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

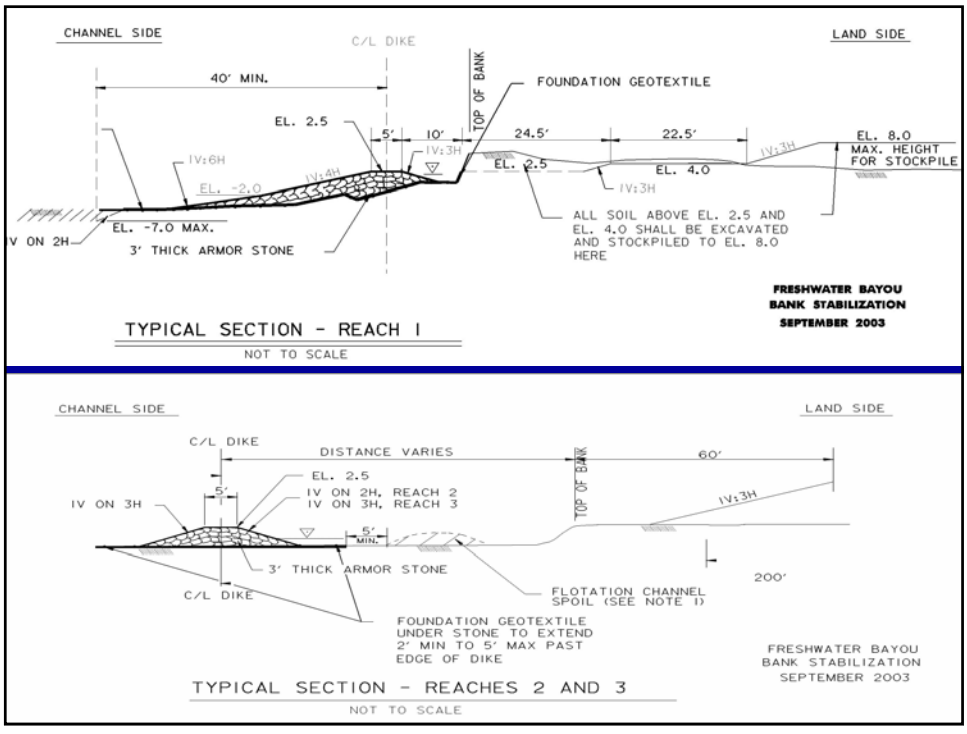
December 2006

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?

Freshwater Bayou Canal
Vermilion Parish, LA

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 9th 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.

TV-11b Ph2 request item #2

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.

TV-11b Ph2 request item #3

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 9th 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.

_____

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

_____

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

_____

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:

_____

Maurya Kilroy
Attorney-Advisor
Local Sponsor & Inleasing Acquisition Branch

_____

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

PM-C

State of Louisiana

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

COASTAL ENGINEERING DIVISION
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AN EQUAL OPPORTUNITY EMPLOYER

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 flotation 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.

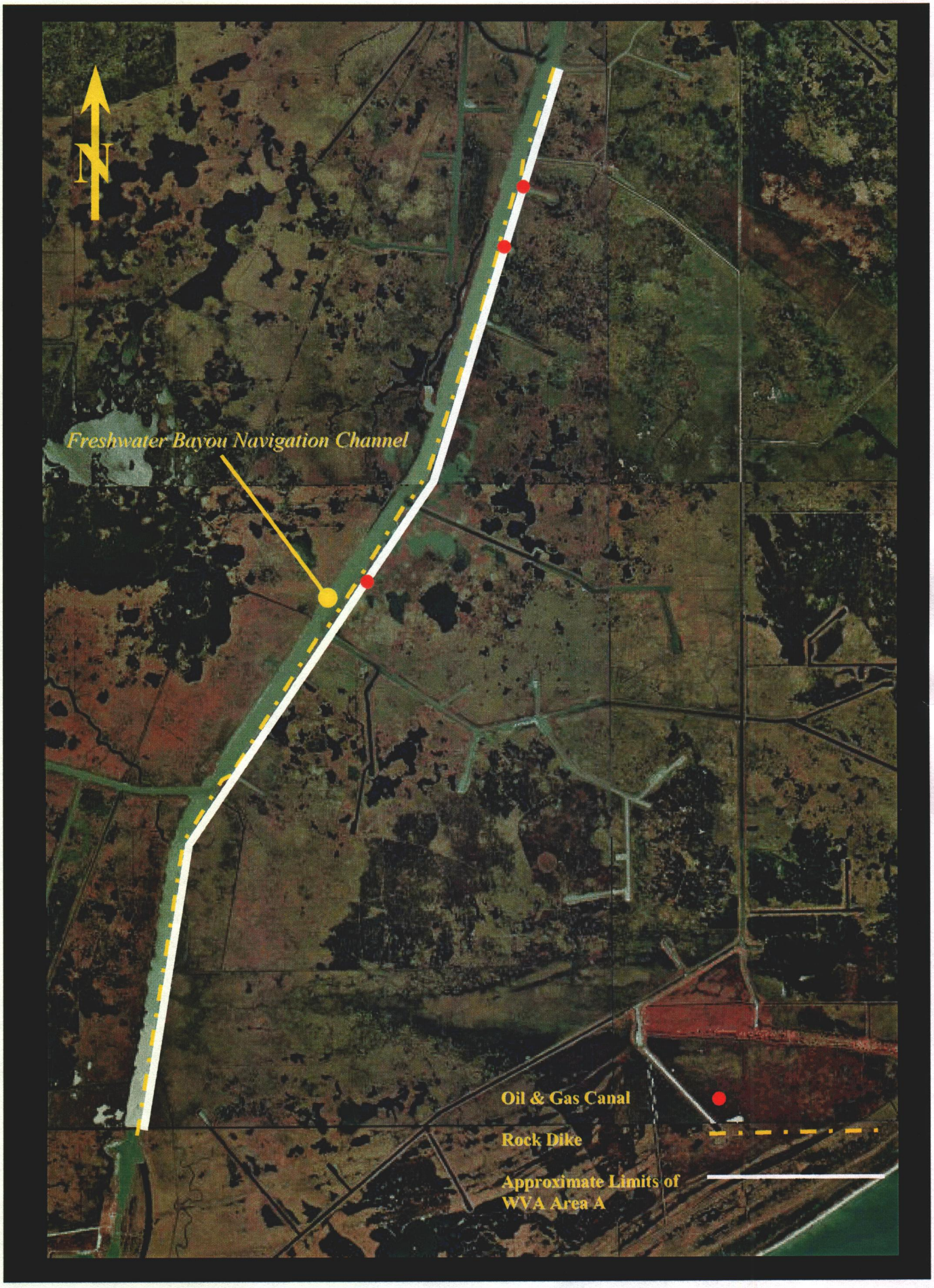
Public Involvement. The proposed action has been coordinated with appropriate Federal, state, and local agencies and businesses, organizations, and individuals through distribution of Environmental Assessment #327 (EA #327) for their review and comment.

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

Draft – January 2004

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).

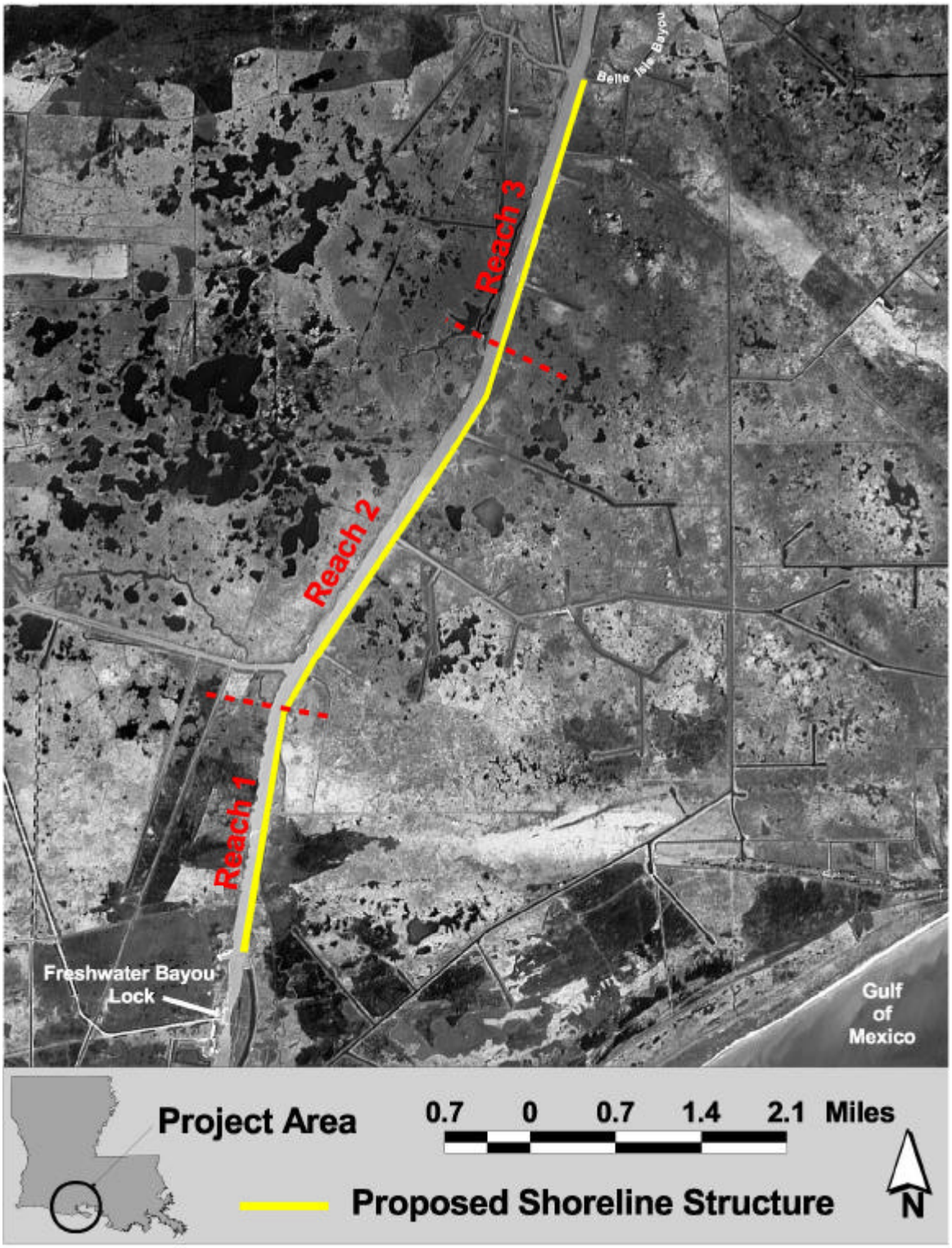


Figure 1: Freshwater Bayou Bank Stabilization (Belle Isle to Lock) project area.

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 (FSmin), 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 FSmin = 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 (Table1).

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.

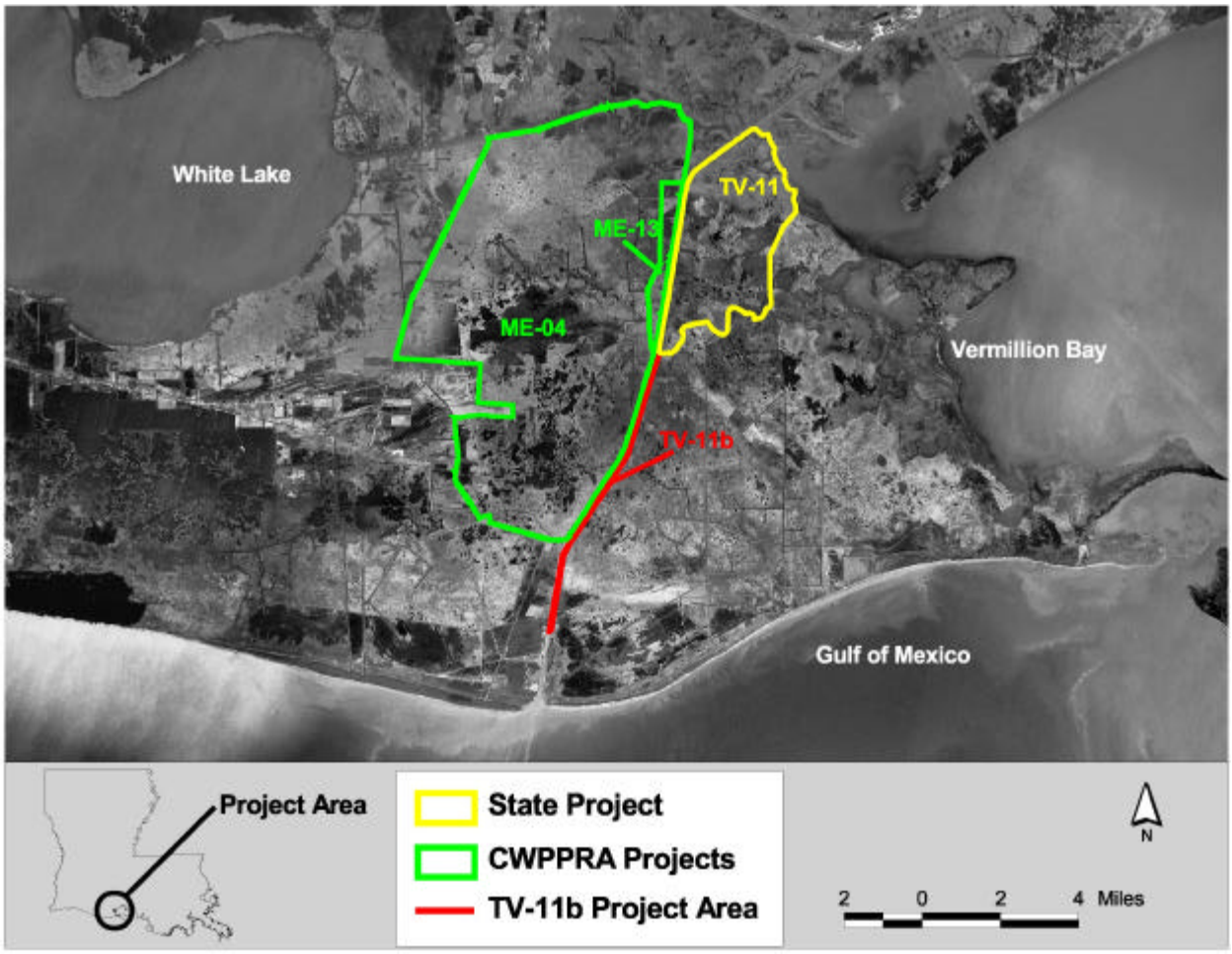


Figure 2: Freshwater Bayou Bank Stabilization (Belle Isle to Lock) and other CWPPRA and State projects along Freshwater Bayou Canal.

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

United States Department of Agriculture

NRCS
Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

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,

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 ÷241 acres = $124,772/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 points

Preparers of Fact Sheet

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

Legend

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

0.7 0 0.7 1.4 Miles

0.8 0 0.8 1.6 Kilometers

N

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