418,539	\$92,953	\$198,245			\$198,245	\$198,245		\$165,814
1	ME-09	FWS	SP	Cameron Prairie	Oct-91		Aug-94	\$912,887		\$213,059			\$213,059	\$213,059		\$183,630
1	TE-20	EPA	BI	Isles Dernieres (Ph 0)	Oct-91		Jun-99	\$8,250,886								
1	CS-18	FWS	SP	Sabine Wildlife Refuge	Oct-91		Mar-95	\$1,210,753	\$1,218,750	\$294,521			\$294,521	\$294,521		\$280,179
1	TE-17	NRCS	VP	Veg Plntags - Falgout Canal	Oct-91		Dec-96	\$118,405	\$31,537	\$24,375			\$24,375	\$24,375		
1	TE-18	NRCS	BI	Veg Plntags - Timbalier Island	Oct-91		Jul-96	\$195,566	\$31,538	\$24,375			\$24,375	\$24,375		
1	CS-19	NRCS	VP	Veg Plntags - West Hackberry	Oct-91		Mar-94	\$162,290	\$31,538	\$24,375			\$24,375	\$24,375		
1	TV-03	COE	SP	Vermilion River	Oct-91		Feb-96	\$1,695,284	\$204,258	\$235,937			\$235,937	\$235,937		\$162,818
1	MR-03	COE	RD	West Bay	Oct-91		Nov-03	\$6,453,022	\$4,466,403	\$9,955,452	\$5,187,456		\$15,142,908	\$15,142,908		\$7,080,249
2	AT-02	NMFS	RD	Atchafalaya Sediment Del	Oct-92		Mar-98	\$1,866,945		\$452,452			\$452,452	\$452,452		\$441,330
2	PO-18	FWS	HM	Bayou Sauvage #2	Oct-92		May-97	\$993,885	\$283,768	\$367,239			\$367,239	\$367,239		\$176,939
2	AT-03	NMFS	MC	Big Island Mining (Incrmnt 1)	Oct-92		Oct-98	\$6,461,638		\$409,773			\$409,773	\$409,773		\$397,583
2	CS-09	NRCS	HM	Brown Lake	Oct-92		Jan-08	\$1,949,100	\$444,992	\$432,226			\$432,226	\$432,226		\$431,534
2	BS-03a	NRCS	HM	Caernarvon Outfall Mgmt	Oct-92		Jun-02	\$2,526,130	\$94,223	\$94,223	\$951,712	\$126,832	\$1,172,767	\$1,172,767		\$1,013,431
2	CS-22	COE	SP	Clear Marais	Oct-92		Mar-97	\$2,792,476	\$180,279	\$796,394			\$796,394	\$796,394		\$741,495
2	ME-04	NRCS	HM	Freshwater Bayou	Oct-92		Aug-98	\$1,305,271	\$632,201	\$752,457	\$506,109		\$1,258,566	\$1,258,566		\$492,172
2	PO-06	NRCS	HM	Fritchie Marsh	Oct-92		Mar-01	\$1,060,816	\$399,926	\$225,211			\$225,211	\$225,211		\$173,342
2	CS-21	NRCS	HM	Hwy 384	Oct-92		Jan-00	\$317,725	\$149,454	\$345,898			\$345,898	\$345,898		\$168,125
2	TE-24	EPA	BI	Isles Dernieres (Ph 1)	Oct-92		Jun-99	\$10,617,170								
2	BA-20	NRCS	HM	Jonathan Davis Wetland	Oct-92		Oct-92	\$20,759,127	\$323,283	\$554,261	\$2,013,660	\$4,742,683	\$7,310,604	\$7,310,604		\$7,243,416
2	CS-20	NRCS	HM	Mud Lake	Oct-92		Jun-96	\$1,399,437	\$382,306	\$603,955	\$720,000		\$1,323,955	\$1,323,955		
2	TE-22	NMFS	HM	Point Au Fer	Oct-92		May-97	\$2,292,946		\$449,429	\$215,000	\$165,000	\$829,429	\$829,429		\$524,464
2	TV-09	NRCS	SP	Vermilion Bay/Boston Canal	Oct-92		Nov-95	\$679,139	\$196,226	\$195,775			\$195,775	\$195,775		\$162,478
2	TE-23	COE	MC	West Belle Pass	Oct-92		Nov-95	\$6,152,995	\$228,252	\$434,475			\$434,475	\$434,475		\$421,636
3	TE-28	NRCS	HM	Brady Canal Hydro Rest	Oct-93		May-00	\$2,851,182	\$1,267,703	\$1,344,038			\$1,344,038	\$1,344,038		\$477,464
3	CS-04a	NRCS	HM	Cameron Creole Maintenance	Oct-93		Oct-93	\$3,719,926	\$3,719,926		\$2,103,787		\$6,571,519	\$5,840,505	\$731,014	\$2,766,789
3	MR-06	COE	RD	Channel Armor Gap	Oct-93		Nov-97	\$495,207								
3	TV-04	NRCS	HM	Cote Blanche	Oct-93		Dec-98	\$4,593,826	\$386,790	\$649,224	\$1,859,116		\$2,508,340	\$2,508,340		\$2,009,655
3	TE-25	NMFS	BI	East Timbalier #1	Oct-93		May-01	\$3,586,950								
3	TE-26	NMFS	HM	Lake Chapeau	Oct-93		May-99	\$4,202,155		\$429,720	\$225,869		\$1,205,555	\$655,589	\$549,966	\$37,571
3	BA-15	NMFS	SP	Lake Salvador	Oct-93		Jun-98	\$2,421,519	\$280,282	\$106,322	\$193,703		\$300,025	\$300,025		\$8,571
3	PO-19	COE	HM	MIRGO Back Dike	Oct-93											
3	CS-23	FWS	HM	Sabine Structures (Hog Island)	Oct-93		Sep-03	\$3,124,337	\$778,562	\$567,987			\$567,987	\$567,987		\$491,772
3	BA-04c	NRCS	HM	West Pt-a-la-Hache	Oct-93		Oct-93	\$2,401,852	\$145,046	\$829,138			\$829,138	\$829,138		\$829,088
3	TE-27	EPA	BI	Whiskey Island Restoration	Oct-93		Jun-00	\$6,967,273								
4	BA-23	NRCS	SP	BBWW "Dupre Cut" (West)	Dec-94		Nov-00	\$2,135,773	\$116,934	\$746,260			\$746,260	\$746,260		\$608,362
4	TE-30	NMFS	BI	East Timbalier #2	Dec-94		Jan-00	\$7,455,822								
4	CS-25	NRCS	VP	Plowed Terraces Demo	Dec-94		Aug-00	\$280,216		\$3,972			\$3,972	\$3,972		\$642
5	PO-22	COE	SP	Bayou Chevee	Feb-96		Dec-01	\$2,208,532	\$670,058	\$236,693			\$236,693	\$236,693		\$219,442
5	ME-13	NRCS	SP	Freshwater Bayou Bank Stab.	Feb-96		Jun-98	\$1,911,055	\$274,953	\$575,510			\$575,510	\$575,510		
5	TE-10	FWS	FD	Grand Bayou	Feb-96		Feb-96	\$4,239,675	\$1,073,523	\$2,744,800			\$2,744,800	\$2,744,800		\$2,744,800
5	TV-12	NMFS	ST	Little Vermilion	Feb-96		Aug-99	\$548,747		\$193,807			\$193,807	\$193,807		\$175,154
5	BA-03c	NRCS	HM	Naomi	Feb-96		Jul-02	\$1,103,277	\$115,313	\$488,980			\$488,980	\$488,980		\$416,209
5	CS-24	NRCS	SP	Perry Ridge Bank Protection	Feb-96		Feb-99	\$1,710,877	\$69,332	\$424,509			\$424,509	\$424,509		\$402,041
5	TE-29	NRCS	SP	Racon Island Breakwaters	Feb-96		Jul-97	\$1,573,970	\$24,464	\$21,749	\$7,285		\$29,034	\$29,034		\$16,685
5	CS-11b	NRCS	SP	Sweet Lake/Willow Lake, Ph 1	Feb-96		Oct-02	\$3,803,233	\$248,588	\$478,513			\$478,513	\$478,513		\$464,986
6	BA-26	NRCS	SP	BBWW "Dupre Cut" (East)	Apr-97		May-01	\$3,917,187	\$213,968	\$1,228,499			\$1,228,499	\$1,228,499		\$1,182,053
6	CS-27	NMFS	HR	Black Bayou Hydrologic Rest	Apr-97		Nov-03	\$4,540,693	\$409,465	\$592,986			\$592,986	\$592,986		\$505,285
6	TV-16	NRCS	ST	Cheniere au Tigre	Apr-97		Nov-01	\$545,710	\$3,000	\$4,181	\$18,794	\$1,827	\$24,802	\$24,802		\$14,764
6	MR-09	NMFS	SD	Delta-Wide Crevasses	Apr-97		Apr-97	\$769,394	\$3,470,239	\$3,695,207			\$3,695,207	\$3,695,207		\$2,776,131
6	TV-15	NMFS	ST	Jaws Sediment Trapping	Apr-97		May-05	\$2,986,841		\$256,471			\$256,471	\$256,471		\$255,410
6	TE-32a	FWS	FD	Lake Boudreaux	Apr-97		Apr-97	\$6,415,302	\$2,546,363	\$3,245,424			\$3,245,424	\$3,245,424		\$3,245,424
6	TV-14	COE	HR	Marsh Island	Apr-97		Dec-01	\$3,769,541	\$151,479	\$145,447	\$554,553		\$700,000	\$700,000		\$645,307
6	TV-13a	NRCS	HR	Oaks/Avery Canals	Apr-97		Oct-02	\$1,928,516	\$323,026	\$323,000			\$323,000	\$323,000		\$282,861
6	TE-34	NRCS	HR	Penchant Basin	Apr-97		Apr-97	\$11,392,102	\$1,855,804	\$1,855,804			\$1,855,804	\$1,855,804		\$1,855,804
7	BA-27	NRCS	SP	Barataria Landbridge - Ph 1 & 2	Jan-98		Jan-98	\$27,735,099	\$1,460,288	\$1,525,609			\$1,525,609	\$1,525,609		\$1,501,973
7	BA-28	NMFS	VP	Grand Terre	Jan-98		Jul-01	\$284,178	\$39,962	\$62,643			\$62,643	\$62,643		\$60,821
7	ME-14	NMFS	TR	Pecan Island Terracing	Jan-98		Sep-03	\$2,040,411		\$200,006			\$200,006	\$200,006		\$195,764
8	PO-24	NMFS	HR	Hopedale	Jan-99		Jan-05	\$1,342,697	\$449,209	\$449,209			\$449,209	\$449,209		
8	ME-11	NRCS	HR	Humble Canal	Jan-99		Mar-03	\$616,133	\$239,858	\$239,858			\$239,858	\$239,858		\$219,835
8	TV-17	NRCS	HR	Lake Portage	Jan-99		May-04	\$988,890	\$105,143	\$105,143			\$105,143	\$105,143		\$99,254
8	CS-28-1	COE	MC	Sabine Refuge M.C., Cycle 1	Jan-99		Feb-02	\$3,393,998	\$50,174	\$2,003			\$2,003	\$2,003		
8	CS-28-2	COE	MC	Sabine Refuge M.C., Cycle 2	Jan-99		Jan-99	\$9,414,855								
8	CS-28-3	COE	MC	Sabine Refuge M.C., Cycle 3	Jan-99		Jan-99	\$4,495,746								
<b>Total</b>								<b>\$236,651,309</b>	<b>\$33,514,964</b>	<b>\$46,122,980</b>	<b>\$14,557,604</b>	<b>\$5,036,342</b>	<b>\$66,997,906</b>	<b>\$65,716,926</b>	<b>\$1,280,980</b>	<b>\$46,097,700</b>

**STATUS OF MONITORING AND O&M WORK ITEMS**

PPL	Proj No.	Agency	Project Type	Project	Project Auth Date	Phase II Approval	Const Compl	First Cost	Baseline O&M Estimate	Re-evaluation \$36,180	Increase 1	Increase 2	Baseline + Increases and Future Increments	Current	Future Increments	Unexpended	
<b>Cash Flow Projects Approved for Phase II</b>																	
9	BA-27c	NRCS	SP	Barataria Landbridge - Ph 3	Jan-00	Jan-02		\$12,781,000	\$5,748,325				\$5,748,325	\$4,270	\$5,744,055		
9	CS-29	NRCS	HR	Black Bayou Bypass Culverts	Jan-00	Aug-03		\$5,121,593	\$812,972				\$812,972	\$53,464	\$759,508	\$53,464	
9	PO-27	NMFS	VP	Chandeleur Island Rest	Jan-00	Jan-00		\$763,714									
9	TV-18	NMFS	TR	Four-Mile Canal	Jan-00	Jan-03	Jul-01	\$2,248,970	\$1,654,682				\$1,654,682	\$18,858	\$1,635,824	\$2,276	
9	ME-16	USFWS	FD	Freshwater Intro. S of Hwy 82	Jan-00	Oct-04		\$4,893,610	\$1,127,451				\$1,127,451	\$52,397	\$1,075,054	\$52,397	
9	TE-41	USFWS	SP	Mandalay Bank Protection	Jan-00	Jan-00	Sep-03	\$1,646,438	\$12,469				\$12,469	\$12,469	\$9,587		
9	TE-37	EPA	BI	New Cut Dune	Jan-00	Jan-01		\$12,678,829	\$35,829			\$264,171	\$300,000	\$300,000		\$300,000	
9	MR-11	COE	SD	Periodic Intro of Sed & Nutrients	Jan-00	Jan-00			\$511,061				\$511,061	\$56,556	\$454,505	\$45,000	
9	CS-30	NRCS	SP	Perry Ridge 2	Jan-00	Jan-01	Jul-02	\$1,631,810									
9	TE-40	EPA	BI	Timbalier Island Dune	Jan-00	Jan-03		\$16,527,789									
10	BS-11	USFWS	SD	Delta Mgmt at Fort St. Philip	Jan-01	Aug-02		\$1,957,999	\$841,706					\$841,706	\$12,457	\$829,249	\$12,457
10	CS-32	USFWS	HR	East Sabine Lake	Jan-01	Nov-03		\$5,428,090	\$988,410					\$988,410	\$13,367	\$975,043	\$13,367
10	ME-19	USFWS	SP	Grand-White Lake	Jan-01	Aug-02	Oct-04	\$4,587,619	\$4,841,126					\$4,841,126	\$1,128,191	\$3,712,935	\$1,128,191
10	PO-30	EPA	SP	Lake Borgne	Jan-01	Feb-06		\$15,834,368	\$2,739,077					\$2,739,077	\$2,419,098	\$319,979	\$2,419,098
10	TE-44	USFWS	SP	North Lake Merchant	Jan-01	Aug-02		\$28,576,125	\$2,254,028					\$2,254,028	\$325,307	\$1,928,721	\$325,307
10	TE-45	USFWS/EPA	DE	Terrebonne Bay Demo	Jan-01	Jan-01		\$2,004,237	\$48,700					\$48,700	\$48,700	\$48,700	
11	BA-38	NMFS	BI	Barataria Barrier Island	Jan-02	Jan-04		\$65,956,167	\$1,297,477					\$1,297,477	\$237,011	\$1,060,466	\$237,011
11	BA-27d	NRCS	SP	Barataria Landbridge - Ph 4	Jan-02	Jan-04		\$10,279,321	\$11,139,979					\$11,139,979	\$6,621,561	\$4,518,418	\$6,621,561
11	LA-03b	NRCS	HC	Coastwide Nutria Control Prog	Jan-02	Apr-02		\$3,083,981	\$62,897,814					\$62,897,814	\$45,868,146	\$10,735,778	
11	BA-37	NMFS	SP	Little Lake	Jan-02	Nov-03		\$33,852,804	\$4,602,045					\$4,602,045	\$115,320	\$4,486,725	\$115,320
11	BS-35	NMFS	BI	Pass Chalard to Grand Bayou Pass	Jan-02	Feb-06		\$26,521,287	\$3,055,456					\$3,055,456	\$2,449,085	\$606,371	\$2,449,085
11	TE-48	NRCS	SP	Raccoon Island SP	Jan-02	Oct-04		\$7,648,927	\$187,976					\$187,976	\$25,043	\$162,933	\$25,043
11	TE-46	USFWS	SP	West Lake Boudreaux	Jan-02	Feb-06		\$14,408,763	\$3,089,126					\$3,089,126	\$1,543,213	\$1,525,913	\$1,543,213
11	CS-31	NRCS	SP	Holly Beach (Complex)	Aug-01	Aug-01	Mar-03	\$13,509,233	\$340,000					\$340,000	\$340,000	\$298,553	
12	LA-05	NRCS	DE	Freshwater Floating Marsh Demo	Jan-03	Jan-03		\$661,195	\$50,077					\$50,077	\$50,077	\$50,077	
12	ME-22	COE	SP	South White Lake	Jan-03	Oct-04	Aug-06	\$15,660,661	\$3,961,168					\$3,961,168	\$20,466	\$3,940,702	\$20,466
13	LA-06	COE	DE	Shoreline Prot Foun Imprvt	Jan-04	Jan-04	Aug-06	\$804,153									
<b>Total</b>								<b>\$309,066,683</b>	<b>\$112,216,954</b>			<b>\$264,171</b>	<b>\$112,481,125</b>	<b>\$32,876,578</b>	<b>\$79,604,547</b>	<b>\$26,503,683</b>	
<b>Cash Flow Projects Not Approved for Phase II</b>																	
9	AT-04	NMFS	SD	Castille Pass	Jan-00			\$20,945,138	\$10,114,094				\$10,114,094				
9	BA-30	NMFS	BI	East Grand Terre	Jan-00			\$26,997,707	\$3,470,652					\$3,470,652			
9	TV-11b	COE	HR	Freshwater Bayou Canal	Jan-00			\$27,154,588	\$2,896,886					\$2,896,886			
9	ME-17	NRCS	HR	Little Pecan Bayou	Jan-00			\$11,008,599	\$3,132,080					\$3,132,080			
9	PO-26	COE	FD	Opportunistic Use of Bonnet Carre	Jan-00			\$86,854									
9	TE-39	NRCS	FD	South Lake DeCade	Jan-00			\$2,857,785	\$965,345					\$965,345			
9	TV-19	COE	SP	Weeks Bay	Jan-00			\$14,074,874	\$342,427					\$342,427			
10	MR-13	COE	SD	Benny's Bay Diversion	Jan-01			\$14,686,515	\$15,589,101					\$15,589,101			
10	BS-10	COE	SD	Delta Bldg Divr N of Fort St. Philip	Jan-01			\$6,012,500									
10	TE-43	NRCS/USFWS	SP	GIWW Bank Rest in Terrebonne	Jan-01			\$13,299,683	\$4,385,832					\$4,385,832			
10	ME-18	NMFS	SP	Rocketfellar Refuge	Jan-01			\$67,836,000	\$28,060,200					\$28,060,200			
10	BA-34	EPA	FD	Small Freshwater Divr to NW Bara Basin	Jan-01			\$11,260,400	\$2,132,200					\$2,132,200			
11	BA-36	USFWS	MC	Dedicated Dredging on Bara Basin LB	Jan-02			\$36,193,083	\$149,568					\$149,568			
11	ME-21	COE	SP	Grand Lake	Jan-02			\$15,074,391	\$9,024,287					\$9,024,287			
11	PO-29	EPA	SW	Maurepas Swamp Diversion	Aug-01			\$54,636,400	\$2,005,800					\$2,005,800			
11	TE-47	EPA	BI	Ship Shoal: West Flank Restoration	Jan-02			\$52,598,407	\$149,568					\$149,568			
11	ME-20	USFWS	HR	South Grand Cheniere	Jan-02			\$19,307,700	\$679,800					\$679,800			
12	TE-49	COE	SD	Avoca Island LB and Divr	Jan-03			\$17,206,200	\$1,640,200					\$1,640,200			
12	BA-39	EPA	MC	Bayou Dupont	Jan-03			\$24,231,000	\$148,000					\$148,000			
12	PO-21	COE	SP	Lake Borgne/MRGO	Jan-03			\$14,633,352	\$34,872,503					\$34,872,503			
12	MR-12	COE	ST	Mississippi River Sediment Trap	Aug-02			\$52,166,200									
13	TV-20	NRCS	SP	Bayou Sale	Jan-04			\$22,885,300	\$9,200,300					\$9,200,300			
13	PO-33	USFWS	MC	Goose Point	Jan-04			\$20,131,010	\$718,071					\$718,071			
13	MR-14	COE	SD	Spanish Pass	Jan-04			\$12,261,000	\$1,649,400					\$1,649,400			
13	TE-50	EPA	BI	Whiskey Island Backbarrier M.C.	Jan-04			\$21,645,900	\$123,000					\$123,000			
14	TV-21	EPA	MC	East Marsh Island	Feb-05			\$16,587,000	\$220,000					\$220,000			
14	BA-40	NMFS	BI	Riverine/Scofield Island	Feb-05			\$40,711,000	\$3,316,700					\$3,316,700			
14	BA-41	NRCS	SP	South Shore of the Pen	Feb-05			\$14,134,000	\$3,247,900					\$3,247,900			
14	BS-12	NRCS	FD	White Ditch Resurrection	Feb-05			\$12,809,000	\$2,018,192					\$2,018,192			
15	BS-13	COE/EPA	FD	Bayou Lamoque	Feb-06			\$3,997,398	\$601,361					\$601,361			
15	BA-42	USFWS	MC	Lake Hermitage	Feb-06			\$30,367,462	\$2,286,190					\$2,286,190			
15	ME-23	NMFS	FD	South Pecan Island	Feb-06			\$3,802,097	\$616,923					\$616,923			
15	MR-15	COE/EPA	MC	Vernice Ponds	Feb-06			\$7,875,748	\$1,097,532					\$1,097,532			
16	PO-34	COE/NRCS	MP	Alligator Bend	Oct-06			\$18,639,952	\$760,987					\$760,987			
16	TE-53	EPA	DE	Enhancement of Barrier Island Demo	Oct-06			\$732,028	\$186,031					\$186,031			
16	TE-51	NMFS	MC	Madison Bay Marsh Creation	Oct-06			\$31,683,890	\$649,613					\$649,613			
16	ME-24	COE	SP	SW LA Gulf Shoreline	Oct-06			\$16,298,577	\$20,604,821					\$20,604,821			
16	TE-52	NMFS	MC	West Belle Pass Barrier Headland	Oct-06			\$29,406,778	\$3,137,480					\$3,137,480			
<b>Total</b>								<b>\$806,437,516</b>	<b>\$170,193,044</b>				<b>\$170,193,044</b>				
<b>Grand Total</b>								<b>\$1,352,155,508</b>	<b>\$315,924,962</b>	<b>\$46,122,980</b>	<b>\$14,821,775</b>	<b>\$5,036,342</b>	<b>\$349,672,075</b>	<b>\$98,593,504</b>	<b>\$80,885,527</b>	<b>\$72,601,384</b>	

O&M Costs	(Millions) PPL 1-8	(Millions) PPL9+ (approved for Phase II)	(Millions) PPL9+ (NOT approved for Phase II)	
No. of Projects	68	27	38	133
First Cost (Construction)	236.7	309.1	806.4	
Baseline O&M	33.5	112.2	170.2	
Re-evaluation O&M (1999)	46.1	112.2	170.2	
Current O&M Estimate	67.0	112.5	170.2	
	28.31%	36.39%	21.10%	



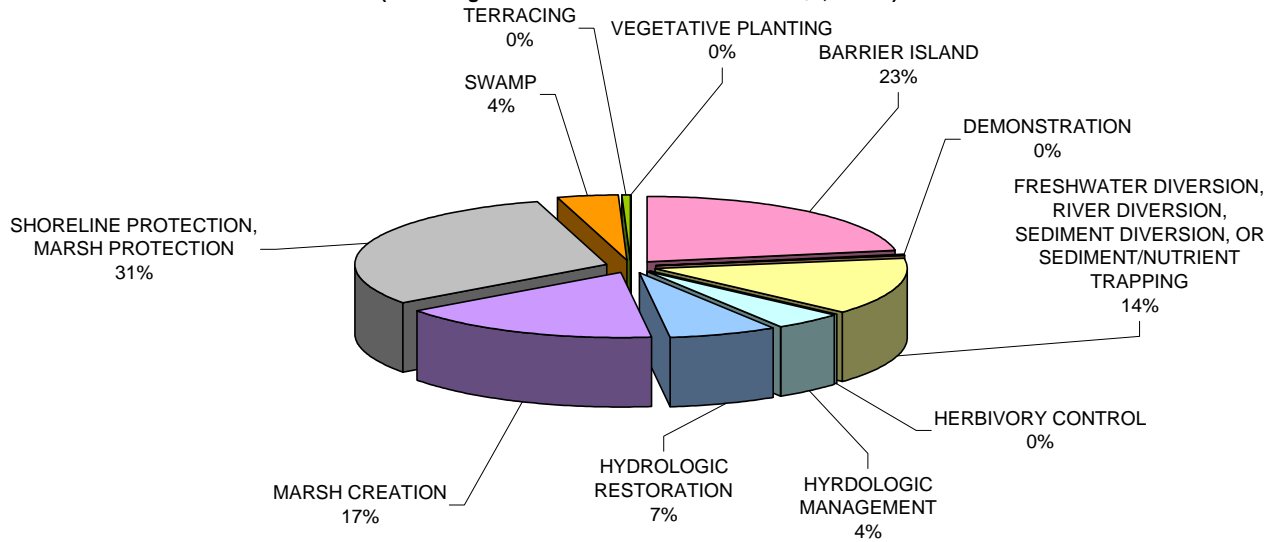
STATUS OF MONITORING AND O&M WORK ITEMS										
PPL	Proj No.	Agency	Project Type	Project	Project Auth Date	Phase II Approval	Const Compl	First Cost	Baseline O&M Estimate	Baseline + Future Increments
1	TE-20	EPA	BI	Isles Dernieres (Ph 0)	Oct-91		Jun-99	\$8,250,886		
1	TE-18	NRCS	BI	Veg Plntgs - Timbalier Island	Oct-91		Jul-96	\$195,566	\$31,538	\$24,375
2	TE-24	EPA	BI	Isles Dernieres (Ph 1)	Oct-92		Jun-99	\$10,617,170		
3	TE-25	NMFS	BI	East Timbalier #1	Oct-93		May-01	\$3,586,950		
3	TE-27	EPA	BI	Whiskey Island Restoration	Oct-93		Jun-00	\$6,967,273		
4	TE-30	NMFS	BI	East Timbalier #2	Dec-94		Jan-00	\$7,455,822		
9	BA-30	NMFS	BI	East Grand Terre	Jan-00			\$26,997,707	\$3,470,652	\$3,470,652
9	TE-37	EPA	BI	New Cut Dune	Jan-00	Jan-01		\$12,678,829	\$35,829	\$300,000
9	TE-40	EPA	BI	Timbalier Island Dune	Jan-00	Jan-03		\$16,527,789		
11	BA-38	NMFS	BI	Barataria Barrier Island	Jan-02	Jan-04		\$65,956,167	\$1,297,477	\$1,297,477
11	BS-35	NMFS	BI	Pass Chaland to Grand Bayou Pass	Jan-02	Feb-06		\$26,521,287	\$3,055,456	\$3,055,456
11	TE-47	EPA	BI	Ship Shoal: West Flank Restoration	Jan-02			\$52,598,407	\$149,568	\$149,568
13	TE-50	EPA	BI	Whiskey Island Backbarrier M.C.	Jan-04			\$21,645,900	\$123,000	\$123,000
14	BA-40	NMFS	BI	Riverine/Scofield Island	Feb-05			\$40,711,000	\$3,316,700	\$3,316,700
<b>BARRIER ISLAND</b>								<b>\$300,710,753</b>	<b>\$11,480,220</b>	<b>\$11,737,228</b>
10	TE-45	USFWS/EPA	DE	Terrebonne Bay Demo	Jan-01	Jan-01		\$2,004,237	\$48,700	\$48,700
12	LA-05	NRCS	DE	Freshwater Floating Marsh Demo	Jan-03	Jan-03		\$661,195	\$50,077	\$50,077
13	LA-06	COE	DE	Shoreline Prot Foun Imprvt	Jan-04	Jan-04	Aug-06	\$804,153		
16	TE-53	EPA	DE	Enhancement of Barrier Island Demo	Oct-06			\$732,028	\$186,031	\$186,031
<b>DEMONSTRATION</b>								<b>\$4,201,613</b>	<b>\$284,808</b>	<b>\$284,808</b>
5	TE-10	FWS	FD	Grand Bayou	Feb-96			\$4,239,675	\$1,073,523	\$2,744,800
6	TE-32a	FWS	FD	Lake Boudreaux	Apr-97			\$6,415,302	\$2,546,363	\$3,245,424
9	ME-16	USFWS	FD	Freshwater Intro. S of Hwy 82	Jan-00	Oct-04		\$4,893,610	\$1,127,451	\$1,127,451
9	PO-26	COE	FD	Opportunistic Use of Bonnet Carre	Jan-00			\$86,854		
9	TE-39	NRCS	FD	South Lake DeCade	Jan-00			\$2,857,785	\$965,345	\$965,345
10	BA-34	EPA	FD	Small Freshwater Divr to NW Bara Basin	Jan-01			\$11,260,400	\$2,132,200	\$2,132,200
14	BS-12	NRCS	FD	White Ditch Resurrection	Feb-05			\$12,809,000	\$2,018,192	\$2,018,192
15	BS-13	COE/EPA	FD	Bayou Lamoque	Feb-06			\$3,997,398	\$601,361	\$601,361
15	ME-23	NMFS	FD	South Pecan Island	Feb-06			\$3,802,097	\$616,923	\$616,923
1	MR-03	COE	RD	West Bay	Oct-91		Nov-03	\$6,453,022	\$4,466,403	\$15,142,908
2	AT-02	NMFS	RD	Atchafalaya Sediment Del	Oct-92		Mar-98	\$1,866,945		\$452,452
3	MR-06	COE	RD	Channel Armor Gap	Oct-93		Nov-97	\$495,207		
6	MR-09	NMFS	SD	Delta-Wide Crevasses	Apr-97			\$769,394	\$3,470,239	\$3,695,207
9	AT-04	NMFS	SD	Castille Pass	Jan-00			\$20,945,138	\$10,114,094	\$10,114,094
9	MR-11	COE	SD	Periodic Intro of Sed & Nutrients	Jan-00	Jan-00				
10	MR-13	COE	SD	Benny's Bay Diversion	Jan-01			\$14,688,515	\$15,589,101	\$15,589,101
10	BS-10	COE	SD	Delta Bldg Divr N of Fort St. Philip	Jan-01			\$6,012,500		
10	BS-11	USFWS	SD	Delta Mgmt at Fort St. Philip	Jan-01	Aug-02		\$1,957,999	\$841,706	\$841,706
12	TE-49	COE	SD	Avoca Island LB and Divr	Jan-03			\$17,206,200	\$1,640,200	\$1,640,200
13	MR-14	COE	SD	Spanish Pass	Jan-04			\$12,261,000	\$1,649,400	\$1,649,400
5	TV-12	NMFS	ST	Little Vermilion	Feb-96		Aug-99	\$548,747		\$193,807
6	TV-16	NRCS	ST	Cheniere au Tigre	Apr-97		Nov-01	\$545,710	\$3,000	\$24,802
6	TV-15	NMFS	ST	Jaws Sediment Trapping	Apr-97		May-05	\$2,986,841		\$256,471
12	MR-12	COE	ST	Mississippi River Sediment Trap	Aug-02			\$52,166,200		
<b>FRESHWATER DIVERSION, RIVER DIVERSION, SEDIMENT DIVERSION, OR SEDIMENT/NUTRIENT TRAPPING</b>								<b>\$189,265,539</b>	<b>\$48,855,501</b>	<b>\$63,051,844</b>
11	LA-03b	NRCS	HC	Coastwide Nutria Control Prog	Jan-02	Apr-02		\$3,083,981	\$62,897,814	\$62,897,814
<b>HERBIVORY CONTROL</b>								<b>\$3,083,981</b>	<b>\$62,897,814</b>	<b>\$62,897,814</b>
1	BA-02	NRCS	HM	BA-2 GIWW to Clovelly	Oct-91		Oct-00	\$6,444,428	\$1,952,936	\$1,235,079
1	PO-16	FWS	HM	Bayou Sauvage #1	Oct-91		May-96	\$975,501	\$290,087	\$294,364
1	CS-17	FWS	HM	Cameron Creole	Oct-91		Jan-97	\$418,539	\$92,953	\$198,245
2	PO-18	FWS	HM	Bayou Sauvage #2	Oct-92		May-97	\$993,885	\$283,768	\$367,239
2	CS-09	NRCS	HM	Brown Lake	Oct-92		Jan-08	\$1,949,100	\$444,992	\$432,226
2	BS-03a	NRCS	HM	Caernarvon Outfall Mgmt	Oct-92		Jun-02	\$2,526,130	\$94,223	\$1,172,767
2	ME-04	NRCS	HM	Freshwater Bayou	Oct-92		Aug-98	\$1,305,271	\$632,201	\$1,258,566
2	PO-06	NRCS	HM	Fritchie Marsh	Oct-92		Mar-01	\$1,060,816	\$399,926	\$225,211
2	CS-21	NRCS	HM	Hwy 384	Oct-92		Jan-00	\$317,725	\$149,454	\$345,898
2	BA-20	NRCS	HM	Jonathan Davis Wetland	Oct-92			\$20,759,127	\$323,283	\$7,310,604
2	CS-20	NRCS	HM	Mud Lake	Oct-92		Jun-96	\$1,399,437	\$382,306	\$1,323,955
2	TE-22	NMFS	HM	Point Au Fer	Oct-92		May-97	\$2,292,946		\$829,429
3	TE-28	NRCS	HM	Brady Canal Hydro Rest	Oct-93		May-00	\$2,851,182	\$1,267,703	\$1,344,038
3	CS-04a	NRCS	HM	Cameron Creole Maintenance	Oct-93				\$3,719,926	\$6,571,519
3	TV-04	NRCS	HM	Cote Blanche	Oct-93		Dec-98	\$4,593,826	\$386,790	\$2,508,340
3	TE-26	NMFS	HM	Lake Chapeau	Oct-93		May-99	\$4,202,155		\$1,205,555
3	PO-19	COE	HM	MRGO Back Dike	Oct-93					
3	CS-23	FWS	HM	Sabine Structures (Hog Island)	Oct-93		Sep-03	\$3,124,337	\$778,562	\$567,987
3	BA-04c	NRCS	HM	West Pt-a-la-Hache	Oct-93			\$2,401,852	\$145,046	\$829,138
5	BA-03c	NRCS	HM	Naomi	Feb-96		Jul-02	\$1,103,277	\$115,313	\$488,980
<b>HYDROLOGIC MANAGEMENT</b>								<b>\$58,719,534</b>	<b>\$11,459,469</b>	<b>\$28,509,140</b>
6	CS-27	NMFS	HR	Black Bayou Hydrologic Rest	Apr-97		Nov-03	\$4,540,693	\$409,465	\$592,986
6	TV-14	COE	HR	Marsh Island	Apr-97		Dec-01	\$3,769,541	\$151,479	\$700,000
6	TV-13a	NRCS	HR	Oaks/Avery Canals	Apr-97		Oct-02	\$1,928,516	\$323,026	\$323,000
6	TE-34	NRCS	HR	Penchant Basin	Apr-97			\$11,392,102	\$1,855,804	\$1,855,804
8	PO-24	NMFS	HR	Hopedale	Jan-99		Jan-05	\$1,342,697	\$449,209	\$449,209
8	ME-11	NRCS	HR	Humble Canal	Jan-99		Mar-03	\$616,133	\$239,858	\$239,858
8	TV-17	NRCS	HR	Lake Portage	Jan-99		May-04	\$988,890	\$105,143	\$105,143
9	CS-29	NRCS	HR	Black Bayou Bypass Culverts	Jan-00	Aug-03		\$5,121,593	\$812,972	\$812,972
9	TV-11b	COE	HR	Freshwater Bayou Canal	Jan-00			\$27,154,588	\$2,896,886	\$2,896,886
9	ME-17	NRCS	HR	Little Pecan Bayou	Jan-00			\$11,008,599	\$3,132,080	\$3,132,080
10	CS-32	USFWS	HR	East Sabine Lake	Jan-01	Nov-03		\$5,428,090	\$988,410	\$988,410
11	ME-20	USFWS	HR	South Grand Cheniere	Jan-02			\$19,307,700	\$679,800	\$679,800
<b>HYDROLOGIC RESTORATION</b>								<b>\$92,599,142</b>	<b>\$12,044,132</b>	<b>\$12,776,148</b>

STATUS OF MONITORING AND O&M WORK ITEMS										
PPL	Proj No.	Agency	Project Type	Project	Project Auth Date	Phase II Approval	Const Compl	First Cost	Baseline O&M Estimate	Baseline + Future Increments
1	BA-19	COE	MC	Barataria Bay Marsh Creation	Oct-91		Oct-96	\$1,102,832	\$1,390,602	
1	PO-17	COE	MC	Bayou LaBranche	Oct-91		Apr-94	\$3,543,345		\$560
2	AT-03	NMFS	MC	Big Island Mining (Incrmnt 1)	Oct-92		Oct-98	\$6,461,638		\$409,773
2	TE-23	COE	MC	West Belle Pass	Oct-92			\$6,152,995	\$228,252	\$434,475
8	CS-28-1	COE	MC	Sabine Refuge M.C., Cycle 1	Jan-99		Feb-02	\$3,393,998	\$50,174	\$2,003
8	CS-28-2	COE	MC	Sabine Refuge M.C., Cycle 2	Jan-99			\$9,414,855		
8	CS-28-3	COE	MC	Sabine Refuge M.C., Cycle 3	Jan-99			\$4,495,746		
11	BA-36	USFWS	MC	Dedicated Dredging on Bara Basin LB	Jan-02			\$36,193,083	\$149,568	\$149,568
12	BA-39	EPA	MC	Bayou Dupont	Jan-03			\$24,231,000	\$148,000	\$148,000
13	PO-33	USFWS	MC	Goose Point	Jan-04			\$20,131,010	\$718,071	\$718,071
14	TV-21	EPA	MC	East Marsh Island	Feb-05			\$16,587,000	\$220,000	\$220,000
15	BA-42	USFWS	MC	Lake Hermitage	Feb-06			\$30,367,462	\$2,286,190	\$2,286,190
15	MR-15	COE/EPA	MC	Venice Ponds	Feb-06			\$7,875,748	\$1,097,532	\$1,097,532
16	TE-51	NMFS	MC	Madison Bay Marsh Creation	Oct-06			\$31,683,890	\$649,613	\$649,613
16	TE-52	NMFS	MC	West Belle Pass Barrier Headland	Oct-06			\$29,406,778	\$3,137,480	\$3,137,480
<b>MARSH CREATION</b>								<b>\$231,041,380</b>	<b>\$10,075,482</b>	<b>\$9,253,265</b>
1	ME-09	FWS	SP	Cameron Prairie	Oct-91		Aug-94	\$912,887		\$213,059
1	CS-18	FWS	SP	Sabine Wildlife Refuge	Oct-91		Mar-95	\$1,210,753	\$1,218,750	\$294,521
1	TV-03	COE	SP	Vermilion River	Oct-91		Feb-96	\$1,695,284	\$204,258	\$235,937
2	CS-22	COE	SP	Clear Marais	Oct-92		Mar-97	\$2,792,476	\$180,279	\$796,394
2	TV-09	NRCS	SP	Vermilion Bay/Boston Canal	Oct-92		Nov-95	\$679,139	\$196,226	\$195,775
3	BA-15	NMFS	SP	Lake Salvador	Oct-93		Jun-98	\$2,421,519	\$280,282	\$300,025
4	BA-23	NRCS	SP	BBWW "Dupre Cut" (West)	Dec-94		Nov-00	\$2,135,773	\$116,934	\$746,260
5	PO-22	COE	SP	Bayou Chevee	Feb-96		Dec-01	\$2,208,532	\$670,058	\$236,693
5	ME-13	NRCS	SP	Freshwater Bayou Bank Stab.	Feb-96		Jun-98	\$1,911,055	\$274,953	\$575,510
5	CS-24	NRCS	SP	Perry Ridge Bank Protection	Feb-96		Feb-99	\$1,710,877	\$69,332	\$424,509
5	TE-29	NRCS	SP	Raccoon Island Breakwaters	Feb-96		Jul-97	\$1,573,970	\$24,464	\$29,034
5	CS-11b	NRCS	SP	Sweet Lake/Willow Lake, Ph 1	Feb-96		Oct-02	\$3,603,233	\$248,588	\$478,513
6	BA-26	NRCS	SP	BBWW "Dupre Cut" (East)	Apr-97		May-01	\$3,917,187	\$213,968	\$1,228,499
7	BA-27	NRCS	SP	Barataria Landbridge - Ph 1 & 2	Jan-98			\$27,735,099	\$1,460,288	\$1,525,609
9	BA-27c	NRCS	SP	Barataria Landbridge - Ph 3	Jan-00	Jan-02		\$12,781,000	\$5,748,325	\$5,748,325
9	TE-41	USFWS	SP	Mandalay Bank Protection	Jan-00	Jan-00	Sep-03	\$1,646,438	\$12,469	\$12,469
9	CS-30	NRCS	SP	Perry Ridge 2	Jan-00	Jan-01	Jul-02	\$1,631,810	\$511,061	\$511,061
9	TV-19	COE	SP	Weeks Bay	Jan-00			\$14,074,874	\$342,427	\$342,427
10	TE-43	NRCS/USFWS	SP	GIWW Bank Rest in Terrebonne	Jan-01			\$13,299,683	\$4,385,832	\$4,385,832
10	ME-19	USFWS	SP	Grand-White Lake	Jan-01	Aug-02	Oct-04	\$4,587,619	\$4,841,126	\$4,841,126
10	PO-30	EPA	SP	Lake Borgne	Jan-01	Feb-06		\$15,834,368	\$2,739,077	\$2,739,077
10	TE-44	USFWS	SP	North Lake Merchant	Jan-01	Aug-02		\$28,576,125	\$2,254,028	\$2,254,028
10	ME-18	NMFS	SP	Rockefeller Refuge	Jan-01			\$67,836,000	\$28,060,200	\$28,060,200
11	BA-27d	NRCS	SP	Barataria Landbridge - Ph 4	Jan-02	Jan-04		\$10,279,321	\$11,139,979	\$11,139,979
11	ME-21	COE	SP	Grand Lake	Jan-02			\$15,074,391	\$9,024,287	\$9,024,287
11	BA-37	NMFS	SP	Little Lake	Jan-02	Nov-03		\$33,852,804	\$4,602,045	\$4,602,045
11	TE-48	NRCS	SP	Raccoon Island SP	Jan-02	Oct-04		\$7,646,927	\$187,976	\$187,976
11	TE-46	USFWS	SP	West Lake Boudreaux	Jan-02	Feb-06		\$14,408,763	\$3,069,126	\$3,069,126
11	CS-31	NRCS	SP	Holly Beach (Complex)	Aug-01	Aug-01	Mar-03	\$13,509,233	\$340,000	\$340,000
12	PO-21	COE	SP	Lake Borgne/MRGO	Jan-03			\$14,633,352	\$34,872,503	\$34,872,503
12	ME-22	COE	SP	South White Lake	Jan-03	Oct-04	Aug-06	\$15,660,661	\$3,961,168	\$3,961,168
13	TV-20	NRCS	SP	Bayou Sale	Jan-04			\$22,885,300	\$9,200,300	\$9,200,300
14	BA-41	NRCS	SP	South Shore of the Pen	Feb-05			\$14,134,000	\$3,247,900	\$3,247,900
16	ME-24	COE	SP	SW LA Gulf Shoreline	Oct-06			\$16,298,577	\$20,604,821	\$20,604,821
16	PO-34	COE/NRCS	MP	Alligator Bend	Oct-06			\$18,839,952	\$760,987	\$760,987
<b>SHORELINE PROTECTION, MARSH PROTECTION</b>								<b>\$411,998,982</b>	<b>\$155,064,017</b>	<b>\$157,185,975</b>
11	PO-29	EPA	SW	Maurepas Swamp Diversion	Aug-01			\$54,636,400	\$2,005,800	\$2,005,800
<b>SWAMP</b>								<b>\$54,636,400</b>	<b>\$2,005,800</b>	<b>\$2,005,800</b>
7	ME-14	NMFS	TR	Pecan Island Terracing	Jan-98		Sep-03	\$2,040,411		\$200,006
9	TV-18	NMFS	TR	Four-Mile Canal	Jan-00	Jan-03	May-04	\$2,248,970	\$1,654,682	\$1,654,682
<b>TERRACING</b>								<b>\$4,289,381</b>	<b>\$1,654,682</b>	<b>\$1,854,688</b>
1	TE-17	NRCS	VP	Veg Plntgs - Falgout Canal	Oct-91		Dec-96	\$118,405	\$31,537	\$24,375
1	CS-19	NRCS	VP	Veg Plntgs - West Hackberry	Oct-91		Mar-94	\$162,290	\$31,538	\$24,375
4	CS-25	NRCS	VP	Plowed Terraces Demo	Dec-94		Aug-00	\$280,216		\$3,972
7	BA-28	NMFS	VP	Grand Terre	Jan-98		Jul-01	\$284,178	\$39,962	\$62,643
9	PO-27	NMFS	VP	Chandeleur Island Rest	Jan-00	Jan-00	Jul-01	\$763,714		
<b>VEGETATIVE PLANTING</b>								<b>\$1,608,803</b>	<b>\$103,037</b>	<b>\$115,365</b>
								<b>#####</b>	<b>\$315,924,962</b>	<b>\$349,672,075</b>
								<b>First Cost</b>	<b>Baseline</b>	<b>Baseline +</b>
								<b>O&amp;M Estimate</b>	<b>Future Increments</b>	
<b>BARRIER ISLAND</b>								<b>\$300,710,753</b>	<b>\$11,480,220</b>	<b>\$11,737,228</b>
<b>DEMONSTRATION</b>								<b>\$4,201,613</b>	<b>\$284,808</b>	<b>\$284,808</b>
<b>FRESHWATER DIVERSION, RIVER DIVERSION, SEDIMENT DIVERSION, OR SEDIMENT/NUTRIENT TRAPPING</b>								<b>\$189,265,539</b>	<b>\$48,855,501</b>	<b>\$63,051,844</b>
<b>HERBIVORY CONTROL</b>								<b>\$3,083,981</b>	<b>\$62,897,814</b>	<b>\$62,897,814</b>
<b>HYDROLOGIC MANAGEMENT</b>								<b>\$58,719,534</b>	<b>\$11,459,469</b>	<b>\$28,509,140</b>
<b>HYDROLOGIC RESTORATION</b>								<b>\$92,599,142</b>	<b>\$12,044,132</b>	<b>\$12,776,148</b>
<b>MARSH CREATION</b>								<b>\$231,041,380</b>	<b>\$10,075,482</b>	<b>\$9,253,265</b>
<b>SHORELINE PROTECTION, MARSH PROTECTION</b>								<b>\$411,998,982</b>	<b>\$155,064,017</b>	<b>\$157,185,975</b>
<b>SWAMP</b>								<b>\$54,636,400</b>	<b>\$2,005,800</b>	<b>\$2,005,800</b>
<b>TERRACING</b>								<b>\$4,289,381</b>	<b>\$1,654,682</b>	<b>\$1,854,688</b>
<b>VEGETATIVE PLANTING</b>								<b>\$1,608,803</b>	<b>\$103,037</b>	<b>\$115,365</b>
								<b>#####</b>	<b>\$315,924,962</b>	<b>\$349,672,075</b>

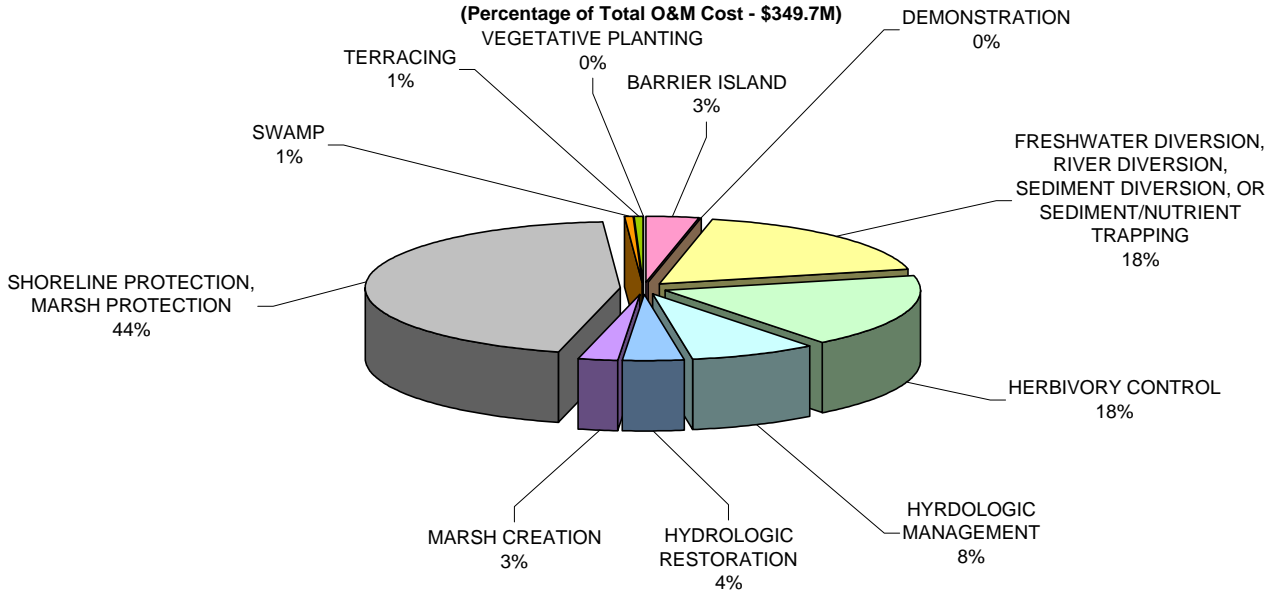
**STATUS OF MONITORING AND O&M WORK ITEMS**

PPL	Proj No.	Agency	Project Type	Project	Project Auth Date	Phase II Approval	Const Compl	First Cost	Baseline O&M Estimate	Baseline + Increases and Future Increments
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**First Construction Cost by Project Type**  
 (Percentage of Total First Construction Cost - \$1,352.2M)



**O&M Cost by Project Type**  
 (Percentage of Total O&M Cost - \$349.7M)



## CWPPRA: Project Types

BI	Barrier Island
CP	Conservation Plan
DE	Demo
DS	Project Design Only
FD	Freshwater Diversion
HC	Herbivory Control
HM	Hydrologic Management
HR	Hydrologic Restoration
IR	Island Restoration
MC	Marsh Creation
MM	Marsh Management
MP	Marsh Protection
MT	Monitoring
OM	O&M
RD	Riverine Diversion
SD	Sediment Diversion
SP	Shoreline Protection
ST	Sediment/Nutrient Trapping
SW	Swamp
TR	Terracing
VP	Vegetative Plantings
WC	Wetland Creation



COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**DISCUSSION: COASTWIDE REFERENCE MONITORING SYSTEM (CRMS)-  
WETLANDS MONITORING**

CRMS Summary  
CWPPRA Technical Committee Meeting  
December 6, 2006

Questions from the Technical Committee and Task Force:

**1) Summary of current data available (at what locations is data available? What type of data is available?)**

*CRMS data currently available through DNR SONRIS database/website, USGS website, or CRMS project page on CWPPRA website:*

*Continuous Hydrographic – 68 CRMS sites*

*Porewater Salinity – 93 CRMS sites*

*Soil Properties – 85 CRMS sites*

*Surface Elevation – 26 CRMS sites*

*Aerial photography (collected in 2005) – 91 CRMS sites*

*Satellite Imagery (collected in 2005) - coastwide*

*Additional CRMS data that will be available in the short-term pending finalization of QA/QC procedures:*

*Continuous Hydrographic – 35 CRMS sites, plus additional data not currently in the SONRIS database from other 68 CRMS sites*

*Vegetation – 221 CRMS sites*

*Aerial photography – 14 CRMS sites*

**2) Landrights issues and what percentage of stations will not be able to be located as planned due to landrights? How does this impact the ability to monitor on a coast-wide basis?**

*Most landrights issues are being resolved and now only the area around the Biloxi Marshes in the extreme eastern end of the Pontchartrain Basin is not available to establish CRMS sites. This will not impact the CRMS design or the ability to effectively monitor on a coast-wide basis. Currently, landrights have been secured on 85% of all CRMS year-one sites.*

**3) When do we get beyond the “start point” and begin to see results (at what point can the data collected be useful to analyze data on a coast-wide basis)?**

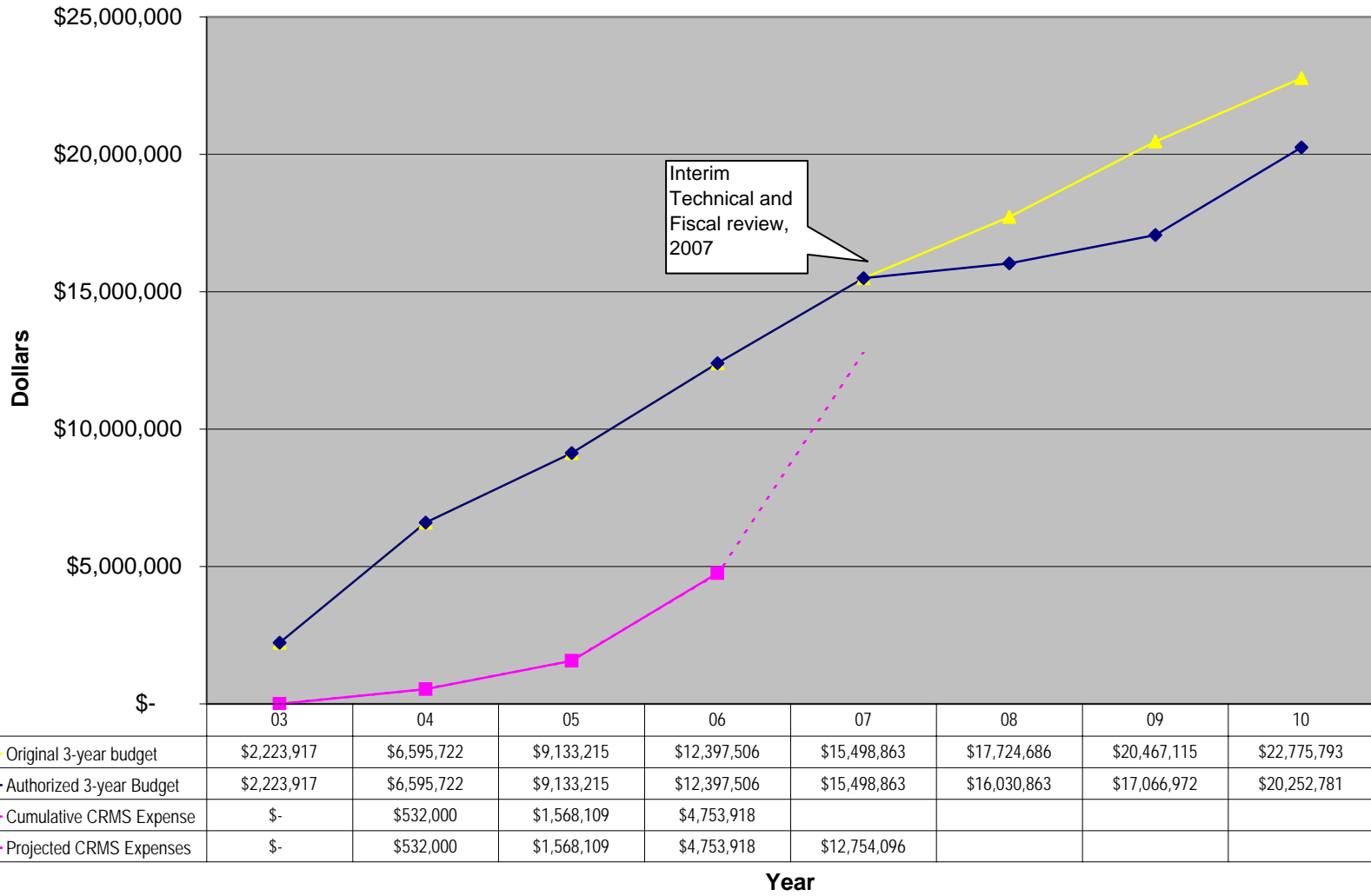
*The CRMS coastwide satellite imagery that was collected in October 2005 has been used to assess new open water areas that formed across the coast following the hurricanes of 2005 (Barras 2006) and to assess CWPPRA project impacts. The results of this work have been critical in establishing a new baseline condition for restoration planning and assessment in coastal Louisiana. The current starting point for the collection of temporal data is set for March 2007. At this time, we anticipate having all year-one CRMS sites established and collecting data. The results from the first year of data collection will be used to establish the base vegetation, hydrology and soil conditions in project and reference areas across the coast. The first set of summary analyses will be performed in the summer of 2008 in order to be available for the fall 2008 cycle of CWPPRA meetings (i.e., P&E, Technical Committee, Task Force). However,*

*all raw data will be available as it is collected and can be used to make short-term project-level assessments or to answer other specific questions. The CRMS data will also be used to augment project specific data in the OM&M reports.*

**4) An analysis of expenditures per year versus funds in-hand (does the \$15M in-hand represent the amount needed over the next 3 years (3-year rolling amount of funds) and given an average expenditure rate of \$3M/year – should available funds in-hand be \$9M?). Need to show that funds requested are what is needed over the upcoming 3 years and not just “replace last year’s expenditures” when requesting funding each year.**

*See attached graph for a summary of the projected CRMS budget and CRMS expenditures to date. CRMS expenditures will “catch-up” with budget requests as we move toward meeting our March 2007 target to have all year-one sites constructed and collecting data.*

### CRMS Monitoring Budget



COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**ADDITIONAL AGENDA ITEMS:**

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**ANNOUNCEMENT: PRIORITY PROJECT LIST 17 REGIONAL PLANNING TEAM MEETINGS**

January 9, 2007	Region IV Planning Team Meeting (Rockefeller Refuge)
January 10, 2007	Region III Planning Team Meeting (Morgan City)
January 11, 2007	Regions I and II Planning Team Meetings (New Orleans)
February 7, 2007	Coast-wide RPT Voting Meeting (Baton Rouge)

**INTERESTED PARTIES****Breaux Act****Coastal Wetlands Planning, Protection and Restoration Act****Regional Planning Team (RPT) Basin Subcommittee Meetings****For the 17<sup>th</sup> Priority Project List****PLEASE READ CAREFULLY**

The CWPPRA Regional Planning Teams (RPT) will meet to develop projects for inclusion into the upcoming 17th Priority Project List (PPL17). At these meetings coastal restoration projects for each coastal region may be proposed. Coastal restoration projects, located within a specific hydrologic basin and region, may be proposed at each Regional Planning Team Meeting (see reverse for a map). The RPTs will examine basin maps, discuss areas of need and Coast 2050 strategies and will accept proposals by hydrologic basin. These proposals will be considered as possible nominees for the PPL 17 project evaluation process. Proposals for demonstration projects will also be accepted at the four RPT meetings. The RPTs will not vote at their individual regional meetings; rather voting for possible nominees will be conducted during a separate coast-wide meeting to be held on February 7, 2007. At the initial RPT meetings, parishes will be asked to identify their official parish representative who will vote at the coast-wide meeting. Parishes will be allowed to vote for demo projects and for nominees in basins that fall within their parish boundaries. At the coast-wide voting meeting two projects per basin will be chosen as nominees (three from Barataria and Terrebonne because of their high loss rates) and 6 demonstration projects will be selected. The final PPL17 Selection Process can be found on the web at [http://www.mvn.usace.army.mil/pd/cwppra\\_mission.htm](http://www.mvn.usace.army.mil/pd/cwppra_mission.htm).

All meetings will be co-chaired by the RPT leader and either a member of the U.S. Army Corps of Engineers or LA Department of Natural Resources to ensure consistency with procedures coast-wide. These meetings will have a formal agenda and written procedures. After the coast-wide voting meeting a lead agency will be assigned to each nominated project in order to develop fact sheets. Schedules for the meetings are given below.

**RPT Meetings (to accept project and demo nominations)**

<b>Region 4</b>	January 9, 2007	10:00 a.m. to 2:00 p.m.	Rockefeller Refuge
<b>Region 3</b>	January 10, 2007	9:00 a.m. to 3:00 p.m.	Morgan City Auditorium
<b>Region 2</b>	January 11, 2007	9:00 a.m. to 12:00 noon	Army Corps of Engineers New Orleans District
<b>Region 1</b>	January 11, 2007	1:00 p.m. to 3:00 p.m.	Army Corps of Engineers New Orleans District

**Coast-wide (All Regions) RPT Voting Meeting (to select up to 20 nominees and 6 demos)**

February 7, 2007 9:30 a.m. to 12:30 p.m. LA Department of Wildlife and Fisheries  
Baton Rouge

**RPT Leaders**

Region 1	Dan Llewellyn	LA Department of Natural Resources
Region 2	Greg Miller	U.S. Army Corps of Engineers
Region 3	Ronnie Paille	U.S. Fish and Wildlife Service
Region 4	Darryl Clark	U.S. Fish and Wildlife Service

More information regarding CWPPRA activities may be found at the following site:

[www.lacoast.gov/cwppra/](http://www.lacoast.gov/cwppra/)

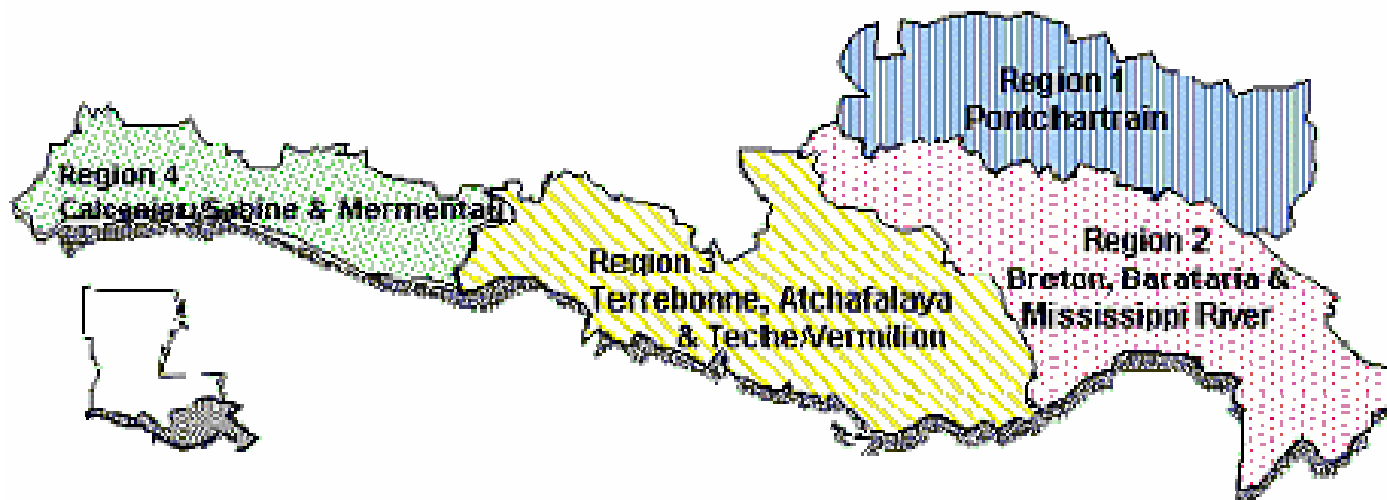
or

[www.mvn.usace.army.mil/pd/cwppra\\_mission.htm](http://www.mvn.usace.army.mil/pd/cwppra_mission.htm)

If you have any questions, please call Ms. Julie Z. LeBlanc, at (504) 862-1597.

Ms. Julie Z. LeBlanc – Chairman  
Planning and Evaluation Subcommittee

## Coastal Wetlands Planning, Protection and Restoration Act Regions and Basins Map



### **Region**

- Region 1 –
- Region 2 –
- Region 3 –
- Region 4 –

### **Basin**

- Pontchartrain
- Breton, Barataria, and Mississippi River
- Terrebonne, Atchafalaya and Teche/Vermillion
- Calacsieu/Sabine and Mermentau

### **Meeting Location Addresses**

Rockefeller Wildlife Refuge  
 Rockefeller Refuge (Camp next to Headquarters Building.)  
 Grand Cheniere, Louisiana  
 The refuge is located 14 Miles east of Grand Cheniere, just South of Highway 82.

Morgan City Auditorium  
 West Concourse  
 728 Myrtle St.  
 Morgan City, LA

U.S. Army Corps of Engineers -New Orleans District  
 District Assembly Room  
 7400 Leake Ave.  
 New Orleans, LA

LA Department of Wildlife and Fisheries  
 Louisiana Room  
 2000 Quail Dr.  
 Baton Rouge, La.



## APPENDIX A

### PRIORITY LIST 17 SELECTION PROCESS

#### **Coastal Wetlands Planning, Protection and Restoration Act Guidelines for Development of the 17<sup>th</sup> Priority Project List FINAL, 12 Jul 06**

##### I. Development of Supporting Information

A. COE staff prepares spreadsheets indicating status of all restoration projects (CWPPRA PL 1-16; 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 1-16; 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 October 2006.
- 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 present and vote for nominees (including demonstration project nominees). The RPTs will choose no more than two projects per basin, except that three projects may be selected from Terrebonne and Barataria Basins because of the high loss rates in those basins. A total of up to 20 projects could be selected as nominees. Selection of the projects nominated per basin will be by consensus, if possible. If voting is required, 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. 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 17<sup>th</sup> Priority Project List

A. The selection of the 17<sup>th</sup> PPL will occur at the Fall Technical Committee and Task Force meetings.

B. Technical Committee meets and considers matrix, Project Information Sheets, and public comments. The Technical Committee will recommend up to four projects for selection to the 17<sup>th</sup> PPL. The Technical Committee may also recommend demonstration projects for the 17<sup>th</sup> PPL.

C. The CWPPRA Task Force will review the TC recommendations and determine which projects will receive Phase 1 funding for the 17<sup>th</sup> PPL.

D. The CPRA reviews projects on the 17<sup>th</sup> Priority List and considers for Phase I approval and inclusion in the upcoming Comprehensive Master Coastal Protection Plan.

## 17<sup>th</sup> Priority List Project Development Schedule (dates subject to change)

November 2006	Distribute public announcement of PPL17 process and schedule
January 9, 2007	Region IV Planning Team Meeting (Rockefeller Refuge)
January 10, 2007	Region III Planning Team Meeting (Morgan City)
January 11, 2007	Regions I and II Planning Team Meetings (New Orleans)
January 31, 2007	Task Force Meeting (Baton Rouge)
February 7, 2007	Coast-wide RPT Voting Meeting (Baton Rouge)
February 19, 2007	President's Day Holiday
February 20, 2007	Mardi Gras
February 1 – February 24	Agencies prepare fact sheets for RPT nominated projects
February 28 – March 1, 2007	Engineering/ Environmental work groups review project features, benefits & prepare preliminary cost estimates for nominated projects (Baton Rouge)
March 2, 2007	P&E Subcommittee prepares matrix of nominated projects showing initial cost estimates
March 14, 2007	Technical Committee meets to select PPL17 candidate projects (New Orleans)
April 11, 2007	Spring Task Force meeting (Lafayette)
April/May	Candidate project site visits
May/June/July/ August	Env/Eng/Econ work group project evaluations
June 13, 2007	Technical Committee meeting (Baton Rouge)
July 11, 2007	Task Force meeting (New Orleans) – announce public meetings
August 29, 2007	PPL 17 Public Meeting (Abbeville)
August 30, 2007	PPL 17 Public Meeting (New Orleans)
September 12, 2007	Technical Committee meeting - recommend PPL17 (New Orleans)
October 17, 2007	Task Force meeting to select PPL 17 (New Orleans)
December 5, 2007	Technical Committee meeting (Baton Rouge)
January 2008	RPT meetings for PPL 18
January 30, 2008	Task Force meeting (Baton Rouge)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**DATE OF UPCOMING TASK FORCE MEETING**

The next Task Force meeting will be held January 31, 2007 at the LA Department of Wildlife and Fisheries in Baton Rouge, LA.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TECHNICAL COMMITTEE MEETING

December 6, 2006

**ANNOUNCEMENT: DATES AND LOCATIONS OF UPCOMING CWPPRA MEETINGS:**

<b>2007</b>			
January 9, 2007	10:00 a.m.	RPT Region IV	Rockefeller Refuge
January 10, 2007	9:00 a.m.	RPT Region III	Morgan City
January 11, 2007	9:00 a.m.	RPT Region II	New Orleans
January 11, 2007	1:00 p.m.	RPT Region I	New Orleans
January 31, 2007	9:30 a.m.	Task Force	Baton Rouge
February 7, 2007	9:30 a.m.	Coast-wide RPT Voting	Baton Rouge
March 14, 2007	9:30 a.m.	Technical Committee	New Orleans
April 11, 2007	9:30 a.m.	Task Force	Lafayette
June 13, 2007	9:30 a.m.	Technical Committee	Baton Rouge
July 11, 2007	9:30 a.m.	Task Force	New Orleans
August 29, 2007	7:00 p.m.	PPL17 Public Meeting	Abbeville
August 30, 2007	7:00 p.m.	PPL17 Public Meeting	New Orleans
September 12, 2007	9:30 a.m.	Technical Committee	New Orleans
October 17, 2007	9:30 a.m.	Task Force	New Orleans
December 5, 2007	9:30 a.m.	Technical Committee	Baton Rouge
<b>2008</b>			
January 30, 2008	9:30 a.m.	Task Force	Baton Rouge