

MR. FRUGÉ

**COASTAL WETLANDS PLANNING, PROTECTION
AND RESTORATION ACT**

TASK FORCE MEETING

April 14, 1998

Revised
P R O P O S A L

Hydrologic Investigation of the Chenier Plain

Submitted by

**Louisiana Department of Natural Resources
Coastal Restoration Division**

at the request of

The Breaux Act Task Force

under the direction of

The Breaux Act Feasibility Study Steering Team

April 14, 1998



Point of Contact: Steven Gammill, Study Manager (504) 342-7308 email StzvenG@dnr.state.la.us

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Background

There are currently \$350,000 in Breaux Act planning funds associated with Phase II of the Barrier Shoreline Feasibility Study (BSFS). The original intent of the Breaux Act Task Force was to spend this money on a shoreline study. The Louisiana Department of Natural Resources (DNR), in conjunction with the Breaux Act Feasibility Study Steering Team, has concluded that a more holistic understanding of hydrology in the Chenier Plain is essential to the successful development and implementation of ecosystem-level restoration strategies for the Chenier Plain. This approach shifts the focus on interior wetland habitats as target areas for protection and restoration projects, rather than solely addressing land loss along the gulf shoreline as proposed in the Phase II Barrier Shoreline Feasibility Study. In effect, the approach has shifted from a shoreline specific study with no new data collection, to emphasizing attainment of a better hydrologic understanding through literature review, analyses of existing data, and collection of new data. The overarching goal is to gain a more holistic understanding of ecosystem dynamics that will allow for more effective management for multiple resource uses.

There are two areas of particular concern: 1) identifying the specific causes of land loss in the Mermentau and Calcasieu-Sabine Basins; and 2) determining the potential impacts of the proposed Trans-Texas Water Program (TTWP) on wetland resources in the Calcasieu-Sabine Basin. Accordingly, this proposal is divided into two sections.

This study complements the Coast 2050 planning initiative by developing a better understanding of how regional hydrology affects biotic and abiotic processes in these ecosystems. This information can be applied toward developing technically and scientifically sound management practices. This ties-in directly with the mission of Coast 2050 that is restated below:

"In partnership with the public, develop, by December 22, 1998, a technically sound strategic plan to sustain coastal resources and provide an integrated multiple use approach to ecosystem management"

Through the Coast 2050 initiative, various working groups are currently developing and evaluating coastal use objectives and priorities and both small and large-scale strategies to

achieve those objectives. All of the study objectives included herein have already been identified at the regional level as priority information needs. The culmination of this initiative will include a plan that lists the strategies which most efficiently achieve the coastal use and resource objectives. There will also be a plan to implement those strategies. In this sense, the 2050 initiative is similar to a reconnaissance phase with the study proposed herein as the data collection effort that is prerequisite to an in-depth evaluation of large-scale strategies. A detailed feasibility study phase is expected to follow. Thus, this study serves a phase for the long-term strategy illustrated below.

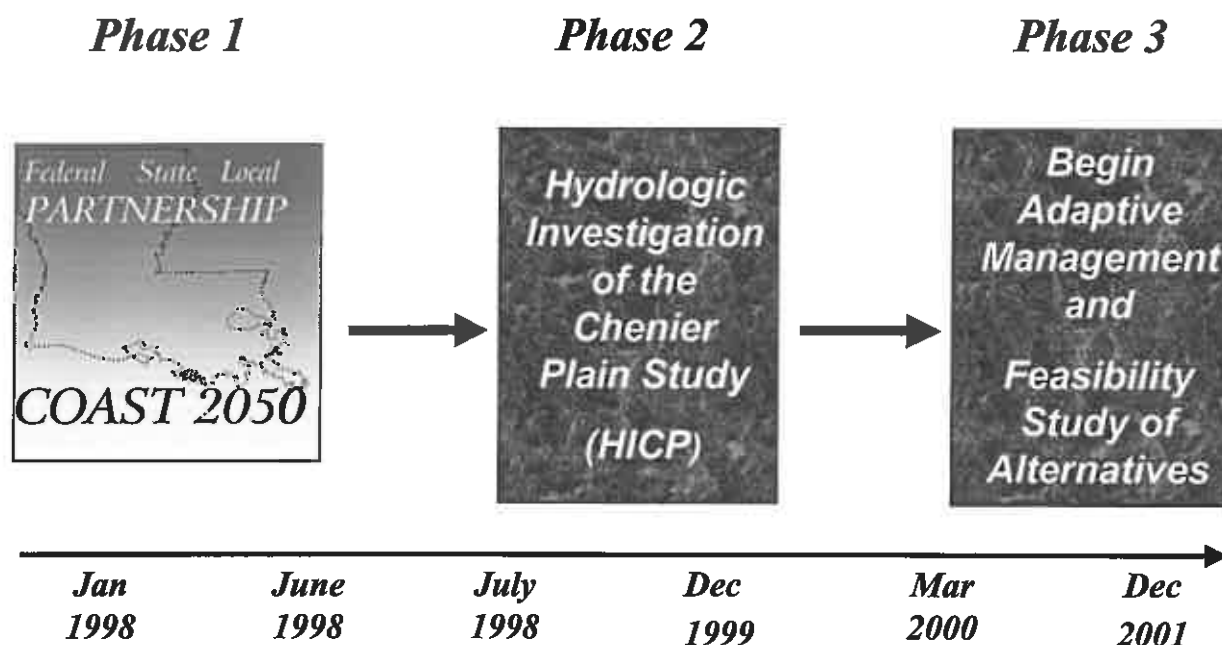


Figure 1 A phased approach to ecosystem management in the Chenier Plain.

This effort will help determine if the proposed related strategies of the 2050 plan or new strategies developed in the study scoping process contribute to the national economic development consistent with protecting the nation's environment as stated in the Federal Principles and Guidelines for Water and Related Land Resources Implementation Studies (a.k.a. the Principles and Guidelines or P&G) (U.S. Government, 1983). This effort and subsequent feasibility phases will be consistent with the P&G in both approach and implementation. The study objectives are intended to be concrete and answerable. The study design shall be scientifically defensible and will be developed by a team of experts in the fields of ecology, hydrology, fish and wildlife biology. Local governments and resident experts in the fields of agriculture and navigation will be coordinated with throughout the study.

It is acknowledged that the budget for this effort is limited to \$350,000. A detailed budget will be developed during the study design phase. By September of 1998, the study team shall have the study design/scope and budget in a format for presentation to the Breaux Act Task Force and, at that time, will solicit Task Force notice to proceed. It is understood that up to \$50,000 is available for development of the scope of services for this phase of the effort. The plan is to complete this task for substantially less than this and utilize remaining funds for study implementation. If the budget is insufficient to cover the cost of all of the recommended components, a decision will be made to either solicit more funding, or reduce the level of effort to fit within the study budget.

It is envisioned that the data collection effort will take place over a minimum period of one year and a maximum period of two years. Figure 2 illustrates the approximate study area boundary.

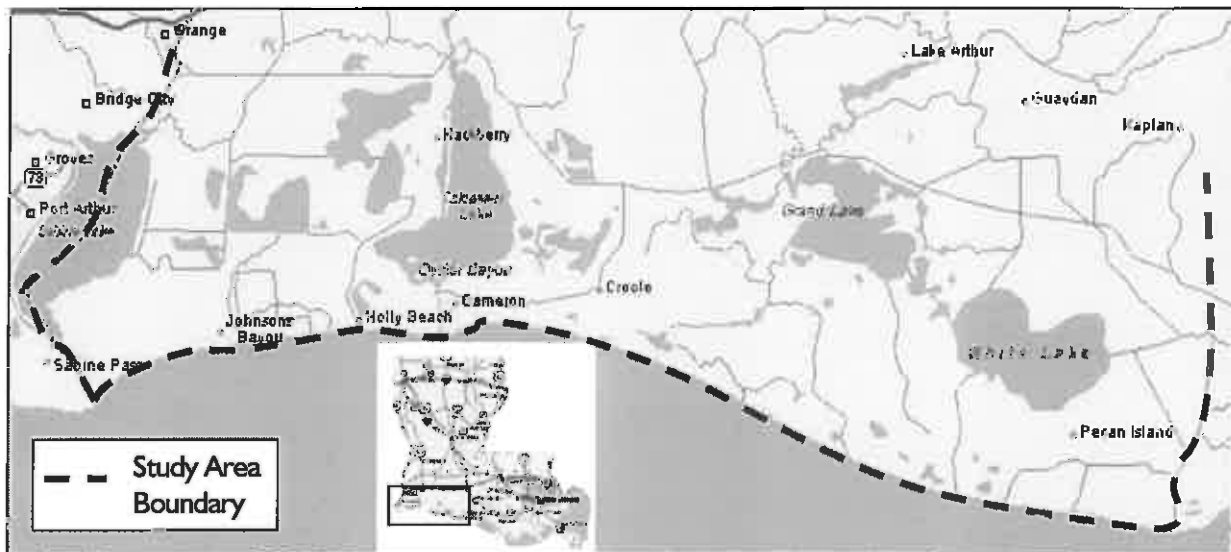


Figure 2 Study area (northern boundary encompasses the watershed).

Study Approach

This document is not intended as a design for the study. There are essentially two phases to this investigation. The initial phase is geared toward improving our understanding of regional ecology through analyses of existing data sources and improving our understanding of the causality of land loss by using the historic data developed and collected by the USACE, USGS and USFWS. A proper study design should be focused on answering specific questions. For example, it is perceived by many experts that periodic high water levels in the Mermentau Lakes Sub-basin is the primary cause of land loss in this area. Although this may be true, we know that wetland sustainability is affected by multiple environmental factors that function in a cumulative fashion. Thus, if we concentrate our efforts only on addressing means to lower water levels, we

may fail in our goal of understanding mechanisms that determine wetland sustainability and therefore be misguided in our management strategies. To avoid this potential pitfall, the study will focus initially on improving our understanding of regional ecology so that we can adequately identify the major gaps in our understanding. From this, we hope to better understand where and how to collect data that will provide direction for the study design. That design will form the basis for the second phase of the study and will entail primarily of collection of hydrologic data necessary to improve our understanding of how system hydrology impacts wetland sustainability.

Items to be considered in study design:

1. Focus on existing data collection sites. These will essentially be "free" data sources and it will leave room in the budget for other efforts.
2. Ensure that data collection from the Trans-Texas Water Program is taken into account in the study design and data analysis phases of the study.
3. Selection of data collection sites should be coordinated with the Breaux Act Monitoring Program and other data collection entities.
4. The study shall be designed such that specific questions can be answered in a statistically sound manner.
5. Identify and utilize existing data sources that are compatible in terms of data management, data quality, and data analysis.
6. Tailor the study design to provide good input data for a regional hydrologic model.
7. Examine previous studies of these areas and do not repeat those that have already been conducted.
8. The study period should be sufficiently long to collect data under a wide range of conditions.

I. Mermentau Basin Study

Background

The Mermentau Basin is hydrographically and hydrologically separated by chenier ridges into the Chenier Sub-basin to the south and the Lakes Sub-basin to the north. The primary focus of this study is on the hydrology of the Lakes Sub-basin. The Mermentau River with a drainage area of more than 1,300 sq mi flows diagonally across the region and supplies the Lakes Sub-

basin with fresh water that is impounded by a series of five locks around the sub-basin perimeter as illustrated below (Figure 3). The Gulf Intracoastal Waterway (GIWW) traverses the northern portion of the region near the Pleistocene ridge.

The lock system was mostly completed in 1951 and effectively stopped tidal flow into the area. This significantly reduced the historic inflows of salt water and created a freshwater reservoir that facilitated agriculture (primarily rice farming), and also maintained higher water levels for navigation. Protection from storm-induced flooding is also cited as a benefit of the structures (USACE, 1996). In general, structures are opened to evacuate excess water when inside stages are above +2.0 MLG (Mean Low Gulf) and are greater than water levels outside the structures. However, from December through August the Schooner Bayou structure is operated to draw water from Vermilion Bay to keep waterway and lake levels from falling below zero stage for navigation and to assist in maximizing fresh water supplies for irrigation (USACE 1996). These structures impact ingress and egress routes for estuarine organisms that historically existed in this area.

The 1993 Breaux Act Restoration Plan identified excessive flooding due to prolonged high water levels as a major cause of interior marsh loss and shoreline erosion around Grand and White Lake. As the lake rims are eroded, marsh surrounding the lakes becomes exposed to increased wave energies. Interior marsh loss due to prolonged flooding is poorly understood and is not scientifically documented in the Lakes Sub-basin. However, excessive water levels seem to have transformed this marsh from one with an abundance of wiregrass (*Spartina patens*) and maidencane (*Panicum hemitomon*) to one dominated by more flood-tolerant species such as bultongue (*Sagittaria lancifolia*). During high rainfall events, water levels can rise rapidly due to upstream drainage improvements, and it is often difficult to drain the region due to the limited window of opportunity when there is sufficient head differential between water levels inside and outside of the control structures.



Figure 3 Mermentau locks and gates.

Although high water levels maintained by the five major structures seem to be the primary factor resulting in land loss in the Lakes sub-basin, many other environmental variables may factor into the land loss problem. Herbivory and grazing pressure, vegetation composition, soil type, local management practices, salinity regime, and climatic conditions also affect land loss and should be taken into account.

Potential Solutions

Drainage through the Calcasieu lock is hindered because operation of this structure is subject to navigation constraints. In other words, the lock cannot be continuously be left open

during high water situations because rapid discharge through the structure hinders navigation. As a result, there are times when, although the structure could be open for drainage, the structure is closed to allow for navigation. To remedy this situation, it has been proposed that a new bypass structure be installed that would allow one structure to be operated strictly for drainage, leaving the other structure available for both drainage and navigation. This would allow for continuous drainage at this location whenever inside stages were above target levels.

If analyses of historic data indicate that excessive water levels significantly impact wetland sustainability, data will be collected to evaluate the effects of alternative hydrologic management schemes on the area. For example, new projects such as the proposed Black Bayou Diversion and/or replacement of the Calcasieu Lock will be evaluated to determine how effectively they may lower water levels in the basin.

Mermentau Study Goal:

Improve our understanding of regional hydrology and apply this knowledge to ecosystem level hydrologic management.

Mermentau Study Objective:

Determine causes of land loss in the basin and identify possible responses or restoration actions to be considered in the second phase of the study.

Mermentau Study Components:

1. Examine spatial and temporal patterns of land loss using the USACE and USGS/NWI land loss and habitat change data to determine how historic land loss patterns relate with spatial or temporal variability in local management practices, vegetation abundance and composition, soil type, salinity regimes and herbivory and grazing pressure. This will entail examining historical data and climatic records, as well as interviewing land owners and others who are knowledgeable about the conditions existing on the marsh over the period of record dating back to 1932. Using this information qualitatively should help in the identification of any significant factors, other than elevated water levels, that may have been responsible for historic marsh loss in the Lakes sub-basin.
2. Develop a freshwater water budget for the Mermentau Basin that takes into account major freshwater inflows and discharges. It is essential to understand the volumes and flows of water in the system in order to understand how to effectively drain the system of excessive high water. It also is essential to know if inflow volumes will stay constant or increase over time.
3. Determine correlation between Catfish Point and Schooner Bayou structure operation procedures and historic salinity data collected by USACE in Grand and White Lakes.

Report of Findings and Recommendations

The study team will develop a technical report detailing the study design, data analyses and findings and make management and policy recommendations in a final report to the Breaux Act Task Force and appropriate state and federal agencies.

II. Calcasieu/Sabine Basin Study

Background

The Calcasieu/Sabine Basin is two semi-distinct hydrologic units with the Sabine Basin continuous between Louisiana and Texas. This study will be confined to the Louisiana region east of the Sabine River to Calcasieu Lake (Figure 4). Intermediate and brackish marshes are the dominant habitats of this well-flushed estuary.

The Calcasieu, Sabine, and Neches Rivers are the principal sources of freshwater inflow into this region. The Sabine and Calcasieu follow a north-to-south gradient, while the Neches flows into Sabine Lake from the west. Additionally, an east-west flow occurs between the basins via the GIWW and existing canals on Sabine National Wildlife Refuge.

The Calcasieu River/Calcasieu Ship Channel has been maintained for navigation since the late-1800's and has been progressively widened and deepened until the 1960's when the ship channel doubled in width and was dredged to a depth of 49 ft (Gosselink et al, 1979). This allowed for increased salt water intrusion and tidal invasion into the estuary which resulted in an overall trend toward more saline habitats in the region.

The Sabine River has a drainage area of 9,325 mi² and crosses the GIWW, and then widens into Sabine Lake before narrowing and draining into the Gulf of Mexico. The channel is maintained at a depth of 45 ft and bifurcates at the Neches River to Beaumont, TX and up the Sabine River to Orange, TX. Hydrology in this area is complex due in part to the effect of the GIWW that flows bidirectionally through the area and the effects of the Toledo Bend Reservoir located roughly 100 miles upstream from the GIWW which regulates flows to the south.

The Sabine River Compact of 1950 mandates that 50% of the water in the Sabine River belongs to the State of Texas and 50% belongs to the State of Louisiana. In an effort to manage dwindling fresh water supplies in southeast Texas, the state has proposed and is evaluating a plan included in the Trans-Texas Water Program (TTWP) that will divert up to 50% of the Sabine River. In addition to studying potential impacts of large-scale diversions to the ecology of the Sabine River and Sabine Lake, the Phase II of the TTWP study calls for an evaluation of several alternative routes for conveying water from the Sabine River to the greater Houston area.

The TTWP has the potential to deprive the Calcasieu/Sabine Basin of a substantial portion of its freshwater inflow. Although it is perceived that the impacts will likely be detrimental, data are needed to better characterize these impacts to wetland sustainability. In particular, data describing relationships between discharge of the Sabine and Neches Rivers and the subsequent moderation of basin salinity, including the relative effects of rainfall, are needed. A sufficient understanding of basin hydrology and the role of the Sabine and Neches Rivers in moderating basin salinity will enable prediction of how manipulations such as the TTWP may affect the system, and also determine approximately how much freshwater must come down the Sabine and Neches Rivers to maintain salinity levels consistent with existing habitats.

Calcasieu/Sabine Study Goal:

Improve our understanding of how fresh water discharges into the Sabine Basin from the Sabine and Neches Rivers moderate salinity and affect wetland sustainability.

Calcasieu/Sabine Study Objective:

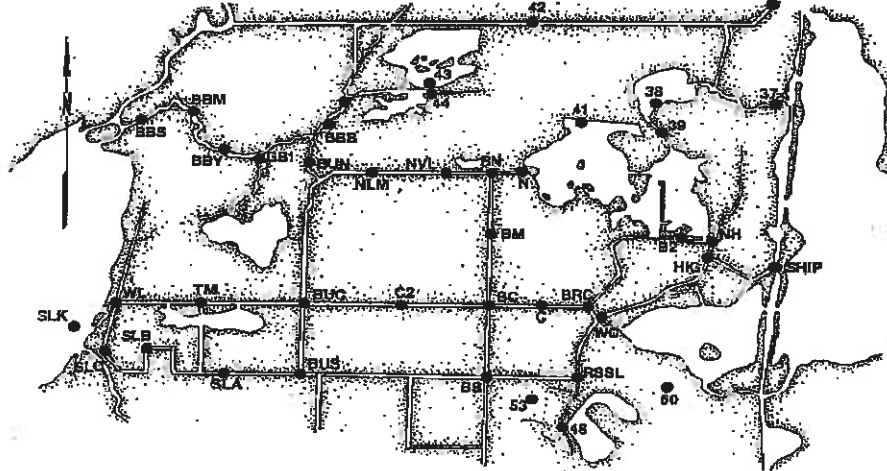
Determine if there is significant potential for adverse impacts to the Calcasieu/Sabine Basin that may result from reductions in discharges of the Sabine River by the proposed TTWP by determining how salinity is correlated with low flow events on the Sabine and Neches Rivers. Assess patterns of vegetated wetland degradation through analysis of historical basin management practices and new data collection. Potential mitigative responses to wetland degradation to be suggested in the second phase of the study.

Calcasieu/Sabine Study Components:

1. Examine spatial and temporal patterns of land loss using the USACE and USGS/NWI land loss and habitat change data to determine how historic land loss patterns relate with spatial or temporal variability in local management practices, vegetation abundance and composition, soil type, salinity regimes and herbivory and grazing pressure. As with Mermentau, this will entail examining historical data and climatic records, as well as interviewing land owners and others who are knowledgeable about the conditions existing on the marsh over the period of record dating back to 1932. By using this information as a qualitative tool, it should help in the identification of any significant factors, other than elevated water levels, that may have been responsible for historic marsh loss in the Lakes sub-basin.
2. Acquire historic salinity data from the Sabine National Wildlife Refuge. Salinity data has been collected monthly at fifteen stations since 1966 and twenty-seven stations since 1984. (Figure 4). Although all data from the refuge is to be evaluated, the primary focus of the proposed study is to be in the areas in the Black Bayou, Johnson's Bayou, and Willow Bayou Coast 2050 mapping units (Figure 5). It is anticipated that these areas are likely to be the most affected by impacts associated with the TTWP.

HICP Data Collection Sites in the Calcasieu/Sabine Basin

Existing Data Collection Sites - Sabine NWR



Adapted from Paille 1996. Water Exchange Patterns and Salinity of Marshes Between Calcasieu and Sabine Lakes. Proc. Sabine Lake Conference, Beaumont Texas. pp 36-43.

Figure 4 Existing data collection sites to be utilized in the Calcasieu-Sabine Basin

3. Utilize Sabine River discharge data collected at the USGS real-time station near Ruliff, TX (located approx 15 mi north from the GIWW). Utilize discharge data collected from the Neches River. Acquire historical discharge data to assess pre-Toledo Bend Sabine River influences on the Sabine Basin. The focus of the discharge investigation is to be on low-flow events.
4. Regional precipitation minus estimated evapotranspiration is to be evaluated. Precipitation data to be acquired from local mosquito control districts and area state and federal wildlife refuges.
5. Acquire all relevant data generated from the TTWP and utilize where appropriate.



Figure 5 Coast 2050 mapping units.

Calcasieu/Sabine Study Data Analysis:

1. Conduct multi-parametric statistical analyses of historical data and data from the continuous recorder stations on the effects of Sabine and Neches River discharge on area

salinities. Parameters to be analyzed include salinity, water level, vegetation type, soil type, precipitation, wind, and other quantifiable physical or biotic parameters. These data will produce a more quantitative understanding of how the Sabine and Neches Rivers' discharge affect marsh sustainability, especially during low-flow events, and will result in the capability to better predict the potential impacts of the TTWP.

Report of Findings and Recommendations

The study team will develop a technical report detailing the study design, data analyses and finding and make management and policy recommendations in a final report to the Breaux Act Task Force and appropriate state and federal agencies.

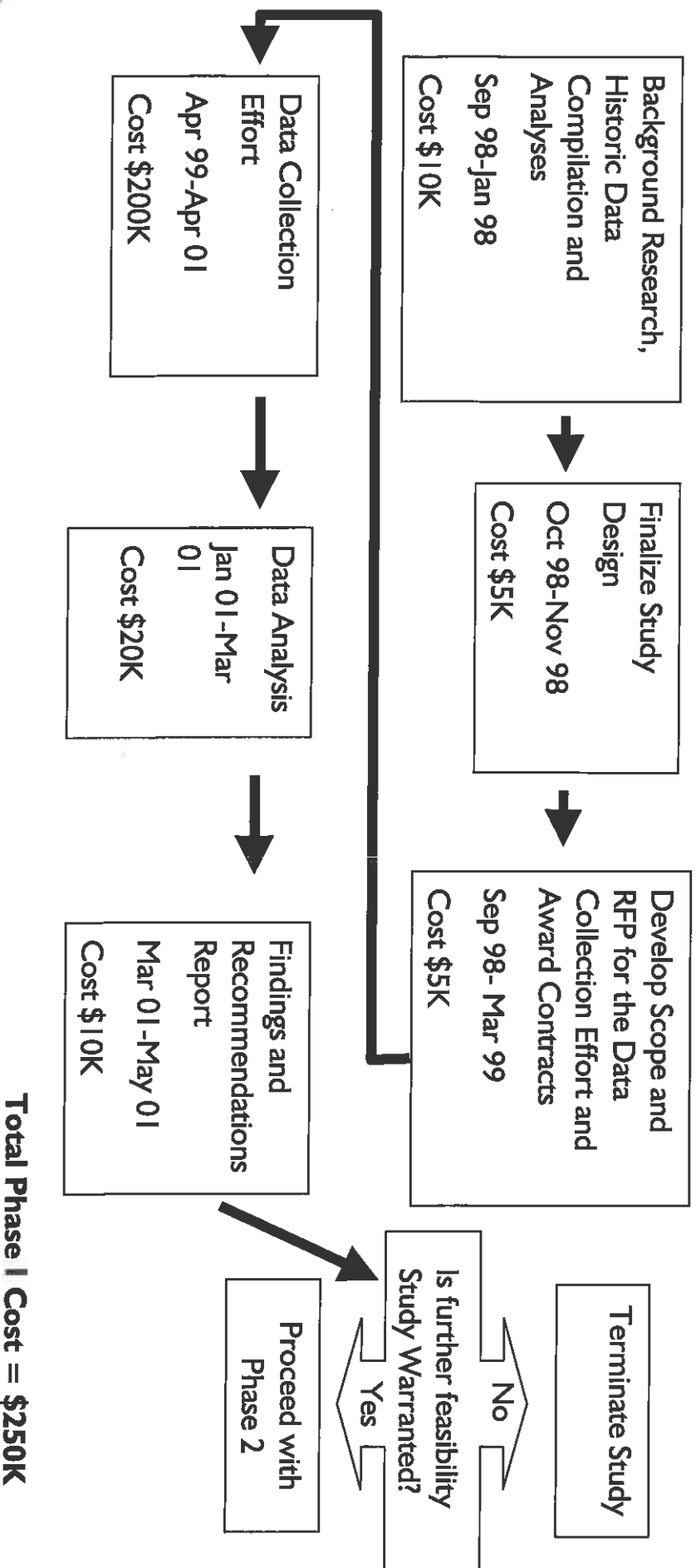
References

- Breaux Act 1993. Louisiana Coastal Wetlands Restoration Plan. Appendices H. and I.
- Gosselink James G.; Carrol L. Cordes; John W. Parsons. 1979. An Ecological Characterization of the Chenier Plain Coastal Ecosystem of Louisiana and Texas. Vol. I FWS/OBS-78/9. 301 pp.
- Gunter G.; W. E. Shell. 1958. A Study of an Estuarine Area with Water-level Control in the Louisiana Marsh. Proc. LA. Acad. Sci. 21:5-34.
- United State Government. 1983. Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies. U.S. Government Printing Office, Washington D.C. 20402. 137 pp.
- USACE 1996. Black Bayou Diversion, Louisiana - Reconnaissance Report.

Draft Hydrologic Investigation of the Chenier Plain Mermentau Timeline and Budget

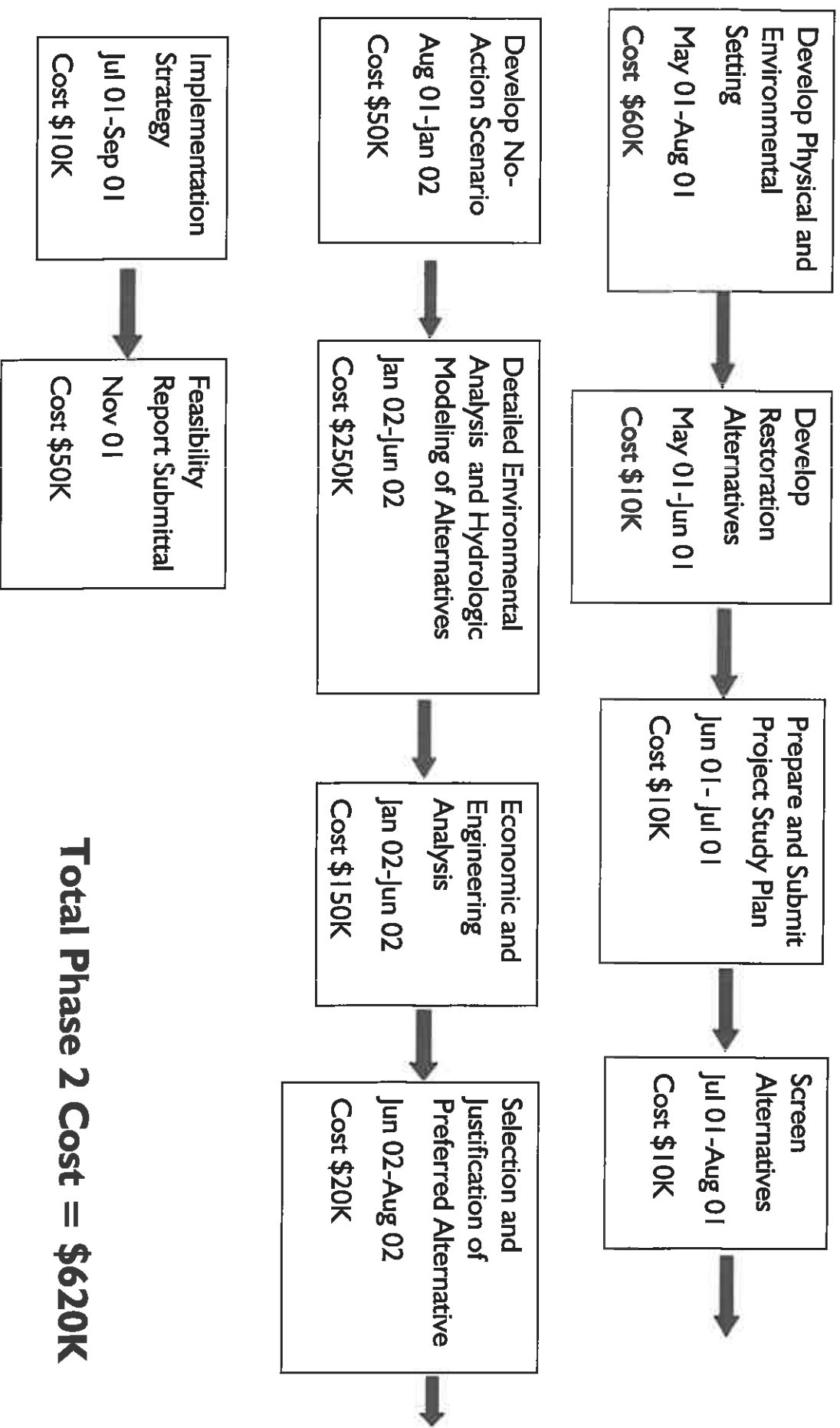
Purpose: Determine the most significant cause of land loss in the Lakes sub-basin. If flooding is a major cause, evaluate methods of lowering water levels.

Phase 1 (Reconnaissance-Level Background Research and Data Collection)



Draft Hydrologic Investigation of the Chenier Plain Mermentau Timeline and Budget

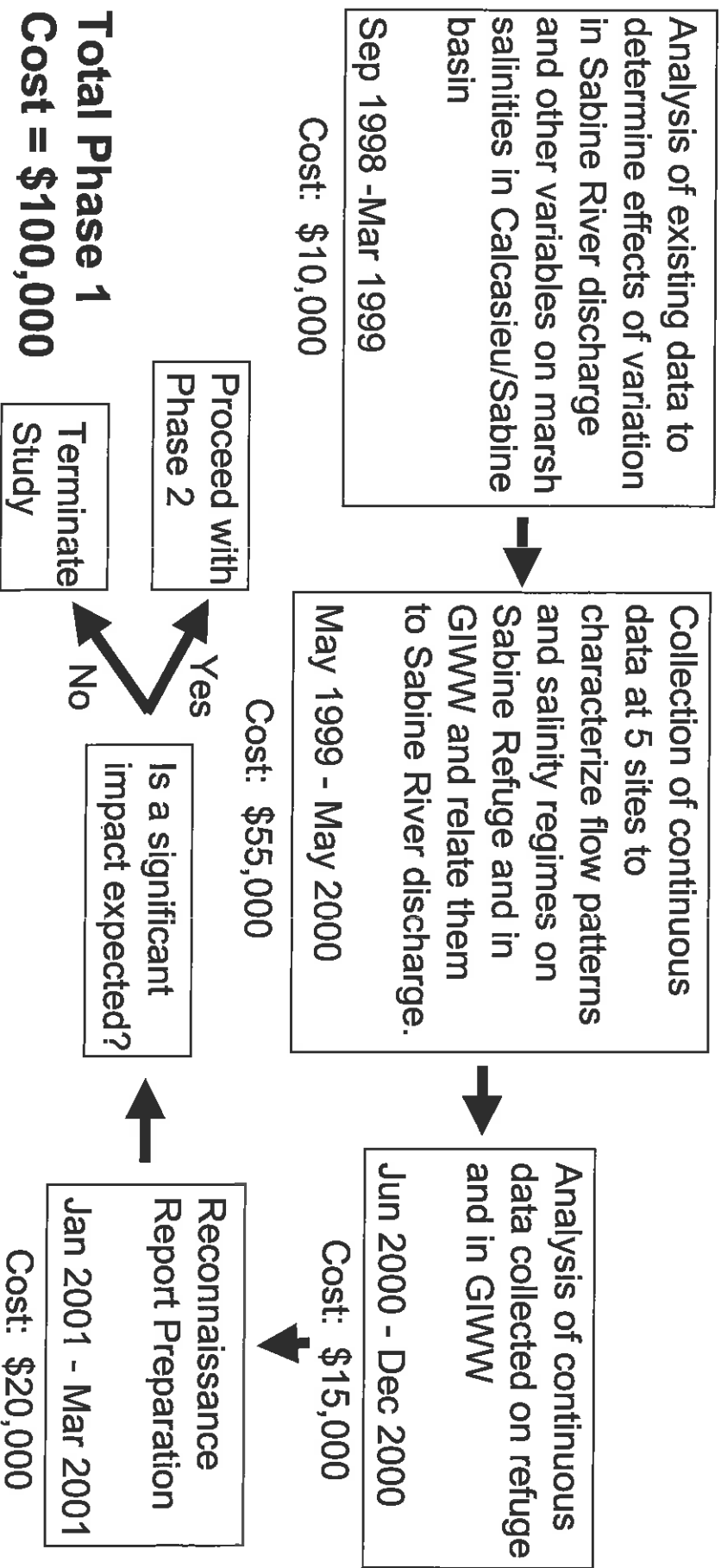
Phase 2 (Feasibility Study)



Draft Hydrologic Investigation of the Chenier Plain Calcasieu/Sabine Timeline and Budget

Purpose: Determine likelihood and predict magnitude of significant detrimental effects to wetlands in the Cal/Sab basin due to reductions in Sabine River discharge.

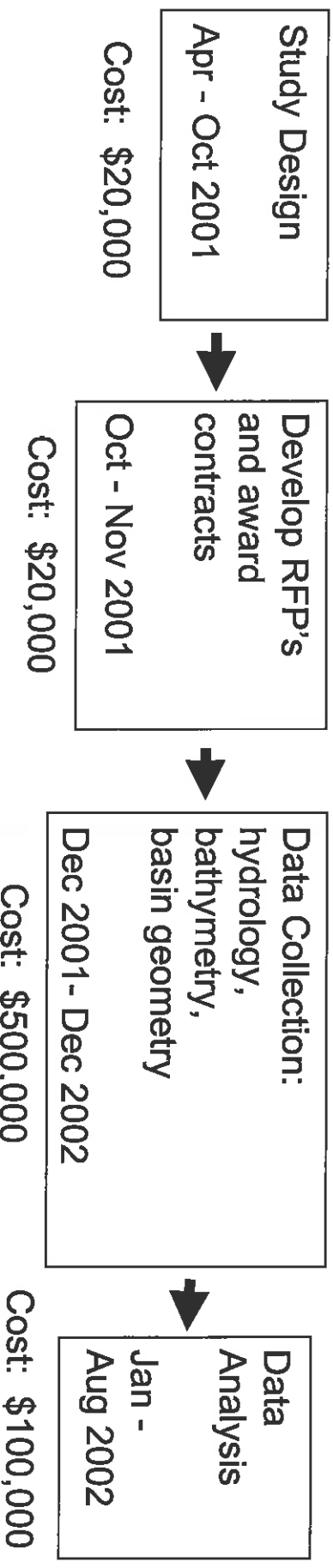
Phase 1 (Reconnaissance)



Draft Hydrologic Investigation of the Chenier Plain Calcasieu/Sabine Timeline and Budget

Purpose: Collect sufficient data for a systemic understanding of Calcasieu Sabine hydrology and future model development

Phase 2 (Feasibility Study)



Phase 3 (Model Development)

Develop 3-D hydrodynamic model which simulates stage, flow, and salinity in the basin.
Jan 2003 - Jan 2004

Total Phase 3 Cost: \$1,000,000

Total Phase 2 Cost: \$660,000

Alternative Motion:

1. That the Task Force approve \$3 million in increases to existing ^{fully funded} monitoring caps for approved monitoring plans, with the requirement that:
 - a. those increased costs will include revision of the plans for projects reclassified to other types;
 - b. \$300,000 in savings achieved by the mutually acceptable recommendations of the TAG and EWG shall be included in the revised plans; and
 - c. a package of all of the revised monitoring plans shall be provided to the EWG/P&E Subcommittee for approval.
2. That the Task Force direct the Economics Work Group to update the monitoring caps to current (1998) dollars for plans not yet approved; OMB guidance will be used to calculate the fully funded costs for those plans. Any requests that exceed (125%) of the updated, fully funded caps will be subject to Task Force approval.
3. Specific goals and objectives to be monitored in all future plans should be developed via coordination between EWG and TAG.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

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 Department of Natural Resources
 625 N. Fourth St, Baton Rouge, Louisiana

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COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING AGENDA

Mineral Board Room
Department of Natural Resources
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April 14, 1998
9:30 a.m.

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COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEMBERS

Task Force Member

Member's Representative

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03/25/98

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

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Task Force Member

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COASTAL WETLANDS PLANNING, PROTECTION AND
RESTORATION ACT

IMPLEMENTATION PLAN

TASK FORCE PROCEDURES

I. Task Force Meetings and Attendance

A. Scheduling/Location

The Task Force will hold regular meetings quarterly, or more often if necessary to carry out its responsibilities. When possible, regular meetings will be scheduled as to time and location prior to the adjournment of any preceding regular meeting.

Special meetings may be called upon request and with the concurrence of a majority of the Task Force members, in which case, the Chairperson will schedule a meeting as soon as possible.

Emergency meetings may be called upon request and with the unanimous concurrence of all members of the Task Force at the call of the Chairperson. When deemed necessary by the Chairperson, such meetings can be held via telephone conference call provided that a record of the meeting is made and that any actions taken are affirmed at the next regular or special meeting.

B. Delegation of Attendance

The appointed members of the Task Force may delegate authority to participate and actively vote on the Task Force to a substitute of their choice. Notice of such delegation shall be provided in writing to the Task Force Chairperson prior to the opening of the meeting.

C. Staff Participation

Each member of the Task Force may bring colleagues, staff or other assistants/advisors to the meetings. These individuals may participate fully in the meeting discussions but will not be allowed to vote.

D. Public Participation (see Public Involvement Program)

All Task Force meetings will be open to the public. Interested parties may submit written questions or comments that will be addressed at the next regular meeting.

II. **Administrative Procedures**

A. Quorum

A quorum of the Task Force shall be a simple majority of the appointed members of the Task Force, or their designated representatives.

B. Voting

Whenever possible, the Task Force shall resolve issues by consensus. Otherwise, issues will be decided by a simple majority vote, with each member of the Task Force having one vote. The Task Force Chairperson may vote on any issue, but must vote to break a tie. All votes shall be via voice and individual votes shall be recorded in the minutes, which shall be public documents.

C. Agenda Development/Approval

The agenda will be developed by the Chairperson's staff. Task Force members or Technical Committee Chairpersons may submit agenda items to the Chairperson in advance. The agenda will be distributed to each Task Force member (and others on an distribution list maintained by the Chairperson's staff) within two weeks prior to the scheduled meeting date. Additional agenda items may be added by any Task Force member at the beginning of a meeting.

D. Minutes

The Chairperson will arrange for minutes of all meetings to be taken and distributed within two weeks after a meeting is held to all Task Force members and others on the distribution list.

E. Distribution of Information/Products

All information and products developed by the Task Force members or their staffs will be distributed to all Task Force members normally within two weeks in advance of any proposed action in order to allow adequate time for review and comment, unless the information/product is developed at the meeting or an emergency situation occurs.

III. Miscellaneous

A. Liability Disclaimer

To the extent permitted by the law of the State of Louisiana and Federal regulations, neither the Task Force nor any of its members individually shall be liable for the negligent acts or omissions of an employee, agent or representative selected with reasonable care, nor for anything the Task Force may do or refrain from doing in good faith, including the following: errors in judgement, acts done or committed on advice of counsel, or mistakes of fact or law.

B. Conflict of Interest

No member of the Task Force (or designated representative) shall participate in any decision or vote which would constitute a conflict of interest under Federal or State law. Any potential conflicts of interest must clearly be stated by the member prior to any discussion on the agenda item.

Coastal Wetlands Planning, Protection and Restoration Act

TASK FORCE MEETING

January 16, 1998

Minutes

I. INTRODUCTION

Colonel William L. Conner, representing the Secretary of the Army, convened the 29th meeting of the Louisiana Coastal Wetlands Conservation and Restoration Task Force at 9:35 a.m., on January 16, 1998, at the U.S. Army Corps of Engineers, New Orleans District. The agenda is attached as Enclosure 1. The Task Force was created by the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA, commonly known as the Breaux Act), which was signed into law (PL 101-646, Title III) by President Bush on November 29, 1990.

II. ATTENDEES

The attendance record for the Task Force meeting is enclosed as Enclosure 2. Listed below are the six Task Force members. All members were in attendance, except for Dr. Bahr, who was represented by Mr. Cullen Curole.

Dr. Len Bahr, State of Louisiana
Mr. William Hathaway, Environmental Protection Agency
Mr. David Frugé, U.S. Department of the Interior
Mr. Donald Gohmert, U.S. Department of Agriculture
Mr. Thomas Bigford, U.S. Department of Commerce
Colonel William L. Conner, U.S. Department of the Army,
Chairman

III. APPROVAL OF MINUTES FROM PREVIOUS MEETING

The minutes of the Task Force meeting held on September 17, 1997 (Enclosure 3), were approved unanimously. Mr. Frugé made the motion to approve the minutes, and Mr. Gohmert seconded it.

IV. TASK FORCE DECISIONS

a. Approval of Project Deauthorizations.

Mr. Schroeder presented a recommendation of the Technical Committee to approve the deauthorization of 3 projects: Eden Isles East Marsh Restoration Project (PPO-4); Bayou Perot/Bayou Rigolettes Restoration Project (BA-21, XBA-65a); and White's Ditch Outfall Management (BS-4a). The standard operating procedures in effect for deauthorization were followed; there was no opposition expressed, either formally or informally, to these deauthorizations.

Motion by Mr. Gohmert: That the Task Force approve the deauthorization of Eden Isles East Marsh Restoration project, Bayou Perot/Rigolettes Restoration project, and the White's Ditch Outfall Management project.

Second to Motion: Mr. Bigford
Passed unanimously.

b. Selection of the 7th Priority Project List.

Mr. Schroeder presented a recommendation of the Technical Committee to choose the following projects for the 7th Priority Project List: Vegetative plantings of dredge material disposal site on Grand Terre Island (\$928,000); Pecan Island Terracing (\$2,185,900); Cut Off Bayou Marsh Restoration (\$6,510,200); Effects of Sediment and Nutrients on Thin-Mat Flotant Marsh (\$460,222); Selected Shoreline Stabilization along Bayous Perot and Rigolettes, Barataria Basin Land Bridge, Phase 1 (\$10,342,700). Mr. Frugé questioned whether the Cut Off Bayou Marsh Restoration project could be pursued under one of the Corps' ecosystem restoration authorities. Ms. Hawes replied that she believed that the Corps' Section 204 authority could be utilized to construct a similar dedicated dredging project, and that the Section 206 authority could be used to construct canal plugs along the MR-GO and GIWW navigation channels. Mr. Hathaway questioned whether the list represented a "ranking according to importance to the ecosystem." Messrs. Podany and Schroeder replied that this was attempted, but that there was no consensus over the meaning of the Task Force directions. Mr. Schroeder stated that the list of projects provided by the Technical Committee represents the committee's views concerning importance to ecosystem (defined to be marsh), cost effectiveness, and projects of merit. Mr. Hartman pointed out that a project like the Barataria Land Bridge project had systemic benefits and addressed ecosystem needs for the basin. Mr. Frugé stated that he envisioned a two-part list, one made up of funded projects and the other made up of some of the remaining candidates which would be unfunded. Mr. Caldwell related that the state's position was that a two-part list, made up of projects ranked contingent upon funding, was not advisable. After much discussion, Colonel Conner suggested that the Task Force pick a single large list from the list of ranked candidates provided by the Technical Committee, and then designate which projects on the list would be funded.

Motion by Mr. Frugé: That the Task Force adopt a 7th Priority List that would include the projects shown on Enclosure 4. Recognizing its commitment to fiscal responsibility, the Task Force identifies only enough money to fund the following projects: Vegetative plantings of dredge material disposal Site on Grand Terre Island (\$928,000); Pecan Island Terracing (\$2,185,900); Effects of Sediment and Nutrients on Thin-Mat Flotant Marsh (\$460,222); and, Selected Shoreline Stabilization

along Bayous Perot and Rigolettes, Baratavia Basin Land Bridge, Phase 1 (\$10,342,700).

Second: Mr. Osborn.
Passed unanimously.

Mr. Cullen asked for clarification of Mr. Frugés' motion, specifically in regard to the status of the unfunded projects on the 7th Priority Project List. The consensus of the Task Force was that there is no stipulation that these projects be funded as funds become available. In addition, the Task Force would need to take special action before these projects could be placed in a funded category. Dr. Denise Reed stated that the public's perception over the amount of planning funds used to select the 7th Priority Project List versus the size of the list should be addressed.

c. Funding Deferrals in Multi-Year Projects.

Mr. Schroeder presented the Technical Committee's recommendation that calls for deferring FY 98 funding of certain multi-year projects until FY 99. After discussion about how this fit in with the selection of a 7th Priority Project List, the Task Force voted.

Motion by Mr. Frugé: That the Task Force agree to defer FY 98 funding of the following projects to FY 99, in the amounts shown: Bayou Lafourche Siphon (\$7,500,000); Delta-Wide Crevasses (\$2,736,950); Penchant Basin Plan (\$7,051,550); Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management, Alternative B (\$4,915,650); Myrtle Grove Siphon (\$5,000,000), and; Nutria Harvest for Coastwide Restoration (\$1,100,000).

Second: Mr. Gohmert.
Passed unanimously.

d. Development of a "Needs" List.

Colonel Conner discussed the Task Force's development of a legacy or "needs" list by July 15, 1998. This list would be a large list made up of previously considered candidate projects that were not selected because of funding constraints, as well as new projects recommended through the Coast 2050 process. The purpose of compiling the list would be to identify the many projects that could be funded should the Breaux Act be reauthorized or that could be funded through other authorities. Mr. Gohmert suggested that a "needs" list did not depart substantially from previous efforts and was consistent with the selection of a 7th Priority Project List made up of funded and unfunded projects.

Mr. Curole and Mr. Hathaway requested that the Task Force provide some direction on the development of the "needs" list. Mr. Hathaway suggested that interim guidance or a strawman proposal be developed. He cited a recent Environmental Protection Agency (EPA) recommendation that includes revisiting the way projects are selected.

Ms. Vaughan questioned the July 15, 1998, deadline. Colonel Conner replied that it was done in order to leverage reauthorization.

Dr. Good suggested that the program managers for Coast 2050 could provide a list of projects for consideration under this list by April 1998. Mr. Hartman suggested that the 8th Priority Project List public meetings could be used to solicit 8th Priority Project List nominations and comments on the previously evaluated candidate projects. Ms. Ethridge recommended that the process include academia, in that they could help in the identification of ecosystem benefits.

Mr. Schroeder stated that the Technical Committee would take the lead in developing the guidelines for preparation of the needs list by mid February (week of February 16th) and would consult with the Coast 2050 planning team, academia, and feasibility study teams in its preparation.

e. Construction and Cost Increase Approval for Several Priority List Projects.

Mr. Schroeder briefed the Task Force on the Technical Committee's recommendation for the following approvals:

(1) construction of Sweet Lake-Willow Lake Hydrologic Restoration (\$4,762,700);

(2) construction cost increase for the West Point-a-la-Hache Outfall Management Project (from \$881,00 to \$4,081,000); and,

(3) construction cost increase for West Belle Pass (from \$6,067,625 to \$6,367,625). Mr. Frugé asked about whether the Technical Committee had finalized its approval of the scope increase for the Grand Bayou project. Mr. Schroeder replied that it had not, but that there was no problem with the lead agency (USFWS) proceeding with engineering to explore the possible project expansion.

Motion by Mr. Frugé: That the Task Force approve the construction and cost increases of the above projects as recommended by the Technical Committee.

Second: Mr. Gohmert.
Passed unanimously.

f. Standard Operating Procedure for Handling Changes in Cost Sharing Under the Conservation Plan.

Mr. Schroeder presented a recommendation of the Technical Committee for a standard operating procedure for handling changes in cost sharing under the State Conservation Plan.

Motion by Mr. Frugé: That the Task Force approve the Standard Operating Procedure as recommended by the Technical Committee.

Second: Mr. Gohmert.
Passed unanimously.

After the vote, Mr. Jack Caldwell requested that the Task Force reconsider the Technical Committee recommendation. He stated that the intent of the Section 532 of WRDA 1996, was to provide reduced non-Federal cost sharing of 10 percent for all projects on the 5th and 6th Priority Project Lists, regardless of when the funds were expended. He recommended that the paragraph 7a. be modified to read: "For Priority Lists 5 and 6 projects, cost sharing is reduced (regardless of when expended) from 75 percent Federal and 25 percent non-Federal to 90 percent Federal and 10 percent non-Federal." This change would result in an additional estimated \$200-300k increase in the Federal share for projects initiated on the 5th and 6th List as of December 1, 1998.

Motion by Mr. Bigford: That the Task Force approve the change to the Standard Operating Procedure, as stated (see Enclosure 5).

Second: Mr. Frugé.
Passed unanimously.

g. Report and Confirmation of Project Approvals.

Mr. Schroeder presented a list of projects for confirmation of Task Force approvals:

(1) construction cost increase for Big Island Mining and Atchafalaya Sediment Delivery (The projects have been bid under one solicitation. Together, the cost of the projects has gone from \$5.9 million to \$7.5 million.);

(2) construction approval with construction cost increase for Isle Dernieres Barrier Island Restoration Projects, East and Trinity Islands (The projects have been bid under one solicitation. Together, the cost of the projects has gone from \$12.6 million to \$16.7 million); and

(3) construction approval with construction cost increase for Whiskey Island (The cost of the project has gone from \$4.4 million to \$6.4 million.) Task Force voting approval of the projects was completed on November 3, 1997, via telephone poll. Motion by Mr. Hathaway: That the Task Force confirm approval of these projects, as recommended by the Technical Committee.

Second: Mr. Bigford.
Passed unanimously.

h. Report on Outreach Committee and Recommendations for Changes in Committee Operations and Structure.

Mr. Jay Gamble presented a report on the activities of the public outreach committee (Enclosure 6). The Task Force discussed Recommendation "A" in the Enclosure, which requested that the Task Force or Technical Committee not make final changes to the Outreach Committee's budget prior to review by the Outreach Committee.

Motion by Mr. Frugé: That the Task Force reject recommendation "A".

Second: Mr. Hathaway.
Passed unanimously.

On Recommendation "B", Colonel Conner said that extending membership on the committee to other efforts was within the purview of the committee itself, as long as laws concerning the voting on the use of Federal funds were obeyed. On the matter of a full-time CWPPRA Outreach Coordinator, Recommendation "C", Mr. Hathaway stated that the EPA will not be able to extend the temporary position currently held by Mr. Gamble beyond the current term. The Task Force informally discussed the possibility of other agencies stepping forward to provide a permanent, full-time position that could be used for CWPPRA Outreach Coordinator. Colonel Conner directed that this be brought up for debate over the remaining 9 months of the current term. The Task Force requested more time to review Recommendation "D", a proposal to rotate the chair of the committee among the agencies. The preliminary consensus was that the chair of the committee might rest with the agency that provides a permanent, full-time employee.

V. INFORMATIONAL AGENDA ITEMS

a. Letter from Mr. Norm Thomas.

Mr. Hathaway announced Mr. Thomas' retirement from EPA and read a letter in which Mr. Thomas thanked all participants in CWPPRA for providing him the opportunity to participate in the program.

b. Report on the Status of Coast 2050.

Dr. Bill Good provided a report on the status of Coast 2050. Dr. Good explained that members of the public had requested a letter from the Governor and Task Force to reaffirm commitment to the process. Dr. Good explained that by the end of May, Coast 2050 participants expected to have the first iteration of unifying coastal restoration needs and strategies with public acceptability.

c. Identifications of Known Cost Increases in the Program.

Mr. Podany provided information on an analysis of program cost increases (Enclosure 7). This information was used to form a "snapshot" of the program's fiscal status to assist in sizing the funded portions of the 7th and 8th Priority Project Lists. The information shows that approximately \$23.1 million is available for new projects on the 7th and 8th Priority Project Lists. Colonel Conner directed that Federal agencies take the lead in identifying cost changes and not rely solely on the state to request them.

d. Status of Feasibility Studies.

Mr. Tim Axtman and Mr. Steve Gammill provided full presentations on the status of the Mississippi River Sediment, Nutrient and Freshwater Redistribution study and the Barrier Shoreline feasibility study, respectively. Mr. Gammill stated that at the next Task Force meeting, DNR will request approval of the scope for Phase 2 of the Barrier Shoreline Study, which covers the Chenier Plain (Calcasieu, Sabine, and Mermentau Basins). The first step of Phase 2 would involve hydrologic investigations. Messrs. John Benoit and Floyd Vincent of the Concerned Citizens of the Mermentau Basin, expressed support for DNR's Phase 2 proposal. Enclosures 8 and 9 are fact sheets on the studies.

e. Status of Construction Program.

Mr. Steve Mathies of the New Orleans District, reported on the status of the Breaux Act construction projects. He noted that last year, 6 new projects were initiated and that 30 new project starts were scheduled this calendar year, 10 within the next quarter. He presented a new short format for describing project status (Enclosure 10). He stated that he would be working on 2 or 3 items for each Task Force meeting. For the next meeting, he will:

(1) report on the status of lead agencies review of monitoring, O&M, and oyster lease impact cost increases;

(2) work with lead agencies to rectify project cost information on a monthly basis; and

(3) work with lead agencies and the State to clarify the status of West Bay Sediment Diversion, Red Mud, Brady Canal, and Caernarvon Outfall Management projects.

f. Status of the Conservation Plan.

Ms. Katherine Vaughan and Ms. Beverly Ethridge reported that the State Conservation Plan was approved in November and is now in effect. Ms. Vaughan thanked the participating agencies for their cooperation, with special thanks to Dr. Paul Coreil, LSU Cooperative Extension.

g. Report on the Lower Atchafalaya Basin re-evaluation study (LABRS), and on the activities of the Atchafalaya Liaison Group.

Mr. Podany reported that model studies for the LABRS are continuing. Results from the TABS II model for no action are expected to be complete in March. Coordination efforts with other agencies are continuing and habitat modeling for Vermilion Bay is underway. Preliminary designs will be completed by the end of FY 98, so that the LABRS team should have the capability to assist in the many project efforts of CWPPRA during this same period.

VI. ADDITIONAL AGENDA ITEMS

Mr. Greg Steyer reported on a national ecosystem restoration conference he attended in South Carolina. He stated that CWPPRA efforts compare favorably with other national programs in the area of adaptive management. Colonel Conner observed that the Breaux Act is in competition for funds with other ecosystem rehabilitation and management programs, such as the multi-million dollar salmon restoration projects in the northwest and the harbor cleanups in Boston and Los Angeles. In comparison to these programs, he said, CWPPRA is relatively poorly funded. Mr. Mark Davis remarked that the Habitat Restoration Partnership Act would be additive dollars that do not compete with CWPPRA.

Ms. Katherine Vaughan and Mr. Cullen Curole, presented a resolution from the State Wetlands Authority in support of the Holly Beach Breakwater Project (Enclosure 11). Mr. Curole suggested that this project could be considered for funding on the 8th or subsequent lists. Colonel Conner directed that this project be discussed at the next meeting, particularly in regard to the proposed multiple sources of funding.

Mr. Bob Jones thanked everyone, especially EPA and Ms. Jeanene Peckham, for the work on the CWPPRA Barrier Island projects under construction in Terrebonne Parish. Ms. Vaughan announced that groundbreaking for these projects will be held in early April.

Mr. Gohmert suggested that the Technical Committee be directed to provide recommendations on procedures to handle bid overruns by the next meeting. The Technical Committee should address the needs of both the State and Federal partners in their review. Mr. Gohmert also requested that monitoring plans and costs be reviewed by the next Task Force meeting.

Task Force members directed that briefing books and final agendas be prepared 2 weeks in advance of the Task Force meetings.

Mr. Podany stated that the Technical Committee had received requests from the respective lead agencies to begin the formal deauthorization process on 4 projects. These projects are Pass-a-Loutre Crevasse, Grand Bay Crevasse, Avoca Island, and Bayou Boeuf Pumping Station.

Motion by Mr. Bigford: That the Task Force begin the formal deauthorization process on these 4 projects.

Second: Mr. Frugé.
Passed unanimously.

VII. DATE AND LOCATION OF THE NEXT TASK FORCE MEETING

The next Task Force meeting was tentatively scheduled for 9:30 a.m. on April 8, 1998 (later changed to April 14th). Task Force members will be contacted to confirm the date and location.

VIII. WRITTEN QUESTIONS FROM THE PUBLIC

No written questions or comments were received from the public.

IX. ADJOURNMENT

The Task Force meeting was adjourned at 2:30 p.m.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

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COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

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- b. Construction Cost Increase for West Point a la Hache Outfall Management, BA-4C; and
- c. Construction Cost Increase for West Belle Pass, TE-23, PTE-15a;
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- a. Construction Cost Increase for Big Island Mining, AT-3/XAT-7;
- b. Construction Cost Increase for Atchafalaya Sediment Delivery, AT-2/PAT-2;
- c. Construction with Construction Cost Increase for Isles Dernieres Barrier Island
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ATTENDANCE RECORD



DATE(S) January 16, 1998 9:30 a.m.	SPONSORING ORGANIZATION COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	LOCATION District Assembly Room New Orleans District Corps of Engineers Building 7400 Leake Ave. New Orleans, Louisiana
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PURPOSE
 MEETING OF THE LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE

PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION (Include mailing address if new or changed)	TELEPHONE & FAX NUMBERS
David Richard	Check for public meeting notice: <input checked="" type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input checked="" type="checkbox"/> Task Force	318-433-1055 (t) 439-2170 (f)
Edmond Russo	COE Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	862-1496 (t) 2572 (f)
Randolph Joseph Jr	NRCS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(318) 896-2382 896-1371 (f)
Larry Trahan	NRCS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	318 896-2382 (t) 896-1371 (f)
Paul Garrett	LSU Ag. Center LCES Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input checked="" type="checkbox"/> Tech. Com. <input checked="" type="checkbox"/> Task Force	504 388-2266 (t) 504 388-2428 (f)
John Deneau	Concerned Citizens of the Mer. Riv. Basin Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(318) 536-9602 (t) (f)
JM Vieux	Concerned Citizens of the Mer. Riv. Basin Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	318-774-2949 (t) (f)
TIM LANDERS	EPA - Dallas Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input checked="" type="checkbox"/> Tech. Com. <input checked="" type="checkbox"/> Task Force	(214) 665-7533 (t) (214) 665-6689 (f)
JEANENE PECKHAM	EPA Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-389-0736 (t) 504-389-0709 (f)
Beverly Ethridge	EPA Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-389-0735 (t) 389-0704 (f)

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

PARTICIPANT REGISTER (CONTINUED)

NAME	JOB TITLE AND ORGANIZATION (Include mailing address if new or changed)	TELEPHONE & FAX NUMBERS
Steve Mathias	CWTREA-COE Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	862-2278 (t) 862-1785 (f)
Rick Hartman	Nat. Mar Fish Serv Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	389-0508 (t) (f)
DOUG SVENDSON	GICA Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	586-1473 (t) (f)
Pete Jones	Plaque Mines Parish Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504 682-0091 (t) X-2580 (f)
Bill Gould	Check for public meeting notice: <input checked="" type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input checked="" type="checkbox"/> Task Force	504-342-7308 (t) (f)
Lana Humphries	Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-342-4076 (t) 504-342-6104 (f)
Phil Pittman	LDNR/COASTAL RESTORATION Check for public meeting notice: <input checked="" type="checkbox"/> P&E Subc. <input checked="" type="checkbox"/> Tech. Com. <input checked="" type="checkbox"/> Task Force	504-342-9489 (t) (f)
Noel Kinker	LDWF / Fur & Refuge Div Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(318) 373-0032 (t) (318) 373-0181 (f)
Britt Post	USDA-NRCS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	318-473-7816 (t) 318-473-7747 (f)
Quin Kinker	USDA-NRCS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-382-2047 (t) 2047 (f)
JOHN HALL	CORPS OF ENGRS, N.O. (P.A.) Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-862-2201 (t) " " - 1724 (f)
Barton Kemp	CEI - BGL Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	628-467-0209 (t) (f)
Gregory Miller	NOAA-NMFS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-389-0508 (t) 389-0506 (f)



ATTENDANCE RECORD



DATE(S) January 16, 1998 9:30 a.m.	SPONSORING ORGANIZATION COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT	LOCATION District Assembly Room New Orleans District Corps of Engineers Building 7400 Leake Ave. New Orleans, Louisiana
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PURPOSE

MEETING OF THE LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE

PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION (Include mailing address if new or changed)	TELEPHONE & FAX NUMBERS
BRUCE LEHTO	NRCS - Asst State Conservationist Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	318-473-7756 (t) (f)
FAYE TALBOT	NRCS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	318-896-9503 (t) (f)
Bonny Parille	USFWS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	318-262-6662 (t) ext. 234 (f)
Don Gehring	NRCS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(t) (f)
Bob Jones	TPCG Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input checked="" type="checkbox"/> Task Force	504 873-6720 (t) (f)
Gerry Bodin	U.S. FWS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input checked="" type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	318-262 6663 ext 244 (t) 6663 (f)
ONEIL MANDRUM	Jefferson Parish / CEGC Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(KOD) 347-2100 (t) (f)
Benz Weber	EPA Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	214 665 6656 (t) (f)
Jay Hamble	CWPPRA Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(t) (f)
MARK DAVIS	CRCC Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504 344 6555 (t) (f)

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

PARTICIPANT REGISTER (CONTINUED)

NAME	JOB TITLE AND ORGANIZATION (Include mailing address if new or changed)	TELEPHONE & FAX NUMBERS
Deuse Reed	LUMCON Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(t) (f)
Tom Bigford	NOAA Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(t) (f)
Stephen Smith	T Baker Smith 750 Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	868-1030 (t) (f)
Gary Rober	COE Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	862-2543 (t) 2572 (f)
David Fruge	USFWS - DOI Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	318) 262-6630 (t) (f)
S.M. GAGLIANO	CEI/EPA Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504/383-7451 (t) (f)
RN Ruebsam	NMFS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input checked="" type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504 5890508 (t) 0506 (f)
Ray Browning	COE Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(t) (f)
Bill Hicks	COE Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(t) (f)
Ann Burruss	CRCL Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	(t) (f)
Bob Rosenbergs	Gulf of Mexico Program Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	601-688-1185 (t) (f)
Gene Turner	USU - Delta Farms Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504 385 6454 (t) (f)
MIKE SPIESS	COE Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	X1830 (t) (f)



ATTENDANCE RECORD



<p>DATE(S) January 16, 1998 9:30 a.m.</p>	<p>SPONSORING ORGANIZATION COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT</p>	<p>LOCATION District Assembly Room New Orleans District Corps of Engineers Building 7400 Leake Ave. New Orleans, Louisiana</p>
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PURPOSE
MEETING OF THE LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE

PARTICIPANT REGISTER*

NAME	JOB TITLE AND ORGANIZATION (Include mailing address if new or changed)	TELEPHONE & FAX NUMBERS
DAVID MUTH	NPS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	589-3882 (t) x 128 (f)
D SANDOE DWGMAN	NPS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	x 119 (t) (f)
Charlotte Parker	USFWS Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504 646 7555 (t) 604-7585 (f)
Don Jolissaint	COE Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504 862- (t) 2649 (f)
Bill Berry	BR Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-566-6465 (t) (f)
Ron Ventola	Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-862-2255 (t) (f)
Marnie Winter	Director, Jefferson Parish Environmental 1221 Elmwood Pk. Blvd., Rm. 703 Harahan, LA 70123 Check for public meeting notice: <input checked="" type="checkbox"/> P&E Subc. <input checked="" type="checkbox"/> Tech. Com. <input checked="" type="checkbox"/> Task Force	504-736-6440 (t) 504-736-6445 (f)
MARTIN CANCIENNE	CONG BILLY TAUBIN Check for public meeting notice: <input type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-621-5793 (t) (f)
Greg Steyer	DNR/CAD Check for public meeting notice: <input checked="" type="checkbox"/> P&E Subc. <input checked="" type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504 342 9435 (t) - 6801 (f)
DARREN CHARK	DNR/CAD Check for public meeting notice: <input checked="" type="checkbox"/> P&E Subc. <input type="checkbox"/> Tech. Com. <input type="checkbox"/> Task Force	504-342-5159 (t) FAX 6801 (f)

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

Coastal Wetlands Planning, Protection and Restoration Act

**TASK FORCE MEETING
September 17, 1997**

MINUTES

I. INTRODUCTION

Colonel William Conner, representing the Secretary of the Army, convened the 28th meeting of the Louisiana Coastal Wetlands Conservation and Restoration Task Force at 9:35 a.m. on September 17, 1997, at the Louisiana Room in the Louisiana Department of Wildlife and Fisheries Building in Baton Rouge, Louisiana. The agenda is attached as enclosure 1. The Task Force was created by the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA), which was signed into law (PL 101-646, Title III) by President Bush on November 29, 1990.

II. ATTENDEES

The Attendance Record for the Task Force meeting is attached as enclosure 2. Listed below are the six Task Force members. All members were in attendance.

Dr. Len Bahr, State of Louisiana
Mr. William Hathaway, Environmental Protection Agency
Mr. David Frugé, U.S. Department of the Interior
Mr. Donald Gohmert, U.S. Department of Agriculture
Mr. Thomas Bigford, U.S. Department of Commerce
Colonel William Conner, U.S. Department of the Army, Chairman

III. APPROVAL OF MINUTES FROM PREVIOUS MEETING

The minutes of the Task Force meeting held on July 23, 1997 (enclosure 3), were approved unanimously with no discussion. Mr. Frugé made the motion to approve the minutes, and Mr. Hathaway seconded it. [1/72]¹

IV. TASK FORCE DECISIONS

A. Consideration for Approval of Coast 2050 Funding for Remainder of FY 1997

Mr. Schroeder presented the Technical Committee's recommendation concerning funding of Coast 2050 contracts for the remainder of FY 1997. To cover these expected contract costs,

¹ The Task Force meeting was recorded on audio tape. The bracketed figures represent the tape no./counter no. for the discussion of this item. Multiple tape/counter numbers are used when an item is discussed more than once during the meeting.

the Technical Committee recommended that the Task Force use all the remaining unobligated funds for FY97, along with available agency contributions from previously budgeted activities as follows: \$20,000 USACE, \$5,000 NRCS, \$5,000 LADNR, and \$2,000 USFWS. The Technical Committee also recommended the use of \$16,000 in deobligated FY 95 funds budgeted to the National Marine Fisheries Service for use on the Mississippi River Sediment, Nutrient and Freshwater Redistribution Study. [1/390-404]

Motion by Dr. Bahr: That the Task Force approve the use of the remaining unobligated funds for FY 97, reallocated FY97 funds, and deobligated FY 95 funds, for a total of \$48,000, to meet Coast 2050 contract requirements for FY97.

Second: Mr. Gohmert.
Passed unanimously. [1/403]

B. Consideration for Construction Approvals

Mr. Schroeder presented the Technical Committee's recommendation concerning construction approvals. The Technical Committee recommended that the Task Force approve for construction the following projects:

1. West Belle Pass Headland Restoration Project (PTE-27) from the 2nd Priority Project List. The estimated total cost of this project is \$5,750,985 (previously approved by fax vote);
2. Isles Dernieres Barrier Island Restoration Project, Phase 0 and Phase 1 on East Trinity Islands (TE-20 and XTE-41) from the 1st and 2nd Priority Project Lists. The estimated total cost of the projects is \$16,566,706; and
3. Beneficial Use of Hopper Dredge Material Demonstration Project from the 2nd Priority Project List. The estimated total cost of this project is \$375,000. [1/409-418]

Motion by Dr. Bahr: That the Task Force approve construction of West Belle Pass Headland Restoration Plan (PTE-27), Isles Dernieres Barrier Island Restoration Project, Phase 0 and Phase 1 on East Trinity Islands (TE-20 and XTE-41), and the Beneficial Use of Hopper Dredge Material Demonstration Project.

Second: Mr. Hathaway
Passed unanimously. [1/417]

C. Request for Change in Project Scope for Bayou Chevee

Mr. Hicks and Mr. Podany discussed the project and requested a change in scope for Bayou Chevee (XPO-69) from that approved on the 5th Priority Project List. The reformulated project provides for shoreline protection through the construction of a rock dike and no longer includes a marsh creation component. Dr. Bahr suggested a title change to reflect the change in scope. [1/420-453]

Motion by Mr. Frugé: That the Task Force approve the suggested change in scope for Bayou Chevee (XPO-69).

Second: Mr. Hathaway

Passed unanimously. [1/452]

D. Consideration for Approval of Future Priority Project List Guidance

Mr. Schroeder presented the Technical Committee's recommendation of new guidance for future priority project lists. The overlap of regions with Coast 2050 was discussed. The Technical Committee recommended that the Task Force approve a new procedure (Enclosure 4) as general guidance for the 8th Priority Project List. [1/489-2/132]

Motion by Mr. Frugé: That the Task Force approve the revised Priority Project List procedure as general guidance for the 8th Priority Project List only and possibly for future lists with the following changes: the "Note to Technical Comm." in the Team Membership paragraph shall be struck from the document, there will be four regional teams similar to the Coast 2050 teams, and the words ad hoc shall be deleted from the phrase "one ad hoc representative appointed by the Governor."

Second: Mr. Gohmert

Passed unanimously. [2/130]

E. Consideration for Approval of Feasibility Steering Committee Recommendations

Mr. Podany presented the Feasibility Steering Committee's recommendations concerning the circumstances of the Barrier Shoreline Study Phases 2 and 3 and the Phase 1 EIS. The recommendations were as follows:

1. that Phase 2 of the Barrier Shoreline, as presently approved, be deauthorized, and that DNR be directed to develop a new proposal for a feasibility study of wetland loss problems relating to the shoreline and interior marshes of the Chenier Plain;

2. that Phase 3 of the Barrier Shoreline Feasibility Study, as currently approved, be deauthorized; and

3. that the Phase 1 EIS be terminated at this time, and the unexpended funds (currently estimated to be \$420,000) be transferred this fiscal year to Coast 2050 efforts and carried over for FY 98 Coast 2050 activities.

A lengthy discussion followed with many members of the public as well as state and Federal agency representatives offering comments. Several aspects of the study were called into question. There was concern about shifting money out of the Phase 1 EIS, delaying the Phase 1 EIS, the completion date of Phase 1, the alternatives considered in Phase 1, the amount of

money budgeted to develop the scope of Phase 2, and the public perception of shifting resources.

Motion by Mr. Hathaway: To table decision until review of the next agenda item, which is, Consideration for Approval of FY 1998 Planning Program Budget

Second: Mr. Frugé

Passed unanimously. [2/135-3/243]

F. Consideration for Approval of FY 1998 Planning Program Budget

Mr. Schroeder presented the Technical Committee's recommendation for the FY 1998 Planning Program Budget (Enclosure 5). The proposal included:

1. \$2,561,612 in funds for agency participation in the program, completion of Priority Project List 7, and initiation of Priority Project List 8;

2. a total of \$550,000 for the Barrier Shoreline Feasibility Study (\$200,000 to complete Phase 1 work, \$150,000 to develop a Phase 2 feasibility scope that will consider restoration of both the shoreline and interior marshes of the Chenier Plain, and \$200,000 to initiate Phase 2);

3. a total of \$562,900 in FY 98 for the Mississippi River Sediment, Nutrient and Freshwater Redistribution Study (Funds in the amount of \$150,000 would be budgeted for FY 99 to complete the study in December 1998 in accordance with the current schedule; no slippage in the schedule would result);

4. a FY 98 total of \$1,066,800 to be budgeted over two years for Coast 2050 (FY 97 and FY 98); and

5. a total of \$43,424 in unallocated funds.

The Barrier Shoreline Feasibility Study budget was changed to \$50,000 to develop a Phase 2 feasibility scope that will consider restoration of both the shoreline and interior marshes of the Chenier Plain, and \$300,000 to initiate Phase 2.

The outreach component of the budget was changed to \$275,000 from \$279,000 (adding \$30,000 for a website upgrade and deferring \$34,000 for the coastal youth reader issue). This changed the total program unallocated balance to \$47,424 and the total unallocated amount to \$93,674. [3/245-4/178]

Motion by Mr. Bigford: To approve the Technical Committee's recommendation for the FY 1998 Planning Program Budget with the changes made during the discussion. (See above.)

Second: Mr. Frugé

Passed unanimously. [4/176]

G. Status of Project Deauthorizations

Mr. Ruebsamen of the National Marine Fisheries Service (NMFS) briefed the Task Force on the status of deauthorization for Eden Isles East Marsh Creation (PPO-4) from the 3rd Priority Project

List. He also informed the Task Force that the NMFS was ready to begin the deauthorization procedure for the Restoration of Bayou Perot / Bayou Rigolettes Marsh(XBA-65a) from the 3rd Priority Project List.

Motion by Mr. Bigford: To begin the deauthorization procedures for the Restoration of Bayou Perot / Bayou Rigolettes Marsh and Eden Isles East Marsh Creation projects.

Second: Mr. Frugé
Passed unanimously. [4/424]

Mr. Gohmert briefed the Task Force on the status of deauthorization for White's Ditch Outfall Management(BS-4a) from the 3rd Priority Project List. [4/313-425]

Motion by Dr. Bahr: To begin the deauthorization procedure for the White's Ditch Outfall Management project.

Second: Mr. Hathaway
Passed unanimously. [4/429]

H. Consideration for Task Force Approval of Memoranda Of Agreement(MOAs) with the Academic Community for 8th Priority Project List Work and Coast 2050 work.

Ms. Hawes described the agreements (Enclosure 5) and requested that the Task Force approve them.

Motion by Mr. Frugé: To approve the MOA with the academic community for 8th Priority Project List work in the amount of \$65,000.

Second: Dr. Bahr
Passed unanimously. [5/587]

Motion by Dr. Bahr: To approve the MOA with the academic community for work on the Coast 2050 effort in the amount of \$106,000, including \$20,000 for maps.

Second: Mr. Bigford
Passed unanimously. [6/58]

V. INFORMATIONAL AGENDA ITEMS

A. Status of Coastwide Strategy (Coast 2050)

Dr. Good briefed the Task Force on the status of the Coastwide Strategy (Coast 2050). Mr. Frugé received positive comments on the CWPPRA program from the White House working group. [1/86-236]

B. Report of Program Performance and Project Implementation

Mr. Scott Clark of the Corps of Engineers reported on the implementation status of approved priority project list projects.

Mr. Clark was recognized for his work with CWPPRA. [1/237-388]

C. Report on Status of the 7th Priority Project List

Mr. Podany briefed the Task Force on the status of the 7th Priority Project List. He stated that due to commitment of 7th PPL funds to previously approved multi-year funded priority list projects, about \$10,000,000 could be anticipated for new projects on the 7th PPL. [4/471-533]

Colonel Conner reaffirmed his instruction at the July 23, 1997 Task Force meeting that the Technical Committee should not to be constrained by a \$10,000,000 cost limit but pick good projects.

D. Status of the Louisiana Coastal Wetlands Restoration Plan Evaluation Report

Dr. Bill Good of the Louisiana Department of Natural Resources reported on the status of the evaluation report required by Section 303(b)(7) of the CWPPRA. He stated that he expected to receive 2000 copies back from the printer in a month or two.

Mr. Jimmy Johnson of the Department of the Interior stated that the brochure "Caring for Coastal Wetlands" was almost completed and could be linked with the evaluation report. [4/533-5/192]

E. Consideration for Approval of Dates and Locations of FY 1998 Quarterly Task Force Meetings

The quarterly Task Force meetings were set for the following dates and locations: 1st quarter - January 14, 1998 at Bayou Segnette State Park, 2nd quarter - April 1, 1998 in Abbeville, 3rd quarter - June 24, 1998 in Thibodaux, and 4th quarter - September 16, 1998 in Baton Rouge. [5/193-448]

F Outreach Committee Report

Mr. Gamble reported on the committee's national outreach program. [5/449-546]

G. Status of Feasibility Studies

Mr. Podany reported to the Task Force on the status of the Louisiana Barrier Shoreline Study and the Mississippi River Diversion Study (MRSNFR). He reported that Phase 1 of the Louisiana Barrier Shoreline study should be completed in December 1997 and MRSNFR is on schedule to be completed in December 1998.

Colonel Conner directed that each study team provide full reports on the studies to the Task Force at the January, 1998 Task Force meeting. [5/547-574]

VI. ADDITIONAL AGENDA ITEMS

Ms. Katherine Vaughan of the Louisiana Department of Natural Resources thanked Mr. Scott Clark for his contribution to the CWPPRA effort. [6/63-82]

VII. REQUEST FOR PUBLIC COMMENT

No written questions or comments were received from the public.

VIII. DATE AND LOCATION OF THE NEXT TASK FORCE MEETING

The next Task Force meeting was scheduled for 9:30 a.m. on January 14, 1998 at Bayou Segnette State Park.¹ Task Force members will be contacted to confirm the date.

IX. ADJOURNMENT

Colonel Conner declared the meeting adjourned. [6/87]

¹ Note: The Task Force meeting was subsequently changed to January 16, 1998, 9:30 a.m., New Orleans District District Assembly Room.

Seventh Priority Project List Approved
by the Louisiana Coastal Wetlands Conservation and Restoration Task Force^a

3/4/98

Project No.	Name of Selected Project on 7th Priority Project List	Lead Agency	Fully Funded Total Cost	Cummulative Fully Funded Total Cost
XME-22	Pecan Island Terracing	NMFS	\$ 2,185,900	\$ 2,185,900
XBA-63 BA-21	Stabilization Along Bayou Perot and Rigolettes, Phase 1	NRCS	\$ 10,342,700	\$ 12,528,600
XBA 1a "1"	Vegetative Planting of Dredge Material Disposal Site on Grand Terre Island	NMFS	\$ 928,900	\$ 13,457,500
CW-(Demo)	Effects of Sediment and Nutrients on Thin-Mar Flotant Marsh	NRCS	\$ 460,222	\$ 13,917,722
Total for Projects Selected and Funded:			\$ 13,917,722	
PO-11	Cut Off Bayou Marsh Restoration	COE	\$ 6,510,200	\$ 6,510,200
PBS-1	Upper Oak River Freshwater Introduction Siphon	NRCS	\$ 12,471,800	\$ 18,982,000
XCS-48 (SA-1)	Sabine Refuge Marsh Creation, Alt No. 1	COE	\$ 9,391,600	\$ 28,373,600
XME-42	South Grand Cheniere Freshwater Introduction (Hog Bayou FW Introduction)	NRCS	\$ 5,130,500	\$ 33,504,100
XTE-62	Wine Island Eastward Expansion	COE	\$ 1,276,100	\$ 34,780,200
XBA-63 BA-21	Stabilization Along Bayou Perot and Rigolettes, Phase 2 ^b	NRCS	\$ 21,263,700	\$ 56,043,900
TE-11aii	Lake Pelfo Dedicated Dredging and New Cut Closure	EPA	\$ 6,314,700	\$ 62,358,600
PPO-2dh	Lake Borgne Shore Protection, Base Only	COE	\$ 15,133,400	\$ 77,492,000
Total for Projects Selected but Not Funded:			\$ 77,492,000	

Proposed Schedule of Allocations for Phased Projects

Project No.	Name of Phased Project from Previously Approved Lists	7th Priority Project List Cost	8th Priority Project List Cost ^c	Cummulative Cost
BA-25				
PBA-20	Bayou Lafourche Siphon	\$ 7,987,000	\$ 7,500,000	\$ 15,487,000
MR-9, PMR-10	Delta-Wide Crevasses	\$ -	\$ 2,736,950	\$ 18,223,950
TE-34, PTE-26i	Penchant Basin Plan	\$ -	\$ 7,051,550	\$ 25,275,500
TE-32, TE-7f	Lake Boudreaux Basin Freshwater Introduction and Hydrologic Management, Alternative B	\$ -	\$ 4,915,650	\$ 30,191,150
BA-24, XBA-48a	Myrtle Grove Siphon	\$ -	\$ 5,000,000	\$ 35,191,150
LA-2, PTV-5	Nutria Harvest for Coastwide Restoration	\$ 640,000	\$ 1,100,000	\$ 36,931,150
Total:		\$ 8,627,000	\$ 28,304,150	

^a The selection meeting of the Task Force was conducted on January 16, 1998.

^b Phase 2 project cost (for associated work) has been shown here to equal the difference in cost (and work) between Phase 0 and Phase 1.

^c 7th Priority Project List phased project costs that are now deferred to the 8th Priority Project List.

CWPPRA STANDARD OPERATING PROCEDURES

7. Revised Cost Sharing¹.

a. General: As provided for in the Louisiana Coastal Wetlands Conservation Plan, effective December 1, 1997, cost sharing is reduced for unexpended funds from 75% Federal and 25% non-Federal to 85% Federal and 15% non-Federal for all future Priority Lists projects and Priority Lists 1 through 4 projects. For Priority Lists 5 and 6 projects, cost sharing is reduced from 75% Federal and 25% non-Federal to 90% Federal and 10% non-Federal .

b. Definitions²: The term "total Project expenditures", as stated in paragraph 4.i., shall mean the sum of all Federal expenditures for the project and all non-Federal expenditures for which the Lead Agency has granted credit. An expenditure is a disbursement of funds for charges incurred for goods and services.

c. Implementation: All expenditures that were incurred through November 30, 1997 (invoices that were submitted to CEMVN-PM-P and all funds disbursed by check), will be considered part of the original cost sharing percentages. These expenditures will be subtracted from the approved current estimates and cost shared at 75% Federal and 25% non-Federal. The remaining funds expended beginning December 1, 1997 will be considered part of the revised cost sharing provisions.

d. Cost Sharing Agreements: Future cost sharing agreements will reflect the new cost sharing percentages and existing cost sharing agreements will be amended to reflect the new cost sharing percentages.

e. Database: As stated in paragraph 5.a., the Corps of Engineers will act as bookkeeper, administrator, and disbursing officer of all Federal and non-Federal funds. A database is in place at present to record all estimates, obligations, and expenditures. Lead agencies will keep the Corps of Engineers informed of current approved project estimates and schedules in order to have the latest information in the database.

¹Formally approved at the January 16, 1998 Task Force meeting.

²At the December 16, 1997 Joint Meeting of the P&E Subcommittee and the Technical Committee the term "expenditure" was further clarified as being on a cash basis. For example, work-in-kind (WIK) and costs paid would be considered expenditures. However, costs submitted would not be considered an expenditure.

ATTACHMENT A:

Status of CWPPRA Outreach Committee Action Assignments:

1. Develop feature stories that highlight scientific, environmental and economic aspects
Lead: National Marine Fisheries Service
Gordon Helm is the lead person on the committee to direct this on-going activity. There have been several regional feature stories this past year including Point Au Fer and Lake Salvador. The outreach committee will pursue this area more aggressively in the coming months.
2. Conduct project tours for media, constituents, and school groups
Lead: Environmental Protection Agency & US Fish and Wildlife Service
This assignment has become the action portion of the project dedications. Due to funding limitations, the project tours have been accomplished during dedications. CWPPRA has received favorable press from these activities. This activity is on-going.
3. Refine/expand mailing lists, identify key media contacts
Lead: Outreach Coordinator
There is a project to merge the LADNR, Coast 2050, Coalition to Restore Coastal Louisiana, BTNEP, and Watermarks mailing lists. This will provide a mailing database that is more comprehensive than the present one.
4. Develop/maintain event calendar focusing on regional and local civic government events
Lead: Outreach Coordinator
This issue is being addressed through the CWPPRA Homepage. There have been start-up difficulties and a protocol is being developed that will allow easier in-put of activities onto the calendar. Additionally, the mailing database will be used to sort individuals and groups targeted for information.
5. Provide materials for CWPPRA Task Force member briefings to high levels
Lead: Outreach Coordinator
This activity is on-going. The CWPPRA slide show has been developed as a basic tool for use by presenters. The tabletop/full size displays are available. A color CWPPRA brochure has been developed. A full size poster of Louisiana coastal wetlands will be available for mass distribution. Material can and will be developed as needs become apparent and activities dictate.
6. Develop/distribute information for outside public officials use
Lead: Outreach Coordinator
This activity has been combined into activity number 4. It relates to the mailing database, Homepage development, material development, and CD-ROM development.

7. Identify/develop personal contacts with environmental, industry, and civic groups (stakeholders)
Lead: Outreach Coordinator
This activity has been greatly advanced by the involvement in Coast 2050. The coordinator will increase efforts to interact with industry/business interests and large land owners.
8. Identify/establish contacts with "issue leaders" from above groups
Lead: Outreach Coordinator
This activity has been rolled into activity number 7.
9. Identify opportunities to participate in conventions, meetings, develop exhibit calendar
Lead: Outreach Coordinator
A calendar of events will be developed to participate in those regional and national events identified as being a priority. That calendar will be developed in draft by the end of January. It will reflect activities proven to be effective in the past to include National Wetlands Month/Alexandria, Va., National Science Teachers Association National Convention, etc.
10. Promote/maintain CWPPRA Internet Homepage
Lead: Corps of Engineers
A budget increase was executed and a Homepage Workgroup was formed to assist the NWRC/NBS in their upgrade of the CWPPRA Homepage. This activity is on-going.
11. Develop speakers bureau/identify agency speakers/provide canned presentations
LADNR/Outreach Coordinator
LADNR (Sharon Thompson) has taken the lead to develop a speaker's bureau. The thrust of this endeavor comes from the Coast 2050 Initiative and the need to reach various groups of people. This activity is on-going.
12. Procure/develop tabletop displays
Lead: Outreach Coordinator
The tabletop display has been procured and is in the inventory. The development of constantly changing themes for use on the display is on-going.
13. Biannual publication of *Watermarks*, expand distribution
Lead: Corps of Engineers/Natural Resources conservation Service
The publication has expanded to quarterly.
14. Conduct project dedications
Lead: All
On-going

15. Finalize publication of general overview brochure and slide presentation & individual project pamphlets

Lead: Environmental Protection Agency

The overview brochure and the slide presentation have been completed under a contract with Dr. Paul Coreil of LSU-CES. Individual project pamphlets will continue to be developed as an on-going activity.

CWPPRA OUTREACH COMMITTEE REPORT

January 16, 1998

1. Action Item Summary: See Attachment A
2. Conferences and Conventions
3. Project Dedication
4. Public Groups, Schools, and Governments
5. Coast 2050
6. Watermarks
7. Budget
8. Recommendations
9. Minutes of 12/18 Meeting. See Attachment B

1. **Action Item Summary: See Attachment A**

2. **Conferences and Conventions:**

Louisiana Science Teachers Association (Shreveport, November 6-7):

CWPPRA was represented at this event by displaying the tabletop display with the CWPPRA mural/message. CWPPRA partnered with a representative of the Environmental Protection Agency's Public Outreach Section. Ms. Terry Branch from the EPA's Regional Office assisted with the activities at the booth. Approximately 300 science teachers from around the state participated in this event. Outreach materials from CWPPRA as well as wetland materials from the EPA were available to the teachers for their classroom use.

National FFA (Future Farmers of America) Convention (Kansas City, November 12-14):

Herb Bourque (NRCS) and Jay Gamble (CWPPRA-EPA) traveled to Kansas City to represent CWPPRA and set up the large display at an assigned booth (#611). The display consisted of the large CWPPRA mural, interactive CD/computer (NWRC), and various handouts (pamphlets, brochures, fact sheets, posters, etc.). There were approximately 32,000 registered convention attendees by late Thursday afternoon. Needless to say, there was a lot of noise and activity. The traditional blue and gold FFA jackets being worn by the young people were nice to see, as well as their politeness and good conduct.

It's really difficult to assess the impacts of attending an activity like this. It was relatively expensive (approximately \$3500) to attend and this particular audience was very diversified. We did not distribute all of the material we had taken with us and ultimately shipped some of the material back. Many people went past the display and read the message on the mural depicting coastal wetland loss in Louisiana. Herb and I both had numerous one-on-one conversations with individuals and groups. But was it cost effective and did we "get the message out" to a national audience in an effective way? Herb and I agreed that we did not.

ENCL 6

Our joint recommendation to the CWPPRA Task Force is that we do not attend this particular function as an exhibitor in the future. While the number of attendees was certainly impressive, it turned out to be an unmanageable task to do effective outreach from an exhibitor setting. It may be better to target segments of the agricultural community to do public outreach regarding coastal wetland losses and not to such a diverse national group.

From a regional perspective, working with LSU-CES in their various wetland program endeavors around the state (Wildwoods Wanderings, Marsh Maneuvers, various 4-H Camps) has shown to be effective in getting the CWPPRA message out to a largely agricultural group.

3. CWPPRA Project Dedication:

Lake Salvador (October 15):

The remoteness of this particular CWPPRA project dedication provided many challenges for the multi agency group committed to the logistics of this ceremony. To the attendees of the dedication ceremony, the challenges were transparent and that is the main indicator of our success. NMFS/LADNR were the overall coordinators of the project dedication with various other agencies and departments taking the lead for various subtaskings. This was the first occasion for many of us to eat nutria in it's various forms (sausage and barbecued).

4. Public Groups/Schools/Governments:

During the last quarter, the CWPPRA outreach coordinator has been active in talking to various public and private groups relating to CWPPRA/Coast 2050. It has been my experience, that when beginning the talk with Coast 2050, some regression is necessary to CWPPRA. From there, some additional regression is necessary to elaborate on the basic functions and values of coastal wetlands. That indicates we need to continue with the very basic message that wetlands are important and they perform vital functions in our environment. CWPPRA is a method/vehicle for restoring-protecting-enhancing lost functions and values of Louisiana's coastal wetlands in crisis. Some of the groups that were given programs include the following:

- Buras High School (Plaquemines Parish)
- Ponchatoula High School (Tangipohoa Parish)
- Tangipohoa School Superintendent & staff
- Lake Maurapas Society (Tangipohoa & St. John Parishes)
- Sixth Ward Association-Lafitte (Jefferson Parish)
- League of Women Voters (St. Tammany Parish)
- Tangipohoa Parish Council
- St. Tammany Parish Council
- EPA Region 6 Outreach Staff

5. Coast 2050:

The CWPPRA outreach coordinator and members of the outreach committee have been involved with the Objectives Development Team (ODT) and Regional Teams of the Coast 2050 effort. Many meetings with the ODT, Coastal Zone Managers, fisheries agents, and county extension agents have taken a lot of time and mileage. Hopefully, those efforts will result in meaningful public input to the Coast 2050 effort. It has been interesting the responses from the public regarding this new planning effort. To say they are a little skeptical would be to put it mildly. One political figure from St. Tammany Parish referred to Coast 2050 as more beaurecratic nonsense. We have our work cut out for us.

6. Watermarks:

Following budget approval by the Task Force permitting the quarterly publication of Watermarks, the outreach committee began development of themes to be used as a guide to the publishers. A preliminary summary of those themes can be found in Attachment B.

7. Budget:

The Outreach Committee met on January 15 in a special meeting devoted to institutionalizing the process the committee uses to make budget recommendations to the Technical Committee/Task Force. The outreach committee will distribute those decisions and recommendations after a review and comment period.

8. Recommendations:

- A. That specific line item changes or additions to funding to the CWPPRA Outreach Committee budget by the Task Force or Technical Committee are reviewed by the Outreach Committee prior to becoming final.
- B. Extend membership of the CWPPRA Outreach Committee to the Gulf of Mexico Program, Barataria-Terrebonne National Estuary Program, Coalition to Restore Coastal Louisiana, and the LSU-Cooperative Extension Service with full voting privileges except for budgetary items.
- C. That a permanent full-time CWPPRA Outreach Coordinator/GS-12 be established at one of the Breaux Act federal agencies.
- D. The chairmanship of the CWPPRA Outreach Committee rotate among the various member agencies for a duration to be determined later. Or, the chairmanship duties are assumed by the full-time outreach coordinator position as a part of his/her job description.

9. Minutes of 12/18 Outreach Committee: See Attachment B

COST SHARING RESPONSIBILITIES

P/L	Total No. of Projects	Current Estimate (a)	Expenditures To Date (b)	Unexpended Funds (c)	75% x Current Est (d)	75% x Expd + 85% x Unexp (PL 0-4, 7) + 90% Unexp PL 5 & 6 (e)	Increase Over Orig 75% Cost (e-d)
0	1	238,871	123,202	115,669	179,153	190,720	11,567
1	17	43,166,429	12,581,639	30,584,790	32,374,822	35,433,301	3,058,479
2	15	53,918,458	13,358,275	40,560,183	40,438,844	44,494,862	4,056,018
3	17	45,029,251	8,461,702	36,567,549	33,771,938	37,428,693	3,656,755
4	10	15,500,087	239,767	15,260,320	11,625,065	13,151,097	1,526,032
5	9	43,778,271	2,396,925	41,381,346	32,833,703	39,040,905	6,207,202
6	13	38,220,049	112,198	38,107,851	28,665,037	34,381,214	5,716,178
7	0	36,931,150	0	36,931,150	27,698,363	31,391,478	3,693,115
Total	82	276,782,566	37,273,708	239,508,858	207,586,925	235,512,270	27,925,346
Available		281,995,484			231,160,268	231,160,268	
Balance		5,212,918			23,573,344	(4,352,602)	
		(Fed & N/F)			(Fed)	(Fed)	

Notes:

- (1) Includes FY 98 estimated \$42,500,000 work allowance.
- (2) Includes \$36,931,150 for Priority List 7 phased projects (\$37,181,150 less \$250,000 for Bayou Boeuf).
- (3) Includes 7 proposed deauthorizations:
 - Bayou Perot
 - Eden Isles
 - Grand Bay
 - Pass-a-Loutre Crevasse
 - White's Ditch
 - Avoca Island
 - Bayou Boeuf (Phased)
- (4) Includes \$7.6M cost increases approved by Task Force 21 Nov 97. (Isles Dernieres + \$4.1, Whiskey Island + \$1.8, Achatalaya Sed + \$0.4, and Big Island + \$1.3).
- (5) Includes additional anticipated cost increases to W. Pt-a-la-hache (PL 3, + \$3.2M) and Grand Bayou (PL 5, + \$2.8M).

**PROGRAM STATUS
ADDITIONAL KNOWN INCREASES**

	<u>Total Costs</u>	<u>Federal Costs</u>	<u>Cumulative Federal Funding Status</u>
Starting Point (20 Dec 97 Spreadsheet)			(\$4,352,000)
1. Adjustments (Assume 85-15 Cost Sharing)			
a. Fully-Funded Cost Increase of West Belle Pass	\$300,000	\$255,000	(\$4,607,000)
b. Fully-Funded Cost of Grand Bayou Expansion, \$2.9M vs. \$2.8M	\$100,000	\$85,000	(\$4,692,000)
c. Fully-Funded Cost of Approved Monitoring Plans*	\$5,000,000	\$4,250,000	(\$8,942,000)
d. Fully-Funded Cost of Unapproved Monitoring Plans*	\$4,140,000	\$3,519,000	(\$12,461,000)
e. Anticipated Oyster Lease Impacts*	\$625,000	\$531,250	(\$12,992,250)
f. Anticipated O&M Increases*	\$12,000,000	\$10,200,000	(\$23,192,250)
2. Additional Potential Deauthorizations			
None	\$0	\$0	
3. Deferrals	<u>7th List Cost</u>	<u>Total Deferred</u>	<u>Fed. Share of Deferred Amt</u>
a. Delta-Wide Crevasses	\$2,736,950	\$2,736,950	\$2,326,408
b. Penchant Basin Plan	\$7,051,550	\$7,051,550	\$5,993,818
c. Lake Boudreaux Basin	\$4,915,850	\$4,915,650	\$4,178,303
d. Nutria Harvest Demo	\$1,740,000	\$1,100,000	\$935,000
e. Bayou Lafourche Siphon	\$15,487,000	\$7,500,000	\$6,375,000
f. Myrtle Grove Siphon	\$5,000,000	\$5,000,000	\$4,250,000
Subtotal	\$36,931,350	\$ 28,304,150	\$24,058,528
4. Other Adjustments			
a. FY 99 Federal Allotment		<u>Amount</u>	
		\$42,100,000	\$43,716,278
b. 8th List Federal Funding of Deferred Projects		\$24,058,528	\$19,657,750
5. Federal Funds Available for New Projects on 7th and 8th List		<u>Amount</u>	
Non-Federal Matching Share		\$19,657,750	
Total Funds Available for New Projects On 7th & 8th Lists		\$3,468,983	\$23,126,733

* Preliminary estimates provided by the Louisiana Department of Natural Resources

January 13, 1997

PROJECT FACT SHEET

PROJECT: Louisiana Barrier Shoreline Feasibility Study

1. PURPOSE: To assess and quantify wetland loss problems linked to protection provided by barrier formations along the Louisiana coast. The study will identify solutions to these problems, attach an estimated cost to these solutions, and determine the barrier configuration which will best protect Louisiana's significant coastal resources from saltwater intrusion, storm surges, wind/wave activity and oil spills. These resources include, but are not limited to, oil and gas production and exploration facilities, the Strategic Petroleum Reserve, pipelines, navigable waterways, and fragile estuarine and island habitats.

2. FACTS:

a. Study Authority. This study is authorized pursuant to the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). The study is funded by 100 percent federal funds from the CWPPRA planning budget. The CWPPRA Task Force, which implements the Act, directed the Louisiana Department of Natural Resources to be the lead agency for the barrier shoreline feasibility study. The Louisiana Governor's Office of Coastal Activities also assists in the implementation of the study. A steering committee composed of federal agency representatives provides input and oversight to the study.

b. Location. The study area encompasses the barrier shoreline formations between the Mississippi and Atchafalaya Rivers, the chenier plain barrier formations in Vermilion and Cameron Parishes, and the Chandeleur Islands.

c. Problems and Solutions Being Investigated. The study will investigate coastal wetland coastal use and resource loss linked to barrier shoreline deterioration.

d. Status. A contract for the feasibility study was let to T. Baker Smith and Sons of Houma, Louisiana. Funds for year one (\$1,007,000) were approved by the Task Force at the June 1995 meeting.

The three year study is broken into three geographic phases. Phase 1 (year 1) focuses on the region between Raccoon Point and the Mississippi River. Phase 2 (year 2) focuses on the chenier plain. Phase 3 (year 3) focuses on the Chandeleur Islands, the Lake Pontchartrain/Lake Borgne land bridge, and the coastal wetlands east of the Mississippi River.

The feasibility study will generate the following information for each phase: A. Review of prior studies, reports, and existing projects; B. Conceptual and quantitative system framework; C. Assessment of resource status and trends; D. Inventory and assessment of physical conditions and parameters; E. Inventory and assessment of existing environmental resource conditions; F. Inventory and assessment of existing economic resource conditions; G. Forecast trends in physical and hydrological conditions with no action; H. Forecast trends in environmental resource conditions

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1997 meeting. Schedules and budgets are being developed by DNR and will be available for Steering Team review in early January 1998.

STUDY MANAGER: Steven Gammill, Louisiana Department of Natural Resources, (504) 342-0981

CELMN-PD-FE
FACT SHEET
NEW ORLEANS DISTRICT

SUBJECT: Mississippi River Sediment, Nutrient and Freshwater Redistribution Study

1. PURPOSE: To determine means to quantify and optimize the available resources of the Mississippi River to create, protect and enhance coastal wetlands and dependent fish and wildlife populations in coastal Louisiana. To plan, design, evaluate and recommend for construction projects utilizing the natural resources of the Mississippi River in order to abate continuing measured loss of this habitat and restore a component of wetland growth.

2. FACTS:

a. Status.

- i. **Tasks Completed:** Initial analyses completed include land use, habitat type and land loss, endangered and threatened species documentation, and existing water supply demand. Spatial distribution of these parameters has also been developed for the study area. The development of concept plan receiving area footprints are being completed. Basic structure sizings, channel and levee requirements are being developed for each plan as the hydraulics is completed. Hydraulic modeling of riverine impacts for multi-diversion combinations is complete. Data and design information development for the intermediate concept plans are complete. A quality assurance review of the model was completed and H&H Branch review of the output is underway. A workshop to address issues stemming from project scope, sponsorship, implementation and operational complexity was held in mid Mar 97. Attendees reach consensus on a number of points although there was serious discussion over several technical issues.
- ii. **Tasks Underway:** Tasks involving the development of future without action conditions are being initiated through the MOA with LUMCON. Modeling of the hydraulic effects of the combined MRSNFR and Barrier Shoreline study alternatives in the Barataria basin are being run. Landscape modeling runs of the Barataria alternatives are also being run. The wetland evaluations for the intermediate study alternatives have been initiated and the field data collection phase is finished. Real Estate cost estimates for the individual alternatives are ongoing. The study efforts are being closely coordinated Coast 2050 planning process. This coast wide multi-interest public planning process will directly influence the implementability of all study alternatives. Information from the outfall and landscape modeling efforts as well as the completed engineering analysis should be available in mid January. Environmental benefit analyses are scheduled to be completed by mid February. A new completion date of mid June 1998 is projected for the draft study report. A completion date of December 1998 is still anticipated for the final report.
- iii. **Budget:** The current total time and cost estimate calls for a study duration of 41 months and a cost of \$4.1 million, including 25 percent contingencies. The Task Force also established a steering committee to oversee and coordinate all CWPPRA funded studies and approve the study scopes and estimates.

Total Estimated Cost (100% Fed)	\$4,082,500
Allocated through FY 1995	\$919,000
Allocated for FY 1996	\$993,400
Allocated for FY 1997	\$1,458,600
Allocated for FY 1998	\$458,600
Balance to Complete After FY 1998	\$712,500

b. Issues.

- i. Coordination of existing water resources uses is, and will continue to be, a major issue in project development. While specific measures may not effect all uses uniformly, or on a consistent annual or seasonal basis, it should be anticipated that some use will be impacted for virtually every action.
- ii. Legal issues involving outputs that would be commonly measured as benefits will also require attention. There are numerous liability issues stemming from proprietary interests, assumed or real, in surface conditions as related to specific user interests.
- iii. The composite of these issues has a direct effect on the local sponsors ability and willingness to participate in these projects. The resultant project and legal costs and operational conflicts can potentially be a deterrent to local sponsorship.

The Coast 2050 effort should be an effective means of coordinating and addressing these issues.

c. Study Authority. This study was authorized by the Louisiana Coastal Wetlands Conservation and Restoration Task Force established under the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) and is funded with CWPPRA planning funds. The Corps of Engineers was directed by the Task Force to be the lead agency in the execution of this study.

d. Location. The study area is comprised of the entire Mississippi River Deltaic Plain, from the East Atchafalaya Basin Protection Levee eastward to the Louisiana-Mississippi state border. The area is bounded to the south by the Gulf of Mexico. The area encompasses approximately 6.4 million acres or 10,000 square miles.

e. Problems and Solutions Being Investigated. The study will investigate existing modifications to natural deltaic processes and resultant loss of coastal wetlands and assess potential uses of the sediment, nutrient and freshwater resources found in the Mississippi River to modify or reverse these trends. Hydraulic modeling will be used to establish the availability of the riverine resources which are to be applied and the effect of reallocation of these resources. After an intermediate screening, lump sum component costs, unit habitat outputs, and the value of resultant attendant resource outputs will be developed. Alternative analysis will be accomplished primarily with existing information. Economic evaluation of the intermediate alternatives will consider positive and negative National Economic Development type impacts as credits and debits toward the cost of each alternative. The final recommendations will be based on the evaluation of environmental outputs versus costs of an alternative as described in Draft EC 1105-2-206.

STUDY MANAGER:

TIM AXTMAN, (504) 862-1921

Revised Study Schedule

< Outfall Modeling (initial results)	10 Feb
< Landscape Modeling (initial results)	17 Feb
< Environmental Benefit Analysis	17 Feb
< Economic Analysis	31 Mar
< Environmental Compliance	31 May
< Draft Report	30 Jun
< Review of Draft Report	31 Aug
< Final Report	30 Oct
< Review of Final Report	15 Dec

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

PROJECT STATUS SUMMARY REPORT

15 January 1998

Summary report on the status of CWPPRA projects prepared for the Louisiana Coastal Wetlands Conservation and Restoration Task Force.

Reports enclosed:

Project Details by Lead Agency

Information based on data furnished by the Federal Lead Agencies and collected by the Corps of Engineers

Prepared by:

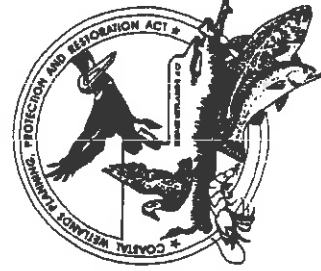
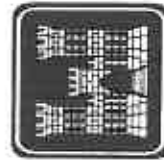
Programs and Project Management Division

U.S. Army Corps of Engineers

New Orleans District

P.O. Box 60267

New Orleans, LA 70160-0267



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COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	***** SCHEDULES *****		***** ESTIMATES *****		Remarks/Status:
	CSA	Const Start	Const End	Baseline	

Lead Agency: DEPT. OF THE ARMY, CORPS OF ENGINEERS

Barataria Bay Marsh Creation	24-Apr-95 A	01-Aug-94 22-Jul-96 A	30-Nov-94 31-Dec-00	\$1,759,257	\$1,695,796	96.4	Completed Queen Bess Island for \$945,678. Remaining funds may be used to purchase oyster leases for O&M beneficial disposal.
Bayou Labranche Wetlands Restoration	17-Apr-93 A	01-Dec-92 06-Jan-94 A	31-Mar-93 07-Apr-94 A	\$4,461,301	\$3,658,740	82.0	Complete.
Lake Salvador Shoreline Protection at Jean Lafitte NHP&P	29-Oct-96 A	05-Jun-95 01-Jun-95 A	31-Aug-96 21-Mar-96 A	\$60,000	\$60,000	100.0	This project was design only. Complete.
Vermilion River Cutoff Bank Protection	17-Apr-93 A	01-Apr-93 10-Jan-96 A	30-Aug-93 11-Feb-96 A	\$1,526,000	\$2,056,249	134.7!	Complete.
West Bay Sediment Diversion		01-Aug-94	30-Nov-94	\$8,517,066	\$13,347,100	156.7!	Unscheduled. CSA at DNR since March 1997.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
Clear Marais Bank Protection	29-Apr-96 A	01-Jun-94 29-Aug-96 A	30-Jun-95 03-Mar-97 A	\$1,741,310	\$3,345,715	192.11	Complete.
West Belle Pass Headland Restoration	27-Dec-96 A	01-Mar-94 20-Feb-98	30-Aug-94 15-Aug-98	\$4,854,102	\$5,936,526	122.3	Construction start slipped from 23 Jan 98 to 20 Feb 98 due to increased cost. Bids were opened 9 Jan 98. Design had slipped from 30 Jul 97 to 31 Oct 97 due to surveys of marsh buggy access problems. Award slipped from 1 Oct 97 to Jan 98 pending Task Force approval.
Channel Armor Gap Crevasse	13-Jan-97 A	01-Oct-95 22-Sep-97 A	31-Dec-95 02-Nov-97 A	\$808,397	\$893,865	110.6	Complete.
MRGO Back Dike Marsh Protection	17-Jan-97 A	01-Oct-94 15-Apr-98	31-Dec-94 31-Jul-98	\$512,198	\$553,900	108.1	Scope of work greatly reduced. Surveys taken in Dec 97; awaiting cost estimate for reduced scope of work. Project being re-evaluated. Design completion slipped from 15 Dec 97 to 15 Jan 98 pending completion of cost estimate.
Pass-a-Loutre Crevasse		01-Oct-95	31-Dec-95	\$2,857,790	\$105,918	3.7	Proposed deauthorization.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	***** SCHEDULES *****		***** ESTIMATES *****		Remarks/Status:
	CSA	Const Start Const End	Baseline	Current %	
Grand Bay Crevasse		01-Nov-96 31-Jan-97	\$2,468,908	\$52,154 2.1	Proposed deauthorization.
Hopper Dredge Demo	30-Jun-97 A	01-Feb-96 28-Feb-98 30-Aug-96 31-May-98	\$300,000	\$374,062 124.7	Awaiting award by Operations Division. Is an option on O&M lease hopper dredge contract 98-9. Construction start slipped from 31 Jan 98 to 28 Feb 98, dependent on River.
Bayou Chevee	15-Mar-98	15-Jan-98 05-May-98 15-Jun-98 15-Oct-98	\$2,890,821	\$2,890,821 100.0	CSA slipped from 15 Oct 97 to 15 Mar 98 due to design changes from marsh creation to shoreline protection. Construction start slipped pending CSA execution. Drafting new model CSA for HQ approval. Final O&M costs for revised project not received until late Nov 97.
Avoca Island (Incr 1)			\$6,438,400	\$49,193 0.8	Deauthorization of project will be requested at 16 Jan 98 Task Force meeting.
Dustpan/Cutterhead Dredge Demo	15-Mar-98	30-May-98 30-Nov-98	\$1,600,000	\$1,600,000 100.0	CSA slipped from 19 Oct 97 to 15 Mar 98 - not final cost available. Construction start slipped from 30 Mar 98 to 30 May 98 to allow for adequate shoaling material. CSA to be drafted and awaiting new model approval by HQ.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
Marsh Island Hydrologic Restoration	13-Feb-98	18-May-98	29-Jan-99	\$4,094,900	\$4,094,900	100.0	CSA execution will require new model CSA; not enough design to base cost on for drafting CSA. Over 4-month delay in right of entry from DNR; received week of 5 Jan 98.
Total DEPT. OF THE ARMY, CORPUS OF ENGINEERS				\$44,890,450	\$40,714,938	90.7	

- 16 Project(s)
- 9 Cost Sharing Agreements Executed
- 6 Construction Started
- 5 Construction Completed
- 3 Project(s) Deferred/Deauthorized
- 6 Scheduled Const Starts This FY
- 3 Projects Over 125% of Baseline Estimate

Notes:

1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)**

PROJECT	***** SCHEDULES *****		***** ESTIMATES *****		%	Remarks/Status:
	CSA	Const Start	Const End	Baseline		

Lead Agency: ENVIRONMENTAL PROTECTION AGENCY, REGION 6

State of Louisiana Wetlands Conservation Plan	13-Jun-95 A	03-Jul-95 03-Jul-95 A	30-Sep-97 15-Nov-97 A	\$238,871	\$238,871	100.0	Complete.
Isles Dernieres (Phase 0) (East Island)	17-Apr-93 A	01-May-93 15-Feb-98	31-Dec-92 01-Jan-99	\$6,345,468	\$8,751,838	137.9	The Task Force will formally approve the budget increase on 16 Jan 98. The construction start date is expected to remain the same.
Isles Dernieres (Phase 1) (Trinity Island)	17-Apr-93 A	01-May-93 15-Feb-98	30-Oct-93 01-Jan-99	\$6,907,897	\$11,949,173	173.0	The Task Force will formally approve the budget increase on 16 Jan 98. The construction start date is expected to remain the same.
Red Mud Demo	03-Nov-94 A	01-Jul-94 08-Jul-96 A	31-Aug-94	\$350,000	\$480,500	137.3	Facility construction is essentially complete; project on hold pending resolution of cell contamination by saltwater before planting occurred, and possible change to freshwater marsh demonstration. Resolution of these concerns is expected by Feb 98.
Whiskey Island Restoration (Phase 2)	06-Apr-95 A	01-Oct-94 20-Feb-98	31-Mar-95 31-Jan-99	\$4,844,274	\$7,863,363	162.3	The Task Force will formally approve the budget increase on 16 Jan 98. The construction start date is expected to remain the same.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)**

***** SCHEDULES ***** ESTIMATES *****
 PROJECT CSA Const Start Const End Baseline Current % Remarks/Status:

Compost Demo	22-Jul-96 A	01-Sep-95	31-Jan-96	\$370,594	\$380,594	102.7	Project is unscheduled. The schedule is delayed, approximately 6 to 12 months, until Entergy can collect an adequate amount of compost.
Bayou Lafourche Sipton	19-Feb-97 A			\$9,000,000	\$9,000,000	100.0	Draft report is proposed for April or May of 1998.
Bayou Boeuf/Verret Basin, Incr 1.				\$150,000	\$0	0.0	Project in process of being deauthorized.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)**

PROJECT	CSA	SCHEDULES *****	Const Start	Const End	***** ESTIMATES *****	Current	Baseline	%	Remarks/Status:
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Total ENVIRONMENTAL PROTECTION AGENCY, REGION 6						\$38,664,339	\$28,207,104	137.1	
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- 8 Project(s)
- 7 Cost Sharing Agreements Executed
- 2 Construction Started
- 1 Construction Completed
- 1 Project(s) Deferred/Deauthorized
- 3 Scheduled Const Starts This FY
- 4 Projects Over 125% of Baseline Estimate

Notes:

1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF THE INTERIOR (FWS)

***** SCHEDULES ***** ESTIMATES *****
 PROJECT CSA Const Start Const End Baseline Current % Remarks/Status:

Lead Agency: DEPT. OF THE INTERIOR, FISH & WILDLIFE SERVICE

Bayou Sauvage #1	17-Apr-93 A	01-May-93 01-Jun-95 A	01-May-94 30-May-96 A	\$1,657,708	\$1,598,612	96.4	Complete.
Cameron Creole Watershed Hydrologic Restoration	17-Apr-93 A	15-Jul-92 01-Oct-96 A	30-Aug-92 28-Jan-97 A	\$660,460	\$775,974	117.5	Complete.
Cameron Prairie Refuge Shoreline Protection	17-Apr-93 A	01-Apr-92 19-May-94 A	31-Aug-92 09-Aug-94 A	\$1,177,668	\$1,490,074	126.51	Complete.
Sabine Wildlife Refuge Erosion Protection	17-Apr-93 A	01-May-93 24-Oct-94 A	01-May-94 01-Mar-95 A	\$4,895,780	\$1,868,673	38.2	Complete.
Bayou Sauvage #2	30-Jun-94 A	01-May-94 15-Apr-96 A	01-May-95 28-May-97 A	\$1,452,035	\$1,700,121	117.1	Complete.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF THE INTERIOR (FWS)**

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
Sabine Refuge Structures (Hog Island)	25-Oct-96 A	01-Jun-95 01-Oct-98	31-Dec-95 01-Jul-99	\$4,581,454	\$4,591,454	100.2	Geotechnical investigations are complete. Design is scheduled for completion in May 98.
Grand Bayou / GIWW Freshwater Introduction	31-Mar-98	01-Sep-99	28-Feb-00	\$5,135,468	\$5,135,468	100.0	The CSA may slip to May 98 - it is presently being reviewed by FWS Atlanta Regional Office. Approval is expected by May 98. Proposed project additions cost about \$3 million. On 14 Jan 98, the Technical Committee approved change in scope of the project only.
Lake Boudreaux FW Introduction, Alt B	01-Aug-98	01-Aug-02	01-Aug-03	\$4,915,650	\$4,915,650	100.0	The FWS is working with DNR to acquire land rights for the freshwater introduction inflow/outflow channel. FWS together with Koch Pipeline Company is investigating potential project impacts to the Koch Pipelines in the project area. This project includes about \$1 million for flood protection purposes. Land rights for the flood protection system and the channels could be a problem.
Nutria Harvest for Wetland Restoration Demo	01-Feb-98			\$400,000	\$400,000	100.0	Preliminary work will begin on promotion of nutria meat overseas. A cost sharing agreement is being written by LA DNR, but will probably not be complete by Feb 98.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF THE INTERIOR (FWS)**

PROJECT	***** SCHEDULES *****	***** ESTIMATES *****	Remarks/Status:		
CSA	Const Start	Const End	Baseline	Current	%

Total DEPT. OF THE INTERIOR, FISH & WILDLIFE SERVICE

- 9 Project(s)
- 6 Cost Sharing Agreements Executed
- 5 Construction Started
- 5 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- Scheduled Const Starts This FY
- 1 Projects Over 125% of Baseline Estimate

\$24,876,223

\$22,476,026

90.4

Notes:

1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)**

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
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Lead Agency: DEPT. OF COMMERCE, NATIONAL MARINE FISHERIES SERVICE

Fourchon Hydrologic Restoration		01-Aug-92	30-Sep-92	\$252,036	\$6,999	2.8	Deauthorized.
Lower Bayou LaCache Hydrologic Restoration	17-Apr-93 A	30-Oct-92	28-Feb-93	\$1,694,739	\$100,625	5.9	Deauthorized.
Atchafalaya Sediment Delivery	01-Aug-94 A	01-Jun-93 01-Feb-98	30-Sep-93 01-Nov-98	\$907,810	\$2,048,679	225.7!	Construction start slipped from Nov 97 to Feb 98. Budget increase will formally be approved by Task Force 16 Jan 98. Construction award is on schedule.
Big Island Mining (Increment 1)	01-Aug-94 A	01-Oct-93 01-Feb-98	30-Aug-94 01-Nov-98	\$4,136,057	\$7,082,356	171.2!	Construction start date slipped from Nov 97 to Feb 98. Budget increase will formally be approved by Task Force 16 Jan 98. Construction award is on schedule.
Point Au Fer	01-Jan-94 A	01-Sep-93 01-Oct-95 A	31-Dec-93 08-May-97 A	\$1,069,589	\$1,775,000	166.0!	Complete.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
Bayou Perot / Bayou Rigolettes Marsh Restoration	01-Mar-95 A	01-Jul-95	31-Dec-95	\$1,835,047	\$1,292,580	70.4	Project in process of being deauthorized.
East Timbalier Island Sediment Restoration #1	01-Feb-95 A	01-Apr-95 01-May-98	30-Nov-95 30-Mar-99	\$2,046,971	\$2,568,751	125.5	Design completion expected in Feb 98. EA and permitting underway. Construction is to be as scheduled.
Lake Chapeau Sediment & Hydrologic Restoration	01-Mar-95 A	01-Mar-95 01-May-98	31-Dec-95 31-Jan-99	\$4,149,182	\$4,849,834	116.9	Land rights acquired for site of plug, but others related to the area to be filled are in question.
Lake Salvador Shore Protection Demo	01-Mar-95 A	01-Jan-95 02-Jul-97 A	31-Mar-95 01-Jun-98	\$1,444,628	\$2,442,952	169.1	Phase 1 was completed Sep 97. Phase 2 is shoreline protection between Bayou desAllemands and Lake Salvador, and will be complete June 1998.
East Timbalier Island Sediment Restoration #2	08-Jun-95 A	01-May-96 01-May-98	30-Nov-96 30-Mar-99	\$5,752,404	\$7,190,505	125.0	Design completion expected in Feb 98. EA and permitting underway. Construction is to be as scheduled.
Eden Isles East Marsh Restoration		01-May-96	30-Aug-96	\$5,018,968	\$1,380	0.0	NMFS letter of 8 Sep 97 requested Task Force to proceed with deauthorization of project.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)**

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
Little Vermilion Bay Sediment Trapping	22-May-97 A	01-Jun-98	31-Jul-98	\$940,065	\$940,100	100.0	Minor construction slip from Apr 98 to Jun 98. On schedule.
Myrtle Grove Siphon	20-Mar-97 A	01-May-99	01-May-00	\$10,500,000	\$10,500,000	100.0	There are some problems with the landowner concerning an easement for the outfall canal. Project construction will probably slip by several months.
Black Bayou Hydrologic Restoration	01-Feb-98	01-Oct-98	31-May-99	\$6,316,800	\$6,316,806	100.0	Cooperative Agreement in NMFS Washington office. Project on schedule.
Delta-Wide Crevasses	01-Feb-98	01-Aug-98	01-Oct-98	\$2,736,950	\$2,736,950	100.0	Cooperative Agreement in NMFS Washington office. Project on schedule.
Jaws Sediment Trapping	01-Feb-98	01-Aug-98	01-Oct-98	\$3,167,400	\$3,167,400	100.0	Cooperative Agreement in NMFS Washington office. Project on schedule.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	CSA	***** SCHEDULES *****	Const Start	***** ESTIMATES *****	Const End	Baseline	Current	%	Remarks/Status:
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Total DEPT. OF COMMERCE, NATIONAL MARINE FISHERIES SERVICE									
						\$51,968,646	\$53,020,918	102.0	

- 16 Project(s)
- 11 Cost Sharing Agreements Executed
- 2 Construction Started
- 1 Construction Completed
- 4 Project(s) Deferred/Deauthorized
- 8 Scheduled Const Starts This FY
- 5 Projects Over 125% of Baseline Estimate

Notes:

1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

***** SCHEDULES ***** ESTIMATES *****
 CSA Const Start Const End Baseline Current % Remarks/Status:

Lead Agency: DEPT. OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE

BA-2 GIWW to Clovelly Wetland Restoration	17-Apr-93 A	15-Apr-92 21-Apr-97 A	30-Sep-93 28-Aug-98	\$8,141,512	\$6,859,412	84.3	Construction completion slipped from Feb 98 to Aug 98 because of general project planning and some land rights issues. In order to expedite implementation, the project was divided into two contracts. The first contract was to install most of the weir structures and is complete. The second contract is to install bank protection, one weir and one plug. Contract #2 is expected to be advertised in Feb 98.
Vegetative Plantings Demo - Dewitt-Rollover	17-Apr-93 A	30-Mar-93 11-Jul-94 A	30-Jun-94 26-Aug-94 A	\$191,003	\$79,282	41.5	Complete and deauthorized.
Vegetative Plantings Demo - Falgout Canal	17-Apr-93 A	30-Mar-93 30-Aug-96 A	30-Jun-94 30-Dec-96 A	\$144,561	\$180,296	124.7	Complete.
Vegetative Plantings Demo - Timbalier Island	17-Apr-93 A	30-Mar-93 15-Mar-95 A	30-Jun-94 30-Jul-96 A	\$372,589	\$411,602	110.5	Complete.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)**

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
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Vegetative Plantings Demo - West Hackberry	17-Apr-93 A	30-Mar-93	30-Jun-94	\$213,947	\$225,157	105.2	Complete.
		15-Apr-93 A	30-Mar-94 A				
Brown Lake	28-Mar-94 A	01-Apr-94	31-Dec-95	\$3,222,800	\$3,222,666	100.0	Contract award has been delayed due primarily to the length of time needed to complete the permitting process, beneficial use of COE dredged material, and the relocation of a pipeline. Contract award is expected in May 98.
		15-Jul-98	01-May-99				
Caernarvon Outfall Management	13-Oct-94 A	01-Jul-94	30-Nov-94	\$2,522,199	\$2,634,353	104.4	This project was proposed for deauthorization but was referred for revisions at the request of the landowners and DNR. The scheduled construction schedule will slip and the cost may change.
		01-Oct-98	01-Sep-99				
Freshwater Bayou	17-Aug-94 A	01-Jun-96	30-Oct-97	\$2,770,093	\$2,780,100	100.4	Construction completion slipped from Dec 97 to Feb 98. Construction is being done by landowner. Project almost complete.
		29-Aug-94 A	28-Feb-98				
Fritchie Marsh	21-Feb-95 A	30-Aug-98	01-Mar-99	\$3,048,389	\$2,875,475	94.3	Delays in project construction start occurred because a landowner had changed his position, prompting design changes, and local officials expressed concerns about drainage that required additional investigations. The construction contract is expected to be awarded in time to start construction in Aug 98. Land rights could be a problem but we don't know yet.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)**

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
Hwy 384	13-Oct-94 A	01-Feb-95 30-Aug-98	30-Aug-96 28-Feb-99	\$700,717	\$756,562	108.0	Construction start slipped from Nov 97 to Aug 98 because of land rights issues. Written agreements remain to be secured from 2 land owners. Difference of opinion between agencies concerning impacts and benefits resulted in delays, and multiple, complex land-owner title issues are not yet resolved. Contract is expected to be advertised in Jun 98.
Jonathan Davis Wetland	05-Jan-95 A	01-Jan-95 28-Feb-98	30-Jun-96 31-Jul-99	\$3,398,867	\$4,046,673	119.1	Construction start slipped from Dec 98 to Feb 98 because of planning and design delays. First contract to construct weir and plugs is to be advertised in Jan 98. Second contract is bank stabilization and will probably be advertised in summer 98.
Mud Lake	24-Mar-94 A	01-Oct-94 01-Oct-95 A	30-Jun-96 15-Jun-96 A	\$2,903,635	\$2,807,225	96.7	Complete.
Vermilion Bay/Boston Canal	24-Mar-94 A	01-Mar-95 13-Sep-94 A	30-Mar-96 30-Nov-95 A	\$1,008,634	\$965,473	95.7	Complete.
Brady Canal	13-Oct-94 A	01-May-96 30-May-98	30-Nov-96 31-Jan-99	\$4,717,928	\$4,598,773	97.5	Permitting and design conditions has resulted in the CSA being modified to also include Fina Oil Co. and LL&E. Both will help cost share the project. The revised CSA is expected to be complete in Feb 98. The construction schedule is expected to remain unchanged.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)**

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
Cameron Creole Maintenance	09-Jan-97 A	30-Sep-97 A	31-Jul-98	\$3,719,926	\$3,730,000	100.3	The first contract for maintenance work is complete. The second contract is advertised now.
Cote Blanche	01-Jul-96 A	01-Apr-95 15-Mar-98	31-Dec-95 15-Sep-98	\$5,173,062	\$4,964,802	96.0	Construction start date slipped from Nov 97 to Mar 98 because of concern about the source of shell to construct the project. Site inspection for bidder was held 12 Jan 98. Concern for a source of shell may require budget modifications. Bid opening scheduled for 27 Jan 98.
SW Shore White Lake Demo	11-Jan-95 A	01-Jul-94 30-Apr-96 A	31-Aug-94 31-Jul-96 A	\$126,062	\$146,944	116.6	Complete. Potential for deauthorization.
Violet Freshwater Distribution	13-Oct-94 A	01-Apr-96 30-Sep-98	30-Oct-96 30-Sep-99	\$1,821,438	\$1,831,440	100.5	Access problems have been resolved and design is currently proceeding; the construction schedule will slip as design is finalized.
West Pointe-a-la-Hache Outfall Management	05-Jan-95 A	01-Oct-95 01-Aug-98	30-Apr-96 30-Mar-99	\$881,148	\$891,100	101.1	Initial cost estimate too low. Additional \$3.2 million will be requested at the 16 Jan 98 Task Force meeting.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)**

***** SCHEDULES ***** ESTIMATES *****
 CSA Const Start Const End Baseline Current % Remarks/Status:

White's Ditch Outfall Management	13-Oct-94 A	01-Mar-95	30-Jun-95	\$756,134	\$23,075	3.1	Project in process of being de-authorized.
Bayou L'Ours Ridge Hydrologic Restoration	23-Jun-97 A	30-Apr-98 01-Jun-99	01-Jun-99 01-Jul-00	\$2,418,676	\$2,418,700	100.0	Project on schedule. Permit applications and environmental assessments are proceeding.
BBWW "Dupre Cut" - West	23-Jun-97 A	01-Mar-98 01-Jul-98	01-Nov-98 28-Feb-99	\$2,192,418	\$2,192,418	100.0	The project is being coordinated with the COE dredging program. COE permit is in the process of reviewing the permit. No date for resolution scheduled.
Flotant Marsh Fencing Demo	30-Jun-98	01-Jun-97 30-Jun-99	31-Dec-97 30-Oct-99	\$367,066	\$367,066	100.0	CSA execution slipped from Sep 97 to Jun 98. Construction schedule will be affected. Difficulty in locating an appropriate site for demonstration and difficulty in addressing engineering constraints. Project location is expected to be settled by the end of January 1998.
Perry Ridge Bank Protection	23-Jun-97 A	01-Nov-97 15-May-98	30-Sep-98 15-Dec-98	\$2,223,518	\$2,223,518	100.0	Project is on schedule and land rights are being acquired.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)**

***** SCHEDULES ***** ESTIMATES *****

PROJECT **CSA** **Const Start** **Const End** **Baseline** **Current** **%** **Remarks/Status:**

Plowed Terraces Demo	15-Feb-98	01-Feb-97 01-Apr-98	31-May-97 30-Sep-98	\$299,690	\$299,690	100.0	CSA execution slipped from Nov 97 to Jun 98. This should not affect project construction schedule. Project initially put on hold pending results of an earlier terraces demonstration project being paid for by the Gulf of Mexico program. Project currently proceeding.
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Freshwater Bayou Bank Stabilization	01-Jul-97 A	15-Feb-98	15-Apr-98	\$3,998,919	\$3,998,919	100.0	Contract was awarded 14 Jan 98. The local cost share is being paid by Acadian Gas Company.
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Naomi Outfall Management	28-Feb-98	01-Mar-99	30-Sep-99	\$1,686,865	\$1,686,865	100.0	CSA execution slipped from Dec 97 to Feb 98 because _____. This should not affect the project construction schedule. This project will be combined with BBWW "Dupre Cut" East project for planning, design, and construction.
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Racoon Island Breakwaters Demo	03-Sep-96 A	21-Apr-97 A	31-Jul-97 A	\$1,497,538	\$2,063,398	137.8!	Complete.
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Sweet Lake/Willow Lake	23-Jun-97 A	01-Jun-98	01-Jun-99	\$4,800,000	\$4,762,700	99.2	On schedule.
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**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)**

***** SCHEDULES ***** ESTIMATES *****

PROJECT	CSA	Const Start	Const End	Baseline	Current	%	Remarks/Status:
BBWW "Dupre Cut" - East	27-Feb-98	01-Mar-99	30-Aug-99	\$5,019,900	\$5,019,900	100.0	CSA execution slipped from Dec 97 to Feb 98 because _____. This should not affect the project construction schedule. This project will be combined with Naomi Outfall Management project for planning, design, and construction.
Cheniere au Tigre Sediment Trapping Device Demo	01-Feb-98	01-Oct-99	30-Mar-00	\$500,000	\$500,000	100.0	On schedule.
Oaks/Avery Canals Hydrologic Restoration-Incr 1 (B.S. only)	01-Feb-98	01-Jul-99	30-Dec-99	\$2,367,700	\$2,367,700	100.0	No anticipated problems to expedite implementation. The planning, design, and construction will be handled by DNR and should result in the project being completed about 6 months early.
Penchant Basin Plan w/o Shoreline Stabilization	01-Feb-98	01-Oct-00	30-Oct-01	\$7,051,550	\$7,051,550	100.0	Data gathering on-going. Project on schedule.

**COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)**

***** SCHEDULES ***** ESTIMATES *****
 PROJECT CSA Const Start Const End Baseline Current % Remarks/Status:

Total DEPT. OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE \$80,258,484 \$78,982,834 98.4

- 33 Project(s)
- 26 Cost Sharing Agreements Executed
- 11 Construction Started
- 8 Construction Completed
- 2 Project(s) Deferred/Deauthorized
- 13 Scheduled Const Starts This FY
- 1 Projects Over 125% of Baseline Estimate

Notes:

- 1. Expenditures based on Corps of Engineers financial data.
- 2. Date codes: A = Actual date * = Behind schedule
- 3. Percent codes: ! = 125% of baseline estimate exceeded

SUMMARY Total All Projects \$230,200,907 \$233,859,055 101.6

82 Project(s)
 59 Cost Sharing Agreements Executed
 26 Construction Started
 20 Construction Completed
 10 Project(s) Deferred/Deauthorized
 30 Scheduled Const Starts This FY
 14 Projects Over 125% of Baseline Estimate

Total Available Funds
 Federal Funds \$231,160,268
 Non/Federal Funds \$50,835,216
 Total Funds \$281,995,484



J. "MIKE" FOSTER, JR.
GOVERNOR

State of Louisiana

OFFICE OF THE GOVERNOR

Baton Rouge

70804-9004

POST OFFICE BOX 94004
(504) 342-7015

DATE: January 12, 1998
TO: CWPPRA Task Force Members
FM: Cathy Mitias and Cullen Curole, Governor's Office
RE: State Task Force Resolution of Support for Holly Beach

On a motion by Katherine Vaughn, the State Wetlands Task Force passed a resolution to offer its continued support for the Holly Beach Project. The resolution offers details describing efforts to secure multiple sources of funding and requests that an increment of this project be included in the CWPPRA Priority List process. This portion would support beach nourishment in three \$5,000,000 phases.

The resolution specifically request that Len Bahr, as Executive Assistant and Chair of the State Wetlands Authority make a formal letter of request that the first \$5,000,000 Phase be allocated for funding on the Priority Project List VIII project list. In light of the untimely death of his mother and in recognition of the nomination and candidate list process, Len has asked for a measure of time to appropriately word this letter.

Please accept the following copy of the resolution and attachments as prepared by the Department of Natural Resources and approved by the State Wetlands Task Force.

ENCL 11

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

DISCUSSION OF WEST BAY SEDIMENT DIVERSION COST INCREASE

For Information.

Mr. Robert Schroeder will brief the Task Force with a cost increase summary on West Bay Sediment Diversion. The recommendation of the Technical Committee consists of continued planning of the West Bay project, recognizing that:

- a. the cost of the project has increased to \$16.7 million, and
- b. since the cost increase exceeds 25 percent of the baseline estimate it will have to be approved by the Task Force through the SOP at the time it is ready for construction.

No Task Force decision is required at this time.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

REPORT ON THE STATUS OF PROJECT DEAUTHORIZATIONS

*Budget Projections
already assume
these de-authorizations*

For information.

Mr. Robert Schroeder will give a status briefing on the following projects that are currently under review for deauthorization:

- a. Pass-a-Loutre Crevasse, MR-7, MR-8/9a (USACE)
- b. Grand Bay Crevasse, BS-7, PBS-6 (USACE)
- c. Avoca Island Marsh Creation, TE-35, CW-5i (USACE)
- d. Bayou Boeuf Pumping Station, TE-33, XTE-32i; (EPA)

The Task Force voted to initiate the deauthorization of these projects at the last Task Force meeting. As per standard operating procedures, the Technical Committee Chairman has prepared letters to the Congressional delegation and the members of the state legislature and parish presidents for these projects. The Technical Committee will make a recommendation to the Task Force concerning the deauthorization of these projects at the next Task Force meeting.

CWPPRA STANDARD OPERATING PROCEDURES

Project Deauthorization

5.r. Project Deauthorization.

(1) When the Lead Agency and the Local Sponsor agree that it is necessary to deauthorize a Project prior to construction, they shall submit a letter to the Technical Committee explaining the reasons for requesting the deauthorization and requesting approval by the Task Force.

(2) If agreement between the Lead Agency and the Local Sponsor is not reached, either party may then appeal directly to the Technical Committee. The Technical Committee will forward to the Task Force a recommendation concerning deauthorization of the project. Nothing herein shall preclude the Lead Agency or the Local Sponsor from bringing a request for deauthorization to the Task Force irrespective of the recommendation of the Technical Committee.

(3) Upon submittal of a request for deauthorization to the Technical Committee, all parties shall suspend all future obligations and expenditures as soon as practicable, until the issue is resolved.

(4) Upon receiving preliminary approval from the Task Force to deauthorize a Project, the Chairperson of the Technical Committee shall send notice to 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, requesting their comments and advising them that, at the next Task Force meeting, a final decision on deauthorization will be made.

(5) When the Task Force determines that a Project should be abandoned or no longer pursued because of economic or other reasons, all expenditures shall cease immediately or as soon as practicable. Congress and the State House and Senate Natural Resources Committee chairs will be informed of the decision.

(6) Once a Project is deauthorized by the Task Force, it shall be categorized as "completed" and closed-out as required by paragraph 5.s.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

REPORT ON THE STATUS OF THE NEEDS LIST

For information.

Mr. Tom Podany will report to the Task Force on the status of the Needs List.

**Needs List
Scope of Work
and Schedule**

Jan 20 - Feb 9 - Scope of Work

The P&E will formulate the process for constructing a needs list. The Technical Committee will designate team members to select and define the projects. Team members should be involved with the Coast 2050 effort.

Feb 10 - Feb 13 - Tech Rev

The Technical Committee reviews the process. Revisions are made.

Feb 17 - Feb 20 - Task Force Rev

The Task Force reviews the process. Revisions are made.

Feb 23 - Mar 6 - PPL Needs

The process team reviews all unfunded candidate projects from PPL's 1-6. The team eliminates bad projects and any projects known to conflict with strategies being formulated in Coast 2050. This list could be used as a list of ready projects that could move quickly to construction if the Task Force so chooses. Costs and benefits have been determined for all of these projects and they have been presented to the public.

Mar 6 - Apr 7 - Rest Plan

The process team reviews the Restoration Plan and selects potential projects considering any strategies that have already been formulated in the Coast 2050 effort.

Mar 6 - Apr 7 - Feas Studies

The process team reviews the two feasibility studies and selects potential projects considering any strategies that have already been formulated in the Coast 2050 effort.

Apr 8 - Apr 28 - 2050 Projects

The process team reviews the strategies formulated in the Coast 2050 effort and suggests projects that address needs or opportunities not addressed by any of the previously reviewed projects. The environmental and engineering work groups participate in developing these projects and determining costs and benefits.

Apr 29 - May 5 - Refine List

The process team reviews all selected projects and determines the final list or lists. The team could choose to list small priority list type projects seperately from big WRDA type projects. At this time all decisions as to the specific content of the needs list report must be made, such as, which project attributes should be included in the descriptions and whether the criticality, the importance to the ecosystem, or the conformity with Coast 2050 strategies should be noted.

May 6 - Jun 1 - Provide Descriptions and Costs

All costs, descriptions, and write-ups will be completed. A suggestion to define projects in terms of their contribution to a no net loss of wetlands was made at the P&E meeting of January 27, 1998.

Jun 2 - Jun 4 - Public Meetings to Present List

The needs list should be presented to the public. Maybe Coast 2050 or 8th PPL meetings could be used.

Jun 8 - Jun 19 - Revisions and Final Comments

Any revisions or additions to the needs list report resulting from public comments will be made.

Jun 22 - Jun 26

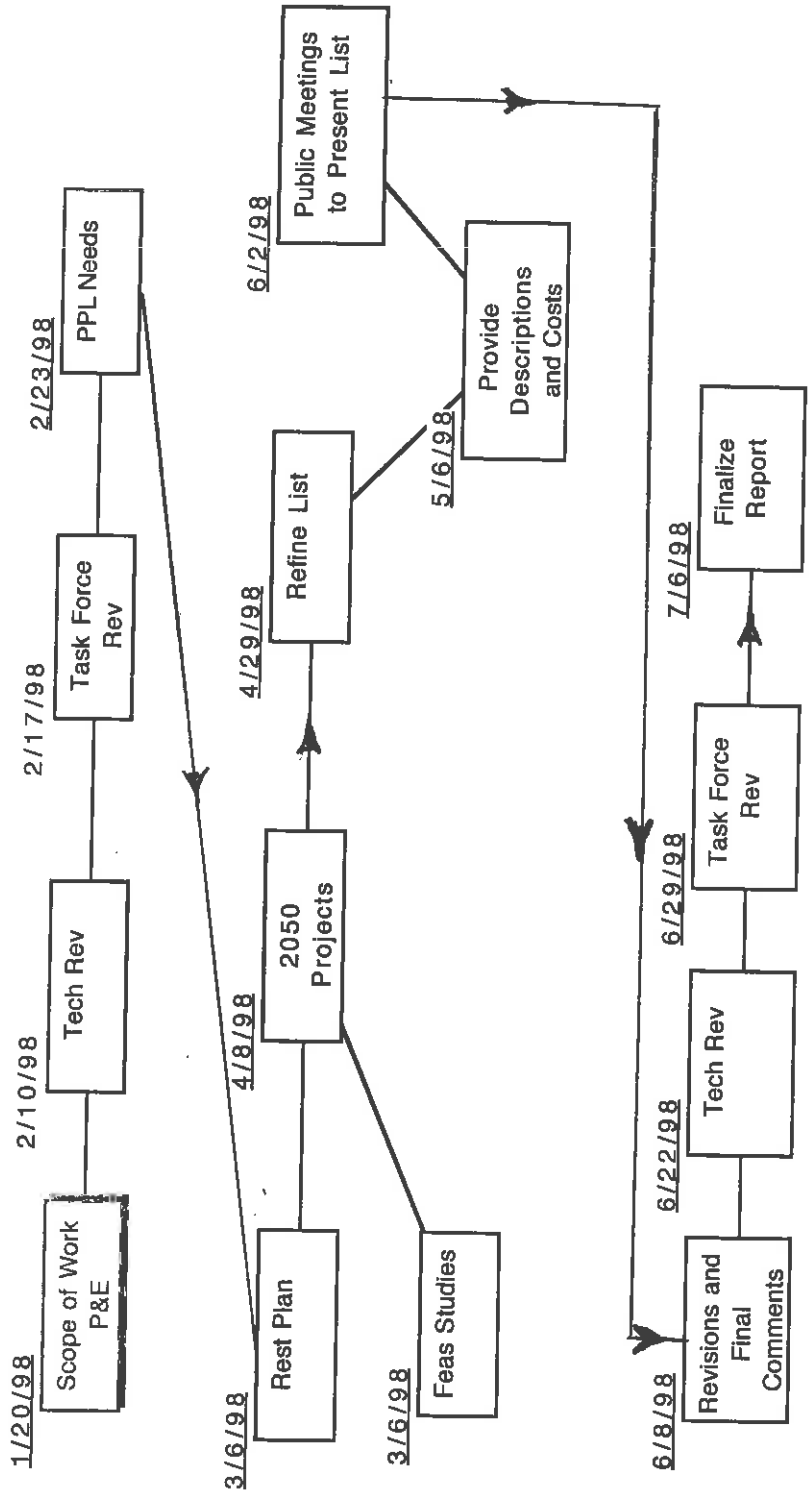
The Technical Committee reviews the needs list report. Revisions are made.

Jun 29 - Jul 3

The Task Force reviews the needs list report.

July 6 - July 14

The needs list report is finalized.



NEEDS LIST SCHEDULE

See Needs List Scope of Work and Schedule for description of tasks.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

REPORT ON ANTICIPATED PROJECT COST INCREASES IN THE PROGRAM

For Information.

Mr. Tom Podany will present to the Task Force an analysis of the known program cost increases, which is enclosed. This information was used to form a "snapshot" of the program's fiscal status to assist in sizing the 8th Priority Project List.

PROGRAM STATUS
ADDITIONAL KNOWN INCREASES

10-Apr-98

Bill recommended that comparison be made to orig. authorized costs.

Starting Point (16 Mar 98 Spreadsheet)	Total Costs	Non-Federal Costs	Federal Costs	Cumulative Federal Funding Status
				\$1,610,100
1. Adjustments (Uses 85-15 Cost Sharing) ⁴				
a. Fully-Funded Cost of Cheniere Au Tigre increase	\$348,073	\$52,211	\$295,862	\$1,314,238
b. Fully-Funded Cost of Grand Bayou Expansion (Adjustment)	\$1,164,532	\$174,680	\$989,852	\$324,386
c. Fully-Funded Cost of Approved Monitoring Plans ¹	\$3,000,000	\$450,000	\$2,550,000	(\$2,225,614)
d. Fully-Funded Cost of Unapproved Monitoring Plans	\$0	\$0	\$0	(\$2,225,614)
e. Anticipated Oyster Lease Impacts	\$625,000	\$93,750	\$531,250	(\$2,756,864)
f. Anticipated O&M Increases ¹	\$8,821,559	\$1,323,234	\$7,498,325	(\$10,255,189)
g. Anticipated Bayou Lafourche Siphon Increases ²	-	-	-	UNKNOWN
h. Fully-Funded Cost of West Belle Pass Increase	\$176,000	\$26,400	\$149,600	(\$10,404,789)
i. Estimated Cost of Isles Dernieres Project Expansion (New Cut Closure)	\$2,600,000	\$390,000	\$2,210,000	(\$12,614,789)
Subtotal	\$16,735,164	\$2,510,275	\$14,224,889	
2. Additional Potential Deauthorizations				
None	\$0	\$0	\$0	
3. Deferrals		Non-Fed. Share of Deferred Amt.	Fed. Share of Deferred Amt	Cumulative Federal Funding Status
a. Delta-Wide Crevasses	\$2,736,950	\$410,543	\$2,326,408	(\$14,941,197)
b. Penchant Basin Plan	\$7,051,550	\$1,057,733	\$5,993,818	(\$20,935,014)
c. Lake Boudreaux Basin	\$4,915,850	\$737,348	\$4,178,303	(\$25,113,317)
d. Nutria Harvest Demo	\$1,100,000	\$165,000	\$935,000	(\$26,048,317)
e. Bayou Lafourche Siphon	\$7,500,000	\$1,125,000	\$6,375,000	(\$32,423,317)
f. Myrtle Grove Siphon	\$5,000,000	\$750,000	\$4,250,000	(\$37,423,317)
Subtotal	\$28,304,150	\$4,245,623	\$24,058,528	
4. Other Adjustments			Amount	
Estimated FY 99 Federal Allotment			\$42,100,000	\$4,676,683
5. Estimated Available Funds			Amount	
Federal Funds Available for New Projects on 8th List			\$4,676,683	
Non-Federal Matching Share			\$825,290	
Total Funds Available for New Projects On 8th List ³			\$5,501,973	

upper estimate → \$4.3 mil.

existing work to extend to Oct.

Bill - expects to have numbers later this mo. could fund w/ future appropriations

FY99 Planning # have been reserved.

Bu. Laf. - work thru comtee and then TF in July, decide Go/No Go

¹ Fully funded costs subject to verification and inflation factors applied by Economic Work Group
² Estimate provided by the Environmental Protection Agency
³ Excludes Funds for DNR's proposed 20% O&M Contingency for Storms and Vandalism (\$9 million)
⁴ For simplification, 85-15 cost sharing was used. Some costs will be cost shared at 90-10. Task Force agencies have not yet reached consensus on what cost sharing to use on project increases for 5th and 6th list projects, or that portion of a project partially funded on the 7th and 8th lists when a project is initially approved on the 5th and 6th lists.

PROGRAM STATUS
ADDITIONAL KNOWN INCREASES

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Subtotal	\$16,735,164	\$2,510,275	\$14,224,889	
2. Additional Potential Deauthorizations				
None	\$0	\$0	\$0	
3. Deferrals				
a. Delta-Wide Crevasses	Total Deferred \$2,738,950	Non-Fed. Share of Deferred Amt. \$410,543	Fed. Share of Deferred Amt. \$2,326,408	Cumulative Federal Funding Status (\$14,941,197)
b. Penchant Basin Plan	\$7,051,550	\$1,057,733	\$5,993,818	(\$20,935,014)
c. Lake Boudreaux Basin	\$4,915,650	\$737,348	\$4,178,303	(\$25,113,317)
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Subtotal	\$ 28,304,150	\$4,245,623	\$24,058,528	
4. Other Adjustments				
Estimated FY 99 Federal Allotment			Amount \$42,100,000	\$4,676,683
5. Estimated Available Funds				
Federal Funds Available for New Projects on 8th List			Amount \$4,676,683	
Non-Federal Matching Share			\$825,290	
Total Funds Available for New Projects On 8th List ³			\$5,501,973	

→ perhaps \$115 to 20M!

Perhaps \$4.3 M owed to DNR

Nov-Dec Contract End Date

Timberline Contract + Big Island

¹ Fully funded costs subject to verification and inflation factors applied by Economic Work Group
² Estimate provided by the Environmental Protection Agency
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⁴ For simplification, 85-15 cost sharing was used. Some costs will be cost shared at 90-10. Task Force agencies have not yet reached consensus on what cost sharing to use on project increases for 5th and 6th list projects, or that portion of a project partially funded on the 7th and 8th lists when a project is initially approved on the 5th and 6th lists.

Bayou before
Big Concern on land Rights (K. Vaughn) - Dep. on Project Parameters

May stretched out Bayou Lafourche funding over many more years.

**PROGRAM STATUS
ADDITIONAL KNOWN INCREASES**

	<u>Total Costs</u>	<u>Federal Costs</u>	<u>Cumulative Federal Funding Status</u>
Starting Point (16 Mar 98 Spreadsheet)			\$1,610,100
1. Adjustments (Uses 85-15 Cost Sharing)			
a. Fully-Funded Cost of Cheniere Au Tigre increase	\$348,073	\$295,862	\$1,314,238
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f. Anticipated O&M Increases ¹	\$8,821,559	\$7,498,325	(\$10,255,189)
g. Anticipated Bayou Lafourche Siphon Increases ²			UNKNOWN
2. Additional Potential Deauthorizations			
None	\$0	\$0	
3. Deferrals	<u>Total Deferred</u>	<u>Fed. Share of Deferred Amt</u>	<u>Cumulative Federal Funding Status</u>
a. Delta-Wide Crevasses	\$2,736,950	\$2,326,408	(\$12,581,597)
b. Penchant Basin Plan	\$7,051,550	\$5,993,818	(\$18,575,414)
c. Lake Boudreaux Basin	\$4,915,650	\$4,178,303	(\$22,753,717)
d. Nutria Harvest Demo	\$1,100,000	\$935,000	(\$23,688,717)
e. Bayou Lafourche Siphon	\$7,500,000	\$6,375,000	(\$30,063,717)
f. Myrtle Grove Siphon	\$5,000,000	\$4,250,000	(\$35,063,717)
Subtotal	\$ 28,304,150	\$24,058,528	
4. Other Adjustments		<u>Amount</u>	
Estimated FY 99 Federal Allotment		\$42,100,000	\$7,036,283
5. Estimated Available Funds		<u>Amount</u>	
Federal Funds Available for New Projects on 8th List		\$7,036,283	
Non-Federal Matching Share		\$1,241,686	
Total Funds Available for New Projects On 8th List ³		\$8,277,969	

¹ Fully funded costs subject to verification and inflation factors applied by Economic Work Group

² Estimate provided by the Environmental Protection Agency

³ Excludes Funds for DNR's proposed 20% O&M Contingency for Storms and Vandalism (\$9 million)

*This Memo is
Passed by Task Force
4/14/98*

**Process Developed by Technical Committee to Resolve Monitoring Plan Cost Increases
4/14/98**

The Technical Committee established a process to address cost changes on monitoring plans. For monitoring plans still under development by the Monitoring Work Group (MWG) and the Technical Advisory Group (TAG), the Technical Committee has directed that:

- 1) The MWG in coordination with the TAG ensure estimates remain within the fully funded cap for all projects.
- 2) The Economics Work Group (EcWG) should index the base average annual cost for each project type to current year price levels and fully fund this number according to current inflation rates as per federal guidelines. The MWG should provide base costs and schedules to the Economic Work Group (EcWG) for proper indexing and for preparation of fully funded cost estimates for each project.
- 3) If these fully funded costs are not within 125 percent of the monitoring budget for each project, the MWG must take steps to reduce the scope of the plan.
- 4) The MWG will provide all TAG recommended plans and budgets to the Planning and Evaluation Subcommittee for approval.

For approved monitoring plans the following process is proposed.

- 1) The Technical Committee has reviewed the Environmental work Group's (EnWG) suggestions for reducing the cost of monitoring plans and made no specific recommendations. However, approximately \$300,000 in savings were agreed to by both the TAG and the EnWG. These savings should be incorporated into the individual plans.
- 2) The Technical Committee established a \$3.0 million window for possible increases in monitoring plans. This \$3.0 million window includes monitoring for the five projects that must be reclassified or need additional monitoring as per the TAG and EnWG.
- 3) The base average annual cost for each project type should be updated to 1998 dollars by the EcWG. This amount should then be fully funded on the basis of current Federal guidelines for inflation rates.
- 4) Base costs and schedules for approved monitoring plans (adjusted for the revisions in 1 above) shall be indexed by the spread sheet approved by the EcWG to determine the fully funded costs of each monitoring plan. This spread sheet shall reflect current inflation rates as per federal guidelines.
- 5) After the plans are evaluated and fully funded:
 - a) If the total increase is less than \$3.0 million, the MWG and TAG will apply the increases.
 - b) If the total increase is more than \$3.0 million, the MWG and TAG must cut back the scope of the monitoring plans to fit within the \$3.0 million window. This will be done in a technical basis, incorporating suggestions from the TAG and EnWG.
- 6) A full report will be made to the Task Force (via the Planning and Evaluation Work Group and the Technical Committee). Task Force approval is only necessary in those cases where the 125% monitoring cost limitation is exceeded for individual projects.

**Process Developed by Technical Committee to Resolve
Monitoring Plan Cost Increases**

Changes

The Technical Committee has established a process to address cost increases on approved and unapproved monitoring plans. For unapproved monitoring plans (these are plans still under development by the Monitoring Work Group and the Technical Advisory Group), the Technical Committee has directed that:

- 1.) The Monitoring Work Group (MWG), in coordination with the Technical Advisory Group (TAG), ensure estimates remain within the fully funded cap for all projects.
- 2.) The MWG shall provide base costs and schedules to the Economic Work Group for proper indexing and for the preparation of fully-funded cost estimates. The base plans may be indexed to 1998 price levels. If these fully funded costs are not within budget, the MWG must take steps to reduce the scope of the plans. *125% of the*
- 3.) The MWG provide a report to the Planning and Evaluation Subcommittee of the results.

For approved monitoring plans the following process is proposed.

1. The Technical Committee has reviewed the Environmental work Group's (EnWG) suggestions for reducing the cost of monitoring plans and had no specific recommendations. However, approximately \$300,000 in savings were agreed to by both the Monitoring Technical Advisory Group (TAG) and the EnWG. These savings should be incorporated into the individual plans.

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5. After the plans are evaluated and fully funded:

a) If the total increase is less than \$3.0 million, the MWG will apply the increases. *→ include the TAG Role*

b) if the total increase is more than \$3.0 million, the MWG must cut back the scope of the monitoring plans to fit within the \$3.0 million window. This will be done in a technical basis, incorporating suggestions from the EnWG.

6. A full report will be made to the Task Force (via the Planning and Evaluation Work Group and the Technical Committee). Task Force approval is only necessary in those cases where the 125% project cost limitation is exceeded for individual projects.

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- 6) A full report will be made to the Task Force (via the Planning and Evaluation Work Group and the Technical Committee). Task Force approval is only necessary in those cases where the 125% monitoring cost limitation is exceeded for individual projects.

Monitoring Cost Issue

I support a ^{sound} ~~cost~~ monitoring effort; it gives us feedback on what works, what does not, and how we need to change the design and operation of existing and future projects. ^{for all of our projects}

Our challenge is to achieve the appropriate balance between construction and monitoring. Monitoring is a Task Force support activity, and not an end in itself. I believe that the **current monitoring caps strike an appropriate balance between building projects and evaluating their success.** Indeed, the Task Force is spending much more on monitoring than most, if not all, other Federal wetland restoration programs, such as the Wetlands Reserve Program, the North American Wetlands Conservation Grants Program, and the National Wetlands Conservation Grants Program. ^{Costs}

Recent monitoring program review by the EWG, TAG, P&E Subcommittee, and the Technical Committee was healthy, albeit painful and contentious at times. Not only did we identify some cost-saving changes that were acceptable even to the Technical Advisory Group, we also corrected some previous errors in funding needs projections, saving millions of dollars. I'm especially pleased with the work of the Env. Work Group in that vein. I think we need such a review periodically.

There are additional opportunities for us to improve our cost effectiveness in monitoring. ^{A third or more} ~~one~~ ^{of} the costs of some monitoring plans are for preparing reports and analyzing data. I think we can save money by reducing the number of reports and the frequency ^{of} data analysis. There are other ways increasing efficiency (such as using common reference sites for several projects), and we need to continually explore them. Budget caps need to be a key consideration at the time monitoring plans are being developed; that way, on-the-spot value judgements can be made as to which parameters are most important.

Our operating procedures allow agencies to expend 125% of the monitoring caps without additional Task Force approval. However, I would expect the majority of future monitoring plans to come in within caps; exceeding those caps should be the exception rather than the rule. This means that the lead agencies, the P&E and the Technical Committee need to pay close attention to the budget compliance aspects of each proposed monitoring plan.

Also needs to be better coord. between EWG & TAG in establishing specific goals & objectives for monitoring plans. Those tend to drive the costs of the plan

Do "global fix" or CSA

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

DISCUSSION AND CONSIDERATION FOR APPROVAL OF FULLY FUNDED MONITORING PLAN COSTS

For Information.

Mr. Robert Schroeder will deliver a report of the Technical Committee concerning a review of cost increases for approved and unapproved monitoring plans.

After a review of approved monitoring plans by the Technical Committee, general agreement was reached on the scope and baseline costs of monitoring plans.

Recommendation of the Technical Committee:

- a. That the monitoring cost caps be indexed to 1998 price levels for all unapproved monitoring plans; and
- b. That the monitoring budget be increased by a total of \$3 million for approved monitoring plans with the funds to be allocated on a technical basis.

Suggested Action:

No action by the Task Force is required until the Economic Work Group has completed indexing the costs for inflation. At that point, lead agencies can identify from the fully funded costs whether the 125% cost limitation has been exceeded. Based on this, lead agencies can request Task Force approval of cost increases on a project by project basis. The Technical Committee can then make a final report to the Task Force of all monitoring plan cost increases and the impact of these increases on the program.

→ ?

Need to resolve this w/in 60 days
DWT

Lead agencies do not ask for increases
TAG needs to review plans to Tab I start w/in 125% CAPS.

The following documents are enclosed:

- Page 1. Monitoring Costs and Cost Overruns
- Page 2. CWPPRA Monitoring Implementation Costs as prepared by the chairman of the Monitoring Work Group
- Page 4. Environmental Work Group Review of Monitoring Plans
- Page 18. CWPPRA Project Summary Report
- Page 35. Proposal for Preparation of Fully-Funded Cost Estimates
- Page 37. A Joint Monitoring Proposal by The Louisiana Department of Natural Resources and the USFWS National Wetlands Research Center Regarding Monitoring of Coastal Wetlands Planning, Protection, and Restoration Act Projects

Monitoring Costs and Cost Overruns

Background: In accordance with the Standard Operating Procedures for CWPPRA projects, when the "project cost will exceed 125% of the cost established in the Priority List (the baseline cost), the lead agency shall request approval from the Task Force to proceed with the project." In addition, CWPPRA cost sharing agreements generally provide for cost limitations on four project phases: Engineering and Design, Construction, Monitoring, and Operations and Maintenance. If at any time during the performance of a phase the estimate for that phase exceeds 125 percent of the established cost, then no new contracts for the project shall be awarded until the lead agency and the state agree on the increases. Current practice allows lead agencies to increase the current estimate of the total project cost up to 125% of the baseline cost without seeking approval from the Task Force. The Task Force approved monitoring cost caps for the various types of wetlands restoration and protection projects at a meeting on October 19, 1992. The approved monitoring procedures including cost caps are enclosed. Two pertinent maxims from that document are as follows:

1. "Monitoring costs for any given project will not exceed 125 percent of the original, fully-funded monitoring cost estimate.
2. "Monitoring costs for any given project will not exceed 50 percent of the fully-funded project cost without monitoring.

The Monitoring Work Group, the Technical Advisory Group, and the Environmental Work Group conducted a review of monitoring costs including cost overruns on approved monitoring plans. The analysis revealed cost overruns on approved monitoring plans totaling approximately \$3.7 million. This total overrun figure resulted primarily from a failure to index the monitoring costs for inflation (fully fund) at the time of their preparation. The Environmental Work Group and the Technical Advisory Group reviewed the approved plans to find potential cost savings. Their findings are reported in the "Environmental Work Group Review of Monitoring Plans." The Technical Committee recommended approving \$3 million to be applied on a sound technical basis to cover the cost overruns. The Economic Work Group has devised a procedure for preparation of fully-funded cost estimates. That Group will undertake the effort to prepare current fully-funded cost estimates for all approved CWPPRA projects with known cost increases or changes of scope or individual work items.

CWPPRA MONITORING IMPLEMENTATION COSTS

Priority List 1

PROJECT NUMBER	PROJECT	PRELIMINARY MONITORING IMPLEMENTATION	FINAL MONITORING IMPLEMENTATION (non-inflated)	FINAL MONITORING IMPLEMENTATION (inflated)	BUDGET ADJUSTMENT FROM FINAL	BUDGET ADJUSTMENT FROM PRELIMINARY
BA-02	GRWW to Clovelly	\$1,433,974	\$1,130,439	\$1,529,453	\$398,014	\$398,014
CS-17	Cameron Creole Watershed	\$220,016	\$251,195	\$308,229	\$57,034	\$88,213
PO-16	Bayou Sauvage Phase 1	\$552,500	\$341,008	\$443,821	\$102,813	\$108,879
CS-18	Sabine Refuge Protection	\$98,816	\$99,868	\$115,134	\$25,269	\$48,818
TE-16	Timberland Island Plantings	\$34,695	\$42,591	\$49,871	\$9,280	\$14,181
TE-17	Falgout Canal Plantings	\$34,881	\$41,821	\$48,839	\$9,018	\$13,853
CS-19	West Hackberry Plantings	\$34,881	\$43,238	\$49,831	\$9,300	\$14,848
ME-06	DeWitt-Railover Plantings**	deauthorized				
MR-03	West Bay Sediment Diversion					
BA-19	Barataria Bay Waterway West. Rest.	\$1,184,815				
TE-19	Lower Bayou La Cache Wetland**	\$134,007	\$92,903	\$128,500	\$33,597	(\$7,807)
PO-17	Bayou La Branche Wetland					
ME-09	Cameron Prairie Refuge	\$134,007	\$208,382	\$287,858	\$58,304	\$132,849
TV-03	Vermilion River Cutoff	\$88,616	\$98,088	\$111,541	\$23,453	\$44,828
TE-20	Eastern Isles Derrives	\$68,972	\$73,471	\$94,084	\$20,613	\$25,122
		\$481,200	\$498,908	\$598,156	\$106,956	\$128,888
	Subtotal Priority List 1	\$4,448,781	\$2,891,868	\$3,851,739	\$838,784	\$579,798

Priority List 2

AT-02	Atchafalaya Sediment Delivery	\$131,828	\$147,430	\$187,431	\$40,001	\$56,000
ME-04	Freshwater Bayou	\$992,411	\$714,808	\$982,470	\$247,662	\$270,058
PO-16	Bayou Sauvage Phase II	\$484,012	\$402,892	\$502,808	\$102,813	\$21,483
CS-22	Clear Marsh	\$87,524	\$75,342	\$96,134	\$20,792	\$28,890
BS-03a	Camarvon Diversion Outfall	\$812,872				
CS-20	East Mud Lake	\$838,877	\$1,040,231	\$1,438,788	\$398,897	\$900,111
BA-20	Jonathan Davis Wetland	\$870,841	\$851,461	\$870,473	\$216,022	\$198,832
TE-22	Point au Fer	\$68,430	\$93,733	\$117,848	\$24,118	\$52,418
AT-03	Big Island Mining	\$131,828	\$147,430	\$187,431	\$40,001	\$56,000
CS-21	Highway 384	\$232,871	\$278,442	\$378,788	\$95,338	\$142,187
PO-08	Fritchfield Marsh	\$988,818	\$988,876	\$988,821	\$207,348	\$24,488
TV-09	Beaton Canal Bank	\$88,888	\$84,378	\$118,837	\$32,463	\$47,188
CS-08	Brown Lake Marsh Management	\$838,877	\$828,888	\$1,182,888	\$394,320	\$314,288
TE-23	West Soto Pass	\$131,828	\$162,825	\$202,864	\$38,868	\$70,888
TE-24	Eastern Isles Derrives Phase 1	\$131,828	\$158,710	\$228,838	\$77,128	\$98,288
	Subtotal Priority List 2	\$8,184,818	\$5,488,710	\$7,328,811	\$1,883,291	\$1,977,888

Priority List 3

PO-19	MRGO Back Otis Marsh Protection	\$170,747				
BA-04c	West Point a La Roche Outfall Mgmt	\$884,821				
MR-06	Channel Armor Gap Crevasse	\$288,483	\$334,888	\$448,838	\$113,874	\$178,878
TV-04	Cala Blanche Hydrologic Restoration	\$834,018	\$857,814	\$781,261	\$183,737	(\$82,788)
CS-04a	Cameron Creole Maintenance	\$0				
BA-21	B. Perot and B. Rigolette Marsh Rest.	deauthorized				
MR-07	Pass-a-Loutre Crevasse	pending deauthorization				
TE-26	East Timberland Island Restoration	\$138,408				
CS-23	Rephase Hog Island, West Cove	\$888,812				
BS-04a	White's Ditch Outfall Management	deauthorized				
TE-28	Lake Chapuis Marsh Creation	\$887,212	\$584,800	\$772,483	\$217,883	\$108,289
TE-27	Whiskey Island Restoration	\$134,884				
TE-28	Bready Canal Hydrologic Restoration	\$883,208	\$722,450	\$1,018,254	\$298,804	\$158,048
PO-09a	Voist Freshwater Distribution (No pumps)	\$807,148				
BA-16	Lake Belvidier Shore Protection (Dam)	\$131,887	\$131,840	\$141,180	\$9,232	\$9,228
ME-12	SW Shores, White Lake Protection (Dam)	\$83,818	\$73,287	\$84,884	\$11,587	\$21,888
PO-20	Red Mud Coastal Restoration (Dam)	\$312,810	\$387,374	\$418,128	\$37,754	\$102,218
	Subtotal Priority List 3	\$5,884,107	\$2,771,738	\$3,831,888	\$888,881	\$488,828

Priority List 4

PO-21	Eden Isles East Marsh Restoration	deauthorized				
BA-22	Hydrologic Restoration of Bayou L'Ours Ridge	\$838,888				
TE-30	E. Timberland Sediment Restoration (Ph2)	\$132,388				
BS-07	Grand Bay Crevasse	pending deauthorization				
CS-24	Parry Ridge Shore Protection (Half)	\$87,790	\$72,838	\$88,178	\$18,337	\$20,388
BA-23	Barataria WW Shores Protection (West)	\$87,888	\$87,888	\$77,887	\$10,778	\$9,888
CS-25	Plowed Terraces (Dam)	\$28,142				
MR-08	Bens. Use of Hopper Dredged Material (Demo)	\$32,488				
TE-31	Piolard Marsh Fencing (Demo)	\$20,834	\$32,488	\$34,588	\$2,154	\$2,154
CS-28	Compost (Demo)	\$33,888				
	Subtotal Priority List 4	\$1,228,013	\$172,272	\$208,538	\$28,288	\$32,481

Priority List 5

BA-24	Myrtle Grove Siphon (Phase 1)	\$888,882				
BA-30	Nazare Outfall Management	\$882,888				
TV-12	Little Vermilion Bay Sediment Trapping	\$143,887				
TE-10	Grand Bayou Diversion	\$882,828				
BA-25	Bayou LaFourche Siphon (Phase 1)	\$888,882				
CS-11b	Sweet Lake/Wilow Lake (Phase 1)	\$143,887				
PO-22	Bayou Chevee Marsh Creation	\$143,887				
ME-13	Freshwater Bayou Bank Stabilization	\$84,888	\$80,218	\$98,887	\$18,842	\$30,888
TE-29	Rephase Island Structures (Dam)	\$203,400	\$203,388	\$228,888	\$17,297	\$17,288
	Subtotal Priority List 5	\$3,878,181	\$283,813	\$328,532	\$38,831	\$48,151

Priority List 6

CS-27	Black Bayou Hydraulic Restoration	\$878,288				
TE-33	Bayou Bonaf Pump Station, Incr. 1	pending deauthorization				
MR-09	Della-Wide Crevasse	\$288,888				
TV-14	Marsh Island Hydrologic Restoration	\$848,801				
TE-34	Penchant Basin Plant w/Shoreline Stabilization	\$888,148				
TV-15	Sediment Trapping at the Jaw	\$142,888				
TV-13a	Oak/Avery Canals Hydrologic Restoration Incr. 1	\$888,113				
TE-32	Lake Boudreaux Basin Freshwater Intro - All B	\$888,148				
BA-28	Barataria Bay Waterway Bank Protection East	\$71,888				
TE-35	Marsh Creation East of Atchafalaya R. - Incr. 1	pending deauthorization				
MR-10	Duvalier/Cutthroat Dredging - Demo	\$0				
LA-02	Mulins Harvest for Wetland Restoration Demo	\$0				
TV-16	Chenier Au Tigre Shoreline Demo	\$134,710				
	Subtotal Priority List 6	\$4,337,811	\$0	\$0	\$0	\$0

Grand Total	\$28,110,882	\$11,598,299	\$15,324,430	\$3,728,131	\$3,128,298
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Note: Preliminary monitoring implementation budgets taken from Task Force approved cost formulas dated October 19, 1992 and the sixth list was amended to 1997 dollars on March 21, 1997. Monitoring plan development costs were added to implementation budgets on August 23, 1998, except for those projects already paid for out of planning dollars. All projects with final Task Force approved monitoring plans and budgets to date are in bold. The final approved monitoring implementation budgets were developed without inflation factors. Final monitoring implementation (inflated) is estimated using a 3.5% inflation factor for lists 1-3, 3.1% for lists 4-5, and 2.6% for list 6. **Indicates projects that are deauthorized.

Environmental Work Group Review of Monitoring Plans

At the December 16, 1997, Technical Committee meeting, Mr. Greg Steyer indicated that an increase of \$5.1 million would be necessary to fully fund the budgets of approximately 40 final, approved monitoring plans. Also, a total of \$11.2 million would be required to fully fund all monitoring plans (approximately 80 plans), approved and unapproved. (Those figures have recently been updated and the current estimate is \$3.73 million to fully fund completed plans and \$7.55 million to fully fund all plans.) At that meeting, it was suggested that cost overruns may have resulted from monitoring plans that address goals and objectives beyond those identified in the authorizing documentation, therefore unnecessary variables may have been monitored. As a result of that discussion, the Technical Committee, and subsequently the Task Force, directed the Environmental Work Group (EWG) to assist lead agencies in reviewing the goals and objectives of all monitoring plans. The EWG is familiar with project goals and objectives identified in project documentation during planning and subsequently discussed during project Wetland Value Assessments (WVAs).

The goal of the EWG review is to develop a list of recommendations for each monitoring plan, as well as programmatic recommendations, which would serve to reduce monitoring budgets without compromising the technical integrity of the monitoring program. Recommendations from the EWG, accompanied by estimated cost savings, would then be presented to the Technical Committee and Task Force. The EWG agreed that the best course of action would be a project-by-project review of all approved monitoring plans. Unapproved plans could be revised by the Technical Advisory Group (TAG) and Monitoring Work Group (MWG) to fit those plans within prescribed budgets, depending on Task Force guidance. The EWG utilized the following questions as guidelines during the review process:

- 1) are the goals and objectives, as stated in the monitoring plan/project plan, consistent with the goals and objectives as discussed by the EWG during the WVA for that project;
- 2) does the monitoring plan include the measurement of certain variables which were not important in determining the wetland benefits for the project;
- 3) could any variables be omitted from the monitoring plan and still provide adequate information to determine the success and effects of the project; and,
- 4) are any variables being monitored by more than one method, possibly allowing deletion of one or more of those methods.

The EWG met with the chairman of the MWG and the TAG, Mr. Greg Steyer, to discuss EWG recommendations on each monitoring plan. At the request of LDNR, representatives of the TAG were also included in this review.

A total of 35 monitoring plans were reviewed by the EWG. Comments from the EWG and the TAG on each monitoring plan are attached. We offer the following comments on the EWG review:

- 1) Driving the development of monitoring plans is the Task Force guidance which directs that monitoring plans are to be developed to provide sufficient information to determine if project goals and objectives are being met. Goals and objectives are typically taken from the Federal sponsoring agency's project documentation (e.g., project plans, environmental assessments, or CWPPRA fact sheets). Overall, the EWG does not believe that addressing a broad range of goals and objectives is the cause for over-budgeted monitoring plans. The EWG recommended revisions for the goals in only 7 of the 35 plans reviewed. In some cases, the omission of certain monitoring elements (e.g., accretion) triggered the omission of certain goals which could not be addressed if that monitoring element was removed. In other cases, revisions to the wording in certain goals was recommended so that certain monitoring elements could be dropped. An example is a goal which states, "Create approximately 254 acres of shallow water habitat conducive to the natural establishment of emergent wetland vegetation". The word "conductive" apparently triggered monitoring of water elevations and soils to determine if indeed an environment conducive to the establishment of emergent wetland vegetation was created. It should be noted that the TAG is opposed to omitting or revising goals which are stated in the authorizing documentation, unless that action is supported by the Task Force.

Although not an overwhelming problem, some monitoring plans address certain goals and objectives which were not discussed during project WVAs but were identified in project documentation. As a result, some plans call for monitoring certain variables which did not play a critical role in determining wetland benefits for those projects as per the WVA. The EWG and the TAG discussed two options which could assist in streamlining project goals and objectives and thus potentially reduce monitoring budgets:

- a) Revise Task Force guidance which directs that monitoring plans address all project goals and objectives as stated in authorizing documentation. If not revised, monitoring plans will continue to address a sometimes lengthy list of goals and objectives which may cause monitoring budgets to exceed budgeted amounts. The MWG/TAG could establish their own set of guidelines to follow as to which goals and objectives should be addressed based on project type. Coordination between the EWG and the MWG/TAG could be improved to allow more consistency in project goals and objectives from planning (e.g., WVAs) to monitoring and which elements were important in determining project benefits.

or

- b) Retain current Task Force guidance for developing monitoring plans and prepare guidelines for sponsoring agencies to follow when listing goals and objectives in authorizing documentation. Sponsoring agencies could state in project

documentation which goals and objectives should be addressed to determine project success. Coordination between the EWG and the MWG/TAG could be improved to allow more consistency in project goals and objectives from planning (e.g., WVAs) to monitoring and which elements were important in determining project benefits.

- 2) The EWG believes the primary reason for cost overruns is the frequency at which some elements are monitored and the monitoring of nonessential elements to determine project success. Thus, most of the EWG recommendations focus on reducing the monitoring of certain elements or omitting certain elements from the monitoring plan. A project-specific list of EWG recommendations and TAG recommendations to reduce monitoring budgets is attached. The following is a list of examples of EWG recommendations to reduce monitoring budgets:
 - a) Omit aerial photography and associated habitat mapping when not necessary to determine project success.
 - b) Reduce the current number of aerial photos and associated habitat mapping if project success can be determined with fewer.
 - c) Reduce the monthly monitoring of salinity and water levels for hydrologic restoration projects from 20 years to 8 years.
 - d) Reduce the frequency of vegetation monitoring for hydrologic restoration and marsh management projects.
 - e) Omit or reduce soil/sediment sampling.
 - f) Reduce the number of transects or sampling points to the minimum to meet statistical design.
- 3) The EWG also noted that some monitoring plans, because of budgetary constraints, were inadequate to determine project success. This resulted primarily from project misclassification. In most instances, those projects were classified as shoreline protection projects but contain hydrologic restoration features. Limiting the monitoring budget to that prescribed for shoreline protection projects does not allow adequate monitoring to address the project's goals and objectives. Some projects, although correctly classified, require additional funding to adequately determine project success. We recommend that the monitoring budgets for those projects be revised to include funding of additional items as necessary. Those projects include: 1) TE-22 Point au Fer Shoreline Protection, 2) CS-24 Perry Ridge Shoreline Protection, 3) BA-23 Barataria Bay Waterway West Bank Protection, 4) AT-02 Atchafalaya Sediment Delivery, and 5) TV-09 Boston Canal Shoreline Protection.
- 4) Approximately half of the recommendations suggested by the EWG were agreed to by the TAG. In some cases, a compromise was reached between what was included in the original monitoring plan and what was initially suggested by the EWG. Also, the TAG proposed several additional items to two monitoring plans beyond those recommended by the EWG under Item 3. Those additions were suggested to maintain consistency with

other projects of the same type. The potential cost savings based on EWG recommendations and TAG recommendations is shown below:

Potential cost savings from EWG recommendations: \$2.76 million

Potential cost savings from TAG recommendations: \$0.31 million

Note - Potential cost savings only include additional funding to address TV-09 Boston Canal Shoreline Protection under Item 3. Additional funding to address other projects under Item 3 and TAG-suggested additions under Item 4 ~~have~~ not been included.

Environmental Work Group Review of Monitoring Plans

1. **C/S-19 West Hackberry Vegetative Plantings Demo**
EWG
 - Monitor for five years only.
 - Omit remaining habitat mapping.
 - Omit remaining monitoring of sediment elevation, and soil percent organic matter and bulk density.**TAG**
 - Agree with EWG recommendations.

2. **TE-18 Timbalier Island Vegetative Plantings Demo**
EWG
 - Omit remaining monitoring of shoreline erosion.
 - Omit Goal #3: Decrease shoreline erosion along island.**TAG**
 - Agree to omit remaining monitoring of shoreline erosion only if omitting a goal which was stated in authorizing documentation is allowed. TAG is opposed to omitting goals mentioned in project documentation.

3. **TE-17 Falgout Canal Vegetative Plantings Demo**
EWG
 - Monitor for five years only.
 - Omit remaining vegetation monitoring.
 - Omit remaining habitat mapping. Monitor shoreline erosion using shoreline markers and DGPS only.**TAG**
 - Agree to monitor project for five years only.
 - Agree to omit remaining vegetation monitoring only if warranted by latest monitoring indicating high mortality.
 - Agree to omit remaining habitat mapping and monitor shoreline erosion using shoreline markers and DGPS only.

4. **PO-17 Bayou La Branche Wetland Dredged Material**
EWG
 - Reduce, if possible, the number of vegetative transects based on a statistical analysis of effective sample size by the TAG statistician.
 - Omit habitat mapping for years 9 and 18.
 - Omit remaining monitoring of sediment elevation, and soil percent organic matter and bulk density.
 - Retain continuous water level monitoring for five year total period.
 - Omit remaining discrete water level monitoring.

TAG

- The number of vegetative transects cannot be reduced at this time.
- Agree to omit habitat mapping for year 9 but retain habitat mapping at year 18.
- Opposed to omitting remaining monitoring of sediment elevation, and soil percent organic matter and bulk density. Monitor sediment elevation and soils during vegetative sampling only.
- Agree to retain continuous water level monitoring for five year total period.
- Agree to omit remaining discrete water level monitoring.

5. ME-09 Cameron Prairie Refuge Shoreline Protection

EWG

- Monitor shoreline every five years instead of annually.
- Omit aerial photography analysis for year 2. Conduct one additional postconstruction flight in the event of a levee breach.

TAG

- Opposed to monitoring shoreline every 5 years. Recommend every 3 years.
- Opposed to omitting aerial photography analysis for year 2. Retain analysis as in original plan.

6. C/S-18 Sabine Refuge Shoreline Protection

EWG

- Either monitor shoreline every 5 years and make one postconstruction aerial photo; Or omit all future monitoring as current monitoring data indicates no difference between project area and reference area.

TAG

- Agree to monitor shoreline every 5 years.
- Agree to one postconstruction aerial photo.

7. T/V-09 Boston Canal Bank Shoreline Protection

EWG

- Omit elevation surveys; delete goal #2.
- Add one postconstruction flight at year 15.
- Monitor shoreline markers every 3 years instead of only twice postconstruction.

TAG

- Agree with EWG recommendations.

8. T/V-03 Vermillion River Cutoff Shoreline Protection

EWG

- Omit remaining aerial photos.
- Monitor shoreline every 5 years instead of every 3 years.

TAG

- Opposed to omitting remaining aerial photos. Retain as in original plan.

- Opposed to monitoring shoreline every 5 years. Monitor every 3 years as in original plan.

9. **PO-16 and PO-13 Bayou Sauvage Hydrologic Restoration (Phases 1 and 2)**

EWG

- Monitor vegetation transects every 3 years instead of annually.
- Have NWRC combine flights for both projects and review for cost reduction.

TAG

- Agree with EWG recommendations.

10. **C/S-20 East Mud Lake Marsh Management**

EWG

- Monitor SET's every three years instead of every two years.
- Reduce vegetation monitoring to every three years instead of every two years.
- Monitor sediment accretion (feldspar) twice postconstruction instead of every two years.
- Monitor soil percent organic matter and bulk density twice postconstruction instead of three times postconstruction.

TAG

- Opposed to monitoring SET's every three years. Recommend monitoring SET's at years 1-5, then every 3 years thereafter.
- Opposed to vegetation monitoring every three years. Recommend monitoring vegetation at years 1-5, then every 3 years thereafter.
- Opposed to monitoring sediment accretion (feldspar) twice postconstruction. Recommend monitoring at years 1-5, 11, and 17.
- Opposed to monitoring soil percent organic matter and bulk density twice postconstruction. Recommend monitoring soil percent organic matter and bulk density at years 5, 11, and 17.
- Recommends adding one postconstruction fisheries sample during a non-drawdown year.

11. **C/S-17 Cameron Creole Watershed Hydrologic Restoration**

EWG

- Monitor vegetation and SAV preconstruction and years 1, 5, 10, and 15 instead of 6 times postconstruction.
- Omit postconstruction soil sampling at year 5 and at one subsequent year.

TAG

- Opposed to reducing vegetation and SAV monitoring. Retain as in original plan.
- Agree to omit postconstruction soil sampling.

12. **C/S-22 Clear Marais Shoreline Protection**
EWG
- Conduct only one postconstruction aerial photo instead of two.
 - Have the TAG statistician recommend whether the number of shoreline marker stations can be reduced to save on field sampling time.
- TAG
- Opposed to only one postconstruction photo. Retain two as in original plan.
 - Reducing number of shoreline marker stations will not save field sampling time.
 - Revise plan to include monitoring of shoreline every 3 years.
13. **TE-22 Point au Fer Shoreline Protection**
EWG
- Omit the last postconstruction photo.
 - The project was misclassified as shoreline protection only. Includes features of a Hydrologic restoration project. Budget should be revised to include funds to monitor Hydrologic restoration features of project.
- TAG
- Opposed to omitting the last postconstruction flight.
 - Agree that budget should be revised to include funding to monitor Hydrologic restoration features.
14. **TE-29 Raccoon Island Breakwaters Demo**
EWG
- Omit the postconstruction aerial photo.
 - Revise Goal #1: delete "reducing wave energy."
 - Omit year 4 wave height measurements.
- TAG
- Agree to omitting the postconstruction aerial photo.
 - Opposed to revising goals stated in authorizing documentation.
 - Opposed to omitting year 4 wave heights measurements. Retain as in original plan.
15. **MR-06 Channel Armor Gap Crevasse Freshwater Diversion**
EWG
- Conduct 2 rather than 3 postconstruction photos. USACE will acquire and provide all aerial photography to NWRC for free.
 - Delete Goal #1: "create an efficient crevasse channel by enlarging an existing gap in the Mississippi River bank."
 - Omit remaining discharge and suspended sediment monitoring.
 - Have the TAG statistician recommend whether the number of vegetation and elevation transects can be reduced to save on field sampling time.

TAG

- Opposed to conducting only 2 postconstruction photos. Retain 3 photos as in original plan.
- Opposed to deleting goals stated in authorizing documentation.
- Opposed to omitting discharge and suspended sediment monitoring.
- Transect lines can be reduced to save one day of field sampling time.

16. ME-04 Freshwater Bayou Hydrologic Restoration

EWG

- Project consists of two phases. Phase 1 consists of rock protection along Freshwater Bayou Canal and has been constructed. Phase 2 consists of water control structures in the interior marsh. The landowner is funding construction of the Phase 2 features which will be installed through mitigation. The features for Phase 2 have changed drastically from what was originally approved on PPL2 resulting in a substantial increase in the project area and an increased monitoring budget. The EWG decided to defer this issue to the P&E Subcommittee because of two issues: 1) Is CWPPRA responsible for monitoring a project, funded by the landowner, which is drastically different in scope from what was originally approved? and 2) Can CWPPRA funds be used to monitor project features which are implemented through the mitigation process?

17. BA-02 GIWW to Clovelly Wetlands Hydrologic Restoration

EWG

- Conduct habitat mapping 3 times postconstruction instead of 5 times as in original plan.
- Reduce budget for monthly water level and salinity monitoring to 8 years instead of 20 years as in original plan; monitor for 5 years, then have TAG review to determine how to best spend the remaining 3 years of funding.
- Monitor vegetation 3 times postconstruction instead of 7 times as in original plan; coincide vegetation monitoring with habitat mapping.
- Omit soil samples.
- Monitor shoreline every 3 years instead of every 2 years as in original plan.
- Monitor SAV 3 times postconstruction instead of 7 times as in original plan.

TAG

- Opposed to reducing habitat mapping. Retain as in original plan.
- Opposed to reducing water level and salinity monitoring. Retain as in original plan.
- Opposed to reducing vegetation monitoring. Retain as in original plan.
- Opposed to omitting soil sampling. Retain as in original plan.
- Agree to monitor shoreline every 3 years.
- Opposed to reducing SAV monitoring. Retain as in original plan.

18. **BA-15 Lake Salvador Shoreline Protection Demo**
EWG
- Omit all remaining habitat mapping; 2 postconstruction photos.
 - Omit year 2 wave height monitoring.
 - Delete Specific Goal #3: "Increase the frequency of SAV in the phase 1 project area."
 - Omit remaining SAV sampling.
- TAG**
- Agree to omit remaining habitat mapping
 - Opposed to omitting year 2 wave height monitoring. Retain as in original plan.
 - Opposed to deleting goals stated in authorizing documentation.
 - Agree to omit remaining SAV monitoring; however, monitor with aerial photos to address stated goal.
19. **BA-19 Barataria Bay Waterway Wetland Creation Dredged Material**
EWG
- Omit all future aerial photography;
 - Monitor vegetation years 1, 2, and 5 instead of years 1, 2, 9, and 18.
 - Have the TAG statistician determine whether the number of transects can be reduced to save on field sampling time.
 - Monitor elevations at years 1, 2, and 5 instead of years 2, 9, and 18.
- TAG**
- Agree to omit all future aerial photography.
 - Opposed to reducing vegetation monitoring. Retain as in original plan.
 - Number of transects cannot be reduced until data is available to evaluate.
 - Opposed to monitoring elevations at years 1, 2, and 5. Retain as in original plan.
20. **AT-03 Big Island Mining**
EWG
- No recommendations
- TAG**
- No recommendations
21. **AT-02 Atchafalaya Sediment Delivery**
EWG
- Include monitoring of SAVs in monitoring plan. Project received significant credit for increasing SAVs in WVA.
- TAG**
- Agrees with EWG recommendation.

22. **TE-20 East Island Rest. (Phase 0) and TE-24 Trinity Island Rest. (Phase 1)**

EWG

- Retain 6 postconstruction aerial photos; however, include habitat mapping for only 4 of those photos.
- Potential cost savings could be realized if SHOALS methodology is used to acquire topography for all barrier island projects. Would also allow dropping of DGPS. Funds currently allocated for professional surveyor would be used for SHOALS methodology at 6 months, and at years 1, 2, 3, 9, and 13 postconstruction. Bathymetry will be included as an additional monitoring item.
- Omit soil sampling.

TAG

- Agrees to 6 postconstruction aerial photos with habitat mapping for 4 photos.
- Agrees to use of SHOALS methodology.
- Opposed to dropping soil sampling. Retain as in original plan.

23. **ME-13 Freshwater Bayou Canal Bank Stabilization**

EWG

- Omit remaining aerial photos. Photos will probably be captured under ME-4 project.
- Request that TAG statistician review to determine if number of shoreline markers can be reduced.

TAG

- Agrees with EWG recommendations.

24. **TE-23 West Belle Pass Headland Restoration**

EWG

- Omit water level monitoring; has already been removed because of revised project design.

TAG

- Provide funding for elevation monitoring, soil sampling, and vegetation sampling as per other marsh creation projects.
- Provide funds for one additional postconstruction photo.

25. **BA-20 Jonathan Davis Wetland Restoration**

EWG

- Reduce budget for monthly water level and salinity monitoring to 8 years instead of 20 years as in original plan; monitor for 5 years, then have TAG review to determine how to best spend the remaining 3 years of funding.
- Monitor vegetation 3 times postconstruction instead of 6 times as in original plan; coincide vegetation monitoring with habitat mapping.
- Omit soil samples.
- Request that TAG statistician review plan to determine if number of vegetation transects can be reduced.

- TAG**
- Opposed to reducing water level and salinity monitoring. Retain as in original plan.
 - Opposed to reducing vegetation monitoring. Retain as in original plan.
 - Opposed to omitting soil sampling. Retain as in original plan.
 - Opposed to reducing number of vegetation transects. Retain as in original plan.
26. **MR-08 Beneficial Use of Hopper Dredge Material (DEMO)**
EWG
- Revise project to a 3-year DEMO and conduct all postconstruction monitoring, habitat mapping, elevations, and vegetation, at year 3.
- TAG**
- Monitoring plan is currently inadequate with only one-time postconstruction monitoring. Budget should be revised.
27. **TV-04 Cote Blanche Hydrologic Restoration**
EWG
- Reduce budget for monthly water level and salinity monitoring to 8 years instead of 20 years as in original plan; monitor for 5 years, then have TAG review to determine how to best spend the remaining 3 years of funding.
- TAG**
- Opposed to reducing water level and salinity monitoring. Retain as in original plan.
28. **TE-26 Lake Chapeau Marsh Creation**
EWG
- Reduce budget for monthly water level and salinity monitoring to 8 years instead of 20 years as in original plan; monitor for 5 years, then have TAG review to determine how to best spend the remaining 3 years of funding.
 - Reduce vegetation transects to every 3 years instead of every year as in original plan.
- TAG**
- Opposed to reducing water level and salinity monitoring. Retain as in original plan.
 - Agrees with reducing vegetation transects to every 3 years.
 - Recommends soil sampling every 3 years be added to plan.
29. **CS-24 Perry Ridge Shoreline Protection**
EWG
- Budget should be increased to monitor Hydrologic restoration aspects of this project. Include funding to monitor salinities inside and outside of the project area during first drought year and for two years afterward.

TAG

- Recommends increasing the number of postconstruction aerial photos from 2 to 3.
- Recommends increasing monitoring of shoreline markers from every 5 years, as in plan, to every 3 years.
- Agrees that budget should be increased to monitor hydrologic restoration aspects of the project.

30. TE-28 Brady Canal Hydrologic Restoration

EWG

- Reduce vegetation transects to every 3 years instead of every 2 years as in original plan.
- Reduce budget for monthly water level and salinity monitoring to 8 years instead of 20 years as in original plan; monitor for 5 years, then have TAG review to determine how to best spend the remaining 3 years of funding.
- Reduce monitoring of vertical accretion to only CTU 1 instead of monitoring in all CTUs as in original plan.
- Reduce SAV monitoring to 4 times postconstruction instead of 6 times as in original plan.

TAG

- Opposed to reducing vegetation transects to every 3 years. Recommend revising original plan to every 2 years for the first six years then every 3 years thereafter.
- Opposed to reducing water level and salinity monitoring. Retain as in original plan.
- Opposed to reducing vertical accretion monitoring. Retain as in original plan.
- Opposed to reducing SAV monitoring to 4 times postconstruction. Recommend plan be revised to monitor SAV 5 times postconstruction.
- Recommends that original plan be revised to include 2 sondes with mat movement recorders to monitor movement of floating marsh.

31. CS-09 Brown Lake

EWG

- EWG members are evenly split as whether or not to omit fisheries monitoring or to retain fisheries monitoring. One option is to allow fisheries monitoring for the East Mud Lake Project to act as a surrogate for all marsh management projects and omit fisheries sampling for Brown Lake. Another option would be to allow one postconstruction fisheries sampling at Brown Lake and omit the other postconstruction sample (one preconstruction sample has been conducted). Will defer this issue to the Technical Committee.

32. BA-23 Barataria Bay Waterway West Bank Protection

EWG

Budget should be increased to monitor Hydrologic restoration aspects of this project, primarily water levels and salinities. Include funding for 8 years of

monthly monitoring of water levels and salinities as with other Hydrologic restoration projects.

TAG

- Agrees to increase budget to monitor Hydrologic restoration features. However, recommend funding for 20 years of monthly water level and salinity monitoring.

33. PO-6 Fritchie Marsh

EWG

- Reduce budget for monthly water level and salinity monitoring to 8 years instead of 20 years as in original plan; monitor for 5 years, then have TAG review to determine how to best spend the remaining 3 years of funding.
- Request that TAG statistician review plan to determine if number of vegetation transects can be reduced.

TAG

- Opposed to reducing water level and salinity monitoring. Retain as in original plan.

34. CS-21 Highway 384

EWG

- Reduce vegetation monitoring to every 3 years (6 times postconstruction) instead of 8 times postconstruction as in original plan.
- Monitor SAV every 3 years to coincide with emergent vegetation monitoring.
- Omit soil sampling

TAG

- Agree to reduce vegetation monitoring to every 3 years.
- Agree to monitor SAV every 3 years to coincide with emergent vegetation monitoring.
- Opposed to omitting soil sampling. Retain as in original plan.
- Recommend that budget be revised to include monthly monitoring of water levels and salinities for 20 years instead of only 3 years as in original plan.
- Recommend one additional postconstruction aerial photo.

Project Summary Report by Priority List

P/L	No. of Projects	Acres	CSA Executed	Under Const.	Const. Completed	Federal		Non/Fed		Current Estimate	Obligations To Date	Expenditures To Date
						Const. Funds Available	Const. Funds Available	Const. Funds Available	Const. Funds Available			
1	14	18,864	13	3	10	\$28,084,900	\$10,517,773	\$39,933,317	\$47,803,970	\$18,758,879	\$12,392,270	
2	15	13,971	15	5	5	\$28,173,110	\$10,161,033	\$40,644,134	\$54,296,761	\$32,015,842	\$13,459,726	
3	14	12,053	14	4	2	\$29,939,100	\$10,156,410	\$35,176,668	\$44,512,928	\$21,133,235	\$7,056,334	
4	8	2,387	6	0	0	\$29,957,533	\$5,000,000	\$13,924,366	\$15,491,396	\$8,976,766	\$186,996	
5	9	5,187	6	1	1	\$33,371,625	\$5,000,000	\$48,436,676	\$51,514,408	\$10,803,348	\$2,404,935	
6	11	10,538	0	0	0	\$39,134,000	\$10,000,000	\$38,810,850	\$38,810,856	\$11,187,742	\$71,213	
7	4	1,431	0	0	0	\$42,500,000	\$0	\$13,917,722	\$13,917,722	\$0	\$0	
Active Projects	75	64,431	54	13	18	\$231,160,268	\$50,835,216	\$230,843,733	\$266,348,042	\$102,875,811	\$35,571,474	
Unfunded Projects	8	1,857	0	0	0			\$77,492,000	\$77,492,000	\$0	\$0	
Subtotal	83	66,288	54	13	18	\$231,160,268	\$50,835,216	\$308,335,733	\$343,840,042	\$102,875,811	\$35,571,474	
Deauthorized Projects	10	312	4	0	1			\$21,663,025	\$2,263,039	\$2,045,358	\$1,741,539	
Total Projects	93	66,600	58	13	19	\$231,160,268	\$50,835,216	\$329,998,758	\$346,103,081	\$104,921,169	\$37,313,014	
Conservation Plan	1	0	1	0	1			\$238,871	\$238,871	\$179,153	\$123,202	
Total Construction Program	94	66,600	59	13	20	\$231,160,268	\$50,835,216	\$330,237,629	\$346,341,952	\$105,100,322	\$37,436,216	
							\$281,995,484					

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Summary Report by Priority List

- NOTES:
1. Total of 94 projects includes 75 active construction projects, 6 deauthorized projects, 4 proposed deauthorizations, the State of Louisiana's Wetlands Conservation Plan, and 8 unfunded projects approved on Priority List 7.
 2. Total construction program funds available is \$281,995,484.
 3. The current estimate for deauthorized projects is equal to expenditures to date.
 4. Current Estimate for the 5th priority list includes authorized funds for FY 96, FY 97 and FY 98 for phased projects with multi-year funding. These projects, if implemented, will require an additional \$12.5 million from Priority List 8 funds.
 5. Current Estimate for the 6th priority list includes authorized funds for FY 97, and FY 98 for phased projects with multi-year funding. These projects, if implemented, will require an additional \$15.8 million from Priority List 8 funds.
 6. The Task Force approved 8 unfunded projects, totalling \$77,492,000 on Priority List 7.
 7. Obligations include expenditures and remaining obligations to date.
 8. \$42,500,000 for Priority List 7 Federal funds available is an estimate; actual funding has not been received.

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Agency COE								
Barataria Bay Marsh Creation	COE	1	Baseline - CSA - Current -	1,759,257.00 1,635,000.00 1,695,796.00	182,713.00 1,491,000.00 1,593,000.00	134,000.00 144,000.00 102,796.00	1,390,602.00 0.00 0.00	51,942.00 0.00 0.00
Bayou Labranche Wetlands Restoration	COE	1	Baseline - CSA - Current -	4,461,301.00 4,000,000.00 3,658,739.64	3,436,974.00 3,316,000.00 3,439,058.64	134,000.00 134,000.00 219,681.00	0.00 0.00 0.00	890,327.00 550,000.00 0.00
Lake Salvador Shoreline Protection at Jean Lafitte NHP&P	COE	1	Baseline - CSA - Current -	60,000.00 60,000.00 60,000.00	60,000.00 60,000.00 60,000.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
Vermilion River Cutoff Bank Protection	COE	1	Baseline - CSA - Current -	1,526,000.00 2,500,000.00 2,056,248.53	1,086,847.00 1,980,000.00 1,723,832.53	69,000.00 69,000.00 82,416.00	204,258.00 451,000.00 250,000.00	165,895.00 0.00 0.00
West Bay Sediment Diversion	COE	1	Baseline - CSA - Current -	8,517,066.00 0.00 16,683,854.00	2,221,081.00 0.00 5,665,900.00	1,184,815.00 0.00 1,207,800.00	4,466,403.00 0.00 6,473,400.00	644,767.00 0.00 3,336,754.00
Clear Marais Bank Protection	COE	2	Baseline - CSA - Current -	1,741,310.00 4,300,000.00 3,416,212.00	1,241,146.00 3,824,500.00 2,931,411.00	67,526.00 75,000.00 84,801.00	180,279.00 400,000.00 400,000.00	252,359.00 500.00 0.00
West Belle Pass Headland Restoration	COE	2	Baseline - CSA - Current -	4,854,102.00 5,466,300.00 6,367,625.00	3,744,844.00 5,098,500.00 5,976,448.00	131,626.00 139,500.00 162,925.00	228,252.00 228,300.00 228,252.00	749,380.00 0.00 0.00
Channel Armor Gap Crevasse	COE	3	Baseline - CSA - Current -	808,397.00 828,700.00 889,914.00	471,759.00 559,200.00 555,249.00	269,463.00 269,500.00 334,665.00	0.00 0.00 0.00	67,175.00 0.00 0.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
MRGO Back Dike Marsh Protection	COE	3	Baseline -	512,198.00	300,754.00	170,747.00	0.00	40,697.00
			CSA -	553,900.00	383,153.00	170,747.00	0.00	0.00
			Current -	482,164.00	311,417.00	170,747.00	0.00	0.00
Pass-a-Loutre Crevasse	COE	3	Baseline -	2,857,790.00	1,263,078.00	278,005.00	1,109,125.00	207,582.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	105,917.75	103,273.75	2,644.00	0.00	0.00
Grand Bay Crevasse	COE	4	Baseline -	2,468,908.00	1,961,403.00	264,026.00	0.00	243,479.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	52,154.15	52,154.15	0.00	0.00	0.00
Hopper Dredge Demo	COE	4	Baseline -	300,000.00	300,000.00	0.00	0.00	0.00
			CSA -	375,000.00	337,500.00	37,500.00	0.00	0.00
			Current -	375,000.00	335,500.00	39,500.00	0.00	0.00
Bayou Chevee Shoreline Protection	COE	5	Baseline -	2,890,821.00	2,302,094.00	143,067.00	0.00	445,660.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	2,555,029.00	1,741,904.00	143,067.00	670,058.00	0.00
Avoca Island (Incr 1)	COE	6	Baseline -	6,438,400.00	5,316,960.00	139,163.00	0.00	982,277.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	49,689.40	49,689.40	0.00	0.00	0.00
Dustpan/Cutterhead Dredge Demo	COE	6	Baseline -	1,600,000.00	1,600,000.00	0.00	0.00	0.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	1,600,000.00	1,600,000.00	0.00	0.00	0.00
Marsh Island Hydrologic Restoration	COE	6	Baseline -	4,094,900.00	2,806,224.00	648,601.00	151,479.00	488,596.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	4,094,900.00	2,806,224.00	648,601.00	151,479.00	488,596.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Agency	COE							
	COE Totals		Baseline -	44,890,450.00	28,295,877.00	3,634,039.00	7,730,398.00	5,230,136.00
			CSA -	19,718,900.00	17,049,853.00	1,039,247.00	1,079,300.00	550,500.00
			Current -	44,143,243.47	28,945,061.47	3,199,643.00	8,173,189.00	3,825,350.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Agency EPA								
State of Louisiana Wetlands Conservation Plan	EPA	0	Baseline - CSA - Current -	238,871.00 238,871.00 238,871.00	238,871.00 238,871.00 238,871.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
Isles Dernieres (Phase 0) (East Island)	EPA	1	Baseline - CSA - Current -	6,345,468.00 6,345,468.00 8,751,838.00	5,088,817.00 5,864,268.00 8,402,790.00	481,200.00 481,200.00 349,048.00	0.00 0.00 0.00	775,451.00 0.00 0.00
Isles Dernieres (Phase 1) (Trinity Island)	EPA	2	Baseline - CSA - Current -	6,907,897.00 6,907,897.00 11,949,173.00	6,491,109.00 6,776,271.00 11,623,448.00	131,626.00 131,626.00 325,725.00	0.00 0.00 0.00	285,162.00 0.00 0.00
23 Red Mud Demo	EPA	3	Baseline - CSA - Current -	350,000.00 470,500.00 480,500.00	151,000.00 348,335.00 379,270.00	139,000.00 122,165.00 101,230.00	60,000.00 0.00 0.00	0.00 0.00 0.00
Whiskey Island Restoration (Phase 2)	EPA	3	Baseline - CSA - Current -	4,844,274.00 4,844,000.00 7,863,363.00	3,884,989.00 4,601,046.00 7,581,873.00	134,691.00 242,954.00 281,490.00	0.00 0.00 0.00	824,594.00 0.00 0.00
Compost Demo	EPA	4	Baseline - CSA - Current -	370,594.00 368,594.00 380,594.00	281,466.00 337,785.00 349,785.00	33,809.00 30,809.00 30,809.00	0.00 0.00 0.00	55,319.00 0.00 0.00
Bayou Lafourche Siphon	EPA	5	Baseline - CSA - Current -	16,987,000.00 1,000,000.00 16,987,000.00	16,987,000.00 1,000,000.00 16,987,000.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
Bayou Boeuf/Verret Basin, Incr 1	EPA	6	Baseline - CSA - Current -	150,000.00 0.00 0.00	150,000.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
EPA Totals								
			Baseline -	36,194,104.00	33,273,252.00	920,326.00	60,000.00	1,940,526.00
			CSA -	20,175,330.00	19,166,576.00	1,008,754.00	0.00	0.00
			Current -	46,651,339.00	45,563,037.00	1,088,302.00	0.00	0.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Bayou Sauvage #1	FWS	1	Baseline -	1,657,708.00	814,621.00	553,000.00	290,087.00	0.00
			CSA -	1,612,875.00	1,021,950.00	365,000.00	225,925.00	0.00
			Current -	1,598,612.00	1,021,950.00	350,737.00	225,925.00	0.00
Cameron Creole Watershed Hydrologic Restoration	FWS	1	Baseline -	660,460.00	347,507.00	220,000.00	92,953.00	0.00
			CSA -	714,506.00	431,930.00	220,016.00	62,560.00	0.00
			Current -	775,974.00	449,930.00	263,484.00	62,560.00	0.00
Cameron Prairie Refuge Shoreline Protection	FWS	1	Baseline -	1,177,668.00	1,110,668.00	67,000.00	0.00	0.00
			CSA -	1,451,000.00	1,080,340.00	66,616.00	304,000.00	44.00
			Current -	1,490,074.00	1,090,340.00	95,734.00	304,000.00	0.00
Sabine Wildlife Refuge Erosion Protection	FWS	1	Baseline -	4,895,780.00	3,610,030.00	67,000.00	1,218,750.00	0.00
			CSA -	4,895,315.00	3,276,000.00	66,646.00	584,160.00	968,509.00
			Current -	1,868,673.00	1,184,800.00	99,713.00	584,160.00	0.00
Bayou Sauvage #2	FWS	2	Baseline -	1,452,035.00	572,660.00	484,012.00	283,768.00	111,595.00
			CSA -	1,632,100.00	993,900.00	354,400.00	283,800.00	0.00
			Current -	1,700,121.00	1,003,900.00	412,421.00	283,800.00	0.00
Sabine Refuge Structures (Hog Island)	FWS	3	Baseline -	4,581,454.00	2,478,383.00	805,812.00	778,562.00	518,697.00
			CSA -	4,581,454.00	2,997,080.00	805,812.00	778,562.00	0.00
			Current -	4,591,454.00	3,007,080.00	805,812.00	778,562.00	0.00
Grand Bayou / GIWW Freshwater Introduction	FWS	5	Baseline -	5,135,468.00	2,707,653.00	882,528.00	1,073,523.00	471,764.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	7,935,468.00	2,707,653.00	882,528.00	1,073,523.00	3,271,764.00
Lake Boudreaux FW Introduction, Alt B	FWS	6	Baseline -	4,915,650.00	4,915,650.00	0.00	0.00	0.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	4,915,650.00	4,915,650.00	0.00	0.00	0.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Agency FWS								
Nutria Harvest for Wetland Restoration Demo	FWS	6	Baseline -	1,040,000.00	1,040,000.00	0.00	0.00	0.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	1,040,000.00	1,040,000.00	0.00	0.00	
FWS Totals								
			Baseline -	25,516,223.00	17,597,172.00	3,079,352.00	3,737,643.00	1,102,056.00
			CSA -	14,887,250.00	9,801,200.00	1,878,490.00	2,239,007.00	968,553.00
			Current -	25,916,026.00	16,421,303.00	2,910,429.00	3,312,530.00	3,271,764.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project Agency	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Fourchon Hydrologic Restoration	NMFS	1	Baseline -	252,036.00	60,253.00	92,953.00	89,451.00	9,379.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	6,999.19	6,999.19	0.00	0.00	0.00
Lower Bayou LaCache Hydrologic Restoration	NMFS	1	Baseline -	1,694,739.00	816,771.00	565,000.00	185,906.00	127,062.00
			CSA -	1,100,000.00	716,250.00	217,071.00	166,679.00	0.00
			Current -	99,625.45	93,304.01	5,835.20	486.24	0.00
Atchafalaya Sediment Delivery	NMFS	2	Baseline -	907,810.00	643,003.00	131,626.00	0.00	133,181.00
			CSA -	908,408.00	799,532.00	108,876.00	0.00	0.00
			Current -	2,051,040.00	1,893,821.00	157,219.00	0.00	0.00
Big Island Mining (Increment 1)	NMFS	2	Baseline -	4,136,057.00	3,272,796.00	131,626.00	0.00	731,635.00
			CSA -	4,136,000.00	4,027,124.00	108,876.00	0.00	0.00
			Current -	7,092,356.00	6,935,137.00	157,219.00	0.00	0.00
Point Au Fer	NMFS	2	Baseline -	1,069,589.00	832,639.00	65,432.00	0.00	171,518.00
			CSA -	1,557,000.00	1,507,570.00	49,430.00	0.00	0.00
			Current -	1,631,706.94	1,527,863.94	103,843.00	0.00	0.00
Bayou Perot / Bayou Rigolettes Marsh Restoration	NMFS	3	Baseline -	1,835,047.00	1,403,336.00	139,405.00	0.00	292,306.00
			CSA -	1,834,750.00	1,688,650.00	146,100.00	0.00	0.00
			Current -	1,844,750.00	1,698,650.00	146,100.00	0.00	0.00
East Timbalier Island Sediment Restoration #1	NMFS	3	Baseline -	2,046,971.00	1,591,746.00	139,405.00	0.00	315,820.00
			CSA -	2,047,000.00	1,912,403.00	134,597.00	0.00	0.00
			Current -	2,568,751.00	2,400,505.00	168,246.00	0.00	0.00
Lake Chapeau Sediment & Hydrologic Restoration	NMFS	3	Baseline -	4,149,182.00	2,880,954.00	667,212.00	0.00	601,016.00
			CSA -	4,149,000.00	3,419,240.00	729,760.00	0.00	0.00
			Current -	5,032,273.00	4,466,490.00	565,783.00	0.00	0.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Lake Salvador Shore Protection Demo	NMFS	3	Baseline - CSA - Current -	1,444,628.00 1,444,600.00 2,565,894.00	919,171.00 1,315,600.00 2,307,967.00	66,956.00 129,000.00 257,927.00	280,282.00 0.00 0.00	178,219.00 0.00 0.00
East Timbalier Island Sediment Restoration #2	NMFS	4	Baseline - CSA - Current -	5,752,404.00 5,752,404.00 7,188,005.00	4,609,917.00 5,531,508.00 6,911,885.00	132,396.00 229,896.00 276,120.00	0.00 0.00 0.00	1,010,091.00 0.00 0.00
Eden Isles East Marsh Restoration	NMFS	4	Baseline - CSA - Current -	5,018,968.00 0.00 1,380.34	2,179,258.00 0.00 1,380.34	554,378.00 0.00 0.00	2,265,265.00 0.00 0.00	20,067.00 0.00 0.00
Little Vermilion Bay Sediment Trapping	NMFS	5	Baseline - CSA - Current -	940,065.00 0.00 940,100.00	668,908.00 0.00 900,100.00	143,067.00 0.00 40,000.00	0.00 0.00 0.00	128,090.00 0.00 0.00
Myrtle Grove Siphon	NMFS	5	Baseline - CSA - Current -	10,500,000.00 4,490,000.00 10,500,000.00	10,500,000.00 4,490,000.00 10,500,000.00	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00
Black Bayou Hydrologic Restoration	NMFS	6	Baseline - CSA - Current -	6,316,800.00 0.00 6,316,806.00	4,172,725.00 0.00 4,950,591.00	878,250.00 0.00 956,750.00	409,465.00 0.00 409,465.00	856,360.00 0.00 0.00
Delta-Wide Crevasses	NMFS	6	Baseline - CSA - Current -	2,736,950.00 0.00 2,736,950.00	974,656.00 0.00 749,394.00	584,612.00 0.00 378,584.00	995,421.00 0.00 1,608,972.00	182,261.00 0.00 0.00
Jaws Sediment Trapping	NMFS	6	Baseline - CSA - Current -	3,167,400.00 0.00 3,167,400.00	3,167,400.00 0.00 2,986,841.00	0.00 0.00 166,420.00	0.00 0.00 14,139.00	0.00 0.00 0.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Grand Terre Vegetative Plantings	NMFS	7	Baseline -	928,900.00	657,390.00	137,407.00	39,962.00	94,141.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	928,900.00	657,390.00	137,407.00	39,962.00	94,141.00
Pecan Island Terracing	NMFS	7	Baseline -	2,185,900.00	1,722,016.00	140,980.00	0.00	322,904.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	2,185,900.00	1,722,016.00	140,980.00	0.00	322,904.00
NMF Totals			Baseline -	55,083,446.00	41,072,939.00	4,570,705.00	4,265,752.00	5,174,050.00
			CSA -	27,419,162.00	25,407,877.00	1,844,606.00	166,679.00	0.00
			Current -	56,858,836.92	50,710,334.48	3,658,433.20	2,073,024.24	417,045.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Agency NRCS								
BA-2 GIWW to Clovelly Wetland Restoration	NRCS	1	Baseline - CSA - Current -	8,141,512.00 8,142,000.00 8,347,106.21	4,083,445.00 4,433,200.00 5,200,127.74	1,433,974.00 1,434,000.00 1,193,978.47	1,952,936.00 1,953,000.00 1,953,000.00	671,157.00 321,800.00 0.00
Vegetative Plantings Demo - Dewitt-Rollover	NRCS	1	Baseline - CSA - Current -	191,003.00 149,300.00 79,447.98	102,077.00 75,110.00 75,725.98	34,750.00 34,687.00 3,722.00	31,538.00 24,375.00 0.00	22,638.00 15,128.00 0.00
Vegetative Plantings Demo - Falgout Canal	NRCS	1	Baseline - CSA - Current -	144,561.00 137,840.00 180,296.00	55,636.00 63,650.00 114,100.00	34,750.00 34,687.00 41,821.00	31,537.00 24,375.00 24,375.00	22,638.00 15,128.00 0.00
Vegetative Plantings Demo - Timbalier Island	NRCS	1	Baseline - CSA - Current -	372,589.00 413,752.00 411,602.00	283,663.00 339,564.00 335,300.00	34,750.00 34,686.00 51,927.00	31,538.00 24,375.00 24,375.00	22,638.00 15,127.00 0.00
Vegetative Plantings Demo - West Hackberry	NRCS	1	Baseline - CSA - Current -	213,947.00 220,864.00 225,157.00	125,021.00 146,676.00 147,126.00	34,750.00 34,686.00 53,656.00	31,538.00 24,375.00 24,375.00	22,638.00 15,127.00 0.00
Brown Lake	NRCS	2	Baseline - CSA - Current -	3,222,800.00 3,222,800.00 3,222,666.03	1,631,154.00 1,939,100.00 1,949,100.00	838,676.00 838,700.00 828,566.03	444,992.00 445,000.00 445,000.00	307,978.00 0.00 0.00
Caemaron Outfall Management	NRCS	2	Baseline - CSA - Current -	2,522,199.00 2,522,160.00 2,634,353.00	1,362,416.00 1,615,280.00 1,727,473.00	812,670.00 812,640.00 812,640.00	94,223.00 94,240.00 94,240.00	252,890.00 0.00 0.00
Freshwater Bayou	NRCS	2	Baseline - CSA - Current -	2,770,093.00 2,770,100.00 2,780,100.00	1,223,398.00 1,445,500.00 1,279,200.00	692,411.00 692,400.00 714,808.00	632,201.00 632,200.00 632,200.00	222,083.00 0.00 153,892.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Fritchie Marsh	NRCS	2	Baseline -	3,048,389.00	1,503,830.00	865,513.00	399,926.00	279,120.00
			CSA -	3,048,400.00	1,782,950.00	865,500.00	399,950.00	0.00
			Current -	2,875,475.00	1,792,950.00	682,575.00	399,950.00	0.00
Hwy 384	NRCS	2	Baseline -	700,717.00	274,257.00	233,572.00	149,454.00	43,434.00
			CSA -	700,720.00	317,680.00	233,600.00	149,440.00	0.00
			Current -	756,562.00	327,680.00	279,442.00	149,440.00	0.00
Jonathan Davis Wetland	NRCS	2	Baseline -	3,398,867.00	2,053,706.00	670,940.00	323,283.00	350,938.00
			CSA -	3,398,900.00	2,404,640.00	670,960.00	323,300.00	0.00
			Current -	4,046,673.00	3,059,880.00	663,493.00	323,300.00	0.00
Mud Lake	NRCS	2	Baseline -	2,903,635.00	1,417,271.00	838,676.00	382,306.00	265,382.00
			CSA -	2,903,600.00	1,682,600.00	838,700.00	382,300.00	0.00
			Current -	2,807,225.24	1,372,468.24	1,052,457.00	382,300.00	0.00
Vermilion Bay/Boston Canal	NRCS	2	Baseline -	1,008,634.00	628,955.00	69,687.00	196,226.00	113,766.00
			CSA -	1,008,600.00	742,700.00	69,700.00	196,200.00	0.00
			Current -	965,473.00	675,200.00	94,073.00	196,200.00	0.00
Brady Canal	NRCS	3	Baseline -	4,717,928.00	2,141,857.00	863,206.00	1,267,703.00	445,162.00
			CSA -	4,717,920.00	2,587,040.00	863,200.00	1,267,680.00	0.00
			Current -	4,598,773.00	2,597,000.00	734,093.00	1,267,680.00	0.00
Cameron Creole Maintenance	NRCS	3	Baseline -	3,719,926.00	0.00	0.00	3,719,926.00	0.00
			CSA -	3,720,000.00	0.00	0.00	3,720,000.00	0.00
			Current -	3,730,000.00	1,114,683.12	5,006.06	2,610,310.82	0.00
Cote Blanche	NRCS	3	Baseline -	5,173,062.00	3,314,369.00	834,015.00	386,790.00	637,888.00
			CSA -	5,173,100.00	3,952,300.00	834,000.00	386,800.00	0.00
			Current -	5,639,302.00	4,672,844.00	579,658.00	386,800.00	0.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Agency NRCS								
SW Shore White Lake Demo	NRCS	3	Baseline - CSA - Current -	126,062.00 126,100.00 146,944.00	32,482.00 38,200.00 38,565.00	63,018.00 63,000.00 83,479.00	24,861.00 24,900.00 24,900.00	5,701.00 0.00 0.00
Violet Freshwater Distribution	NRCS	3	Baseline - CSA - Current -	1,821,438.00 1,821,440.00 1,844,040.00	742,344.00 880,640.00 903,288.00	607,146.00 607,200.00 607,146.00	333,606.00 333,600.00 333,606.00	138,342.00 0.00 0.00
West Pointe-a-la-Hache Outfall Management	NRCS	3	Baseline - CSA - Current -	881,148.00 881,100.00 4,079,556.00	378,805.00 442,400.00 2,236,587.00	293,702.00 293,700.00 864,521.00	145,046.00 145,000.00 600,431.00	63,595.00 0.00 378,017.00
White's Ditch Outfall Management	NRCS	3	Baseline - CSA - Current -	756,134.00 756,160.00 23,074.74	326,328.00 379,520.00 20,261.74	252,036.00 252,080.00 2,813.00	124,570.00 124,560.00 0.00	53,200.00 0.00 0.00
Bayou L'Ours Ridge Hydrologic Restoration	NRCS	4	Baseline - CSA - Current -	2,418,676.00 2,418,700.00 2,418,700.00	1,279,046.00 1,489,700.00 1,489,700.00	838,686.00 838,700.00 838,700.00	90,280.00 90,300.00 90,300.00	210,664.00 0.00 0.00
BBWW "Dupre Cut" - West	NRCS	4	Baseline - CSA - Current -	2,192,418.00 2,192,500.00 2,212,279.00	1,682,366.00 2,008,300.00 2,028,095.00	67,790.00 67,800.00 67,790.00	116,394.00 116,400.00 116,394.00	325,868.00 0.00 0.00
Flotant Marsh Fencing Demo	NRCS	4	Baseline - CSA - Current -	367,066.00 0.00 393,628.00	277,921.00 0.00 351,760.00	20,934.00 0.00 20,934.00	20,934.00 0.00 20,934.00	47,277.00 0.00 0.00
Perry Ridge Bank Protection	NRCS	4	Baseline - CSA - Current -	2,223,518.00 2,223,500.00 2,223,500.00	1,742,374.00 2,086,400.00 2,086,400.00	67,790.00 67,800.00 67,800.00	69,332.00 69,300.00 69,300.00	344,022.00 0.00 0.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Plowed Terraces Demo	NRCS	4	Baseline -	299,690.00	235,166.00	26,142.00	0.00	38,382.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	299,690.00	235,166.00	26,142.00	0.00	38,382.00
Freshwater Bayou Bank Stabilization	NRCS	5	Baseline -	3,998,919.00	3,008,259.00	68,993.00	274,953.00	646,714.00
			CSA -	3,998,900.00	3,654,900.00	69,000.00	275,000.00	0.00
			Current -	3,998,900.00	3,654,900.00	69,000.00	275,000.00	0.00
Naomi Outfall Management	NRCS	5	Baseline -	1,686,865.00	890,909.00	523,851.00	115,313.00	156,792.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	1,771,813.00	901,004.00	582,055.00	137,278.00	151,476.00
Raccoon Island Breakwaters Demo	NRCS	5	Baseline -	1,497,538.00	1,197,991.00	49,463.00	24,464.00	225,620.00
			CSA -	2,063,400.00	1,835,500.00	203,400.00	24,500.00	0.00
			Current -	2,063,398.01	1,835,500.00	203,398.01	24,500.00	0.00
Sweet Lake/Willow Lake	NRCS	5	Baseline -	4,800,000.00	3,633,821.00	143,067.00	248,588.00	774,524.00
			CSA -	4,762,700.00	4,371,000.00	143,100.00	248,600.00	0.00
			Current -	4,762,700.00	4,371,000.00	143,100.00	248,600.00	0.00
BBWW "Dupre Cut" - East	NRCS	6	Baseline -	5,019,900.00	3,912,689.00	71,069.00	213,968.00	822,174.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	5,019,900.00	3,912,689.00	71,069.00	213,968.00	822,174.00
Cheniere au Tigre Sediment Trapping Device Demo	NRCS	6	Baseline -	500,000.00	486,000.00	11,000.00	3,000.00	0.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	500,000.00	486,000.00	11,000.00	3,000.00	0.00
Oaks/Avery Canals Hydrologic Restoration-Incr 1 (B.S. only)	NRCS	6	Baseline -	2,367,700.00	1,181,085.00	666,113.00	323,026.00	197,476.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	2,367,700.00	1,181,085.00	666,113.00	323,026.00	197,476.00

CWPPRA Project Estimates (PL 7 unfunded projects not included)

16-Mar-98

Project	Agency	P/L	Type	Total	Construction	Monitoring	O & M	Contingency
Agency NRCS								
Penchant Basin Plan w/o Shoreline Stabilization	NRCS	6	Baseline -	7,051,550.00	7,051,550.00	0.00	0.00	0.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	7,051,550.00	7,051,550.00	0.00	0.00	
Barataria Basin Landbridge, Ph I	NRCS	7	Baseline -	10,342,700.00	7,719,848.00	71,905.00	892,799.00	1,658,148.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	10,342,700.00	7,719,848.00	71,905.00	892,799.00	1,658,148.00
Thin Mat Floatant Marsh Enhancement Demo	NRCS	7	Baseline -	460,222.00	202,176.00	151,619.00	69,492.00	36,935.00
			CSA -	0.00	0.00	0.00	0.00	0.00
			Current -	460,222.00	202,176.00	151,619.00	69,492.00	36,935.00
NRCS Totals								
			Baseline -	91,061,406.00	56,182,215.00	12,286,664.00	13,166,743.00	9,425,784.00
			CSA -	63,494,556.00	40,714,550.00	10,897,926.00	11,499,770.00	382,310.00
			Current -	95,280,506.21	67,146,432.82	12,340,499.57	12,357,073.82	3,436,500.00
Project Totals								
			Baseline -	252,745,629.00	176,421,455.00	24,491,086.00	28,960,536.00	22,872,552.00
			CSA -	145,695,198.00	112,140,056.00	16,669,023.00	14,984,756.00	1,901,363.00
			Current -	268,849,951.60	208,786,168.77	23,197,306.77	25,915,817.06	10,950,659.00

Preparation of Fully-Funded Cost Estimates

The following methodology will be used to recalculate project monitoring and operation and maintenance (O&M) budgets. The methodology will require several sets of inputs and review by the Economics Work Group (EW) before the data can be accepted for analysis. It is important that all input data be peer reviewed by appropriate personnel from each lead agency.

A final budget estimate must be completed before the Eighth Priority Project List is selected. This recalculation may take several months. A list of general information requirements is below:

- 1) The year of project construction or estimated construction completion date.
- 2) Actual project expenditures by category. Federal costs are housed with the Corps of Engineer Project Management Branch. State costs are housed with Louisiana Department of Natural Resources Accounting Division. All costs to date will be totaled and reported in the following categories:
 - a) Engineering and Design: Pre-construction monitoring costs should not be placed in the monitoring category. A review of project expenditures has shown pre-construction monitoring charges in the E&D category on some projects.
 - b) Land rights: Land rights can be placed with the E&D numbers.
 - c) Construction
 - d) O&M
 - e) Monitoring
- 3) A spreadsheet will be completed on each project for monitoring equipment and usage in a given year (explained below).
- 4) A spreadsheet will be completed on each project for O&M costs within a given year (explained below).
- 5) The EW will inflate the estimated costs of monitoring and O&M in the specified years using Office of Management and Budget (OMB) inflation estimates. According to OMB circular A-11, all federal agencies must use OMB economic assumptions when preparing budget estimates. One of these requirements is the use of OMB inflation estimates when projecting costs for a multi-year budget.

Monitoring Recalculation

Traditionally, the EW has taken estimates from the LDNR monitoring staff as created in 1993, adjusted them for inflation, and calculated fully funded costs. There is a need for more detailed projections than an average annual budget outlay. Monitoring has been initiated for projects in many categories, and the state has information which would allow for preparing these more detailed estimates. The monitoring information should be calculated as discussed below.

The monitoring work group will prepare a cost estimate for monitoring each project. The estimate will be made on worksheets (see attached) which show a list of items that may

be used in monitoring a project, as well as a current price for each item. The quantity of each item to be used will be specified for each year.

Input sheets will be reviewed and approved by members of each agency's monitoring specialists. Conflicts will be resolved by the Environmental Work Group. Approved input sheets will be forwarded to the EW, which will complete the fully funded cost estimates for monitoring each project. The EW will report cost overruns to the Planning and Evaluation Subcommittee.

Operation and Maintenance

Engineers from each agency will prepare cost projections for O&M of their respective projects. The projections will be made on worksheets (see attached) which show a list of items that may be used on a project, as well as current prices for each item. The quantity of each item needed will be specified for each year.

Input sheets will be reviewed by engineers from each agency. Conflicts will be resolved by the Engineering Work Group. Approved input sheets will be forwarded to the Economics Work group (EW), which will complete the fully funded cost estimates. The EW will report cost overruns to the Planning and Evaluation Subcommittee.

October 21, 1992

A JOINT MONITORING PROPOSAL BY
THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AND
THE USFWS NATIONAL WETLANDS RESEARCH CENTER
REGARDING MONITORING OF
COASTAL WETLANDS PLANNING, PROTECTION, AND RESTORATION ACT
PROJECTS

Background:

Monitoring of projects implemented from the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) restoration plan must provide:

- 1) "an evaluation of the effectiveness of each coastal wetlands restoration project in achieving long-term solutions to arresting coastal wetlands loss in Louisiana" PL 101-646 Sec. 303 (b)(4)(L); and
- 2) "a scientific evaluation of the effectiveness of the coastal wetlands restoration projects carried out under the plan in creating, restoring, protecting and enhancing coastal wetlands in Louisiana" PL 101-646 Sec. 303 (b)(7).

In order for the above mandates to be achieved, the monitoring efforts must generate results that can aid in determining the success or failure of existing projects, in the beneficial modification of existing projects, in the design of future projects, and most importantly, support future decisions on selection of projects proposed for creating, restoring, protecting and enhancing Louisiana's coastal wetlands. Comparisons of results among projects of similar type is the only way to determine which projects are most effective in achieving long-term solutions to arresting coastal wetlands loss in Louisiana.

The Monitoring Work Group was tasked by the P & E Subcommittee to resolve two issues essential to achieving the above mandates. The first issue was to develop a standardized monitoring protocol, and the second issue was to determine how this protocol would be implemented in a monitoring program, e.g., who would develop monitoring plans, collect field data, write reports, etc. The protocol was developed and reviewed by representatives from agencies, academia, and consulting firms, and their recommendations were incorporated into a final Monitoring Program Document. This

document is attached as Appendix A to this proposal.

Once the Monitoring Program Document was complete, the representatives of the various committees of the Task Force and the Monitoring Work Group discussed who would implement the monitoring program. Several options presented themselves as follows: 1) all monitoring would be the responsibility of the project sponsor; 2) all monitoring would be the responsibility of a single agency; 3) divide the monitoring among all the sponsoring agencies based upon expertise; 4) contract all monitoring with universities; and 5) contract all monitoring with a private consulting firm. The Monitoring Work Group discussed which options would meet the goals of consistency and technical credibility while at the same time being cost-effective and able to integrate with on-going data collection programs. The result of this discussion was that none of the options fit all of the requirements; therefore, they were all rejected.

During these discussions, the Louisiana Department of Natural Resources proposed that they be responsible for managing the monitoring program. After review and comments by the Monitoring Work Group and P & E Subcommittee, this proposal was refined to insure that the goals of consistency, credibility, and cost would be met. It was accepted and is presented here as a recommendation of the P & E Subcommittee.

Monitoring Responsibilities:

The Louisiana Department of Natural Resources, Coastal Restoration Division (LDNR/CRD) will be responsible for management of all monitoring activities of the CWPRA including monitoring plan development, data collection and storage, statistical analysis, quality control, data interpretation and report generation. The United States Fish and Wildlife Service/National Wetlands Research Center (USFWS/NWRC) will be responsible for habitat mapping and GIS analysis (geographic information systems support) and other related monitoring as deemed appropriate by LDNR/CRD for each project. The LDNR/CRD and the USFWS/NWRC will jointly prepare reports for each CWPRA project implemented. These reports will be submitted to the P & E Subcommittee, Technical Committee and Task Force for final approval. The P & E Subcommittee shall direct the Monitoring Work Group to provide a technical review of the project reports. The implementation of all monitoring plans will follow the protocols developed in the CWPRA Monitoring Program Document. A Technical Advisory Group consisting of a federal project sponsor representative, state (LDNR/CRD) project sponsor representative, USFWS/NWRC representative, wetland ecologist and biostatistician will assist in the development of project specific monitoring plans. The P & E Subcommittee will be advised of all Technical Advisory Group meetings. Assistance by the other sponsoring agencies in the development of the monitoring plans will be available on a voluntary basis. These plans will be reviewed by the Monitoring Work Group and submitted to the P & E

Subcommittee, Technical Committee and Task Force for final approval (see attached flowchart). The independent wetland ecologist and biostatistician will also provide quality assurance and verification of data interpretations to ensure unbiased determinations of results.

Justification:

- As a 25% cost-share partner on all CWPBRA projects, the State of Louisiana is the common denominator across all projects. The LDNR/CRD can provide the consistency needed to evaluate and compare similar project types across the entire coastal zone of Louisiana. In addition, the natural resources affected by CWPBRA projects fall under the domain of the State of Louisiana and, therefore, these resources should be monitored and managed by the State of Louisiana.
- A program within the LDNR/CRD is already established to monitor projects developed within the State of Louisiana's Coastal Wetlands Conservation and Restoration Plans. This monitoring program was used as a template for the development of the CWPBRA Monitoring Program Document and, therefore, would be compatible or easily adaptable to any CWPBRA requirements.
- The USFWS/NWRC currently provides GIS support and mapping assistance to the CWPBRA Task Force and the LDNR/CRD for planning and monitoring. The USFWS/NWRC program provides a mechanism for organizing and distributing GIS data generated for CWPBRA activities. This program, combined with the LDNR/CRD monitoring program will establish a long term mechanism to properly manage, archive, transfer, and distribute information.
- The LDNR/CRD currently develops reports for the Louisiana Legislature one year after project completion and updates these reports yearly. This coincides with the requirement of the Task Force to report to the United States Congress on the effectiveness of all implemented projects not less than three years after the completion and submission of the restoration plan, and at least every three years thereafter. Combined with the graphical, editorial and technical support of the USFWS/NWRC, the LDNR/CRD can complete all reporting requirements as specified in the CWPBRA.

Limits on Monitoring Variables:

Monitoring budgets for CWPBRA projects will be developed based on the minimum monitoring variables necessary to provide sufficient information to determine if project goals and objectives are being

net. A mechanism for selecting variables to be monitored is provided in the CWPRA Monitoring Program Document. However, due to the limited availability of funds, all of the highest priority variables cannot be monitored. The Monitoring Work Group determined by project type which variables were essential in judging project success or failure and which variables may need to be monitored based on project objectives and possible impacts. They are as follows:

<u>Project Type</u>	<u>Essential Variables</u>	<u>Additional Variables or Substitutions</u>
Freshwater Diversion	Habitat Mapping Salinity Water Level Vegetation	Fisheries Discharge Precipitation Wind Speed/Direction
Marsh Management	Habitat Mapping Salinity Water Level Vegetation Fisheries	Sediment Accretion
Hydrologic Restoration	Habitat Mapping Salinity Water Level Vegetation	Fisheries Sediment Accretion Water/Sediment Quality
Sediment Diversion	Habitat Mapping Bathymetry/ Topography	Vegetation Suspended Sediment Discharge
Vegetative Planting	Vegetation Shoreline Markers	Habitat Mapping Salinity
Beneficial Use of Dredge Material	Habitat Mapping Vegetation Bathymetry/ Topography	Shoreline Markers
Barrier Island Restoration	Habitat Mapping Vegetation Bathymetry/ Topography	Shoreline Markers
Sediment/Nutrient Trapping	Habitat Mapping Vegetation	Suspended Sediment Bathymetry Nutrients
Shoreline Protection	Habitat Mapping Shoreline Markers	Vegetation Bathymetry/ Topography

Monitoring costs for any given project will not exceed 125% of the original, fully-funded monitoring cost estimates.

Monitoring costs for any given project will not exceed 50% of the fully-funded project cost without monitoring.

These costs were derived based on a number of assumptions regarding sample number, sample frequency, project size, and the monitoring protocol utilized. Costs were derived independently and without consideration of existing monitoring stations. Average annual monitoring costs will decrease over time as a greater number of projects are implemented.

Project-specific exemptions to the above monitoring costs will be mutually agreed upon by the State of Louisiana and the Federal cost-share sponsor. Monitoring costs will be included as a component of the fully-funded project cost using the above average annual monitoring cost guidelines. In situations where monitoring costs must be added to a previously approved project, such an addition will not cause the previously approved fully-funded project cost to be exceeded by more than 25%.

The essential variables illustrate those variables which generally would be measured for each project type. However, project-specific goals and objectives may dictate that some of these variables may be non-essential. This list does not preclude other variables from being monitored, if determined necessary by the Technical Advisory Group. To reduce monitoring costs, full use will be made of existing research findings regarding the effects of water control structures.

Limits on Monitoring Costs:

The LDNR/CRD has reviewed the goals and objectives of all 18 first priority list projects and developed monitoring cost estimates for each. The monitoring budgets on 20 completed State of Louisiana wetland restoration projects as well as the monitoring priorities and costs identified within the CWPPRA Monitoring Program Document were also reviewed. This review determined that monitoring costs cannot be set at a fixed percentage of project cost, due to varying project goals and objectives and project sizes. It did, however, provide enough information to estimate an average annual cost (below) necessary to adequately monitor each type of wetland restoration project.

Average annual monitoring costs for each project type will not exceed the following:

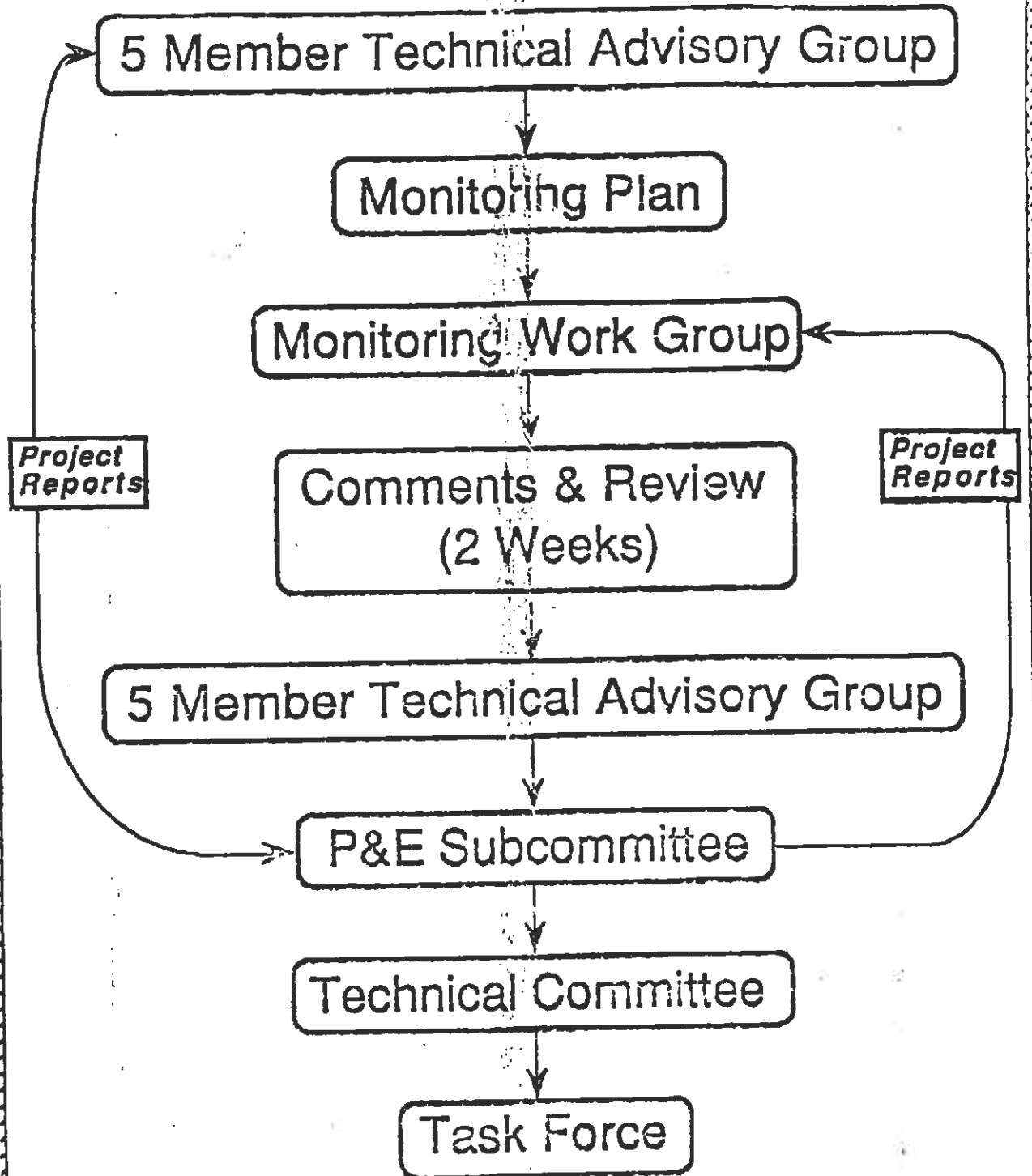
<u>Project Type</u>	<u>Average Annual Cost</u>
Freshwater Diversion	\$ 25,875
Marsh Management	\$ 25,875
Hydrologic Restoration	\$ 25,875
Sediment Diversion	\$ 8,625
Vegetative Planting	\$ 4,325
Beneficial Use of Dredged Material	\$ 4,325
Barrier Island Restoration	\$ 4,325
Sediment/Nutrient Trapping	\$ 4,325
Shoreline Protection	\$ 2,150

Freshwater diversion, marsh management, and hydrologic restoration project costs can be prorated based on project size as follows:

- less than 1,000 acres = 60%
- 1,000 - 5,000 acres = 70%
- 5,000 - 15,000 acres = 80%
- 15,000 - 60,000 acres = 100%

In addition, those projects that require continuous data recorders for active management will also be funded at 100%, regardless of project size.

Monitoring Implementation Protocol



COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

REVIEW AND CONSIDERATION FOR APPROVAL OF OPERATIONS AND MAINTENANCE (O&M) COSTS FOR PRIORITY PROJECT LIST PROJECTS

For Information.

Mr. Robert Schroeder will deliver a report of the Technical Committee concerning a review of Operations and Maintenance (O&M) costs for approved projects. A background summary is enclosed.

Recommendation of the Technical Committee:

- 1.) That the \$8.8 million cost increase in O&M plans be approved subject to verification by the Corps (Economic Work Group) of the methods used to index the costs for inflation;
- 2.) That a recommendation to the Task Force on the issue of establishing a contingency fund (for storms, vandalism, and permit requirements) be deferred until the next Technical Committee meeting; and
- 3.) That any project currently showing a zero budget for O&M (due to uncertainties over the final design) be handled in accordance with normal project development procedures. A final O&M plan will be developed for these projects in due course when the design is sufficiently complete.

Suggested Action:

No action by the Task Force is required until the Economic Work Group has completed indexing the costs for inflation. At that point, lead agencies can identify from the fully funded costs whether the 125% cost limitation has been exceeded. Based on this, lead agencies can then request Task Force approval of cost increases on a project by project basis. The Technical Committee can then make a final report to the Task Force of all O&M cost increases and the impact of these increases on the program.

The following documents are enclosed:

- Page 1. Review of Operations and Maintenance Plans
- Page 2. CWPPRA Operations and Maintenance Funding Analysis
prepared by DNR using Pyburn and Odum inflation factors
- Page 4. Proposal for Preparation of Fully-Funded Cost Estimates
- Page 6. Vermilion River Cutoff (TV 03) O&M Cost Estimate and
Spreadsheet

Review of Operations and Maintenance Plans

Background: In accordance with the Standard Operating Procedures for CWPPRA projects, when the "project cost will exceed 125% of the cost established in the Priority List (the baseline cost), the lead agency shall request approval from the Task Force to proceed with the project." In addition, CWPPRA cost sharing agreements generally provide for cost limitations on four project phases: Engineering and Design, Construction, Monitoring, and Operations and Maintenance. If at any time during the performance of a phase the estimate for that phase exceeds 125 percent of the established cost, then no new contracts for the project shall be awarded until the lead agency and the state agree on the increases. Current practice allows lead agencies to increase the current estimate of the total project cost up to 125% of the baseline cost without seeking approval from the Task Force.

The Louisiana Department of Natural Resources(DNR) commissioned the firm of Pyburn and Odum, Inc. to review O&M plans for all approved CWPPRA Priority List projects. The Pyburn and Odum report estimates total O&M budget requirements will exceed current estimates by a total of \$21 million. DNR staff met with members of each respective CWPPRA agency and conducted a project by project review of O&M requirements and costs. Conflicts were resolved by the Engineering Work Group. The results are tabulated in the following "CWPPRA Operations and Maintenance Funding Analysis." The tabulation indicates a total \$8.8 million cost increase in the agreed upon O&M requirements. This figure is not completely accurate as yet. Some projects, as noted in the tabulation, are in the process of being redesigned. Also, the fully funded costs were generated using an inflation index supplied by Pyburn and Odum. The Economic Work Group has determined that all Federal budgets must be prepared using the inflation index supplied by the Office of Management and Budget(OMB) in accordance with OMB Circular A-11 (1997). The Economic Work Group will undertake the effort to prepare current fully-funded cost estimates for all approved CWPPRA projects with known cost increases or changes of scope or individual work items.

CS-09	2	NRCS	444,992	17,126	462,118	
					0	
CS-20	2	NRCS	382,306	231,700	614,006	
					0	
CS-21	2	NRCS	149,454	232,784	382,218	
					0	
BS-3a	2	NRCS	94,223	0	94,223	Revisit After Features Redesign
					0	
CS-4a	3	NRCS	3,719,926	0	3,719,926	
					0	
PO-09a	3	NRCS	333,606	0	333,606	Revisit After Features Redesign
					0	
TV-04	3	NRCS	386,790	318,944	705,734	
					0	
TE-28	3	NRCS	1,267,703	180,186	1,447,889	
					0	
BA-04c	3	NRCS	600,431	0	600,431	Baseline Adjusted For Revised Project Scope
					0	
CS-24	4	NRCS	69,332	397,700	467,032	
					0	
TE-31	4	NRCS	20,934	0	20,934	
					0	
BA-22	4	NRCS	90,280	335,485	425,775	
					0	
BA-23	4	NRCS	116,394	718,630	835,024	
					0	
BA-03c	5	NRCS	115,313	416,087	533,400	
					0	
CS-11b	5	NRCS	248,588	228,048	476,636	
					0	
TE-29	5	NRCS	24,464	0	24,464	
					0	
ME-13	5	NRCS	274,953	315,558	590,511	
					0	
TV-13a	6	NRCS	323,026	(26,240)	294,786	
					0	
TE-34	6	NRCS	1,655,804	0	1,655,804	Revisit After Features Determination
					0	
BA-26	6	NRCS	213,968	1,042,440	1,256,408	
					0	
TE-36	7	NRCS	69,492	0	69,492	
					0	
xba-63l	7	NRCS	892,799	0	892,799	
					0	
CS-25	4	NRCS	0	3,600	3,600	
					0	
TV-16	6	NRCS	3,000	29,581	32,581	
					0	
Subtotal			15,275,475	4,133,692	19,409,167	
MR-03	1	USACOE	6,473,000	0	6,473,000	Waiting On Info From Bill Hicks (Used P & O Estimate)
					0	
TV-03	1	USACOE	204,258	45,742	250,000	
					0	
CS-22	2	USACOE	180,279	619,721	800,000	
					0	
TE-23	2	USACOE	228,252	246,748	475,000	
					0	
TV-14, TV5/7	4	USACOE	151,479	0	151,479	
					0	
BA-19	1	USACOE	0	0	0	
					0	
PO-17	1	USACOE	0	0	0	
					0	
MR-06	3	USACOE	0	100,000	100,000	
					0	
PO-19	3	USACOE	0	0	0	
					0	
MR-08	4	USACOE	0	0	0	
					0	
SF-14	4	USACOE	0	0	0	
					0	
PO-22	5	USACOE	0	250,000	250,000	
					0	
MR-10	6	USACOE	0	0	0	
					0	
Subtotal			7,237,268	1,262,211	8,499,479	
Total			38,134,731	6,821,559	44,956,290	Deauthorized Projects Not Included

7/

be used in monitoring a project, as well as a current price for each item. The quantity of each item to be used will be specified for each year.

Input sheets will be reviewed and approved by members of each agency's monitoring specialists. Conflicts will be resolved by the Environmental Work Group. Approved input sheets will be forwarded to the EW, which will complete the fully funded cost estimates for monitoring each project. The EW will report cost overruns to the Planning and Evaluation Subcommittee.

Operation and Maintenance

Engineers from each agency will prepare cost projections for O&M of their respective projects. The projections will be made on worksheets (see attached) which show a list of items that may be used on a project, as well as current prices for each item. The quantity of each item needed will be specified for each year.

Input sheets will be reviewed by engineers from each agency. Conflicts will be resolved by the Engineering Work Group. Approved input sheets will be forwarded to the Economics Work group (EW), which will complete the fully funded cost estimates. The EW will report cost overruns to the Planning and Evaluation Subcommittee.

VERMILLION RIVER CUTOFF SHORELINE PROTECTION PROJECT TV/03

Inflation Factors for Projecting Fully-Funded Costs based on
an inflation rate of 2.60%

Construction completion date was Feb 1996

Calander Year	Inflation Factor	Project Year	Expenditures in 1998 costs	Expenditures adjusted dollars	Description of work
1995	0.924				
1996	0.949				
1997	0.974	1			
1998	1.000	2			
1999	1.026	3			
2000	1.053	4			
2001	1.080	5	4,800	5,184	Inspection & Report
2002	1.108	6			
2003	1.137	7	167,934	190,941	Add second lift of rock to rock dike
2004	1.166	8			
2005	1.197	9			
2006	1.228	10	4,800	5,894	Inspection & Report
2007	1.260	11			
2008	1.293	12			
2009	1.326	13			
2010	1.361	14			
2011	1.396	15	4,800	6,701	Inspection & Report
2012	1.432	16			
2013	1.470	17			
2014	1.508	18			
2015	1.547	19			
2016	1.587	20			
2017	1.629				
2018	1.671				
2019	1.714				
2020	1.759				
2021	1.805				
2022	1.852				
			TOTAL	\$208,720	
			ROUNDED TOTAL =	\$209,000	

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

**CONSIDERATION FOR APPROVAL
OF THE GRAND BAYOU PROJECT ADDITIONS**

For Task Force Decision.

Mr. Robert Schroeder will deliver the recommendation of the Technical Committee to the Task Force that they approve the additions to the Grand Bayou project, which would significantly increase both the scope and cost of the project. The fully funded cost of the project would increase by \$3,977,700 from \$5,135,468 to \$9,113,168 (see attached).

Proposed Additions to the Grand Bayou Diversion/Cutoff Canal Project (TE-10/XTE-49)

Introduction

During consultations with affected landowners and local shrimpers, the FWS, together with the Louisiana Department of Wildlife and Fisheries, realized that the authorized Grand Bayou Project could be expanded to the west to encompass a 16,164-acre area of sensitive and deteriorating wetlands, dominated by floating fresh marshes. The additional area is located in Lafourche Parish, east of Bayou Pointe au Chien and west of Grand Bayou Canal, Grand Bayou, and Cutoff Canal (Figure 1). This lies adjacent to the western boundary of the previously authorized Grand Bayou Diversion Project.

Project Features/Operation

The proposed Bayou Pointe au Chien Structure would include as many deep sluice gates as engineeringly practical. This structure would remain closed, except when discharging excess water. It would also effectively block inflow of high tides, helping to protect existing cypress swamps and flood-prone developed areas along upper Bayou Pointe au Chien. Drainage/water exchange for the additional area would be redirected primarily to the Relief Structure, which would include a boat bay, large sluice gates, and flapgates. The structure would allow unrestricted flow through the sluice gates. Flapgates would facilitate outflow and restrict inflow of highly saline water. Additional exchange would be allowed through the two LDWF structures and the proposed Fisheries Structure, when salinities remain below specified thresholds. All structures would be temporarily closed during extreme high tides to preclude flooding of low-lying developments along Bayou Pointe au Chien and to reduce/avoid excessive ponding of brackish water within the project area.

Spoil banks along the northern portion of subarea B would be gapped to promote flushing and freshwater flow-through. Internal drainage would also be improved by removing several existing canal plugs and weirs, and through the dredging of existing trenasses (Figure 2).

Anticipated Benefits to the Additional Area

1. Reduce saltwater intrusion into swamp and fragile floating fresh marshes
2. Curtail major inundation events
3. Improve drainage by providing additional outlets
4. Restore hydrology of upper Grand Bayou Basin
5. Relocate primary water exchange site to a less saline site
6. Protect remaining cypress swamps along St. Louis Canal

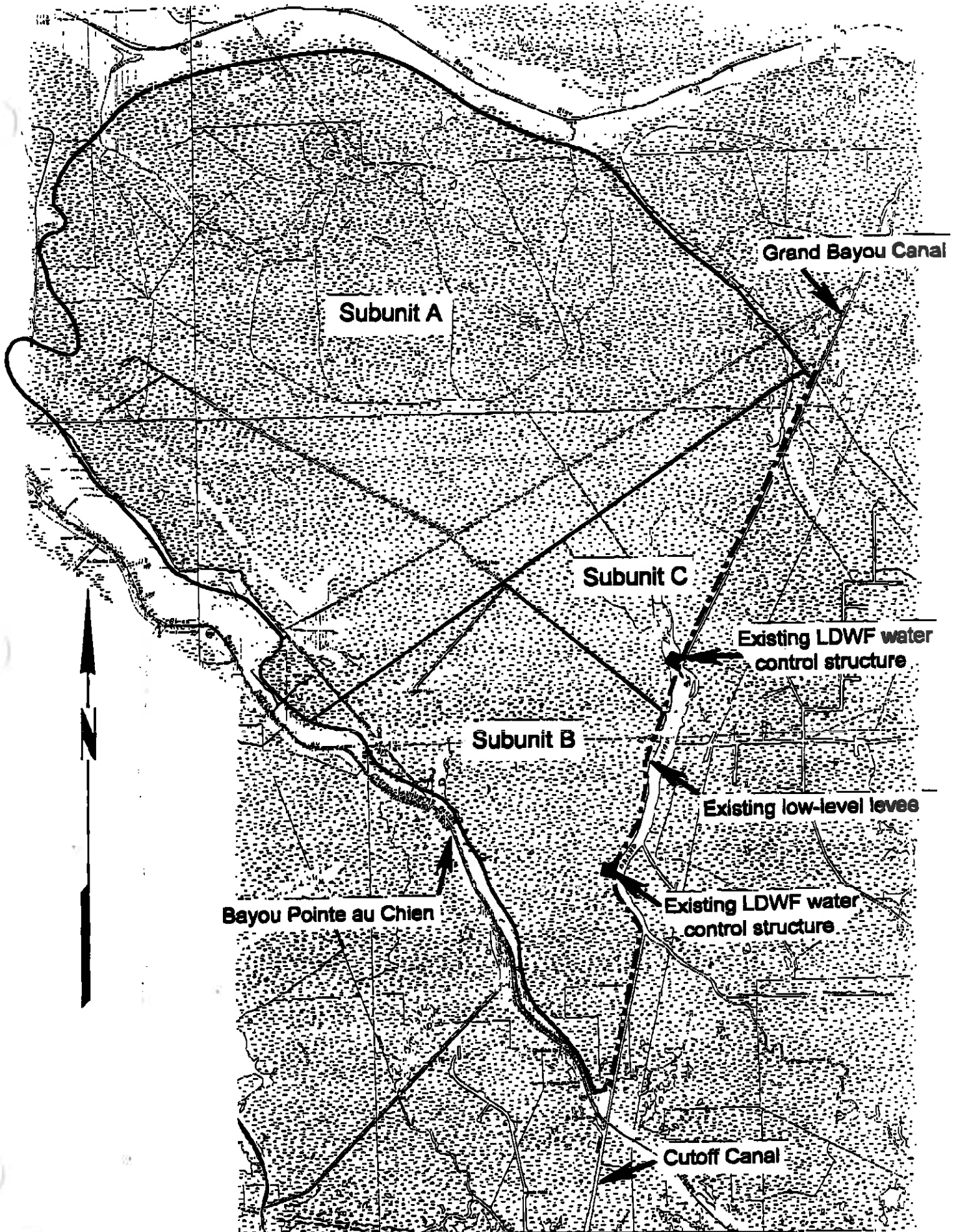


Figure 1. Map delineating the three subunits of the proposed additional project area.

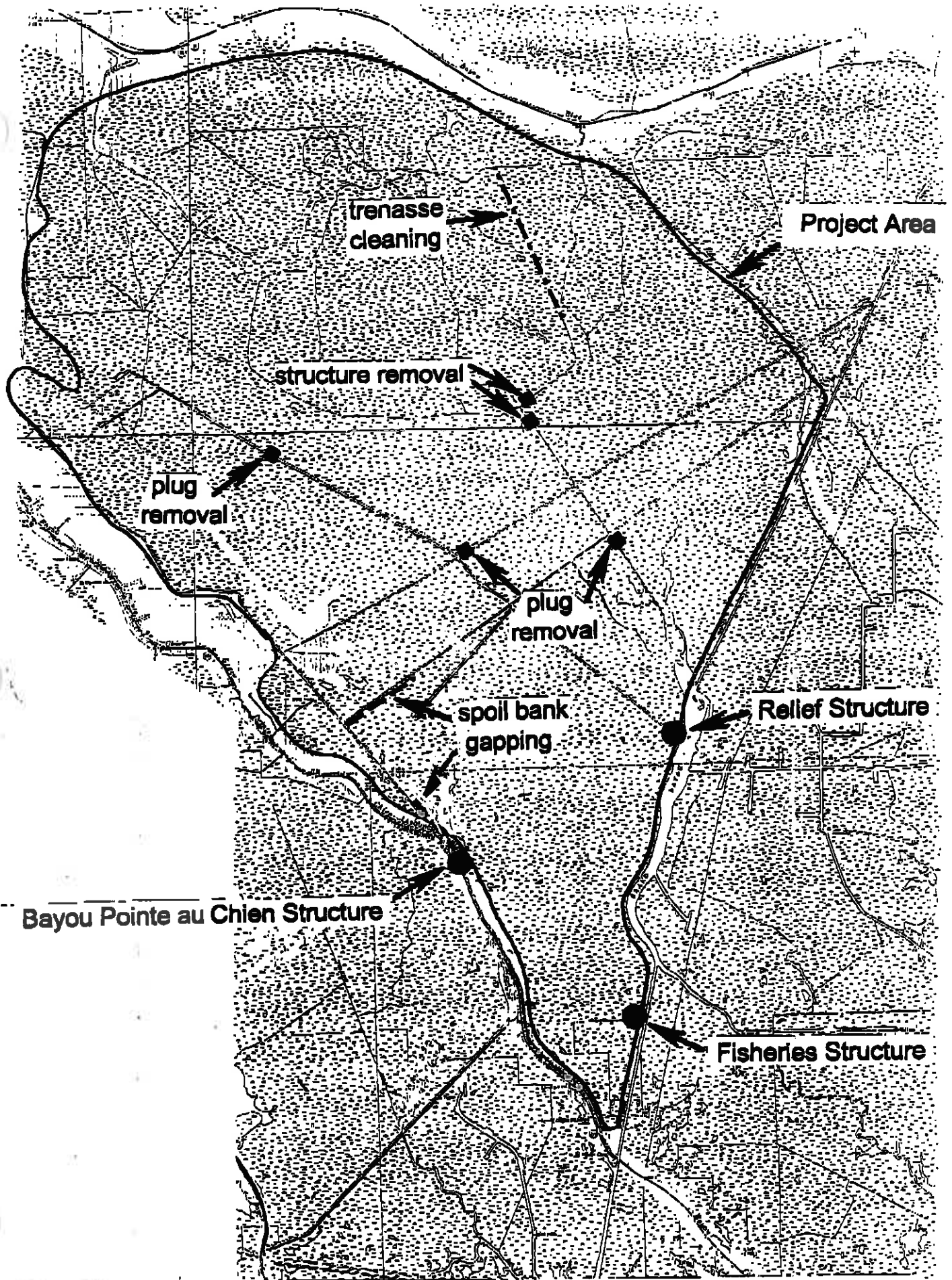


Figure 2. Map delineating the locations of proposed additional project features.

Other Anticipated Benefits

1. Increase freshwater input to the original project area
2. Reduce tidal flooding of developed properties along upper Bayou Pointe au Chien

Estimated Costs

Additional Project Area/Features

Additional Project Area = 16,164 acres
 AAHU's = 335
 Fully Funded Cost = \$3,977,700
 Ave. Annual Cost = \$270,100
 Cost Effectiveness = \$833/AAHU

Authorized Project

Project Area = 26,530 acres
 AAHU's = 771
 Fully Funded Cost = \$5,135,468
 Ave. Annual Cost = \$397,100
 Cost Effectiveness = \$515/AAHU

Additional Project Features plus the Authorized Project

Project Area = 42,694 acres
 AAHU's = 1106
 Fully Funded Cost = \$9,113,168
 Ave. Annual Cost = \$667,200
 Cost Effectiveness = \$603/AAHU

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

REPORT ON THE STATUS OF THE 8TH PRIORITY PROJECT LIST

For information.

Mr. Tom Podany will report to the Task Force on the status of the 8th Priority Project List.

Initiated work in April

2 Public Meetings held

30 Projects nominated by Public

2 more meetings scheduled

Feder, Academic Advisors

← April 22

April 24 Public Meeting

Agenda will select 10 Candidates

Dec 98 - Rec of Tech Committee

Hathaway - Where will

Newhite: Selected for unfunded project on ~~8th~~ 7th List

Also nominated on 8th List project

CWPPRA Project Bid Overruns (Pre-award)

STATEMENT OF PROBLEM:

Occasionally bids on CWPPRA projects may exceed the authorized amount plus the 25% contingency amount. When bids exceed the authorized amount plus the 25% contingency amount, the options are:

Option 1) allow the acceptance period to expire and abandon the project

Option 2) reject all bids, reduce the scope of the project and re-advertise

Option 3) request additional funding from the Task Force and award the contract

DISCUSSION:

Option 1) is not an acceptable option if the project is needed.

Option 2) may be required if the bids are obviously so far over the available funding that the Task Force would not consider additional funding requests.

Option 3) the most desirable option if the overrun is not excessive enough to be considered under Option 2) as a candidate for rejection, scope reduction and re-advertisement.

If option 2 or 3 is selected, the resulting cost effectiveness should be evaluated for substantial increases in cost/habitat unit. (i.e. 25% above original)

Provisions in bidding procedures by the State of Louisiana allow for acceptance of a bid within a 30 calendar day window after the offer is made.

Provisions in bidding procedures by the Natural Resources Conservation Service, under the Federal Acquisition Regulations (FAR), allow for acceptance of a bid within a 60 calendar day window after the offer is made.

Provisions in bidding procedures by the Corps of Engineers, under the Federal Acquisition Regulations (FAR), mandate acceptance of a construction bid within a 30 calendar day window after the offer is made, unless the bidder grants an extension in 30 day increments.

RECOMMENDATIONS:

- 1) The final engineers cost estimate must have been reviewed and updated within 90 days prior to advertisement.
- 2) If the final estimate, prior to advertising, equals or slightly exceeds the authorized amount less the 25% contingency amount, the bid package should contain a base bid, and additive or deductive alternatives that would allow the project to be awarded within the allocated funds plus the 25% contingency amount. The base bid with additive or deductive alternates provides additional flexibility if the base bid is lower than anticipated.
- 3) If the final estimate is within the available funds (authorized amount) prior to bidding and the base bid without alternates approach was used but the bid exceeded the authorized amount plus the 25% contingency amount, the sponsor agency (federal or state) will notify each of the agencies on the Task Force of their intention to request additional funds within 15 days of receipt of bids. The sponsor should also provide the other members of the Task Force bid data and any information that supports the request for additional funds at the same time.
- 4) If the final estimate is within the available funds (authorized amount) prior to bidding and the base bid with alternates approach was used but the bid exceeded the authorized amount plus 25% contingency amount, the sponsor agency (federal or state) would apply deductive alternates to get the project within available funds. If after taking deductive alternatives the base bid still exceeds authorized funds plus 25% contingency, the sponsor will notify each of the agencies on the Task Force of their intention to request additional funds within 15 days of receipt of bids. The sponsor should also provide the other members of the Task Force bid data and any information that supports the request for additional funds at the same time.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

DISCUSSION OF PROCEDURES TO HANDLE BID OVERRUNS

For Information.

Mr. Robert Schroeder will deliver the Technical Committee's recommendation for handling bid overruns on projects. The NRCS is currently compiling comments and will distribute the revised procedures to the CWPPRA agencies for further review.

No Task Force decision is required at this time.

*Send any comments
further to Brett Paul (NRCS)*

*Tech. Committee will have
mtg. on next meeting.*

CWPPRA Project Bid Overruns (Pre-award)

STATEMENT OF PROBLEM:

Occasionally bids on CWPPRA projects may exceed the authorized amount plus the 25% contingency amount. When bids exceed the authorized amount plus the 25% contingency amount, the options are:

Option 1) allow the acceptance period to expire and abandon the project

Option 2) reject all bids, reduce the scope of the project and re-advertise

Option 3) request additional funding from the Task Force and award the contract

DISCUSSION:

Option 1) is not an acceptable option if the project is needed.

Option 2) may be required if the bids are obviously so far over the available funding that the Task Force would not consider additional funding requests.

Option 3) the most desirable option if the overrun is not excessive enough to be considered under Option 2) as a candidate for rejection, scope reduction and re-advertisement.

Provisions in bidding procedures by the State of Louisiana allow for acceptance of a bid within a 30 calendar day window after the offer is made.

Provisions in bidding procedures by Federal Agencies, under the Federal Acquisition Regulations (FAR), allow for acceptance of a bid within a 60 calendar day window after the offer is made.

RECOMMENDATIONS:

1) The final engineers cost estimate must have been reviewed and updated within 90 days prior to advertisement.

2) If the final estimate, prior to advertising, equals or slightly exceeds the authorized amount less the 25% contingency amount, the bid package should contain a base bid, and additive or deductive alternatives that would allow the project to be awarded within the allocated funds plus the 25% contingency amount. The base bid with additive or deductive alternates provides additional flexibility if the base bid is lower than anticipated.

*Notice to DIR
to request
cost - show
concernance*

3) If the final estimate is within the available funds (authorized amount) prior to bidding and the base bid without alternates approach was used but the bid exceeded the authorized amount plus the 25% contingency amount, the sponsor agency (federal or state) will notify each of the agencies on the Task Force of their intention to request additional funds within 15 days of receipt of bids. The sponsor should also provide the other members of the Task Force bid data and any information that supports the request for additional funds at the same time.

4) If the final estimate is within the available funds (authorized amount) prior to bidding and the base bid with alternates approach was used but the bid exceeded the authorized amount plus 25% contingency amount, the sponsor agency (federal or state) would apply deductive alternates to get the project within available funds. If after taking deductive alternatives the base bid still exceeds authorized funds plus 25% contingency, the sponsor will notify each of the agencies on the Task Force of their intention to request additional funds within 15 days of receipt of bids. The sponsor should also provide the other members of the Task Force bid data and any information that supports the request for additional funds at the same time.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

FEASIBILITY STUDY STEERING COMMITTEE REPORT

For information.

Mr. Tom Podany will report to the Task Force on the status of the Louisiana Barrier Shoreline Study and the Mississippi River Sediment Nutrient and Fresh Water Redistribution Study. Enclosed are fact sheets for the two studies. The proposal for Phase 2 of the Barrier Shoreline Study, which covers investigations of the Chenier Plain, will be distributed as a handout.

PROJECT FACT SHEET

PROJECT: Mississippi River Sediment, Nutrient and Freshwater Redistribution Study

1. PURPOSE: To determine means to quantify and optimize the available resources of the Mississippi River to create, protect and enhance coastal wetlands and dependent fish and wildlife populations in coastal Louisiana. To plan, design, evaluate and recommend for construction projects utilizing the natural resources of the Mississippi River in order to abate continuing measured loss of this habitat and restore a component of wetland growth.

2. FACTS:

a. Status.

- i. **Tasks Completed:** Initial analyses completed include land use, habitat type and land loss, endangered and threatened species documentation, and existing water supply demand. Spatial distribution of these parameters has also been developed for the study area. Hydraulic modeling of riverine impacts for multi-diversion combinations is complete. Data and design information development for the intermediate concept plans are complete. A quality assurance review of the model was completed and H&H Branch output is complete. A workshop to address issues stemming from project scope, sponsorship, implementation and operational complexity was held in mid Mar 97. Modeling of the hydraulic effects of the combined MRSNFR and Barrier Shoreline study alternatives in the Barataria basin have been run. Information from the outfall modeling efforts is available. The wetland evaluations for the intermediate study alternatives have been initiated the field data collection and WVA analysis is finished.
- ii. **Tasks Underway:** Tasks involving the development of future without action conditions continue to be developed through the MOA with LUMCON. Landscape modeling runs of the Barataria alternatives are being run. The HEP habitat analysis is currently underway. Environmental benefit analyses should be completed by mid April. Real Estate cost estimates for the individual alternatives are ongoing. The study efforts are being closely coordinated Coast 2050 planning process. This coast wide multi-interest public planning process will directly influence the implementability of all study alternatives. A completion near mid summer 1998 is projected for a preliminary draft study report.
- iii. **Budget:** The current total time and cost estimate calls for a study duration of 41 months and a cost of \$4.1 million, including 25 percent contingencies. The Task Force also established a steering committee to oversee and coordinate all CWPPRA funded studies and approve the study scopes and estimates.

Total Estimated Cost (100% Fed)	\$4,082,500
Allocated through FY 1995	\$919,000
Allocated for FY 1996	\$993,400
Allocated for FY 1997	\$1,458,600
Allocated for FY 1998	\$562,500
Balance to Complete After FY 1998	\$150,000

b. Issues.

- i. Coordination of existing water resources uses is, and will continue to be, a major issue in project development. While specific measures may not effect all uses uniformly, or on a consistent annual or seasonal basis, it should be anticipated that some use will be impacted for virtually every action.
- ii. Legal issues involving outputs that would be commonly measured as benefits will also require attention. There are numerous liability issues stemming from proprietary interests, assumed or real, in surface conditions as related to specific user interests.
- iii. The composite of these issues has a direct effect on the local sponsors ability and willingness to participate in these projects. The resultant project and legal costs and operational conflicts can potentially be a deterrent to local sponsorship.

The Coast 2050 effort should be an effective means of coordinating and addressing these issues.

c. Study Authority. This study was authorized by the Louisiana Coastal Wetlands Conservation and Restoration Task Force established under the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) and is funded with CWPPRA planning funds. The Corps of Engineers was directed by the Task Force to be the lead agency in the execution of this study.

d. Location. The study area is comprised of the entire Mississippi River Deltaic Plain, from the East Atchafalaya Basin Protection Levee eastward to the Louisiana-Mississippi state border. The area is bounded to the south by the Gulf of Mexico. The area encompasses approximately 6.4 million acres or 10,000 square miles.

Draft Report Dec 1998
Report
Final Report June 1999

e. Problems and Solutions Being Investigated. The study will investigate existing modifications to natural deltaic processes and resultant loss of coastal wetlands and assess potential uses of the sediment, nutrient and freshwater resources found in the Mississippi River to modify or reverse these trends. Hydraulic modeling will be used to establish the availability of the riverine resources which are to be applied and the effect of reallocation of these resources. After an intermediate screening, lump sum component costs, unit habitat outputs, and the value of resultant attendant resource outputs will be developed. Alternative analysis will be accomplished primarily with existing information. Economic evaluation of the intermediate alternatives will consider positive and negative National Economic Development type impacts as credits and debits toward the cost of each alternative. The final recommendations will be based on the evaluation of environmental outputs versus costs of an alternative as described in Draft EC 1105-2-206.

STUDY MANAGER: Tim Axtman, CELMN-PD-FE, USACE, New Orleans District,
(504) 862-1921

March 27, 1998

PROJECT FACT SHEET

PROJECT: Louisiana Barrier Shoreline Feasibility Study

1. **PURPOSE:** To assess and quantify wetland loss problems linked to protection provided by barrier formations along the Louisiana coast. The study will identify solutions to these problems, attach an estimated cost to these solutions, and determine the barrier configuration that will best protect Louisiana's significant coastal resources from saltwater intrusion, storm surges, wind/wave activity and oil spills. These resources include, but are not limited to, oil and gas production and exploration facilities, the Strategic Petroleum Reserve, pipelines, navigable waterways, and fragile estuarine and island habitats.

2. **FACTS:**

a. **Study Authority.** This study is authorized pursuant to the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA). The study is funded by 100 percent federal funds from the CWPPRA planning budget. The CWPPRA Task Force, which implements the Act, directed the Louisiana Department of Natural Resources to be the lead agency for the barrier shoreline feasibility study. The Louisiana Governor's Office of Coastal Activities also assists in the implementation of the study. A steering committee composed of federal agency representatives provides input and oversight to the study.

b. **Location.** The study area encompasses the barrier shoreline formations between the Mississippi and Atchafalaya Rivers, the chenier plain barrier formations in Vermilion and Cameron Parishes, and the Chandeleur Islands.

c. **Problems and Solutions Being Investigated.** The study will investigate coastal wetland coastal use and resource loss linked to barrier shoreline deterioration.

d. **Status.** A contract for the feasibility study was let to T. Baker Smith and Sons of Houma, Louisiana.

The three-year study is broken into three geographic phases. Phase 1 (year 1) focuses on the region between Raccoon Point and the Mississippi River. Phase 2 (year 2) focuses on the chenier plain. Phase 3 (year 3) focuses on the Chandeleur Islands, the Lake Pontchartrain/Lake Borgne land bridge, and the coastal wetlands east of the Mississippi River.

The feasibility study will generate the following information for each phase: A. Review of prior studies, reports, and existing projects; B. Conceptual and quantitative system framework; C. Assessment of resource status and trends; D. Inventory and assessment

of physical conditions and parameters; E. Inventory and assessment of existing environmental resource conditions; F. Inventory and assessment of existing economic resource conditions; G. Forecast trends in physical and hydrological conditions with no action; H. Forecast trends in environmental resource conditions with no action; I. Formulation of strategic options; J. Assessment of strategic options; K. Identification and assessment of management and engineering alternatives; L. Description and rationale for the selected plans; M. Project implementation plans and; N. Final report and EIS collaboration.

Report Status

(Italics indicate that the draft report is under review by the CWPPRA Feasibility Study Steering Team and Bold indicates that the draft report is under revision by the contractor following Steering Team comment. Projected dates reflect the best optimistic estimate for report completion of the study manager.

- A. Review of prior studies, reports, and existing projects
- B. Conceptual and quantitative system framework
- C. Assessment of resource status and trends
- D. Inventory and assessment of physical conditions and parameters
- E. Inventory and assessment of existing environmental resource conditions
- F. Inventory and assessment of existing economic resource conditions
- G. Forecast trends in physical and hydrological conditions with no action
- H. Forecast trends in environmental resource conditions with no action
- Ha. Forecast trends in economic resource conditions with no action
- I. Formulation of strategic options
- J. Assessment of strategic options
- K. Identification and assessment of management and engineering alternatives
- L. Description and rationale for the selected plans
- M. Project implementation plans and
- N. Final report and EIS collaboration

Total estimated cost (100% federal) \$3,775,000
Allocated for FY 95 \$1,007,000
Allocated for FY 96 \$704,000
Allocated for FY 97 \$418,000
Request for FY 98 \$550,000

Draft - Sept 1998
Final - 6 months later
EIS will lag

e. Issues. The potential use of Ship Shoal sand in rebuilding the barrier islands has meant that Minerals Management Service (MMS), the agency which manages minerals on federal property, must be consulted for EIS work. A contract for an EIS has been let and managed by the MMS with the input of the other CWPPRA agencies. The Department of Natural Resources, the National Marine Fisheries Service, and the MMS have signed a Memorandum of Agreement, which assigns responsibility to the agencies in completing the EIS. The EIS effort is currently on hold pending the outcome of the Phase 1 and a determination of the economic effectiveness of using Ship Shoal as a sediment source for island restoration.

The scope of Phase 2 is being revised per Task Force recommendations from the September 1997 meeting. Schedules and budgets are being developed by DNR and will be available for Steering Team review in early April 1998. The Department of Natural Resources has submitted a proposal to the Task Force to alter the scope of Phase 2 to an intensive hydrologic data collection effort in the chenier plain. The purpose of this proposal is to identify more effective means of lowering water levels in the Mermentau Lakes Sub-basin and address large-scale hydrologic management in the Calcasieu/Sabine Basin. This proposal is currently under review and awaiting action by the Task Force.

STUDY MANAGER: Steven Gammill, Louisiana Department of Natural Resources,
(504) 342-0981

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

REPORT ON THE ATCHAFALAYA LIAISON GROUP

For Information.

Mr. Tom Podany will present a report on the Atchafalaya Liaison Group.

LARS Model Run for study
Conditions early May 1998

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

STATUS OF THE STATE CONSERVATION PLAN

For information.

Ms. Katherine Vaughan will report on the status of the State Conservation Plan.

April 21 9-12

1st Coord. Meeting of Feds

State Const. Projects.

Quantum Cash : Cy preprint Pat

Oak's Avery

B. Sequette - 300,000

24 Veg Planting Projects - 516,000

X-Mus Trees - 308,000 yr Danisher

Stehle Hamm: Point Person

Public Outreach: PA's

Sea Grant: Model Ordinances

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

STATUS OF THE COASTWIDE STRATEGY (COAST 2050)

May 20 - ~~21~~ 21
Joint Mtg of Sub / CSM w/b
Common Ground
Development
July 21/22
See Handout

For information.

Dr. Bill Good will brief the Task Force on the status of the effort to develop a coastwide strategy for addressing the problem of wetland loss.

Rement:
o Schedule
o Time Capable Idea
Provide Feedback
Formal Task Force
Meeting

Full day Regional
Meetings
Sept 9, 10, 15
J/k

Oct →
Need to Meet,
Disuss &
Agree

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

REPORT OF PROGRAM PERFORMANCE AND PROJECT IMPLEMENTATION

For information.

Dr. Steve Mathies will report on the implementation status of approved priority project list projects. The current status report on the projects is enclosed.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT PROJECT STATUS SUMMARY REPORT

31 March 1998

Summary report on the status of CWPPRA projects prepared for the Louisiana Coastal Wetlands Conservation and Restoration Task Force.
Reports enclosed:

- Project Details by Lead Agency
- Project Summary by Basin
- Project Summary by Parish
- Project Summary by Priority List

Information based on data furnished by the Federal Lead Agencies and collected by the Corps of Engineers

Prepared by:

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Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
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Lead Agency: DEPT. OF THE ARMY, CORPS OF ENGINEERS

Priority List 1

Barataria Bay Marsh Creation	BARA	JEFF	445	24-Apr-95 A	22-Jul-96 A	31-Dec-00	\$1,759,257	\$1,695,796	96.4	\$1,191,659 \$1,058,589
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Remarks: The enlargement of Queen Bess Island was incorporated into the project and the construction of the 9-acre cell was completed in October 1996. If oyster-related conflicts are removed from the remaining marsh creation sites, they will be incorporated into the Corp's O&M deposit plan for the next maintenance cycle.

Status: Completed Queen Bess Island for \$945,678. Remaining funds may be used to purchase oyster leases for O&M beneficial disposal.

Bayou Labranche
Wetlands Restoration

PONT	STCHA	203	17-Apr-93 A	06-Jan-94 A	07-Apr-94 A	\$4,461,301	\$3,658,740	82.0	\$3,379,167 \$3,357,455
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Remarks: Contract awarded to T. L. James Co. (Dredge "Tom James") for dredging approximately 2,500,000 cy of Lake Pontchartrain sediments and placing in marsh creation area. Contract final inspection was performed on April 7, 1994. Site visit by Task Force took place on April 13, 1994. The area was seeded by LA DNR on June 25, 1994.

The project site is being monitored. No further work is planned at this time except to address the problem of impaired access for the lease holders in the project area.

Status: Complete.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****		***** ESTIMATES *****		Actual Obligations/ Expenditures
					Const Start	Const End	Baseline	Current	

Lake Salvador Shoreline Protection at Jean Lafitte NHP&P	BARA	JEFF	0	29-Oct-96 A	01-Jun-95 A	21-Mar-96 A	\$60,000	\$60,000	\$58,378 \$58,378	100.0
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Remarks: This project was added to Priority List 1 at the March 1995 Task Force meeting.

The Task Force approved the expenditures of up to \$45,000 in Federal funds and non-Federal funds of \$15,000 (25%) for the design of the project.

A design review meeting was held with Jean Lafitte Park personnel in May 1996 to resolve design comments prior to advertisement for the construction contract. The contract was awarded December 4, 1996 for \$610,000 to Bertucci Contracting Corp. The contract was completed in March 1997.

Status: Complete. This project was design only.

Vermilion River Cutoff Bank Protection	TECHE	VERMI	54	17-Apr-93 A	10-Jan-96 A	11-Feb-96 A	\$1,526,000	\$2,056,249	\$1,681,202 \$1,680,784	134.71
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Remarks: The project was modified by moving the dike from the west to the east bank of the cutoff to better protect the wetlands. The need for the sediment retention fence on the west bank is still undetermined.

The Task Force approved a revised project estimate of \$2,500,000; however, current estimate is less.

Condemnation of real estate easements was required because of unclear ownership titles and significantly lengthened the project schedule. Construction was completed in February 1996.

Status: Complete.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	ESTIMATES	Current	%	Actual Obligations/Expenditures
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West Bay Sediment Diversion	DELTA	PLAQ	9,831					\$8,517,066	\$16,683,854	195.91		\$458,229 \$457,938
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Remarks: The major portion of the cost increase is for dredging the anchorage as a result of induced shoaling caused by the diversion of flow from the river. A model study of the river and diversion point was completed, providing a basis for estimating the amount of material to be dredged. However, the State of Louisiana was looking into the issue of State-owned waterbottom vs. private ownership, both before and after project construction, and they requested that we not proceed with easement acquisition through condemnation until that issue was resolved. If no resolution on the land rights issue with L.A DNR is reached, project will be proposed for de-authorization.

In a letter dated March 1, 1995, the Local Sponsor, LA DNR, requested deauthorization of the project citing cost overruns and its location on the "bird's foot" delta, which the CWPRA Restoration Plan calls for a phased-abandonment. A letter requesting deauthorization of the project was issued to the Chairman of the Technical Committee on August 25, 1995.

However, at the February 28, 1996 Task Force meeting, the State withdrew its request for deauthorization and work on the project proceeded. The CSA was sent to LA DNR for signature in March 1997. The current estimate exceeds the Priority List estimate by 125% and will, therefore, necessitate Task Force approval.

Status: Unscheduled. CSA at DNR since March 1997.

Total Priority List 1	10,533	\$16,323,624	\$24,154,638	148.0	\$6,768,635	\$6,613,143
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- 5 Project(s)
- 4 Cost Sharing Agreements Executed
- 4 Construction Started
- 3 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	ESTIMATES	Current	%	Actual Obligations/Expenditures
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Priority List 2

Clear Marais Bank Protection	CALC	CALCA	1,066	29-Apr-96 A	29-Aug-96 A	03-Mar-97 A	\$1,741,310	\$3,416,212	196.2!			\$2,869,956 \$2,765,651
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Remarks: The original construction estimate was low, based on the proposed plan in that the rock quantity estimate was less than half of the quantity needed (based on the original design), and the estimate did not include a floatation channel needed for construction. This accounts for most of the cost increase shown. The current estimate is based on the original rock dike design and costs about \$89/foot.

The Cost Sharing Agreement was executed and approved and the construction contract awarded on August 1, 1996 to Luhr Bros., Inc. for \$2,694,000. Construction was completed in March 1997.

There is an opportunity to create marsh behind the rock dike between Brannon Canal and Alkalie Ditch using material from GIWW maintenance dredging.

Status: Complete.

West Belle Pass Headland Restoration	TERRE	LAFOU	469	27-Dec-96 A	10-Feb-98 A	15-Aug-98	\$4,854,102	\$6,367,625	131.2!			\$5,463,332 \$726,198
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Remarks: We have received verbal authority from HQ Counsel to acquire oyster leases, for this project only, directly impacted by the construction of the project. Construction cost increase approved at the January 16, 1998 Task Force meeting.

Status: Construction start slipped from January 23, 1998 to February 10, 1998 due to increased cost. Bids were opened January 9, 1998. Design had slipped from July 30, 1997 to October 31, 1997 due to surveys of marsh buggy access problems. Construction contract awarded to T.L. James in January 1998 for \$4,122,711.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 2										
			1,535				\$6,595,412	\$9,783,837	148.3	\$8,333,288
2										\$3,491,849

2 Project(s)

2 Cost Sharing Agreements Executed

2 Construction Started

1 Construction Completed

0 Project(s) Deferred/Deauthorized

0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	***** SCHEDULES *****	***** ESTIMATES *****	Actual Obligations/ Expenditures
				CSA Const Start Const End	Baseline Current %	

Priority List 3

Channel Armor Gap Crevasse	DELTA	PLAQ	936	13-Jan-97A 22-Sep-97A 02-Nov-97A	\$808,397 \$889,914	110.1 \$511,223 \$462,735
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Remarks: The Cost Sharing Agreement is being reviewed by LA DNR.

Cost increase is due to additional project management costs, by both Federal and Local Sponsor.

Surveys identified a pipeline in the crevasse area which would be negatively impacted by the project. US Fish & Wildlife Service reviewed their permit for the pipeline and determined that Shell Pipeline is required to lower it at their own cost. US FWS requested a modification to the alignment and only US FWS-owned lands should be involved.

Status: Complete.

MRGO Back Dike Marsh Protection	PONT	STBER	755	17-Jan-97A 31-Aug-98 31-Oct-98	\$512,198 \$482,164	94.1 \$200,090 \$198,732
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Remarks: Cost increase is due to additional project management costs, environmental investigations and local sponsor activities not included in the baseline estimate. Further, title research indicates that private ownership titles are unclear, requiring condemnation. This accounts for the long period between CSA execution and project construction.

Status: Scope of work greatly reduced. Surveys taken in December 1997; awaiting cost estimate for reduced scope of work. Project being re-evaluated. Construction start slipped from April 1998 to August 1998.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****		***** ESTIMATES *****		Actual Obligations/Expenditures
					Const Start	Const End	Baseline	Current	

Pass-a-Loutre Crevasse	DELTA	PLAQ	0				\$2,857,790	\$105,918	3.7	\$108,830 \$105,918
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Remarks: Two pipelines and two power poles are in the area of the crevasse, increasing relocation costs by approximately \$2.15 million. LA DNR asked that the Corps investigate alternative locations to avoid or minimize impacts to the pipelines, but there are no more suitable locations for the cut. The Corps has also reviewed the design to determine whether relocations cost-savings could be achieved. Reducing the bottom width of the crevasse from 430 feet as originally proposed to 200 feet reduced the relocation cost only marginally.

Status: A draft memorandum dated December 5, 1997 was sent to the CWPPRA Technical Committee Chairman requesting the Task Force to deauthorize the project. COE requested deauthorization at the January 16, 1998 Task Force meeting.

Total Priority List	3	1,691	\$4,178,385	\$1,477,996	35.4	\$820,143 \$767,385
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- 3 Project(s)
- 2 Cost Sharing Agreements Executed
- 1 Construction Started
- 1 Construction Completed
- 1 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COF)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	ESTIMATES	Current	%	Actual Obligations/ Expenditures
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Priority List 4

Grand Bay Crevasse	BRET	PLAQ	0					\$2,468,908	\$52,154		2.1	\$55,101 \$52,154
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Remarks: The major landowner has indicated non-support of the project and has withheld ROE because of concern about sedimentation negatively impacting oil and gas interests within the deposition area.

Status: A draft memorandum dated December 5, 1997 was sent to the CWPRA Technical Committee Chairman requesting the Task Force to deauthorize the project. COE requested deauthorization at the January 16, 1998 Task Force meeting.

Hopper Dredge Demo	DELTA	PLAQ	0	30-Jun-97 A	30-Apr-98	31-May-98		\$300,000	\$375,000		125.0	\$21,559 \$21,559
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Remarks: LA DNR requested that the hoppers dump the material in crevasses, but there are concerns that the hopper dredges cannot get close enough to the crevasses to avoid dropping the material in the navigation channel. Current plan involves the pumpout of material from the hopper into a disposal area located on the left descending bank or in Southwest Pass between miles 2.95 and 3.2 BHP.

Status: Awaiting award by Operations Division. Is an option on O&M lease hopper dredge contract 98-9. Construction start slipped from January 31, 1998 to April 30, 1998, dependent on river.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****		***** ESTIMATES *****	Actual Obligations/Expenditures			
					Const Start	Const End			Baseline	Current	%
Total Priority List											
4			0				\$2,768,908	\$427,154	15.4	\$76,660	\$73,713

2 Project(s)

1 Cost Sharing Agreements Executed

0 Construction Started

0 Construction Completed

1 Project(s) Deferred/Deauthorized

0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COI)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/Expenditures
Priority List 5										
Bayou Chevee Shoreline Protection	PONT	ORL	199	01-Jun-98	31-Aug-98	30-Nov-98	\$2,890,821	\$2,555,029	88.4	\$215,714 \$215,714
Remarks: Revised project consists of constructing a 2,870-foot rock dike across the mouth of the north cove and a 2,820-foot rock dike tying into and extending an existing USFWS rock dike, across the south cove. Approximately 75 acres of brackish marsh will be protected by the project.										
Status:										
Total Priority List 5 199 \$2,890,821 \$2,555,029 88.4 \$215,714 \$215,714										

- 1 Project(s)
- 0 Cost Sharing Agreements Executed
- 0 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	ESTIMATES	Current	%	Actual Obligations/ Expenditures
Priority List 6												
Avoca Island (Incr 1)	TERRE	STMRY	0					\$6,438,400	\$49,689	\$49,689	0.8	\$49,689
<p>Remarks: A draft memorandum dated December 5, 1997 was sent to the Technical Committee Chairman requesting the Task Force to deauthorize the project. COE requested deauthorization at the January 16, 1998 Task Force meeting.</p> <p>Status: COE requested deauthorization of project at the January 16, 1998 Task Force meeting.</p>												
Dustpan/Cutterhead Dredge Demo	DELTA	PLAQ	0	01-Jun-98	15-Jun-98	30-Aug-98		\$1,600,000	\$1,600,000	\$22,704	100.0	\$22,704
<p>Remarks:</p> <p>Status: Construction start slipped from March 30, 1998 to June 15, 1998 to allow for adequate shoaling material. CSA to be drafted and awaiting new model approval by HQ.</p>												

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
Marsh Island Hydrologic Restoration	TECHE	IBERI	408	01-Jul-98	30-Sep-98	29-Jan-99	\$4,094,900	\$4,094,900	100.0	\$45,998 \$45,999

Remarks:

Status: CSA execution will require new model CSA; not enough design to base cost on for drafting CSA. Over 4-month delay in right of entry from DNR; received week of January 5, 1998.

Total Priority List	6	408	\$12,133,300	\$5,744,589	47.3	\$118,392	\$118,393
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- 3 Project(s)
- 0 Cost Sharing Agreements Executed
- 0 Construction Started
- 0 Construction Completed
- 1 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF THE ARMY (COE)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES *****	ESTIMATES *****	Actual Obligations/ Expenditures	
					Const Start	Const End	Current	%
Total	DEPT. OF THE ARMY, CORPS OF ENGINEERS		14,998				\$77,201,750	99.0
20	Project(s)						\$76,454,543	
9	Cost Sharing Agreements Executed							
7	Construction Started							
5	Construction Completed							
3	Project(s) Deferred/Deauthorized							
4	Unfunded Project(s)							
							\$16,332,832	
							\$11,280,197	

Notes:

1. Expenditures based on Corps of Engineers financial data.
2. Date codes: A = Actual date * = Behind schedule
3. Percent codes: ! = 125% of baseline estimate exceeded

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	ESTIMATES	Current	%	Actual Obligations/Expenditures
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Lead Agency: ENVIRONMENTAL PROTECTION AGENCY, REGION 6

Priority List Conservation Plan

State of Louisiana Wetlands Conservation Plan	ALL	COAST	0	13-Jun-95 A	03-Jul-95 A	21-Nov-97 A		\$238,871	\$238,871		100.0	\$179,153 \$123,202
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Remarks: The date the MIPR was issued to obligate the Federal funds for the development of the plan is used as the construction start date for reporting purposes.

Status: Complete.

Total Priority List	Cons Plan	0						\$238,871	\$238,871		100.0	\$179,153 \$123,202
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- 1 Project(s)
- 1 Cost Sharing Agreements Executed
- 1 Construction Started
- 1 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/Expenditures
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Priority List 1

Isles Dernieres (Phase 0) (East Island)	TERRE	TERRE	9	17-Apr-93 A	16-Jan-98 A	31-Aug-98	\$6,345,468	\$8,751,838	137.91	\$6,530,737 \$308,397
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Remarks: This phase of the Isles Dernieres restoration project is being combined with Isles Dernieres, Phase I (Trinity Island), a priority list 2 project. Additional funds to cover the increased construction cost on lowest bid received were approved at the January 16, 1998 Task Force meeting. A revised Cooperative Agreement is in preparation.

Status: Construction start was January 16, 1998. Potential completion of dredging activities on East Island is end of May 1998. Contractor is to provide revised schedule as soon as possible. Containment dikes have been constructed by bucket dredge. Hydraulic dredging began January 23, 1998.

Total Priority List 1	9	\$6,345,468	\$8,751,838	137.9	\$6,530,737 \$308,397
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- 1 Project(s)
- 1 Cost Sharing Agreements Executed
- 1 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/Expenditures
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Priority List 2

Isles Dernieres (Phase I) (Trinity Island)	TERRE	TERRE	110	17-Apr-93 A	27-Jan-98 A	30-Nov-98	\$6,907,897	\$11,949,173	173.0%	\$9,062,629 \$333,703
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Remarks: Costs have increased due to construction bids significantly greater than projected in plans and specifications. Additional funds to cover the increased project cost were approved at the January 16, 1998 Task Force meeting.

Status: The 30' hydraulic dredge, the Tom Jones, mobilized at East Island on about January 27, 1998 and is expected to move to Trinity Island end of May. Construction of containment dikes by bucket dredge has commenced.

Total Priority List 2	110	\$6,907,897	\$11,949,173	173.0%	\$9,062,629 \$333,703
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- 1 Project(s)
- 1 Cost Sharing Agreements Executed
- 1 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	Current	%	Actual Obligations/Expenditures
Red Mud Demo	PONT	STJON	0	03-Nov-94 A	08-Jul-96 A			\$350,000	\$480,500	137.31	\$367,493 \$286,623

Priority List 3

Remarks: Bids for construction were opened on January 31, 1996. Project construction started July 8, 1996.

Status: Facility construction is essentially complete; project on hold pending resolution of cell contamination by saltwater before planting occurred, and possible change to freshwater marsh demonstration. Resolution of these concerns is expected by summer 1998.

Whiskey Island Restoration (Phase 2)

TERRE	TERRE	1,239	06-Apr-95 A	13-Feb-98 A	31-Aug-98			\$4,844,274	\$7,863,363	162.31	\$5,956,103 \$54,046
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Remarks: At the January 16, 1998 meeting, the Task Force approved additional funds to cover the increased construction cost on lowest bid received.

Status: Work was initiated on February 13, 1998. Dredging may be completed by the end of May 1998.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	ESTIMATES	Current	%	Actual Obligations/Expenditures
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Total Priority List 3											\$6,323,596
											\$340,669

- 2 Project(s)
- 2 Cost Sharing Agreements Executed
- 2 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
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Priority List 4

Compost Demo	CALC	CAMER	0	22-Jul-96A			\$370,594	\$380,594	102.7	\$286,199 \$7,172
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Remarks: Engineering/design proposals were received September 6, 1996. Project location has changed from the original. The project construction start and completion is unscheduled. The project schedule is delayed until Entergy can collect an adequate amount of compost, possibly 6 to 12 months.

Status: Unscheduled. The schedule is delayed, approximately 6 to 12 months, until Entergy can collect an adequate amount of compost.

Total Priority List 4	0	\$370,594	\$380,594	102.7	\$286,199 \$7,172
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- 1 Project(s)
- 1 Cost Sharing Agreements Executed
- 0 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
Project Status Summary Report - Lead Agency: ENVIRONMENTAL PROTECTION AGENCY (EPA)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES		ESTIMATES		Actual Obligations/Expenditures
					Const Start	Const End	Baseline	Current	

Priority List 5

Bayou Lafourche Siphon	TERRE	ASCEN	428	19-Feb-97 A			\$16,987,000	\$16,987,000	100.0	\$967,500 \$516,506
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Remarks: Priority List 5 authorized funding in the amount of \$1,000,000 for the FY 96 Phase 1 of this project. Priority List 6 authorized \$8,000,000 for the FY 97 Phase 2 of this project. In FY 98, Priority List 7 authorized \$7,987,000, for a project estimate of \$16,987,000. Priority List 8 is scheduled to fund \$7,500,000. The total project will cost \$24,487,000 if fully implemented. The public has been involved in development of the scope of the first phase in carrying out this project by presenting statements at the four public meetings or submitting written comments. A Responsiveness Summary and Revised Plan of Work has been provided to the project mailing list of 600. Several alternatives for diversion of freshwater are being evaluated.

Status: The Cost Sharing Agreement (CSA) was executed February 19, 1997. Draft report is proposed for May 1998.

Total Priority List 5 428

1 Project(s)							\$16,987,000	\$16,987,000	100.0	\$967,500 \$516,506
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- 1 Cost Sharing Agreements Executed
- 0 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF THE INTERIOR (FWS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	Current	%	Actual Obligations/Expenditures
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Priority List 2

Bayou Sauvage #2	PONT	ORL	1,281	30-Jun-94 A	15-Apr-96 A	28-May-97 A	\$1,452,035	\$1,700,121	117.1	\$1,027,731 \$1,001,877
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Remarks: Construction was completed on March 18, 1997. Initial problems with the pumps were corrected, and the project was accepted at a final inspection conducted May 28, 1997.

Status: Complete.

Total Priority List 2			1,281				\$1,452,035	\$1,700,121	117.1	\$1,027,731 \$1,001,877
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- 1 Project(s)
- 1 Cost Sharing Agreements Executed
- 1 Construction Started
- 1 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF THE INTERIOR (FWS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
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Priority List 3

Sabine Refuge Structures (Hog Island)	CALC	CAMER	953	25-Oct-96 A	01-Oct-98	01-Jul-99	\$4,581,454	\$4,591,454	100.2	\$220,318 \$15,640
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Remarks: The construction completion date was revised to accommodate a State-requested review of alternative structure design options. A meeting held on March 21, 1997 led to selection of the current design option. Project completion is now projected to occur in July 1999. Geotechnical investigations have been completed. Design completion is scheduled for May 1998.

Status: Geotechnical investigations are complete. Design is scheduled for completion in May 98.

Total Priority List 3	953	\$4,581,454	\$4,591,454	100.2	\$220,318 \$15,640
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- 1 Project(s)
- 1 Cost Sharing Agreements Executed
- 0 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF THE INTERIOR (FWS)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****		***** ESTIMATES *****		Actual Obligations/Expenditures
					Const Start	Const End	Baseline	Current	

Priority List 5

Grand Bayou / GIWW Freshwater Introduction	TERRE	LAFOU	1,609	31-Mar-98	01-Sep-99	28-Feb-00	\$5,135,468	\$7,935,468	154.5	\$94,500 \$53,300
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Remarks: The FWS, in consultation with residents, shrimpers, and agency personnel, has decided that the best site for installation of the Cutoff Canal Structure would be at the head of Cutoff Canal. That decision has prompted an investigation of incorporating 16,000 acres of wetlands located west of Grand Bayou Canal within the project area through the addition of three new water control structures. Project implementation is on hold pending a Task Force decision to amend the project and authorize additional funds.

Status: The draft cost share agreement was accepted by LA DNR. The FWS regional office approved that agreement with some modifications. LA DNR is now reviewing the modified agreement. The inclusion of additional features and funding would require amending the cost share agreement to reflect those additions, thereby delaying execution of the cost share agreement until at least May 1998. Other aspects of project implementation may also be delayed.

Total Priority List 5	5	1,609					\$5,135,468	\$7,935,468	154.5	\$94,500 \$53,300
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- 1 Project(s)
- 0 Cost Sharing Agreements Executed
- 0 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF THE INTERIOR (FWS)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****		Const End	Baseline	***** ESTIMATES *****		Actual Obligations/ Expenditures
					Const Start	Const End			Current	%	

Priority List 6

Lake Boudreaux FW Introduction, Alt B	TERRE	TERRE	619	01-Aug-98	01-Aug-02	01-Aug-03	\$4,915,650	\$4,915,650	100.0	\$50,874	\$123
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Remarks: In FY 97, Priority List 6 authorized funding of \$4,915,650. An additional \$4,915,650 is scheduled to be authorized on Priority List 8; for a total project estimate of \$9,831,300.

Status: The FWS has conducted preliminary land rights investigations for the outfall channel and determined that several channel alternatives exist where land rights are presently obtainable. With information provided by the FWS, Koch Pipeline, Inc., has determined that the project will not adversely affect their pipelines. The top priority task is to confirm that land rights for the flood protection system can be acquired and begin designing that system. DNR is scheduled to work on land rights issues. The FWS has coordinated with the Corps of Engineers regarding the Corps' maintenance dredging of Bayous Grand Caillou and Pelton. Opportunities to combine efforts and reduce project costs may exist provided sufficient engineering and design can be completed, all environmental work is completed, and the Corps' project is further delayed. FWS has prepared a draft cost sharing agreement and submitted it to DNR.

Nutria Harvest for Wetland Restoration Demo	TERRE	COAST		01-May-98			\$1,040,000	\$1,040,000	100.0	\$50,000	\$0
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Remarks: NMFS letter of September 15, 1997, with the concurrence of the US Fish and Wildlife Service and the Louisiana Department of Natural Resources, asked that the Federal sponsorship of this project be transferred to the US Fish and Wildlife Service. This is a two-phased project. In FY 97, Priority List 6 authorized \$400,000 for phase 1; Priority List 7 authorized \$640,000 in FY 98. Priority List 8 is scheduled to fund \$1,100,000. The total project will cost \$2,140,000. Preliminary work will begin on promotion of nutria meat overseas.

Status: Preliminary work will begin on promotion of nutria meat overseas. A cost sharing agreement is being written by LA DNR, but will probably not be complete until May 98.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF THE INTERIOR (FWS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 6										
			619				\$5,955,650	\$5,955,650	100.0	\$100,874
2										\$123
0										
0										
0										
0										
0										
Total DEPT. OF THE INTERIOR, FISH & WILDLIFE SERVICE										
			12,288				\$25,516,223	\$25,916,026	101.6	\$5,055,568
9										\$4,546,867
6										
5										
5										
0										
0										

Notes:

- Expenditures based on Corps of Engineers financial data.
- Date codes: A = Actual date * = Behind schedule
- Percent codes: ! = 125% of baseline estimate exceeded

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	ESTIMATES	Current	%	Actual Obligations/ Expenditures
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Lead Agency: DEPT. OF COMMERCE, NATIONAL MARINE FISHERIES SERVICE

Priority List 1

Fourchon Hydrologic Restoration	TERRE	LAFOU	0					\$252,036	\$6,999	\$6,999	2.8	\$6,999 \$6,999
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Remarks: In a meeting on October 7, 1993, Port Fourchon conveyed to NMFS personnel that any additional work in the project area could be conducted by the Port and they did not wish to see the project pursued because they question its benefits and are concerned that undesired Government / general public involvement would result after implementation.

NMFS has recommended to the Task Force that the project be deauthorized and the Task Force concurred at the July 14, 1994 meeting.

Status: Deauthorized.

Lower Bayou LaCache Hydrologic Restoration	TERRE	TERRE	0	17-Apr-93 A				\$1,694,739	\$99,625	\$99,625	5.9	\$99,625 \$99,625
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Remarks: In a public hearing on September 22, 1993, with landowners in the project area, users strenuously objected to the proposed closure of the two east-west connections between Bayou Petit Caillou and Bayou Terrebonne.

NMFS received a letter from LA DNR, dated February 6, 1995, recommending deauthorization of the project. NMFS forwarded the letter to COE for Task Force approval.

Status: Deauthorized.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES ***** Const Start	Const End	***** Baseline	ESTIMATES ***** Current	%	Actual Obligations/ Expenditures
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Priority List 2

Atchafalaya Sediment Delivery	ATCH	STMRY	2,232	01-Aug-94 A	25-Jan-98 A	21-Mar-98 A	\$907,810	\$2,051,040	225.91	\$1,508,409 \$682,982
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Remarks: Project cost increase was approved by the Task Force at the January 16, 1998 meeting.

Status: Complete.

Big Island Mining (Increment 1)	ATCH	STMRY	2,160	01-Aug-94 A	25-Jan-98 A	24-Nov-98	\$4,136,057	\$7,092,356	171.51	\$5,293,495 \$3,032,867
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Remarks: Project cost increase was approved by the Task Force at the January 16, 1998 meeting.

Status: Construction contract awarded and notice to proceed issued January 28, 1998. Construction underway and expect completion by November 24, 1998.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/Expenditures
Point Au Fer	TERRE	TERRE	375	01-Jan-94 A	01-Oct-95 A	08-May-97 A	\$1,069,589	\$1,631,707	152.6	\$1,206,700 \$881,775

Remarks: Construction for the project will be accomplished in two phases. Phase I construction on the wooden plugs in the oil and gas canals in Area 1 was completed December 22, 1995. Phase II construction in Area 2 has been delayed until suitable materials can be found to backfill the canal fronting the Gulf of Mexico. Phase II construction completed in May 1997. Task Force approved project design change and project cost increase at December 18, 1996 meeting.

Status: Complete. Closing out cooperative agreement grant between NOAA and LA DNR.

Total Priority List 2 4,767

\$6,113,456 \$10,775,103 176.3 \$8,008,604 \$4,597,624

- 3 Project(s)
- 3 Cost Sharing Agreements Executed
- 3 Construction Started
- 2 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/ Expenditures
Priority List 3										
Bayou Perot / Bayou Rigolettes Marsh Restoration	BARA	JEFF	0	01-Mar-95 A			\$1,835,047	\$1,844,750	100.5	\$1,389,483 \$1,292,658
<p>Remarks: A feasibility study conducted by LA DNR indicated that possible wetlands benefits from construction of this project are questionable. LA DNR has indicated a willingness to deauthorize the project. In April 1996, LA DNR had asked to reconsider the project with potential of combining this with two other projects in the watershed. Project deauthorized at January 16, 1998 Task Force meeting.</p> <p>Status: Deauthorized.</p>										
East Timbalier Island Sediment Restoration #1	TERRE	LAFOU	1,013	01-Feb-95 A	01-Jun-98	30-Apr-99	\$2,046,971	\$2,568,751	125.5!	\$2,173,516 \$1,465,209
<p>Remarks:</p> <p>Status: Design complete March 1998. EA and permitting underway. Construction is to be as scheduled.</p>										

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****		***** ESTIMATES *****		Actual Obligations/ Expenditures
					Const Start	Const End	Baseline	Current	

Priority List 4

East Timbalier Island Sediment Restoration #2	TERRE	LAFOU	215	08-Jun-95 A	01-Jun-98	30-Mar-99	\$5,752,404	\$7,188,005	125.0	\$6,098,279 \$72,474
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Remarks:

Status: Design complete March 1998. EA and permitting underway. Construction is to be as scheduled.

Eden Isles East Marsh Restoration

PONT	STTAM	0					\$5,018,968	\$1,380	0.0	\$41,347 \$31,973
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Remarks: NMFS letter of September 8, 1997 requests the CWPPRA Task Force to move forward with deauthorization of this project. Bids were placed twice to acquire the land: both times they were rejected due to higher bids by private developers. Project deauthorized at January 16, 1998 Task Force meeting.

Status: Deauthorized.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	***** SCHEDULES *****	***** ESTIMATES *****	Current	%	Actual Obligations/ Expenditures
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Priority List 5

Little Vermilion Bay Sediment Trapping	TECHE	VERMI	441	22-May-97A	01-Sep-98	31-Jan-99		\$940,065	\$940,100	100.0	\$702,576 \$5,695
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Remarks:

Status: Minor construction slip from April 1998 to September 1998. On schedule. Soils investigation on-going - longer than anticipated due to extensive borings and analysis.

Myrtle Grove Siphon	BARA	PLAQ	1,119	20-Mar-97A	01-May-99	01-May-00		\$10,500,000	\$10,500,000	100.0	\$3,372,500 \$17,777
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Remarks: The 5th Priority List authorized funding in the amount of \$4,500,000 for the FY 96 Phase 1 of this project. Priority List 6 authorized funding in the amount of \$6,000,000 for FY 97. Priority List 8 is scheduled to fund the remaining \$5,000,000. Total project cost is estimated to be \$15,525,950.

Status: Early site investigations have been initiated. Landowner negotiations needed to obtain easements for rights-of-way for project corridor.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 5										
			1,560				\$11,440,065	\$11,440,100	100.0	\$4,075,076
										\$23,472

2 Project(s)

2 Cost Sharing Agreements Executed

0 Construction Started

0 Construction Completed

0 Project(s) Deferred/Deauthorized

0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	ESTIMATES	Current	%	Actual Obligations/ Expenditures
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Priority List 6

Black Bayou Hydrologic Restoration

CALC	CAMER	3,594	15-Apr-98	01-Jan-99	31-Jul-99	\$6,316,800	\$6,316,806	100.0	\$5,681,403	\$864
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Remarks:

Status: Cooperative Agreement in NMFS Washington office. Award of cooperative agreement expected April 1998.

Delta-Wide Crevasses

DELTA	PLAQ	2,386	15-Apr-98	01-Aug-98	01-Oct-98	\$2,736,950	\$2,736,950	100.0	\$2,456,638	\$650
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Remarks: In FY 97, Priority List 6 authorized funding of \$2,736,950 for Phase 1 of this 2-phased project. Priority List 8 is scheduled to fund \$2,736,950. Total project is scheduled to cost \$5,473,900.

Status: Cooperative Agreement in NMFS Washington office. Award of cooperative agreement expected April 1998.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/Expenditures
Jaws Sediment Trapping	TECHE	STMAR	1,999	15-Apr-98	01-Jan-99	31-May-99	\$3,167,400	\$3,167,400	100.0	\$2,847,036 \$873

Remarks:

Status: Cooperative Agreement in NMFS Washington office. Cooperative agreement award expected April 1998.

Total Priority List 6 7,979 \$12,221,150 \$12,221,156 100.0 \$10,985,077 \$2,387

- 3 Project(s)
- 0 Cost Sharing Agreements Executed
- 0 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES ***** Const Start	Const End	***** ESTIMATES ***** Baseline	Current	%	Actual Obligations/ Expenditures
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Priority List 7

Grand Terre Vegetative Plantings	BARA	JEFF	127	15-Jul-98	15-Mar-99	15-Apr-99	\$928,900	\$928,900	100.0	\$0 \$0
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Remarks:

Status: Draft cooperative agreement being developed.

Pecan Island Terracing	MERM	VERMI	442	15-Feb-00	15-Feb-00	15-Jun-00	\$2,185,900	\$2,185,900	100.0	\$0 \$0
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Remarks:

Status: Draft cooperative agreement being developed by LA DNR.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF COMMERCE (NMFS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 7										
			569				\$3,114,800	\$3,114,800	100.0	\$0
2	Project(s)									\$0
0	Cost Sharing Agreements Executed									
0	Construction Started									
0	Construction Completed									
0	Project(s) Deferred/Deauthorized									
0	Unfunded Project(s)									
Total DEPT. OF COMMERCE, NATIONAL MARINE FISHERIES SERVICE										
			16,788				\$55,083,446	\$56,858,837	103.2	\$38,710,089
18	Project(s)									\$11,702,672
1	Cost Sharing Agreements Executed									
4	Construction Started									
2	Construction Completed									
4	Project(s) Deferred/Deauthorized									
0	Unfunded Project(s)									

Notes:

- Expenditures based on Corps of Engineers financial data.
- Date codes: A = Actual date * = Behind schedule
- Percent codes: ! = 125% of baseline estimate exceeded

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	ESTIMATES	Current	%	Actual Obligations/ Expenditures
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Lead Agency: DEPT. OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE

Priority List 1

BA-2 GIWW to Clovelly Wetland Restoration	BARA	LAFOU	175	17-Apr-93 A	21-Apr-97 A	28-Aug-98		\$8,141,512	\$8,347,106		102.5	\$1,240,913 \$1,637,489
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Remarks: The project has been divided into a number of smaller contracts in order to expedite implementation. The first contract was to install most of the weir structures and is complete. The second contract is to install bank protection, one weir and one plug.

Contract 1: Begin: 1 May 97 Complete: 30 Nov 97 \$ 646,691
 Contract 2: Begin: 1 Jun 98 Complete: 28 Aug 98 \$2,826,968
 Contingency: \$ 765,575

Status: The first construction contract is complete. The second construction contract is expected to be advertised in May 1998. Construction completion of the second construct slipped from February 1998 to August 1998 because of general project planning and some land rights issues.

Vegetative Plantings Demo - Dewitt-Rollover	MERM	VERMI	312	17-Apr-93 A	11-Jul-94 A	26-Aug-94 A		\$191,003	\$79,448		41.6	\$79,448 \$79,448
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Remarks: Sub-project of the Vegetative Plantings project.

Status: Complete and deauthorized.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
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Vegetative Plantings Demo - Falgout Canal	TERRE	TERRE	54	17-Apr-93 A	30-Aug-96 A	30-Dec-96 A	\$144,561	\$180,296	124.7	\$118,532 \$109,655
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Remarks: Sub-project of the Vegetative Plantings project. Wave-stilling devices are in place. Vegetative plantings are in place.

Status: Complete.

Vegetative Plantings Demo - Timbalier Island	TERRE	TERRE	169	17-Apr-93 A	15-Mar-95 A	30-Jul-96 A	\$372,589	\$411,602	110.5	\$333,019 \$96,512
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Remarks: Sub-project of the Vegetative Plantings project.

The contract to install the sand fences has been completed and the vegetation was planted during the summer of 1996.

Status: Complete.

Vegetative Plantings Demo - West Hackberry	CALC	CAMER	98	17-Apr-93 A	15-Apr-93 A	30-Mar-94 A	\$213,947	\$225,157	105.2	\$154,898 \$151,145
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Remarks: Sub-project of the Vegetative Plantings project.

Status: Complete.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 1										
			808				\$9,063,612	\$9,243,609	102.0	\$1,926,810
5										\$2,074,250

5 Project(s)

5 Cost Sharing Agreements Executed

5 Construction Started

4 Construction Completed

1 Project(s) Deferred/Deauthorized

0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	ESTIMATES	Current	%	Actual Obligations/Expenditures
					*****			Baseline			

Priority List 2

Brown Lake	CALC	CAMER	274	28-Mar-94 A	*****	15-Jul-98	01-May-99	\$3,222,800	\$3,222,666	100.0	\$240,196 \$148,586
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Remarks: Land rights may be a problem holding up construction start.

Status: Contract award has been delayed due primarily to the length of time needed to complete the permitting process, beneficial use of COE dredged material, and the relocation of a pipeline. Contract award is expected in May 98.

Caernarvon Outfall Management

BRET	PLAQ	802	13-Oct-94 A	*****	01-Oct-98	01-Sep-99		\$2,522,199	\$2,634,353	104.4	\$268,687 \$149,573
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Remarks: NRCS correspondence dated September 30, 1996 requested DNR to evaluate project for possible deauthorization. DNR correspondence of December 6, 1996 concurred with NRCS to begin formal deauthorization of the project. As of July 1, 1997, LA DNR had stated that problems might be able to be resolved, and requested that NRCS not proceed with formal deauthorization at July 1997 Task Force meeting. Further discussion with primary landowner put deauthorization on hold. A meeting was scheduled for July 22, 1997 between NRCS, LA DNR and primary landowner to see if problems could be resolved.

Status: This project was proposed for deauthorization but was referred for revisions at the request of the landowners and DNR. The construction schedule will slip and the cost may change.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

Actual
 Obligations/
 Expenditures

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****	***** ESTIMATES *****	Baseline	Current	%	Actual Obligations/ Expenditures
Freshwater Bayou	MERM	VERMI	1,604	17-Aug-94 A	29-Aug-94 A	30-Apr-98	\$2,770,093	\$2,780,100	100.4	\$1,273,095 \$1,216,135

Remarks: The project has been expedited in order to allow the use of stone removed from the Wax Lake Outlet Weir at a substantial cost savings. Construction is included as an option in the Corps of Engineers contract for the Wax Lake Outlet Weir removal. Option was exercised on September 2, 1994.

The rock bank protection was Phase I of this project and was completed on January 26, 1995. Phase II will consist of installing water control structures to benefit the interior marsh area.

Status: Construction completion slipped from Dec 97 to Apr 98. Construction is being done by landowner. Project almost complete.

Fritchie Marsh

PONT	STTAM	1,040	21-Feb-95 A	30-Aug-98	01-Mar-99	\$3,048,389	\$2,875,475	94.3	\$248,557 \$116,907
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Remarks: Delays in project construction start occurred as a land owner had changed his position regarding prompting design changes, and local officials expressed concerns about drainage that required additional investigations.

Status: Delays in project construction start occurred because a landowner had changed his position, prompting design changes, and local officials expressed concerns about drainage that required additional investigations. The construction contract is expected to be awarded in time to start construction in August 1998. Land rights could be a problem but we don't know yet.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES ***** Const Start	***** Const End	***** ESTIMATES ***** Baseline	***** Current	***** %	Actual Obligations/ Expenditures
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Hwy 384	CALC	CAMER	1,50	13-Oct-94 A	30-Aug-98	28-Feb-99	\$700,717	\$756,562	108.0	\$76,226 \$97,370
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Remarks: Difference of opinion between agencies concerning impacts and benefits resulted in delays, and multiple, complex land-owner title issues are not yet resolved.

Status: Construction start slipped from November 1997 to August 1998 because of land rights issues. Written agreements remain to be secured from one land owner. Difference of opinion between agencies concerning impacts and benefits resulted in delays, and multiple, complex land-owner title issues are not yet resolved. Contract is expected to be advertised in June 1998.

Jonathan Davis Wetland	BARA	JEFF	510	05-Jan-95 A	15-May-98	15-Nov-99	\$3,398,867	\$4,046,673	119.1	\$1,728,673 \$277,515
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Remarks: The project will be constructed in two contracts. The first contract will install the majority of the structures. The second contract will install the bank protection and the remaining structures.

Status: Construction start slipped from December 1997 to May 98 because of planning and design delays. First contract to construct weir and plugs was advertised in February 1998. Second contract is bank stabilization and will probably be advertised in fall 98.

Mud Lake	CALC	CAMER	1,520	24-Mar-94 A	01-Oct-95 A	15-Jun-96 A	\$2,903,635	\$2,807,225	96.7	\$1,476,279 \$1,356,267
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Remarks: Bid opening was August 8, 1995 and contract awarded to Crain Bros. Construction started in early October 1995. Water control structures are installed and the vegetation installed in the summer of 1996.

Status: Complete.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/ Expenditures
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Vermillion Bay/Boston Canal	TECHE	VERMI	378	24-Mar-94 A	13-Sep-94 A	30-Nov-95 A	\$1,008,634	\$965,473	95.7	\$690,231 \$672,321
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Remarks: The structural portion of the project - shoreline protection - is complete.

The vegetative portion of the project is complete.

Status: Complete.

Total Priority List 2	6,278	\$19,575,334	\$20,088,527	102.6	\$6,001,943 \$4,034,673
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- 8 Project(s)
- 8 Cost Sharing Agreements Executed
- 3 Construction Started
- 2 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****			***** ESTIMATES *****		Actual Obligations/ Expenditures
					Const Start	Const End	Baseline	Current	%	

Priority List 3

Brady Canal	TERRE	TERRE	297	13-Oct-94 A	15-Aug-98	15-Apr-99	\$4,717,928	\$4,598,773	97.5	\$202,031 \$42,229
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Remarks: Project delayed because of landowner concerns about permit conditions regarding monitoring, and objection from a pipeline company in the area. In addition, CSA revisions were needed to accommodate the landowner's interest in providing non-Federal funding.

Status: Permitting and design conditions have resulted in the CSA being modified to also include Fina Oil Co. and LL&E. Both will help cost share the project. The revised CSA is expected to be complete in March 98. The construction schedule slipped from May 1998 to August 1998.

Cameron Creole Maintenance	CALC	CAMER	2,602	09-Jan-97 A	30-Sep-97 A	31-Jul-98	\$3,719,926	\$3,730,000	100.3	\$1,058,000 \$13,694
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Remarks: This project provides for maintenance on an as-needed basis, therefore, a definite design completion start date cannot be set. The first contract for maintenance is complete.

Status: The first contract for maintenance work is complete. The second contract has been awarded.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES *****	Const Start	Const End	***** ESTIMATES *****	Baseline	Current	%	Actual Obligations/ Expenditures
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Cote Blanche
 TECHE STMRY 2,223 01-Jul-96 A 25-Mar-98 A 15-Sep-98 \$5,173,062 \$5,639,302 109.0 \$4,555,346 \$303,418

Remarks: LA DNR's placement of the project on a September 1995 candidate deauthorization list caused delays, as did the CSA being put on hold during that time.

Status: Construction start date slipped from November 1997 to March 1998 because of concern about the source of shell to construct the project. Site inspection for bidder was held January 12, 1998. Concern for a source of shell may require budget modifications. Contract awarded February 1998; notice to proceed March 1998.

SW Shore White Lake Demo
 MERM VERMI 16 11-Jan-95 A 30-Apr-96 A 31-Jul-96 A \$126,062 \$146,944 116.6 \$58,286 \$37,766

Remarks:
 Status: Complete. Deauthorization requested.

Violet Freshwater Distribution
 PONT STBER 247 13-Oct-94 A 15-Feb-00 15-Dec-00 \$1,821,438 \$1,844,040 101.2 \$143,011 \$58,099

Remarks: Rights-of-way to gain access to the site is a problem due to multiple landowner coordination, and additional questions have arisen about rights to operate existing siphon.

Status: Access problems have been resolved and design is currently proceeding; the construction schedule slipped from September 1998 to February 2000 as design is finalized.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/Expenditures
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West Pointe-a-la-Hache Outfall Management	BARA	PLAQ	1.087	05-Jan-95 A	15-Nov-99	15-Dec-00	\$881,148	\$4,079,556	463.01	\$98,923 \$7,893
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Remarks: Initial cost estimate is too low. Additional \$3.2 million requested and approved at the January 16, 1998 Task Force meeting.

Status: Project put on hold while waiting for estimate increase. Construction start slipped from August 1998 to November 1999.

White's Ditch Outfall Management	BRET	PLAQ	0	13-Oct-94 A			\$756,134	\$23,075	3.1	\$102,335 \$23,075
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Remarks: LA DNR concurred with NRCS to deauthorize the project. Project deauthorized at the January 16, 1998 Task Force meeting.

Status: Deauthorized.

Total Priority List 3	6,472	\$17,195,698	\$20,061,690	116.7	\$6,217,932 \$486,172
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- 7 Project(s)
- 7 Cost Sharing Agreements Executed
- 3 Construction Started
- 1 Construction Completed
- 1 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****	***** ESTIMATES *****	Actual Obligations/ Expenditures
				Const Start	Const End	Baseline	Current %

Priority List 4

Bayou L'Ours Ridge Hydrologic Restoration

BARA	LAFOU	737	23-Jun-97 A	01-Jun-99	01-Jul-00	\$2,418,676	\$2,418,700	100.0	\$280,472
									\$1,073

Remarks:

Status: Project on schedule. Permit applications and environmental assessments are proceeding.

BBWW "Dupre Cut" - West

BARA	JEFF	232	23-Jun-97 A	15-Oct-98	15-May-99	\$2,192,418	\$2,212,279	100.9	\$181,246
									\$1,524

Remarks:

Status: The project is being coordinated with the COE dredging program. COE permit is in the process of reviewing the permit. No date for resolution scheduled.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****			***** ESTIMATES *****		Actual Obligations/ Expenditures
					Const Start	Const End	Baseline	Current	%	

Flotant Marsh Fencing Demo	TERRE	TERRE	0	30-Jun-98	30-Jun-99	30-Oct-99	\$167,066	\$393,628	107.2	\$73,294 \$1,073
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Remarks: Difficulty in locating an appropriate site for demonstration and difficulty in addressing engineering constraints.

Status: CSA execution slipped from September 1997 to June 1998. Construction schedule will be affected. Difficulty in locating an appropriate site for demonstration and difficulty in addressing engineering constraints. Project location is expected to be settled by the end of January 1998.

Perry Ridge Bank Protection	CALC	CALCA	1,203	23-Jun-97 A	15-Jun-98	15-Jan-99	\$2,223,518	\$2,223,500	100.0	\$1,991,175 \$79,995
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Remarks:

Status: Acquisition of land rights are complete; project on schedule.

Plowed Terraces Demo	CALC	CAMER	0	15-Apr-98	01-Aug-98	30-Jan-99	\$299,690	\$299,690	100.0	\$44,542 \$2,128
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Remarks: Project was put on hold pending results of an earlier terraces demonstration project being paid for by the Gulf of Mexico program. The project is currently proceeding.

Status: CSA execution slipped from November 1997 to April 1998. Construction start slipped from April 1998 to August 1998. Project initially put on hold pending results of an earlier terraces demonstration project being paid for by the Gulf of Mexico program. Project currently proceeding.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	***** SCHEDULES *****	***** ESTIMATES *****	Actual Obligations/ Expenditures
							Baseline	Current	%
Total Priority List 4									
			2.172				\$7,501,368	\$7,547,797	100.6
5									\$2,570,729
3									\$85,792
0									
0									
0									
0									

- 5 Project(s)
- 3 Cost Sharing Agreements Executed
- 0 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	***** SCHEDULES *****		***** ESTIMATES *****	Actual Obligations/Expenditures
					Const Start	Const End	Baseline Current	%

Priority List 5

Freshwater Bayou Bank Stabilization

MERM	VERMI	511	01-Jul-97 A	15-Feb-98 A	15-Apr-98	\$3,998,919	\$3,998,900	100.0	\$3,444,212 \$13,777
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Remarks: The local cost share is being paid by Acadian Gas Company.

Status: Contract was awarded January 14, 1998. Construction began February 1998.

Naomi Outfall Management

BARA	PLAQ	633	15-Apr-98	01-Mar-99	30-Sep-99	\$1,686,865	\$1,771,813	105.0	\$109,981 \$1,062
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Remarks:

Status: CSA at DNR for several months; execution slipped from December 1997 to April 1998 based on LA DNR's O&M program and monitoring program reviews. This should not affect the project construction schedule. This project will be combined with BBWW "Dupre Cut" East project for planning, design, and construction.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES	Const Start	Const End	Baseline	ESTIMATES	Current	%	Actual Obligations/Expenditures
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Raccoon Island Breakwaters Demo	TERRE	TERRE		03-Sep-96 A	21-Apr-97 A	31-Jul-97 A		\$1,497,538	\$2,063,398		137.8!	\$1,765,830 \$1,557,433
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Remarks:

Status: Complete.

Sweet Lake/Willow Lake

	CALC	CAMER	247	23-Jun-97 A	01-Jun-98	01-Jun-99		\$4,800,000	\$4,762,700		99.2	\$130,535 \$23,672
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Remarks: The 5th Priority List authorized funding in the amount of \$2,300,000 for the FY 96 Phase 1 of this project. Priority List 6 authorized funding in the amount of \$2,500,000 for the FY 97 Phase 2 of the project. Total project cost is \$4,800,000.

Status: On schedule.

Total Priority List 5 1,391

\$11,983,322 \$12,596,811 105.1 \$5,450,558 \$1,595,943

4 Project(s)

3 Cost Sharing Agreements Executed

2 Construction Started

1 Construction Completed

0 Project(s) Deferred/Deauthorized

0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	***** SCHEDULES *****		***** ESTIMATES *****		Actual Obligations/ Expenditures
				Const Start	Const End	Baseline	Current	

Priority List 6

BBWW "Dupre Cut" East	BARA	JEFF	217	15-Apr-98	01-Mar-99	30-Sep-99	\$5,019,900	\$5,019,900	100.0	\$7,500 \$0
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Remarks: This project will be combined with the Naomi Outfall Management project for planning, design and construction.

Status: CSA at DNR for several months; execution slipped from December 1997 to April 1998 because of LA DNR's O&M program and monitoring program review. This should not affect the project construction schedule. This project will be combined with Naomi Outfall Management project for planning, design, and construction.

Cheniere au Tigre Sediment Trapping Device Demo	TECHE	VERMI	0	01-Jul-98	01-Apr-99	30-Oct-99	\$500,000	\$500,000	100.0	\$7,500 \$0
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Remarks:

Status: Additional funds in the amount of \$346,073 will be requested at the April 1998 Task Force meeting; total project will be \$846,073.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/Expenditures
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Oaks/Avery Canals Hydrologic Restoration-Incr 1 (B.S. only)	TECHE	VERMI	160	01-May-98	01-Jul-99	30-Dec-99	\$2,367,700	\$2,367,700	100.0	\$10,588 \$0
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Remarks:

Status: No anticipated problems to expedite implementation. The planning, design, and construction will be handled by DNR and should result in the project being completed about 6 months early.

Penchant Basin Plan w/o Shoreline Stabilization	TERRE	TERRE	1,155	01-May-99	01-Oct-00	30-Oct-01	\$7,051,550	\$7,051,550	100.0	\$7,500 \$0
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Remarks: Priority List 6 authorized funding for \$7,051,550 in FY 97; Priority List 8 is scheduled to fund \$7,051,550, for a total project cost of \$14,103,100.

Status: CSA slipped from February 1998 to May 1999. Data gathering on-going. Project on schedule.

Total Priority List 6			1,532				\$14,939,150	\$14,939,150	100.0	\$33,088 \$0
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- 4 Project(s)
- 0 Cost Sharing Agreements Executed
- 0 Construction Started
- 0 Construction Completed
- 0 Project(s) Deferred/Deauthorized
- 0 Unfunded Project(s)

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	Baseline	ESTIMATES Current	%	Actual Obligations/ Expenditures
Priority List 7										
Barataria Basin Landbridge, Ph 1	BARA	JEFF	862	15-Jul-98	15-Jan-00	15-Sep-00	\$10,342,700	\$10,342,700	100.0	\$0
Remarks:										
Status:										
Barataria Basin Landbridge, Ph 2	BARA	JEFF	787				\$21,263,700	\$21,263,700	100.0	\$0
Remarks: This project was approved as an unfunded project on Priority List 7.										
Status: Unfunded.										

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	Const Start	Const End	***** ESTIMATES *****	*****	*****	Actual Obligations/ Expenditures
							Baseline	Current	%	

South Grand Cheniere Freshwater Introduction	MERM	CAMER	33				\$5,130,500	\$5,130,500	100.0	\$0 \$0
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Remarks: This project was approved as an unfunded project on Priority List 7.

Status: Unfunded.

Thin Mat Floatant Marsh Enhancement Demo	PEN	TERRE	0	15-Sep-98	15-Apr-99	15-May-99	\$460,222	\$460,222	100.0	\$0 \$0
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Remarks:

Status:

Upper Oak River Freshwater Introduction Siphon	BRET	PLAQ	337				\$12,471,800	\$12,471,800	100.0	\$0 \$0
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Remarks: This project was approved as an unfunded project on Priority List 7.

Status: Unfunded.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT
 Project Status Summary Report - Lead Agency: DEPT. OF AGRICULTURE (NRCS)

PROJECT	BASIN	PARISH	ACRES	CSA	SCHEDULES Const Start	Const End	ESTIMATES Baseline	Current	%	Actual Obligations/ Expenditures
Total Priority List 7										
			2,019				\$49,668,922	\$49,668,922	100.0	\$0
5										\$0
0										
0										
0										
0										
3										
Total DEPT. OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE										
			20,672				\$129,927,406	\$134,146,506	103.2	\$22,201,060
38										\$8,276,830
26										
13										
8										
2										
3										

Notes:

- Expenditures based on Corps of Engineers financial data.
- Date codes: A = Actual date * = Behind schedule
- Percent codes: ! = 125% of baseline estimate exceeded

Project Status Summary Report - Total All Priority Lists

PROJECT	ACRES	ESTIMATES	*****		Actual Obligations/ Expenditures
			Baseline	Current	
SUMMARY	66,600	\$330,237,629	\$346,341,952	104.9	\$105,761,863 \$37,436,216
93 94 Project(s)		75 Projects Active			
59 Cost Sharing Agreements Executed		19 Projects Completed			
34 Construction Started		+ 1 Completed failed Project			
21 Construction Completed		+ Conserv. Plan			
10 Project(s) Deferred/Deauthorized					
8 Unfunded Project(s)					
		Total Available Funds			
		Federal Funds	\$231,160,268		
		Non/Federal Funds	\$50,835,216		
		Total Funds	\$281,995,484		

17 ~~25~~ Starts
 This FY
 15 Next FY

64 completed or started by
 end of FY 99

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

Basin: All Basins in State		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Priority List:	Cons Plan	1	0	1	1	1	0	\$238,871	\$238,871	\$123,202
Basin Total		1	0	1	1	1	0	\$238,871	\$238,871	\$123,202
Basin: Atchafalaya										
Priority List:		2	4,392	2	2	1	0	\$5,043,867	\$9,143,396	\$3,715,849
Basin Total		2	4,392	2	2	1	0	\$5,043,867	\$9,143,396	\$3,715,849
Basin: Barataria										
Priority List:		1	620	3	3	1	0	\$9,960,769	\$10,102,902	\$2,754,456
Priority List:		2	510	1	0	0	0	\$3,398,867	\$4,046,673	\$277,515
Priority List:		3	1,263	3	1	0	1	\$4,160,823	\$8,490,200	\$2,396,353
Priority List:		4	969	2	0	0	0	\$4,611,094	\$4,630,979	\$2,597
Priority List:		5	1,752	1	0	0	0	\$12,186,865	\$12,271,813	\$18,838
Priority List:		6	217	0	0	0	0	\$5,019,900	\$5,019,900	\$0
Priority List:		7	1,776	0	0	0	0	\$32,535,300	\$32,535,300	\$0
Basin Total		15	7,107	10	4	1	1	\$71,873,618	\$77,097,767	\$5,449,759

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

	No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Basin: Breton Sound									
Priority List:	2	1	802	0	0	0	\$2,522,199	\$2,634,353	\$149,573
Priority List:	3	1	0	0	0	1	\$756,134	\$23,075	\$23,075
Priority List:	4	1	0	0	0	1	\$2,468,908	\$52,154	\$52,154
Priority List:	7	1	337	0	0	0	\$12,471,800	\$12,471,800	\$0
Basin Total	4	1,139	2	0	0	2	\$18,219,041	\$15,181,382	\$224,802

Basin: Calcasieu

Priority List:	1	3	6,127	3	3	0	\$5,770,187	\$2,869,804	\$1,743,657
Priority List:	2	4	3,010	2	2	0	\$8,568,462	\$10,202,665	\$4,367,873
Priority List:	3	2	3,555	1	0	0	\$8,301,380	\$8,321,454	\$29,334
Priority List:	4	3	1,203	0	0	0	\$2,893,802	\$2,903,784	\$89,294
Priority List:	5	1	247	0	0	0	\$4,800,000	\$4,762,700	\$23,672
Priority List:	6	1	3,594	0	0	0	\$6,316,800	\$6,316,806	\$864
Priority List:	7	1	238	0	0	0	\$9,391,600	\$9,391,600	\$0
Basin Total	15	17,974	12	6	5	0	\$46,042,231	\$44,768,813	\$6,254,694

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

Basin: Miss. River Delta		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Priority List:	1	1	9,831	0	0	0	0	\$8,517,066	\$16,683,854	\$457,938
Priority List:	3	2	936	1	1	1	1	\$3,666,187	\$995,832	\$568,653
Priority List:	4	1	0	1	0	0	0	\$300,000	\$375,000	\$21,559
Priority List:	6	2	2,386	0	0	0	0	\$4,336,950	\$4,336,950	\$23,354
Basin Total		6	13,153	2	1	1	1	\$16,820,203	\$22,391,636	\$1,071,504

Basin: Mermentau		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Priority List:	1	2	559	2	2	2	1	\$1,368,671	\$1,569,522	\$979,431
Priority List:	2	1	1,604	1	1	0	0	\$2,770,093	\$2,780,100	\$1,216,135
Priority List:	3	1	16	1	1	1	0	\$126,062	\$146,944	\$37,766
Priority List:	5	1	511	1	1	0	0	\$3,998,919	\$3,998,900	\$13,777
Priority List:	7	2	475	0	0	0	0	\$7,316,400	\$7,316,400	\$0
Basin Total		7	3,165	5	5	3	1	\$15,580,145	\$15,811,866	\$2,247,109

Basin: Bayou Penchant		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Priority List:	7	1	0	0	0	0	0	\$460,222	\$460,222	\$0
Basin Total		1	0	0	0	0	0	\$460,222	\$460,222	\$0

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

	No. of Projects	Acres	CSA Executed	Under Const.		Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Basin: Pontchartrain										
Priority List: 1	2	1,753	2	2	2	2	0	\$6,119,009	\$5,257,352	\$4,340,887
Priority List: 2	2	2,321	2	1	1	1	0	\$4,500,424	\$4,575,596	\$1,118,784
Priority List: 3	3	1,002	3	1	0	0	0	\$2,683,636	\$2,806,704	\$543,454
Priority List: 4	1	0	0	0	0	0	1	\$5,018,968	\$1,380	\$31,973
Priority List: 5	1	199	0	0	0	0	0	\$2,890,821	\$2,555,029	\$215,714
Priority List: 7	2	357	0	0	0	0	0	\$21,643,600	\$21,643,600	\$0
Basin Total	11	5,632	7	4	4	3	1	\$42,856,458	\$36,839,661	\$6,250,812

Basin: Teche / Vermilion

Priority List: 1	1	54	1	1	1	1	0	\$1,526,000	\$2,056,249	\$1,680,784
Priority List: 2	1	378	1	1	1	1	0	\$1,008,634	\$965,473	\$672,321
Priority List: 3	1	2,223	1	1	0	0	0	\$5,173,062	\$5,639,302	\$303,418
Priority List: 5	1	441	1	0	0	0	0	\$940,065	\$940,100	\$5,695
Priority List: 6	4	2,567	0	0	0	0	0	\$10,130,000	\$10,130,000	\$46,872
Basin Total	8	5,663	4	3	2	2	0	\$18,777,761	\$19,731,124	\$2,709,090

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

	No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Basin: Terrebonne									
Priority List: 1	5	232	4	3	3	2	\$8,809,393	\$9,450,361	\$621,189
Priority List: 2	3	954	3	3	1	0	\$12,831,588	\$19,948,505	\$1,941,675
Priority List: 3	4	3,058	4	1	0	0	\$15,758,355	\$20,063,160	\$4,575,932
Priority List: 4	2	215	1	0	0	0	\$6,119,470	\$7,581,633	\$73,546
Priority List: 5	3	2,037	2	1	1	0	\$23,620,006	\$26,985,866	\$2,127,239
Priority List: 6	5	1,774	0	0	0	2	\$19,595,600	\$13,056,889	\$49,812
Priority List: 7	2	105	0	0	0	0	\$7,590,800	\$7,590,800	\$0
Basin Total	24	8,375	14	8	4	4	\$94,325,212	\$104,677,214	\$9,389,395

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Basin

	No. of Projects	Acres	CSA		Under		Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
			Excuted	59	Const.	34				
Total All Basins	94	66,600	59	34	21	10	\$330,237,629	\$346,341,952	\$37,436,216	

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Parish

	No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
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Parish: ASCENSION

Priority List:	5	428	1	0	0	0	\$16,987,000	\$16,987,000	\$516,506
Parish Total	1	428	1	0	0	0	\$16,987,000	\$16,987,000	\$516,506

Parish: CALCASIEU

Priority List:	2	1,066	1	1	1	0	\$1,741,310	\$3,416,212	\$2,765,651
Priority List:	4	1,203	1	0	0	0	\$2,223,518	\$2,223,500	\$79,995
Parish Total	2	2,269	2	1	1	0	\$3,964,828	\$5,639,712	\$2,845,646

Parish: CAMERON

Priority List:	1	6,374	4	4	4	0	\$6,947,855	\$4,359,878	\$2,643,640
Priority List:	2	1,944	3	1	1	0	\$6,827,152	\$6,786,453	\$1,602,222
Priority List:	3	3,555	2	1	0	0	\$8,301,380	\$8,321,454	\$29,334
Priority List:	4	0	1	0	0	0	\$670,284	\$680,284	\$9,300
Priority List:	5	247	1	0	0	0	\$4,800,000	\$4,762,700	\$23,672
Priority List:	6	3,594	0	0	0	0	\$6,316,800	\$6,316,806	\$864
Priority List:	7	271	0	0	0	0	\$14,522,100	\$14,522,100	\$0
Parish Total	15	15,985	11	6	5	0	\$48,385,571	\$45,749,675	\$4,309,031

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Parish

		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Parish: Coastal Parishes										
Priority List:	Cons Plan	1	0	1	1	1	0	\$238,871	\$238,871	\$123,202
Priority List:		6		0	0	0	0	\$1,040,000	\$1,040,000	\$0
Parish Total		2	0	1	1	1	0	\$1,278,871	\$1,278,871	\$123,202
Parish: IBERIA										
Priority List:		6	408	0	0	0	0	\$4,094,900	\$4,094,900	\$45,999
Parish Total		1	408	0	0	0	0	\$4,094,900	\$4,094,900	\$45,999
Parish: JEFFERSON										
Priority List:		1	445	2	2	1	0	\$1,819,257	\$1,755,796	\$1,116,967
Priority List:		2	510	1	0	0	0	\$3,398,867	\$4,046,673	\$277,515
Priority List:		3	0	1	0	0	1	\$1,835,047	\$1,844,750	\$1,292,658
Priority List:		4	232	1	0	0	0	\$2,192,418	\$2,212,279	\$1,524
Priority List:		6	217	0	0	0	0	\$5,019,900	\$5,019,900	\$0
Priority List:		7	1,776	0	0	0	0	\$32,535,300	\$32,535,300	\$0
Parish Total		9	3,180	5	2	1	1	\$46,800,789	\$47,414,698	\$2,688,664

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Parish

	No. of Projects	Acres	CSA Executed	Under		Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
				Const.						
Parish: LAFOURCHE										
Priority List:	2	175	1	1	0	1		\$8,393,548	\$8,354,105	\$1,644,488
Priority List:	2	469	1	1	0	0		\$4,854,102	\$6,367,625	\$726,198
Priority List:	3	1,013	1	0	0	0		\$2,046,971	\$2,568,751	\$1,465,209
Priority List:	4	952	2	0	0	0		\$8,171,080	\$9,606,705	\$73,546
Priority List:	5	1,609	0	0	0	0		\$5,135,468	\$7,935,468	\$53,300
Parish Total	7	4,218	5	2	0	1		\$28,601,169	\$34,832,654	\$3,962,742

Parish: ORLEANS

Priority List:	1	1,550	1	1	1	0		\$1,657,708	\$1,598,612	\$983,433
Priority List:	2	1,281	1	1	1	0		\$1,452,035	\$1,700,121	\$1,001,877
Priority List:	5	199	0	0	0	0		\$2,890,821	\$2,555,029	\$215,714
Priority List:	7	226	0	0	0	0		\$6,510,200	\$6,510,200	\$0
Parish Total	4	3,256	2	2	2	0		\$12,510,764	\$12,363,962	\$2,201,024

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Parish

	No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Parish: PLAQUEMINES									
Priority List:	1	9,831	0	0	0	0	\$8,517,066	\$16,683,854	\$457,938
Priority List:	2	802	1	0	0	0	\$2,522,199	\$2,634,353	\$149,573
Priority List:	3	2,023	3	1	1	2	\$5,303,469	\$5,098,462	\$599,620
Priority List:	4	0	1	0	0	1	\$2,768,908	\$427,154	\$73,713
Priority List:	5	1,752	1	0	0	0	\$12,186,865	\$12,271,813	\$18,838
Priority List:	6	2,386	0	0	0	0	\$4,336,950	\$4,336,950	\$23,354
Priority List:	7	337	0	0	0	0	\$12,471,800	\$12,471,800	\$0
Parish Total	13	17,131	6	1	1	3	\$48,107,257	\$53,924,387	\$1,323,037

Parish: ST. BERNARD

Priority List:	3	1,002	2	0	0	0	\$2,333,636	\$2,326,204	\$256,831
Priority List:	7	131	0	0	0	0	\$15,133,400	\$15,133,400	\$0
Parish Total	3	1,133	2	0	0	0	\$17,467,036	\$17,459,604	\$256,831

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Parish

Parish: ST. CHARLES		No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Priority List:	1	1	203	1	1	1	0	\$4,461,301	\$3,658,740	\$3,357,455
Priority List:	3	1	176	1	1	0	0	\$1,444,628	\$2,565,894	\$1,095,802
Parish Total	2	2	379	2	2	1	0	\$5,905,929	\$6,224,634	\$4,453,257

Parish: ST. JOHN THE BAPTIST

Priority List:	3	1	0	1	1	0	0	\$350,000	\$480,500	\$286,623
Parish Total	1	1	0	1	1	0	0	\$350,000	\$480,500	\$286,623

Parish: ST. MARTIN

Priority List:	6	2	1,999	0	0	0	1	\$3,317,400	\$3,167,400	\$873
Parish Total	2	2	1,999	0	0	0	1	\$3,317,400	\$3,167,400	\$873

Parish: ST. MARY

Priority List:	2	2	4,392	2	2	1	0	\$5,043,867	\$9,143,396	\$3,715,849
Priority List:	3	1	2,223	1	1	0	0	\$5,173,062	\$5,639,302	\$303,418
Priority List:	6	1	0	0	0	0	1	\$6,438,400	\$49,689	\$49,689
Parish Total	4	4	6,615	3	3	1	1	\$16,655,329	\$14,832,387	\$4,068,956

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Parish

	No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Parish: ST. TAMMANY									
Priority List:	2	1,040	1	0	0	0	\$3,048,389	\$2,875,475	\$116,907
Priority List:	4	0	0	0	0	1	\$5,018,968	\$1,380	\$31,973
Parish Total	2	1,040	1	0	0	1	\$8,067,357	\$2,876,855	\$148,880

Parish: TERREBONNE

Priority List:	1	4	232	4	3	2	\$8,557,357	\$9,443,361	\$614,190
Priority List:	2	2	485	2	2	1	\$7,977,486	\$13,580,880	\$1,215,478
Priority List:	3	3	2,045	3	1	0	\$13,711,384	\$17,494,409	\$3,110,724
Priority List:	4	1	0	0	0	0	\$367,066	\$393,628	\$1,073
Priority List:	5	1	1	1	1	0	\$1,497,538	\$2,063,398	\$1,557,433
Priority List:	6	2	1,774	0	0	0	\$11,967,200	\$11,967,200	\$123
Priority List:	7	3	105	0	0	0	\$8,051,022	\$8,051,022	\$0
Parish Total	16	4,641	10	7	4	1	\$52,129,053	\$62,993,898	\$6,499,020

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Parish

	No. of Projects	Acres	CSA Executed	Under Const.	Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
Parish: VERMILION									
Priority List:	1	2	366	2	2	1	\$1,717,003	\$2,135,697	\$1,760,232
Priority List:	2	2	1,982	2	1	0	\$3,778,727	\$3,745,573	\$1,888,456
Priority List:	3	1	16	1	1	0	\$126,062	\$146,944	\$37,766
Priority List:	5	2	952	1	0	0	\$4,938,984	\$4,939,000	\$19,472
Priority List:	6	2	160	0	0	0	\$2,867,700	\$2,867,700	\$0
Priority List:	7	1	442	0	0	0	\$2,185,900	\$2,185,900	\$0
Parish Total	10	3,918	7	6	4	1	\$15,614,376	\$16,020,814	\$3,705,926

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Status Summary Report by Parish

	No. of Projects	Acres	CSA		Under		Completed	Projects Deauth.	Baseline Estimate	Current Estimate	Expenditures To Date
			Executed	59	Const.	34					
Total All Parishes	94	66,600	59	34	21	10	\$330,237,629	\$346,341,952	\$37,436,216		

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Project Summary Report by Priority List

P/L	No. of Projects	Acres	CSA Executed	Under Const.	Const. Completed	Federal Const. Funds Available	Non/Fed Const. Funds Available	Baseline Estimate	Current Estimate	Obligations To Date	Expenditures To Date
1	14	18,864	13	3	10	\$28,084,900	\$10,517,773	\$39,933,317	\$47,803,970	\$18,758,879	\$12,392,270
2	15	13,971	15	4	6	\$28,173,110	\$10,161,033	\$40,644,134	\$54,296,761	\$32,434,196	\$13,459,726
3	14	12,053	14	5	2	\$29,939,100	\$10,156,410	\$35,176,668	\$44,512,928	\$21,376,422	\$7,056,334
4	8	2,387	6	0	0	\$29,957,533	\$5,000,000	\$13,924,366	\$15,491,396	\$8,976,766	\$186,996
5	9	5,187	6	1	1	\$33,371,625	\$5,000,000	\$48,436,676	\$51,514,408	\$10,803,348	\$2,404,935
6	11	10,538	0	0	0	\$39,134,000	\$10,000,000	\$38,810,850	\$38,810,856	\$11,187,742	\$71,213
7	4	1,431	0	0	0	\$42,500,000	\$0	\$13,917,722	\$13,917,722	\$0	\$0
Active Projects	75	64,431	54	13	19	\$231,160,268	\$50,835,216	\$230,843,733	\$266,348,042	\$103,537,352	\$35,571,474
Unfunded Projects	8	1,857	0	0	0			\$77,492,000	\$77,492,000	\$0	\$0
Subtotal	83	66,288	54	13	19	\$231,160,268	\$50,835,216	\$308,335,733	\$343,840,042	\$103,537,352	\$35,571,474
Deauthorized Projects	10	312	4	0	1			\$21,663,025	\$2,263,039	\$2,045,358	\$1,741,539
Total Projects	93	66,600	58	13	20	\$231,160,268	\$50,835,216	\$329,998,758	\$346,103,081	\$105,582,710	\$37,313,014
Conservation Plan	1	0	1	0	1			\$238,871	\$238,871	\$179,153	\$123,202
Total Construction Program	94	66,600	59	13	21	\$231,160,268	\$50,835,216	\$330,237,629	\$346,341,952	\$105,761,863	\$37,436,216
						\$281,995,484					

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

31-Mar-98

Project Summary Report by Priority List

- NOTES:
1. Total of 94 projects includes 75 active construction projects, 6 deauthorized projects, 4 proposed deauthorizations, the State of Louisiana's Wetlands Conservation Plan, and 8 unfunded projects approved on Priority List 7.
 2. Total construction program funds available is \$281,995,484 .
 3. The current estimate for deauthorized projects is equal to expenditures to date.
 4. Current Estimate for the 5th priority list includes authorized funds for FY 96, FY 97 and FY 98 for phased projects with multi-year funding. These projects, if implemented, will require an additional \$12.5 million from Priority List 8 funds.
 5. Current Estimate for the 6th priority list includes authorized funds for FY 97, and FY 98 for phased projects with multi-year funding. These projects, if implemented, will require an additional \$15.8 million from Priority List 8 funds.
 6. The Task Force approved 8 unfunded projects, totalling \$77,492,000 on Priority List 7.
 7. Obligations include expenditures and remaining obligations to date.
 8. \$42,500,000 for Priority List 7 Federal funds available is an estimate; actual funding has not been received.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

OUTREACH COMMITTEE REPORT

For information.

Mr. Jay Gamble will report on the committee's national outreach program. The Outreach Committee Report is enclosed.

CWPPRA OUTREACH COMMITTEE REPORT

April 14, 1998

1. **Activities**
2. **Dedication**
3. **CD-ROM**
4. **BTNEP Support**
5. **May 1 Press Conference**
6. **Coast 2050**
7. **National Wetlands Month Celebration**
8. **WaterMarks Contract Review**

1. **Activities:**

A. **Environmental Education Symposium:** Provided the Breaux Act display and was a presenter to the Annual Environmental Education Symposium held in Alexandria, La. March 13-14. There have been several follow-ups from teachers on the Homepage regarding the presentation.

B. **UNO Career Day**

C. **Southern University Career Day**

D. **High School Presentations:** Presentations to over 500 high school and middle school students regarding the coastal erosion problem in coastal Louisiana.

E. **Individual Mailouts/Presentations**

2. **Dedication:**

Coordinated with EPA and LDNR on the Isles Derniers groundbreaking ceremony scheduled for April 13th. Outreach coordinator provided media support, logistics, and surveillance for activity. The event was held at Houma and Trinity Island. Approximately 100 people attended the event.

3. CD-ROM:

Coordination continues with National Wetlands Research Center, Barataria-Terrebonne National Estuary Program and Audubon Aquarium (Zoo and Education Center). Portions of the CD-ROM have been asked to be included in permanent wetland exhibits at the Zoo and Education Center. Combined with attendance at the Aquarium, the CD-ROM will be available to over 2 million visitors a year from the nation and overseas. The mobile kiosk has been completed and will be available once the CD-ROM is ready. The kiosk and CD-ROM were previewed at the Environmental Education Symposium with very favorable response. A schedule is being developed by the Outreach Committee.

4. BTNEP Support:

The Breaux Act display was set up at public workshops in support of the BTNEP Leadership Training activities. Towns in the basin where the display and materials were made available to citizens were in Marero, Houma, Pierre Part, LaRose, Hahnville, Port Allen, and Port Sulfur. The meetings were well attended with citizens and politicians from the local area participating. Over 300 people attended the workshops.

5. May 1 Press Conference:

Members of the Outreach Committee have been supporting Governor's Office staff to formulate a May 1 Press Conference that will proclaim May as Wetlands Month in Louisiana and highlight the wetland loss (both inland and coastal) in the state. Potential attendees include Mike Davis (USACE), Terry Garcia (NOAA), Wally Smitten (NMFS) and others who have yet to confirm. COL Connor will MC the event. Local television stations have given tentative support through their early morning programs for this event.

6. Coast 2050:

Members of the Outreach Committee continue to support the work of Coast 2050 by working on the Objectives Development Team, Regional Planning Teams and Strategic Planning Group. The first draft of the plan is due in June after much public input and technical evaluation.

7. National Wetlands Month Celebration:

The Breaux Act was chosen as a topic for presentation at the Terrene Institute "National Wetlands Month Celebration" to be held in Arlington, Va April 15-17th. The Outreach Coordinator will have the display on exhibit along with a preview of the CD-ROM. On April 15th, the Outreach Coordinator will be on a panel along with Tim Osborn (NMFS) and tell the Louisiana coastal wetland loss story to a national audience.

8. WaterMarks Contract Review:

The Outreach Committee, headed by Herb Borque of NRCS, received and reviewed 25

different proposals for the *WaterMarks* publication. A decision was made based on evaluative criteria and the award will be announced. *WaterMarks* is going to be a quarterly publication so there will be a requirement from all the CWPPRA agencies to support this initiative with project articles, feature stories, and technical data.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

ADDITIONAL AGENDA ITEMS

For information.

Each Task Force member has the opportunity at this point to propose additional items or issues for the consideration of the Task Force.

CWPPRA MRGO Back Dike Protection

Attached is a map of the project area.

The 1993 WVA divided the project into three cells:

North -	135 acres of marsh
Central-	245 acres of marsh
South-	475 acres of marsh

The above acreages were based on one short trip to the southern area and the examination of some dark color IRs.

Based on several trips by our Planning Division personnel covering the entire area, and examination of 1995 IRs it appears that there is very little marsh in the northern area - probably less than 50 acres of marsh. Also, there is most likely more than 245 acres of marsh in the central cell. Additionally, it is noted that the entire disposal area slopes to the southeast so some of the water that falls in the northern cell will drain to the central and southern cells.

There are three landowners involved in the existing project area:

1) Felix Favaloro, located in the northern cell, has stated that for him to support the project, a weir will need to be constructed on his property. The Corps does not feel that a weir is needed in this location as the lateral dike is breached and water would not be impounded anyway, but would flow to the central and southern cells. A 30' breach to be repaired is located on this property. As it stands now, the Corps would have to clear unresolved successions to the property, which are both time consuming and costly. If the successions cannot be cleared, condemnation would be required.

2) Auster Oil & Gas Co., also located in the northern cell, has verbally accepted the appraised value offered by the Corps without restrictions such as a weir, etc. However, Auster definitely requires condemnation. No dike work is located on this property.

3) Biloxi Marsh Lands Corp., located in the central and southern cells, has signed the offer from the Corps and requires no condemnation or succession clearance. A 20' breach and a 3000' reach of dike to be repaired are located on this property. There are already several water control structures that the Corps feels are sufficient for the purposes of this project.

Proposal: Delete the breach repair in the northern area and concentrate on the southern and central cells where the majority of the benefits are. The WVA benefits should not be reduced and avoiding condemnation and/or succession clearance would allow for us to construct the project much sooner.

MR-GO DISPOSAL AREA MARSH PROTECTION - (Priority List 3)
PROJECT COST ESTIMATE(S)

	<u>Original Estimate</u>	1/	<u>Current Estimate</u>
REAL ESTATE:	\$49,500		\$75,716
ENVIRONMENTAL CLEARANCE:			
Cultural Resources	***Not Incl***		\$8,197 2/
HTRW	***Not Incl***		\$20,000 3/
Subtotal	<u>\$0</u>		<u>\$28,197</u>
ENGINEERING & DESIGN: 4/			
Surveys	\$20,000		\$20,162
Design/Plans & Specifications	\$26,400		\$26,238
Subtotal	<u>\$46,400</u>		<u>\$46,400</u>
CONSTRUCTION: 5/			
Construction	\$162,800		\$42,000
Construction S&I	\$21,300		\$15,000
Subtotal	<u>\$184,100</u>		<u>\$57,000</u>
O, M, R & R:	\$0		\$0
MONITORING:	\$170,700		\$0
PROJECT MANAGEMENT:	\$20,800		\$74,104 6/
LOCAL SPONSOR ACTIVITIES:	***Not Incl***		\$30,000 7/
CONTINGENCIES:	\$40,700		\$0 8/
PROJECT TOTAL	\$512,200		\$311,417
Over/Under Original Estimate			(\$200,783)
% Over/Under Original Estimate			-39.2%

- 1/ Original estimate from Corps of Engineers, Nov 1993.
- 2/ Cultural Resources not included in Priority List estimate, but considered minimal.
- 3/ HTRW not included in Priority List estimate.
- 4/ Includes design, preparation, review & approval of P&S; and advertisement & award.
- 5/ Revised construction estimate with 25% contingencies:
 Does not include installation of 2 metal box weirs with single 40-inch pipe
 Does not include refurbishment of the interior (lateral) dikes
 S&I based on contract duration of 15 calendar days
- 6/ Priority List estimate not sufficient to cover life of project.
- 7/ Local Sponsor activities not included in Priority List estimate.
- 8/ Contingency used toward Environmental and Project Management cost increases.

Overrun on estimated armor stone:

An overrun on armor stone occurred because the bottom elevations in the vicinity of closures 4 and 5 were lower than the elevations at the time the design surveys were performed. These areas have eroded considerably since the design survey was done. The overrun would have occurred even if we had not changed the design of the dikes because we would have been erecting them in deeper water (ie, we moved the bottom elevation of the new design up one foot from the +1 elevation to the +2 elevation). The amount of the overrun for the armor stone is summarized below:

<u>Contract Estimated Quantity</u>	<u>Estimated Final Quantity</u>	<u>Unit Price</u>	<u>Variation</u>
7,000 tons	11,100 tons	\$23.10	+\$94,710.00

Overrun on estimated geotextile:

There was a computational error in arriving at the quantity of material to be used in the contract. The error was not discovered during review of the P&S or during the bidding process. Thus, this overrun would have occurred no matter what design was used. The overrun for the geotextile for both the base plan and the optional work above Evan's Canal is summarized below. Note that the optional armor work has been invoked.

<u>Contract Estimated Quantity</u>	<u>Estimated Final Quantity</u>	<u>Unit Price</u>	<u>Variation</u>
Base Plan: 36,700 SY	53,953 SY	\$3.68	+\$63,491.04
Optional: 13,800 SY	18,784 SY	\$3.68	<u>+\$18,341.12</u>
			<u>+\$81,832.16</u>
	OVERRUN	TOTAL:	+\$176,542.16
	OVERRUN	Fed Cost:	+\$150,060.84
	OVERRUN	Non-Fed:	+\$ 26,481.32

Increase in O&M costs:

Baseline cost:	\$228,300		
Revised O&M costs with COE revised inflation factors:	\$419,000		
	O&M increase:		+\$190,700.00
	Overrun:		<u>+\$176,542.16</u>
		TOTAL:	~\$367,300
	INCREASE	Fed Cost:	~\$312,200
	INCREASE	Non-Fed:	~\$ 55,100

WEST BELLE PASS HEADLAND RESTORATION PROJECT - (Priority List 2)
PROJECT COST ESTIMATE(S)

FULL SCOPE OF WORK	Original Estimate ^{1/}	Current Estimate	Expended Thru 30Nov97
REAL ESTATE:	\$126,100	\$250,000 ^{2/}	\$228,130
ENVIRONMENTAL CLEARANCE:			
Cultural Resources	***Not Incl***	\$51,005 ^{3/}	\$51,005
HTRW	***Not Incl***	\$15,717 ^{4/}	\$15,717
NEPA	***Not Incl***	\$5,500	\$4,238
Subtotal	\$0	\$72,222	\$70,960
ENGINEERING & DESIGN: ^{5/}			
Surveys	\$40,000	\$100,823	\$97,593
Design/Plans & Specifications	\$118,400	\$203,604	\$179,979
Subtotal	\$158,400	\$304,427	\$279,023
CONSTRUCTION:			
Construction	\$2,997,500	\$5,060,697 ^{6/}	\$0
Construction S&I	\$252,700	\$226,453	\$0
Subtotal	\$3,250,200	\$5,287,150	\$0
O, M, R & R:	\$228,300	\$419,000 ^{7/}	\$0
MONITORING:	\$131,600	\$162,925 ^{8/}	\$4,869
PROJECT MANAGEMENT:	\$210,100	\$159,193	\$135,193
LOCAL SPONSOR ACTIVITIES:	***Not Incl*** ^{9/}	\$80,000	\$0
CONTINGENCIES:	\$749,400	\$0 ^{10/}	
PROJECT TOTAL	\$4,854,100	\$6,734,917	\$718,175
Over/Under Original Estimate	\$1,880,817	
% Over/Under Original Estimate	38.7%	
125%	\$6,067,625		

- 1/ Original estimate from Corps of Engineers, Nov 1993.
- 2/ Includes \$97,300 for estimated DNR credit for LL&E landsoyster lease acquisition
- 3/ Cultural Resources not included in Priority List estimate
- 4/ HTRW not included in Priority List estimate.
- 5/ Includes design, preparation, review & approval of P&S; and advertisement & award.
Also includes \$51,681 for DNR survey effort
- 6/ Bids opened on 9Jan98. Estimate is for total work including optional items
- 7/ O&M costs after March 98 review and COE revised inflation factors
- 8/ Final monitoring plan
- 9/ Local Sponsor activities not included in Priority List estimate.
- 10/ Contingency used toward cost increases.

Minimum \$ required from Task Force for O&M increase & rock armor variations and overrun cost:	\$367,292	
		Rounded #s
New Current cost estimate: (includes O&M increase)	\$6,734,917	
New approved total costs:	\$6,367,625	
Current estimated first costs : (RE + Env + E&D + Constr + PM + Sponsor)	\$6,152,992	\$5,976,450
E&D phase:	\$615,842	\$615,845
Construction + RE phase:	\$5,537,150	\$5,537,150
Monitoring Phase	\$162,925	\$162,925
O&M phase:	\$419,000	\$419,000
Current Total Project Cost	\$6,734,917	\$6,734,920

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING AGENDA
(continued)

Tab

- XV. Status of the Coastwide Strategy, Coast 2050. (Bill Good)1:45..... Q
- XVI. Report of Program Performance and Project Implementation. (Steve Mathies).....1:50..... R
- XVII. Outreach Committee Report (Jay Gamble).....2:05..... S
- XVIII. Additional Agenda Items.....2:35..... T
- XIX. Request for Public Comments..... U
- XX. Date and Location of the Next Task Force Meeting2:40..... V

has ~~Coastwide~~ 2050 joint mtg on July 21, 22

Move to July 23

mark Davis - Coast Stewardship Evening - Thibodaux - May 1.

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING AGENDA

Mineral Board Room
 Department of Natural Resources
 625 N. Fourth St, Baton Rouge, Louisiana

April 14, 1998
 9:30 a.m.

Tab

- I. Meeting Initiation:
 - a. Introduction of Task Force Members or Alternates 9:30
 - b. Opening Remarks by Task Force Members
- II. Adoption of Minutes from the 16 January 1998 Meeting D
need revision to needs list issue.
- III. Discussion of West Bay Cost Increase. (Robert Schroeder)..... E
- IV. Report on Status of Project Deauthorizations. (Robert Schroeder)
 - a. Pass-a-Loutre Crevasse, MR-7, MR-8/9a (USACE)
 - b. Grand Bay Crevasse, BS-7, PBS-6 (USACE)
 - c. Avoca Island Marsh Creation, TE-35, CW-5i (USACE)
 - d. Bayou Boeuf Pumping Station, TE-33, XTE-32i; (EPA) F
- V. Report on Status of the Needs List. (Tom Podany) G
10:30
- VI. Report on Anticipated Project Cost Increases in the Program. (Tom Podany) H
11AM
- VII. Discussion and Consideration for Approval of Fully Funded Monitoring Plan Costs. (Robert Schroeder) I
11:20
- VIII. Review and Consideration for Approval of Operations and Maintenance (O&M) Costs for Priority Project List Projects. (Robert Schroeder) J
11:30
- IX. Consideration for Approval of the Grand Bayou Project Additions. (Robert Schroeder)..... K
11:45
Lunch 12-1PM
- X. Report on Status of the 8th Priority Project List. (Tom Podany)..... L
1:15
- XI. Discussion of Procedures to Handle Bid Overruns. (Robert Schroeder)..... M
1:20
- XII. Feasibility Study Steering Committee Report (Tom Podany)..... N
1:20
- XIII. Report on the Atchafalaya Liaison Group (Tom Podany)..... O
1:22
- XIV. Status of the State Conservation Plan. (Katherine Vaughan)..... P
1:25

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

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Mineral Board Room
 Department of Natural Resources
 625 N. Fourth St, Baton Rouge, Louisiana

April 14, 1998
 9:30 a.m.

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COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

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Status of the Coastwide Strategy, Coast 2050. (Bill Good)..... Q

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Date and Location of the Next Task Force Meeting.....V

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

ADDITIONAL AGENDA ITEMS

For information.

Each Task Force member has the opportunity at this point to propose additional items or issues for the consideration of the Task Force.

Bill Hicks - ① West Belle Pass Project cost overruns

1. Construction - 176 K

2. O + M increase - 191 K

Total 367 K

TF approved

② MRGO Back Dike Protection Project

TF approved

Proceed w/ reduced scope

CE can monitor dike condition annually.

Len - update on Trans TX Water Diver. Project
+ Steve Gammill

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING
April 14, 1998

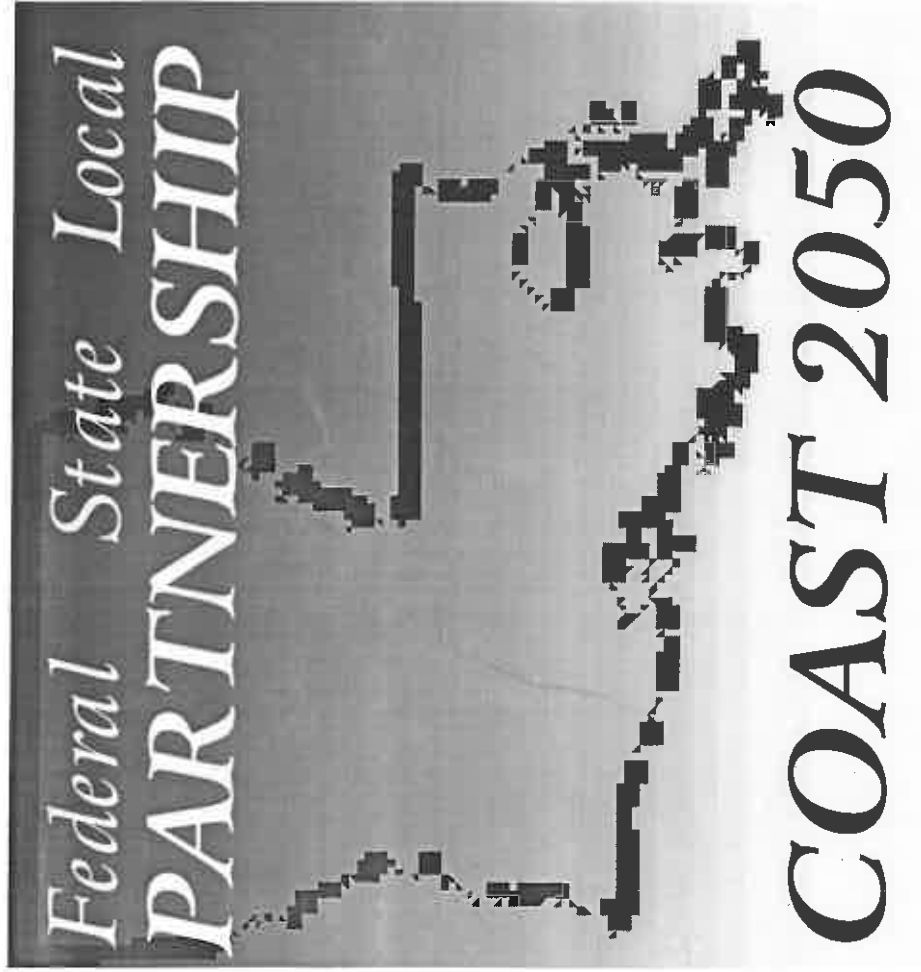
REQUEST FOR PUBLIC COMMENTS

The Task Force chairman will offer members of the public an opportunity to comment on issues of concern.

Dave Richard

*Sabine R. Post
1951*

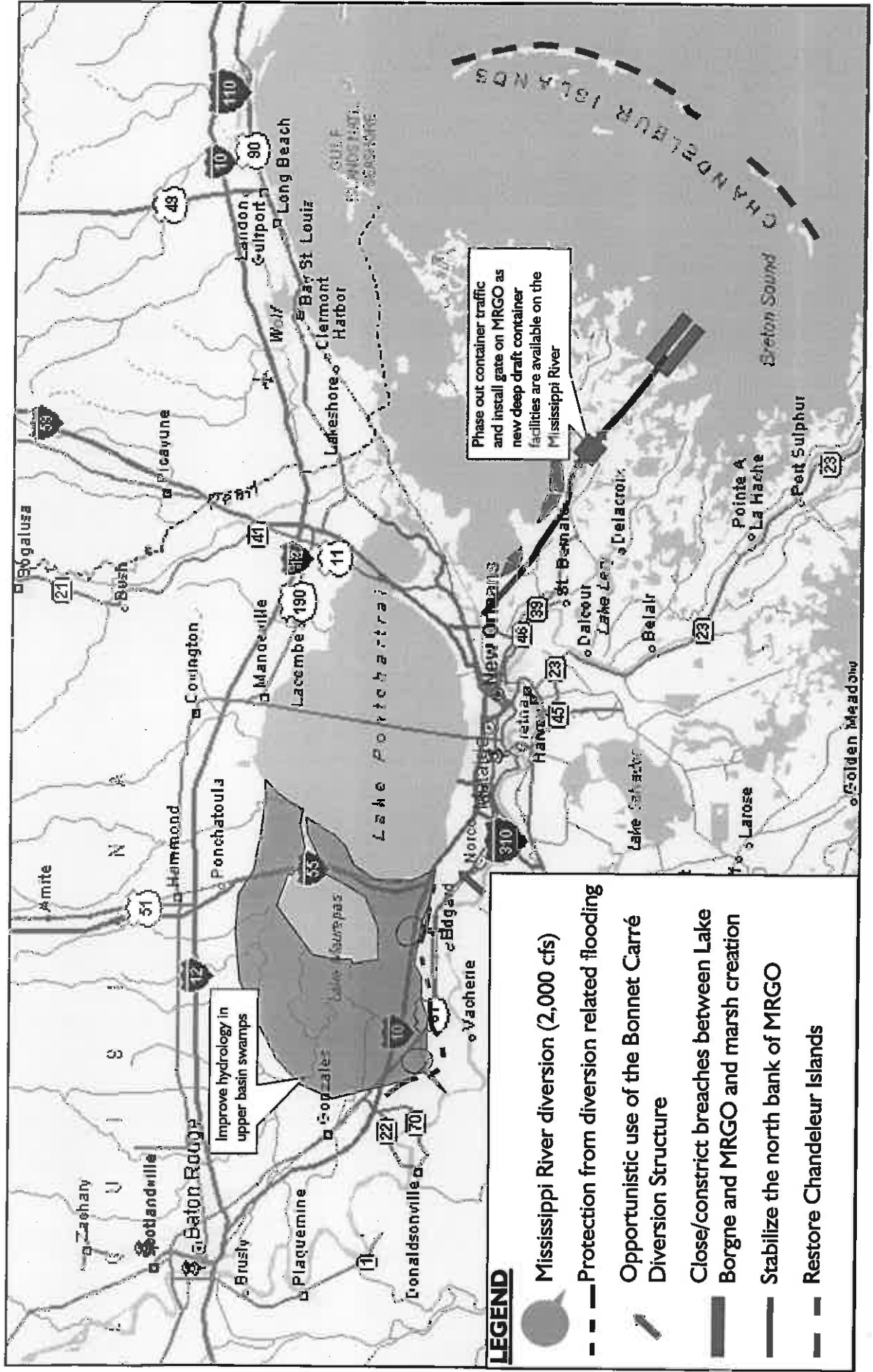
*1/2 of Sabine R. water in Texas
Year 2040 = Texas Planning Horizon
Planners Focus on how we can
protect our areas.
~~Coastal~~*



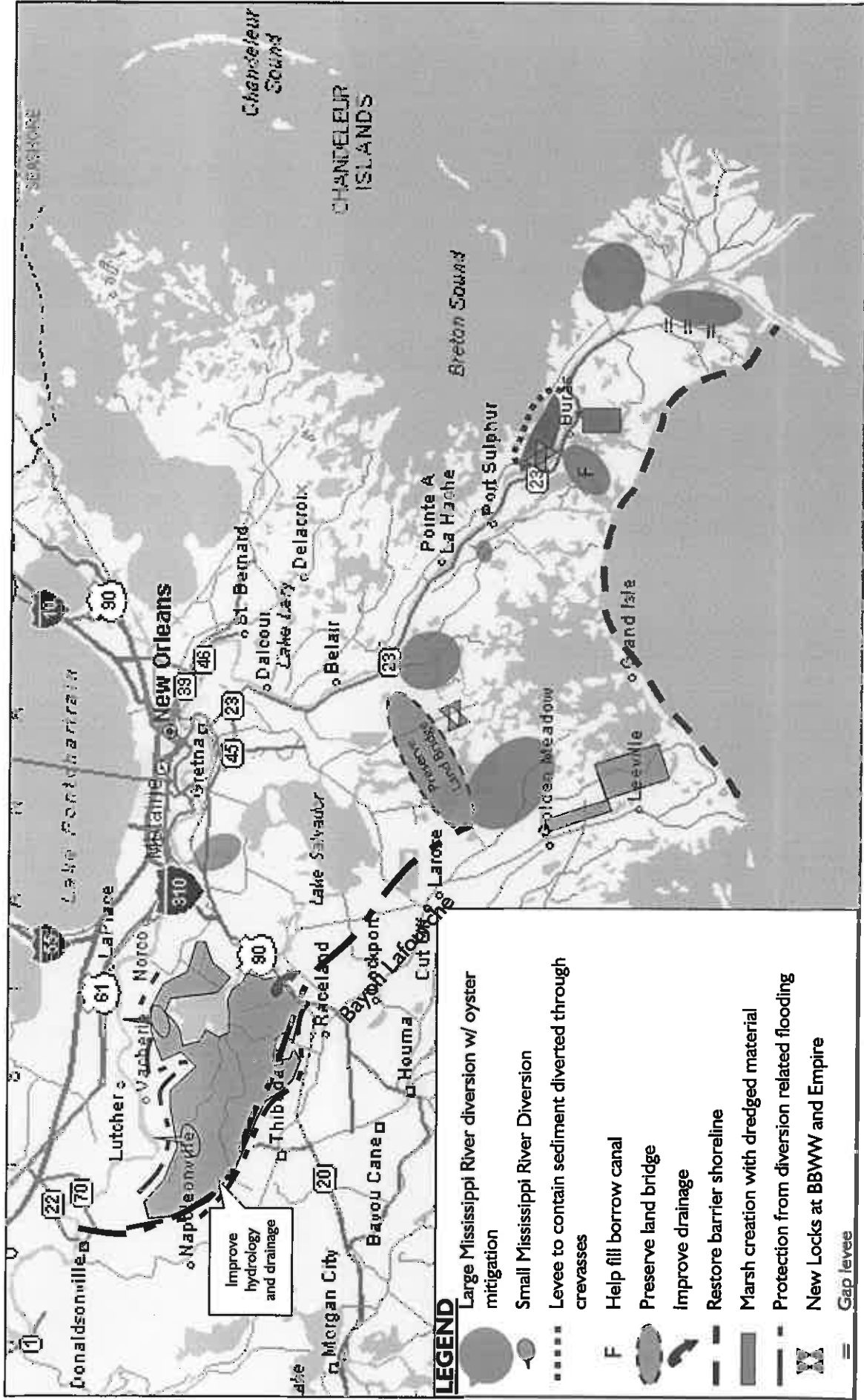
Breaux Act Task Force Update

April 14, 1998

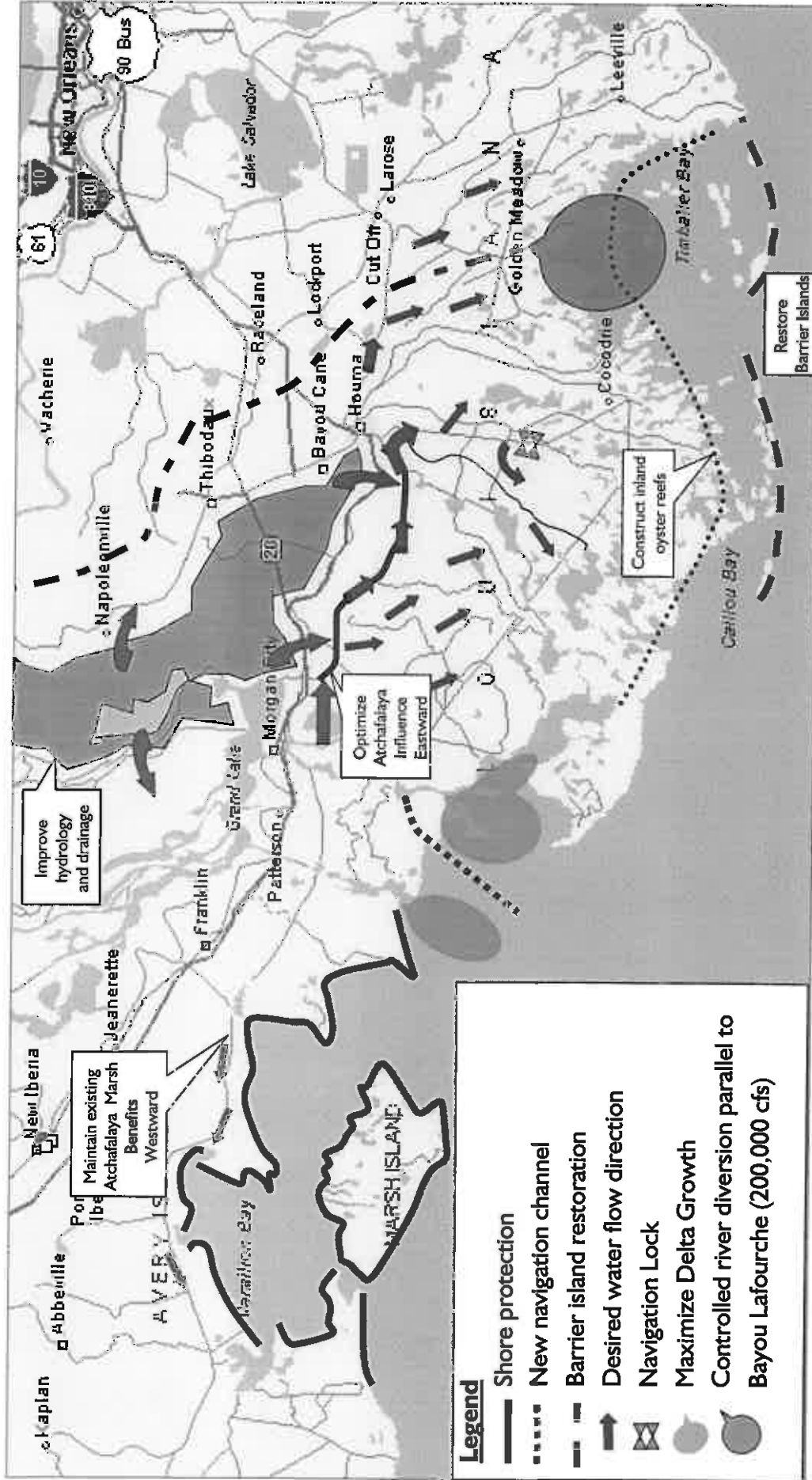
DRAFT COAST 2050 REGION 1 LARGE-SCALE COASTAL RESTORATION STRATEGIES



DRAFT COAST 2050 REGION 2 LARGE-SCALE COASTAL RESTORATION STRATEGIES



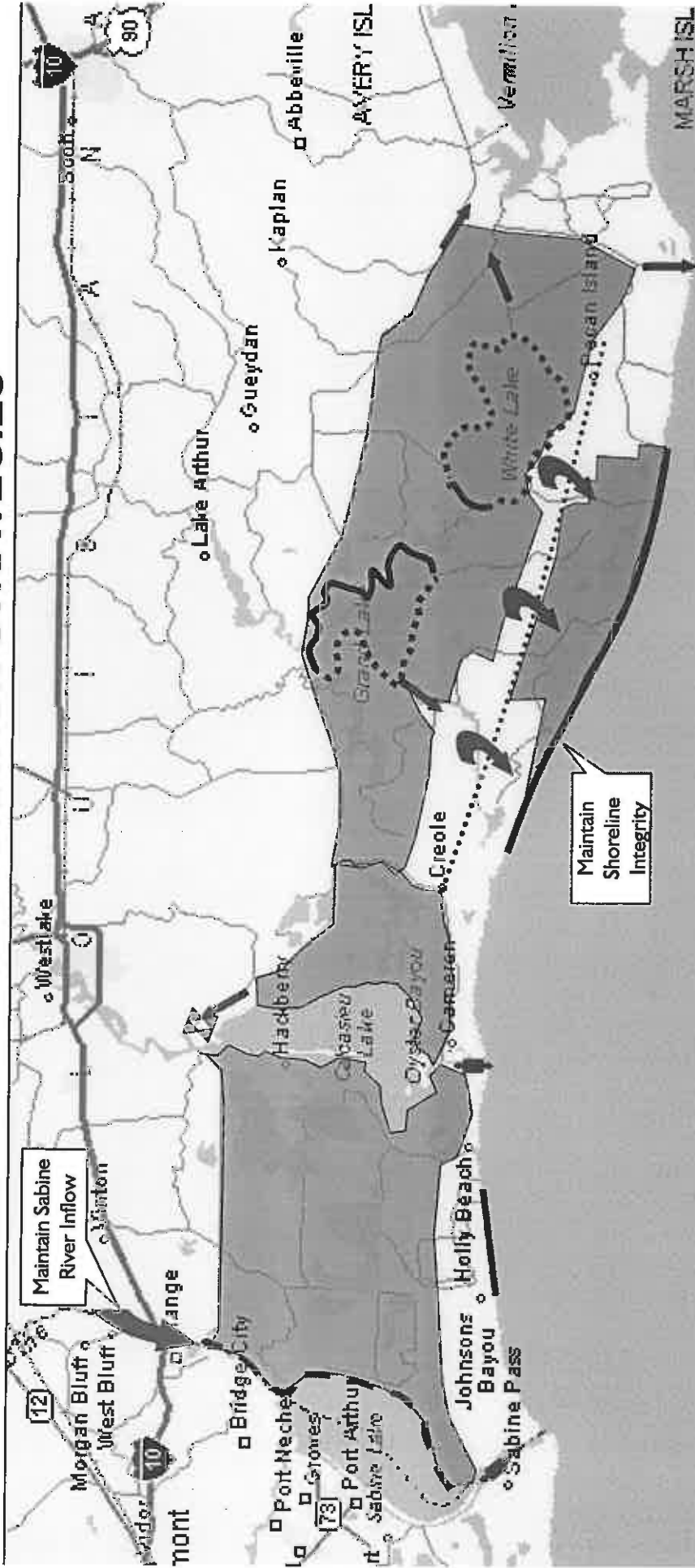
DRAFT COAST 2050 REGION 3 LARGE-SCALE COASTAL RESTORATION STRATEGIES



Legend

- Shore protection
- New navigation channel
- - - Barrier island restoration
- ➔ Desired water flow direction
- ⊗ Navigation Lock
- Maximize Delta Growth
- Controlled river diversion parallel to Bayou Lafourche (200,000 cfs)

DRAFT COAST 2050 REGION 4 LARGE-SCALE COASTAL RESTORATION STRATEGIES



Legend

- Shoreline Stabilization or Maintenance
- Rebuild Lake Rims
- - - Sabine Perimeter Hydrologic Control (short-term)
- Increase Freshwater inflow into the Chenier Sub-basin
- ☒ Saltwater barrier in the form of a lock, gate or constriction (long-term)
- ☒ Manage as a hydrologic Unit
- ☒ Manage lock operation to evacuate excessive water
- ☒ New Lock to aid in evacuating excessive water

4/14/98

Additional Large-scale Strategies

- Enhance ongoing management of the Cameron-Creole Watershed, Sabine NWR, State and CWPPRA Projects and privately managed areas.
- Marsh creation with dredged material or by terracing wherever feasible
- Integrated Hydrologic Management Consistent with HICP results

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

TASK FORCE MEETING

April 14, 1998

DATE AND LOCATION OF THE NEXT TASK FORCE MEETING

X-Memo July 22-98

The next Task Force meeting will be held at 9:30 am on July 22, 1998 in Lafayette, Louisiana. Confirmation is currently pending for a meeting location in the conference room at the National Wetlands Research Center, University of Southwestern Louisiana, 700 Cajundome Boulevard. Final details will be provided via public notice and the CWPPRA Internet Web Page.

23rd

*Det. Carlos Manduca re.
Sabine River Diversion*

Lake Gaston Project NC/VA



COASTAL WETLANDS PLANNING, PROTECTION & RESTORATION ACT
Public Law 101-646, Title III

SECTION 303. Priority Louisiana Coastal Wetlands Restoration Projects.

- Section 303a. Priority Project List
- NLT 13 Jan 91. Sec. of Army (Secretary) will convene a Task Force
 - Secretary
 - Administrator, EPA
 - Governor, Louisiana
 - Secretary, Interior
 - Secretary, Agriculture
 - Secretary, Commerce
- NLT 28 Nov. 91, Task Force will prepare and transmit to Congress a Priority List of wetland restoration projects based on cost effectiveness and wetland quality.
- Priority List is revised and submitted annually as part of President's budget.
- Section 303b. Federal and State Project Planning
 - NLT 28 Nov. 93, Task Force will prepare a comprehensive coastal wetlands Restoration Plan for Louisiana.
 - Restoration Plan will consist of a list of wetland projects, ranked by cost effectiveness and wetland quality.
 - Completed Restoration Plan will become Priority List.
 - Secretary will ensure that navigation and flood control projects are consistent with the purpose of the Restoration Plan.
 - Upon submission of the Restoration Plan to Congress, the Task Force will conduct a scientific evaluation of the completed wetland restoration projects every 3 years and report findings to Congress.

SECTION 304. Louisiana Coastal Wetlands Conservation Planning.

- Secretary; Administrator, EPA; and Director, USFWS will:
 - Sign an agreement with the Governor specifying how Louisiana will develop and implement the Conservation Plan.
 - Approve the Conservation Plan.
 - Provide Congress with periodic status reports on Plan implementation.
- NLT 3 years after agreement is signed, Louisiana will develop a Wetland Conservation Plan to achieve no net loss of wetlands resulting from development.

SECTION 305. National Coastal Wetlands Conservation Grants.

- Director, USFWS, will make matching grants to any coastal state to implement Wetland
- Conservation Projects (projects to acquire, restore, manage, and enhance real property interest in coastal lands and waters).
- Cost sharing is 50% Federal / 50% State.

SECTION 306. Distribution of Appropriations.

- 70 % of annual appropriations not to exceed (NTE) \$70 million used as follows:
 - NTE \$15 million to fund Task Force completion of Priority List and Restoration Plan -- Secretary disburses the funds.
 - NTE \$10 million to fund 75% of Louisiana's cost to complete Conservation Plan Administrator disburses funds.
 - Balance to fund wetland restoration projects at 75% Federal/ 25% Louisiana Secretary disburses funds.
- 15% of annual appropriations, NTE \$15 million for Wetland Conservation Grants -- Director, USFWS disburses funds.
- 15% of annual appropriations, NTE \$15 million for projects authorized by the North American Wetlands Conservation Act -- Secretary, Interior disburses funds.

SECTION 307. Additional Authority for the Corps of Engineers.

- Section 307a. Secretary authorized to:
 - Carry out projects to protect, restore, and enhance wetlands and aquatic/coastal ecosystems.
- Section 307b. Secretary authorized and directed to study feasibility of modifying MR&T to increase flows and sediment to the Atchafalaya River for land building wetland nourishment.
 - 25% if the state has dedicated trust fund from which principal is not spent.
 - 15% when Louisiana's Conservation Plan is approved.

TITLE III--WETLANDS

Sec. 301. SHORT TITLE.

This title may be cited as the "Coastal Wetlands Planning, Protection and Restoration Act".

Sec. 302. DEFINITIONS.

As used in this title, the term--

(1) "Secretary" means the Secretary of the Army;

(2) "Administrator" means the Administrator of the Environmental Protection Agency;

(3) "development activities" means any activity, including the discharge of dredged or fill material, which results directly in a more than de minimus change in the hydrologic regime, bottom contour, or the type, distribution or diversity of hydrophytic vegetation, or which impairs the flow, reach, or circulation of surface water within wetlands or other waters;

(4) "State" means the State of Louisiana;

(5) "coastal State" means a State of the United States in, or bordering on, the Atlantic, Pacific, or Arctic Ocean, the Gulf of Mexico, Long Island Sound, or one or more of the Great Lakes; for the purposes of this title, the term also includes Puerto Rico, the Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands, and the Trust Territories of the Pacific Islands, and American Samoa;

(6) "coastal wetlands restoration project" means any technically feasible activity to create, restore, protect, or enhance coastal wetlands through sediment and freshwater diversion, water management, or other measures that the Task Force finds will significantly contribute to the long-term restoration or protection of the physical, chemical and biological integrity of coastal wetlands in the State of Louisiana, and includes any such activity authorized under this title or under any other provision of law, including, but not limited to, new projects, completion or expansion of existing or on-going projects, individual phases, portions, or components of projects and operation, maintenance and rehabilitation of completed projects; the primary purpose of a "coastal wetlands restoration project" shall not be to provide navigation, irrigation or flood control benefits;

(7) "coastal wetlands conservation project" means--

(A) the obtaining of a real property interest in coastal lands or waters, if the obtaining of such interest is subject to terms and conditions that will ensure that the real property will be administered for the long-term conservation of such lands and waters and the hydrology, water quality and fish and wildlife dependent thereon; and

(B) the restoration, management, or enhancement of coastal wetlands ecosystems if such restoration, management, or enhancement is conducted on coastal lands and waters that are administered for the long-term conservation of such lands and waters and the hydrology, water quality and fish and wildlife dependent thereon;

(8) "Governor" means the Governor of Louisiana;

(9) "Task Force" means the Louisiana Coastal Wetlands Conservation and Restoration Task Force which shall consist of the Secretary, who shall serve as chairman, the Administrator, the Governor, the Secretary of the Interior, the Secretary of Agriculture and the Secretary of Commerce; and

(10) "Director" means the Director of the United States Fish and Wildlife Service.

SEC. 303. PRIORITY LOUISIANA COASTAL WETLANDS RESTORATION PROJECTS.

(a) PRIORITY PROJECT LIST.--

(1) PREPARATION OF LIST.--Within forty-five days after the date of enactment of this title, the Secretary shall convene the Task Force to initiate a process to identify and prepare a list of coastal wetlands restoration projects in Louisiana to provide for the long-term conservation of such wetlands and dependent fish and wildlife populations in order of priority, based on the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing coastal wetlands, taking into account the quality of such coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration.

(2) TASK FORCE PROCEDURES.--The Secretary shall convene meetings of the Task Force as appropriate to ensure that the list is produced and transmitted annually to the Congress as required by this subsection. If necessary to ensure transmittal of the list on a timely basis, the Task Force shall produce the list by a majority vote of those Task Force members who are present and voting; except that no coastal wetlands restoration project shall be placed on the list without the concurrence of the lead Task Force member that the project is cost effective and sound from an engineering perspective. Those projects which potentially impact navigation or flood control on the lower Mississippi River System shall be constructed consistent with section 304 of this Act.

(3) TRANSMITTAL OF LIST.--No later than one year after the date of enactment of this title, the Secretary shall transmit to the Congress the list of priority coastal wetlands restoration projects required by paragraph (1) of this subsection. Thereafter, the list shall be updated annually by the Task Force members and transmitted by the Secretary to the Congress as part of the President's annual budget submission. Annual transmittals of the list to the Congress

shall include a status report on each project and a statement from the Secretary of the Treasury indicating the amounts available for expenditure to carry out this title.

(4) LIST OF CONTENTS.--

(A) AREA IDENTIFICATION; PROJECT DESCRIPTION--The list of priority coastal wetlands restoration projects shall include, but not be limited to--

(i) identification, by map or other means, of the coastal area to be covered by the coastal wetlands restoration project; and

(ii) a detailed description of each proposed coastal wetlands restoration project including a justification for including such project on the list, the proposed activities to be carried out pursuant to each coastal wetlands restoration project, the benefits to be realized by such project, the identification of the lead Task Force member to undertake each proposed coastal wetlands restoration project and the responsibilities of each other participating Task Force member, an estimated timetable for the completion of each coastal wetlands restoration project, and the estimated cost of each project.

(B) PRE-PLAN.--Prior to the date on which the plan required by subsection (b) of this section becomes effective, such list shall include only those coastal wetlands restoration projects that can be substantially completed during a five-year period commencing on the date the project is placed on the list.

(C) Subsequent to the date on which the plan required by subsection (b) of this section becomes effective, such list shall include only those coastal wetlands restoration projects that have been identified in such plan.

(5) FUNDING.--The Secretary shall, with the funds made available in accordance with section 306 of this title, allocate funds among the members of the Task Force based on the need for such funds and such other factors as the Task Force deems appropriate to carry out the purposes of this subsection.

(b) FEDERAL AND STATE PROJECT PLANNING.--

(1) PLAN PREPARATION.--The Task Force shall prepare a plan to identify coastal wetlands restoration projects, in order of priority, based on the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing the long-term conservation of coastal wetlands, taking into account the quality of such coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration. Such restoration plan shall be completed within three years from the date of enactment of this title.

(2) PURPOSE OF THE PLAN.--The purpose of the restoration plan is to develop a comprehensive approach to restore and prevent the loss of, coastal wetlands in Louisiana. Such plan shall

coordinate and integrate coastal wetlands restoration projects in a manner that will ensure the long-term conservation of the coastal wetlands of Louisiana.

(3) INTEGRATION OF EXISTING PLANS.--In developing the restoration plan, the Task Force shall seek to integrate the "Louisiana Comprehensive Coastal Wetlands Feasibility Study" conducted by the Secretary of the Army and the "Coastal Wetlands Conservation and Restoration Plan" prepared by the State of Louisiana's Wetlands Conservation and Restoration Task Force.

(4) ELEMENTS OF THE PLAN.--The restoration plan developed pursuant to this subsection shall include--

(A) identification of the entire area in the State that contains coastal wetlands;

(B) identification, by map or other means, of coastal areas in Louisiana in need of coastal wetlands restoration projects;

(C) identification of high priority coastal wetlands restoration projects in Louisiana needed to address the areas identified in subparagraph (B) and that would provide for the long-term conservation of restored wetlands and dependent fish and wildlife populations;

(D) a listing of such coastal wetlands restoration projects, in order of priority, to be submitted annually, incorporating any project identified previously in lists produced and submitted under subsection (a) of this section;

(E) a detailed description of each proposed coastal wetlands restoration project, including a justification for including such project on the list;

(F) the proposed activities to be carried out pursuant to each coastal wetlands restoration project;

(G) the benefits to be realized by each such project;

(H) an estimated timetable for completion of each coastal wetlands restoration project;

(I) an estimate of the cost of each coastal wetlands restoration project;

(J) identification of a lead Task Force member to undertake each proposed coastal wetlands restoration project listed in the plan;

(K) consultation with the public and provision for public review during development of the plan; and

(L) evaluation of the effectiveness of each coastal wetlands restoration project in achieving long-term solutions to arresting coastal wetlands loss in Louisiana.

(5) PLAN MODIFICATION.--The Task Force may modify the restoration plan from time to time as necessary to carry out the purposes of this section.

(6) PLAN SUBMISSION.--Upon completion of the restoration plan, the Secretary shall submit the plan to the Congress. The restoration plan shall become effective ninety days after the date of its submission to the Congress.

(7) PLAN EVALUATION.--Not less than three years after the completion and submission of the restoration plan required by this subsection and at least every three years thereafter, the Task Force shall provide a report to the Congress containing a scientific evaluation of the effectiveness of the coastal wetlands restoration projects carried out under the plan in creating, restoring, protecting and enhancing coastal wetlands in Louisiana.

(c) COASTAL WETLANDS RESTORATION PROJECT BENEFITS.--Where such a determination is required under applicable law, the net ecological, aesthetic, and cultural benefits, together with the economic benefits, shall be deemed to exceed the costs of any coastal wetlands restoration project within the State which the Task Force finds to contribute significantly to wetlands restoration.

(d) CONSISTENCY.--(1) In implementing, maintaining, modifying, or rehabilitating navigation, flood control or irrigation projects, other than emergency actions, under other authorities, the Secretary, in consultation with the Director and the Administrator, shall ensure that such actions are consistent with the purposes of the restoration plan submitted pursuant to this section.

(2) At the request of the Governor of the State of Louisiana, the Secretary of Commerce shall approve the plan as an amendment to the State's coastal zone management program approved under section 306 of the Coastal Zone Management Act of 1972 (16 U.S.C. 1455).

(e) FUNDING OF WETLANDS RESTORATION PROJECTS.--The Secretary shall, with the funds made available in accordance with this title, allocate such funds among the members of the Task Force to carry out coastal wetlands restoration projects in accordance with the priorities set forth in the list transmitted in accordance with this section. The Secretary shall not fund a coastal wetlands restoration project unless that project is subject to such terms and conditions as necessary to ensure that wetlands restored, enhanced or managed through that project will be administered for the long-term conservation of such lands and waters and dependent fish and wildlife populations.

(f) COST-SHARING.--

(1) FEDERAL SHARE.--Amounts made available in accordance with section 306 of this title to carry out coastal wetlands restoration projects under this title shall provide 75 percent of the cost of such projects.

(2) FEDERAL SHARE UPON CONSERVATION PLAN APPROVAL.--Notwithstanding the previous paragraph, if the State develops a Coastal Wetlands Conservation Plan pursuant to this title, and such conservation plan is approved pursuant to section 304 of this title, amounts made available in accordance with section 306 of this title for any coastal wetlands restoration project under this section shall be 85 percent of the cost of the project. In the event that the Secretary, the Director, and the Administrator jointly determine that the State is not taking reasonable steps to implement and administer a conservation plan developed and approved pursuant to this

title, amounts made available in accordance with section 306 of this title for any coastal wetlands restoration project shall revert to 75 percent of the cost of the project: Provided, however, that such reversion to the lower cost share level shall not occur until the Governor, has been provided notice of, and opportunity for hearing on, any such determination by the Secretary, the Director, and Administrator, and the State has been given ninety days from such notice or hearing to take corrective action.

(3) FORM OF STATE SHARE.--The share of the cost required of the State shall be from a non-Federal source. Such State share shall consist of a cash contribution of not less than 5 percent of the cost of the project. The balance of such State share may take the form of lands, easements, or right-of-way, or any other form of in-kind contribution determined to be appropriate by the lead Task Force member.

(4) Paragraphs (1), (2), and (3) of this subsection shall not affect the existing cost-sharing agreements for the following projects: Caernarvon Freshwater Diversion, Davis Pond Freshwater Diversion, and Bonnet Carre Freshwater Diversion.

SEC. 304. LOUISIANA COASTAL WETLANDS CONSERVATION PLANNING.

(a) DEVELOPMENT OF CONSERVATION PLAN.--

(1) AGREEMENT.--The Secretary, the Director, and the Administrator are directed to enter into an agreement with the Governor, as set forth in paragraph (2) of this subsection, upon notification of the Governor's willingness to enter into such agreement.

(2) TERMS OF AGREEMENT.--

(A) Upon receiving notification pursuant to paragraph (1) of this subsection, the Secretary, the Director, and the Administrator shall promptly enter into an agreement (hereafter in this section referred to as the "agreement") with the State under the terms set forth in subparagraph (B) of this paragraph.

(B) The agreement shall--

(i) set forth a process by which the State agrees to develop, in accordance with this section, a coastal wetlands conservation plan (hereafter in this section referred to as the "conservation plan");

(ii) designate a single agency of the State to develop the conservation plan;

(iii) assure an opportunity for participation in the development of the conservation plan, during the planning period, by the public and by Federal and State agencies;

(iv) obligate the State, not later than three years after the date of signing the agreement, unless extended by the parties thereto, to submit the conservation plan to the Secretary, the

Director, and the Administrator for their approval;
and

(v) upon approval of the conservation plan, obligate the State to implement the conservation plan.

(3) GRANTS AND ASSISTANCE.--Upon the date of signing the agreement--

(A) the Administrator shall, in consultation with the Director, with the funds made available in accordance with section 306 of this title, make grants during the development of the conservation plan to assist the designated State agency in developing such plan. Such grants shall not exceed 75 percent of the cost of developing the plan; and

(B) the Secretary, the Director, and the Administrator shall provide technical assistance to the State to assist it in the development of the plan.

(b) CONSERVATION PLAN GOAL.--If a conservation plan is developed pursuant to this section, it shall have a goal of achieving no net loss of wetlands in the coastal areas of Louisiana as a result of development activities initiated subsequent to approval of the plan, exclusive of any wetlands gains achieved through implementation of the preceding section of this title.

(c) ELEMENTS OF CONSERVATION PLAN.--The conservation plan authorized by this section shall include--

(1) identification of the entire coastal area in the State that contains coastal wetlands;

(2) designation of a single State agency with the responsibility for implementing and enforcing the plan;

(3) identification of measures that the State shall take in addition to existing Federal authority to achieve a goal of no net loss of wetlands as a result of development activities, exclusive of any wetlands gains achieved through implementation of the preceding section of this title;

(4) a system that the State shall implement to account for gains and losses of coastal wetlands within coastal areas for purposes of evaluating the degree to which the goal of no net loss of wetlands as a result of development activities in such wetlands or other waters has been attained;

(5) satisfactory assurance that the State will have adequate personnel, funding, and authority to implement the plan;

(6) a program to be carried out by the State for the purpose of educating the public concerning the necessity to conserve wetlands;

(7) a program to encourage the use of technology by persons engaged in development activities that will result in negligible impact on wetlands; and

(8) a program for the review, evaluation, and identification of regulatory and nonregulatory options that will be adopted by the State to encourage and assist private owners of wetlands to continue to maintain those lands as wetlands.

(d) APPROVAL OF CONSERVATION PLAN.--

(1) IN GENERAL.--If the Governor submits a conservation plan to the Secretary, the Director, and the Administrator for their approval, the Secretary, the Director, and the Administrator shall, within one hundred and eighty days following receipt of such plan, approve or disapprove it.

(2) APPROVAL CRITERIA.--The Secretary, the Director, and the Administrator shall approve a conservation plan submitted by the Governor, if they determine that -

(A) the State has adequate authority to fully implement all provisions of such a plan;

(B) such a plan is adequate to attain the goal of no net loss of coastal wetlands as a result of development activities and complies with the other requirements of this section; and

(C) the plan was developed in accordance with terms of the agreement set forth in subsection (a) of this section.

(e) MODIFICATION OF CONSERVATION PLAN.--

(1) NONCOMPLIANCE.--If the Secretary, the Director, and the Administrator determine that a conservation plan submitted by the Governor does not comply with the requirements of subsection (d) of this section, they shall submit to the Governor a statement explaining why the plan is not in compliance and how the plan should be changed to be in compliance.

(2) RECONSIDERATION.--If the Governor submits a modified conservation plan to the Secretary, the Director, and the Administrator for their reconsideration, the Secretary, the Director, and Administrator shall have ninety days to determine whether the modifications are sufficient to bring the plan into compliance with requirements of subsection (d) of this section.

(3) APPROVAL OF MODIFIED PLAN.--If the Secretary, the Director, and the Administrator fail to approve or disapprove the conservation plan, as modified, within the ninety-day period following the date on which it was submitted to them by the Governor, such plan, as modified, shall be deemed to be approved effective upon the expiration of such ninety-day period.

(f) AMENDMENTS TO CONSERVATION PLAN.--If the Governor amends the conservation plan approved under this section, any such amended plan shall be considered a new plan and shall be subject to the requirements of this section; except that minor changes to such plan shall not be subject to the requirements of this section.

(g) IMPLEMENTATION OF CONSERVATION PLAN.--A conservation plan approved under this section shall be implemented as provided therein.

(h) FEDERAL OVERSIGHT.--

(1) INITIAL REPORT TO CONGRESS.--Within one hundred and eighty days after entering into the agreement required under subsection (a) of this section, the Secretary, the Director, and the Administrator shall report to the Congress as to the status of a conservation plan approved under this section and the progress of the State in carrying out such a plan, including and accounting, as required under subsection (c) of

this section, of the gains and losses of coastal wetlands as a result of development activities.

(2) REPORT TO CONGRESS.--Twenty-four months after the initial one hundred and eighty day period set forth in paragraph (1), and at the end of each twenty-four-month period thereafter, the Secretary, the Director, and the Administrator shall, report to the Congress on the status of the conservation plan and provide an evaluation of the effectiveness of the plan in meeting the goal of this section.

SEC. 305 NATIONAL COASTAL WETLANDS CONSERVATION GRANTS.

(a) MATCHING GRANTS.--The Director shall, with the funds made available in accordance with the next following section of this title, make matching grants to any coastal State to carry out coastal wetlands conservation projects from funds made available for that purpose.

(b) PRIORITY.--Subject to the cost-sharing requirements of this section, the Director may grant or otherwise provide any matching moneys to any coastal State which submits a proposal substantial in character and design to carry out a coastal wetlands conservation project. In awarding such matching grants, the Director shall give priority to coastal wetlands conservation projects that are--

(1) consistent with the National Wetlands Priority Conservation Plan developed under section 301 of the Emergency Wetlands Resources Act (16 U.S.C. 3921); and

(2) in coastal States that have established dedicated funding for programs to acquire coastal wetlands, natural areas and open spaces. In addition, priority consideration shall be given to coastal wetlands conservation projects in maritime forests on coastal barrier islands.

(c) CONDITIONS.--The Director may only grant or otherwise provide matching moneys to a coastal State for purposes of carrying out a coastal wetlands conservation project if the grant or provision is subject to terms and conditions that will ensure that any real property interest acquired in whole or in part, or enhanced, managed, or restored with such moneys will be administered for the long-term conservation of such lands and waters and the fish and wildlife dependent thereon.

(d) COST-SHARING.--

(1) FEDERAL SHARE.--Grants to coastal States of matching moneys by the Director for any fiscal year to carry out coastal wetlands conservation projects shall be used for the payment of not to exceed 50 percent of the total costs of such projects: except that such matching moneys may be used for payment of not to exceed 75 percent of the costs of such projects if a coastal State has established a trust fund, from which the principal is not spent, for the purpose of acquiring coastal wetlands, other natural area or open spaces.

(2) FORM OF STATE SHARE.--The matching moneys required of a coastal State to carry out a coastal wetlands conservation project shall be derived from a non-Federal source.

(3) IN-KIND CONTRIBUTIONS.--In addition to cash outlays and payments, in-kind contributions of property or personnel services by non-Federal interests for activities under this section may be used for the non-Federal share of the cost of those activities.

(e) PARTIAL PAYMENTS.--

(1) The Director may from time to time make matching payments to carry out coastal wetlands conservation projects as such projects progress, but such payments, including previous payments, if any, shall not be more than the Federal pro rata share of any such project in conformity with subsection (d) of this section.

(2) The Director may enter into agreements to make matching payments on an initial portion of a coastal wetlands conservation project and to agree to make payments on the remaining Federal share of the costs of such project from subsequent moneys if and when they become available. The liability of the United States under such an agreement is contingent upon the continued availability of funds for the purpose of this section.

(f) WETLANDS ASSESSMENT.--The Director shall, with the funds made available in accordance with the next following section of this title, direct the U.S. Fish and Wildlife Service's National Wetlands Inventory to update and digitize wetlands maps in the State of Texas and to conduct an assessment of the status, condition, and trends of wetlands in that State.

SEC. 306. DISTRIBUTION OF APPROPRIATIONS.

(a) PRIORITY PROJECT AND CONSERVATION PLANNING EXPENDITURES.--Of the total amount appropriated during a given fiscal year to carry out this title, 70 percent, not to exceed \$70,000,000, shall be available, and shall remain available until expended, for the purposes of making expenditures--

(1) not to exceed the aggregate amount of \$5,000,000 annually to assist the Task Force in the preparation of the list required under this title and the plan required under this title, including preparation of--

- (A) preliminary assessments;
- (B) general or site-specific inventories;
- (C) reconnaissance, engineering or other studies;
- (D) preliminary design work; and

(E) such other studies as may be necessary to identify and evaluate the feasibility of coastal wetlands restoration projects;

(2) to carry out coastal wetlands restoration projects in accordance with the priorities set forth on the list prepared under this title;

(3) to carry out wetlands restoration projects in accordance with the priorities set forth in the restoration plan prepared under this title;

(4) to make grants not to exceed \$2,500,000 annually or \$10,000,000 in total, to assist the agency designated by the

State in development of the Coastal Wetlands Conservation Plan pursuant to this title.

(b) COASTAL WETLANDS CONSERVATION GRANTS.--Of the total amount appropriated during a given fiscal year to carry out this title, 15 percent, not to exceed \$15,000,000 shall be available, and shall remain available to the Director, for purposes of making grants--

(1) to any coastal State, except States eligible to receive funding under section 306(a), to carry out coastal wetlands conservation projects in accordance with section 305 of this title; and

(2) in the amount of \$2,500,000 in total for an assessment of the status, condition, and trends of wetlands in the State of Texas.

(c) NORTH AMERICAN WETLANDS CONSERVATION.--Of the total amount appropriated during a given fiscal year to carry out this title, 15 percent, not to exceed \$15,000,000, shall be available to, and shall remain available until expended by, the Secretary of the Interior for allocation to carry out wetlands conservation projects in any coastal State under section 8 of the North American Wetlands Conservation Act (Public Law 101-233, 103 Stat. 1968, December 13, 1989).

SEC. 307. GENERAL PROVISIONS.

(a) ADDITIONAL AUTHORITY FOR THE CORPS OF ENGINEERS.--The Secretary is authorized to carry out projects for the protection, restoration, or enhancement of aquatic and associated ecosystems, including projects for the protection, restoration, or creation of wetlands and coastal ecosystems. In carrying out such projects, the Secretary shall give such projects equal consideration with projects relating to irrigation, navigation, or flood control.

(b) STUDY.--The Secretary is hereby authorized and directed to study the feasibility of modifying the operation of existing navigation and flood control projects to allow for an increase in the share of the Mississippi River flows and sediment sent down the Atchafalaya River for purposes of land building and wetlands nourishment.

SEC. 308. CONFORMING AMENDMENT.

16 U.S.C. 777c is amended by adding the following after the first sentence: "The Secretary shall distribute 18 per centum of each annual appropriation made in accordance with the provisions of section 777b of this title as provided in the Coastal Wetlands Planning, Protection and Restoration Act: Provided, That, notwithstanding the provisions of section 777b, such sums shall remain available to carry out such Act through fiscal. year 1999."

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25TH ANNIVERSARY INVITED PAPER

System Functioning as a Basis for Sustainable Management of Deltaic Ecosystems

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Deltas are very important ecologically and economically, and much of the world's coastal wetlands are located in deltas. These areas are in crisis because various human impacts have led to deterioration of deltas. In this article, we address the functioning of deltas, human impacts in deltas, and the concept of sustainable management of deltas. It is implicit in this discussion that only management that is based on the functioning of deltas is sustainable.

In spite of sea-level rise and subsidence, deltas have greatly increased in area because of riverine sediment delivery over the past several thousand years. Recently, human impacts have altered natural pulsing energies and sediment distribution. It is clear that deltas are not being managed in a sustainable manner and there is a need to move toward more sustainable management. Such management must be based on a carefully controlled return to the natural functioning of deltas by utilizing, rather than diminishing, beneficial natural pulsing energies. We propose ways to

Many of the ideas for this article were stimulated by work in the Mississippi, Grijalva-Usumacinta, Rhone, Po, Ebro, and Rhine deltas. This work benefited from discussions with a number of colleagues, including Carles Ibañez, Didier Pont, Donald Cahoon, Denise Reed, Alejandro Yáñez-Arancibia, Paul Kemp, Joseph Suhayda, Robert Costanza, Philippe Hensen, and David Tilley. Research findings on which this article is based were supported by a number of agencies, including Louisiana Sea Grant Program, Environmental Protection Agency, Corps of Engineers, U.S. Geological Survey, the French National Program of Coastal Oceanography, the Fulbright Program, and the EC Environmental Research Programme "Climatology and Natural Hazards": MEDDEL, Impact of Climate Change on Northwestern Mediterranean Deltas (Contract EV5V-CT94-0465).

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determine if deltas are geomorphically, ecologically, and economically sustainable. The article is concluded with an EMergy analysis to holistically test for deltaic sustainability.

Keywords delta, management, pulsing, sea-level rise, sustainability

Deltas are important ecologically and economically; most of the world's coastal wetlands are located in deltas. These areas, however, are in crisis because various human impacts have led to their deterioration. Activities such as the construction of dams, impoundments, dikes, and canals; water and mineral extraction; and habitat destruction have led to such problems as enhanced subsidence and reduced accretion, salinity intrusion, water quality deterioration, and decreased biological production. In this paper, the authors will address the functioning of deltas, human impacts in deltas, and the concept of sustainable management of deltas. It is implicit in this discussion that only management which is based on the functioning of deltas is sustainable.

From a geomorphological point of view, deltas can be considered as one endpoint in the continuum of coastal systems, which includes deltas, estuaries, and coastal lagoons (Kjerfve, 1989). Deltas are riverine dominated systems, while lagoons are marine dominated, with estuaries intermediate between the two. The primary forces shaping deltas are riverine input and the forces governing the deposition of riverine sediments. Deltas are generally characterized by broad expanses of near-sea-level wetlands and shallow water bodies.

It is important to understand that present day deltas, and other coastal systems, are relatively young geologically. At the height of the last glaciation about 15,000 years ago, sea level was more than 100 m lower than it is today. With the melting of the glaciers, sea level rose, reaching nearly its present level about 5,000 years ago. Since that time sea level has fluctuated within a few meters of its present level. All coastal systems as we know them today were formed during the past 5,000 years, and deltas were formed over this period as their rivers successively occupied different channels and filled shallow coastal waters. Thus, deltas are the result of strong interactions with rivers and the sea, with riverine influence generally dominant over marine forces. The effects of human activities have been to upset the balance and to isolate, often to a considerable extent, the delta from the river and the sea. Most rivers have also been dammed, resulting in a reduction in the amount of freshwater and sediments reaching the delta.

The Concept of Sustainability and Sustainable Management of Deltas

What is *sustainability*? The Brundtland Report, *Our Common Future*, marked the first time the international community embraced sustainable development as a goal for the future. Defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development [WCED], 1987), this politically acclaimed definition spawned many other international efforts, bodies, and commissions such as the 1992 Rio Summit that produced the Convention of Biodiversity (United Nations Conference on Environment and Development [UNEP], 1992). As best expressed by Goodland and Daly (1996), the concept of "[s]ustainability arose from the recognition that the profligate and inequitable nature of current patterns of development, when projected

into the not too distant future, leads to biophysical impossibilities. The transition to sustainability is urgent because the deterioration of global life support systems—the environment—imposes a time limit.”

There is evidence that global environmental health is declining, with global warming due to burning of fossil fuels, the decline of the ozone shield, and land degradation due to soil erosion, salination, and desertification. It is estimated that at least 35% of the earth's land is degraded and has exceeded its regenerative capacity. Biodiversity is also threatened; at least 55% of rain forests have been destroyed (Goodland, 1991). In terms of primary productivity, human activities consume approximately 40% of the net primary photosynthesis of terrestrial producers (Vitousek et al., 1986).

While international bodies and commissions are the appropriate vehicles to espouse global objectives, sustainability remains an elusive term that provides little firm guidance to local and regional decision makers who must decide which policies are to be implemented and thus will ultimately affect sustainability. The immediate challenge is to determine what sustainability means in the context of local environments; in this case, deltas. Without this guidance, deltaic environments will suffer from piecemeal decision making and will fall victim to the “tyranny of small decisions” (W. E. Odum, 1982).

While the concept of environmental sustainability is grounded in the biological concepts of carrying capacity and sustainable yield, there is a fundamental difference in scope and scale. *Carrying capacity* refers to the maximal population size of a given species that an area can support without reducing its ability to support the same species in the future (Daily & Ehrlich, 1992, 1996). *Sustainable yield* usually refers to a particular population or resource being harvested and is utilized to determine the optimal level of harvesting. *Environmental sustainability*, however, expands the reference populations and resources to include all the natural resource services in an ecosystem. The goal of environmental sustainability is to maintain the crucial environmental sink and source functions that ensure long-term survival (Goodland & Daly, 1996). This implies that in the case of deltas where the natural resource services are dependent on dynamic pulsing cycles, environmental sustainability necessitates accommodation of these events in management strategies. Past efforts to harness deltaic environments with levees, canals, and impoundments have led to the deterioration of deltaic resources.

Economic incentives are necessary to change the current patterns of production (O'Neill, 1996). In order to achieve environmental sustainability, current methods of evaluating contributions of natural resources to the human economy need to be reevaluated. The current accounting system looks at inputs and outputs of goods and services as if they are separate from the environment from which they are derived. The alternative is to view natural resources as what ecological economists (see Costanza, 1991; Daily & Ehrlich, 1996; Daly, 1991) term “natural capital.” This category includes the basic parameters necessary for any ecosystem, such as soil, water, and flora and fauna. Economic activity based on depleting these resources should not count as income. Rather, rates of harvest and waste generation should be based on regenerative and assimilative capacities, respectively, and be included in economic assessments, thereby maintaining source and sink functions (Costanza, 1996). Later in this paper, the authors analyze several approaches to quantifying sustainability.

Goodland and Daly (1996) further expanded this concept by creating the category of cultivated natural capital that encompasses enhancement of natural production by means of agriculture or intensified livestock production. This enhancement is done with operating costs traditionally not factored into economic analyses. In the case of agriculture, costs include traditional capital expenses such as tractors, diesel irrigation pumps,

and chemical fertilizers, and most importantly, natural capital such as topsoil, sunlight, and water. This suggests that for delta management, the natural capital of river water, sediments, and nutrients should be part of an economic analysis.

Deltas are dynamic systems that are constantly in flux. While some of the pulses are minor and others are major, all are critical to the health of the ecosystem. Alterations that undermine sediment supply and transport will inevitably lead to a loss of sustainability and to the decline of the delta. Critical functions of a delta will be lost when the ecosystem shifts to an unsustainable level of production if economic activities reduce important pulsing functions. Environmental sustainability of deltas requires management of a wide range of fluxes. As stated by Jansson and Jansson (1994), "[t]he dynamic behavior of the ecosystems has to be respected as a basic rule in human affairs." The wide range of fluxes in deltas calls for the ability to respond adaptively; hence, preservation of these functions is most crucial to sustainability. Thus, utilizing natural pulsing energies reduces the economic costs associated with trying to maintain both human and natural habitats in deltas.

Objectives and Hypotheses

In this article, we define, in a quantitative manner, sustainability in deltaic systems which is based on the fundamental functioning of deltas. We hypothesize that deltaic sustainability can be defined and quantified using geomorphic, ecological, and economic bases, and that deltas can be managed in a sustainable manner only if natural energetic events are used in their proper spatial-temporal scales.

1. From a geomorphological point of view, we hypothesize that a deltaic landscape is sustainable if the rate of vertical accretion and surface elevation gain is greater than or equal to the rate of relative sea-level rise (RSLR). Deltas can be managed to withstand a moderate acceleration of sea-level rise by increasing accretion. By enhancing the delta's ability to withstand sea-level rise, ecosystem functioning will be enhanced (in terms of primary productivity, fisheries, and material processing).
2. From an ecological point of view, we hypothesize that a delta is sustainable if change in total net primary productivity (NPP) over the long term is greater than or equal to zero. Under natural conditions, deltaic NPP is maintained within an equilibrium range based on the total area of the delta and the relative proportions of different habitat types. Both reclamation of wetlands and conversion of wetlands to open water will generally result in lower NPP because of the high productivity of wetlands. It is likely that most deltas have experienced decreasing NPP over time and we will analyze various management scenarios that stop this decrease and possibly increase NPP toward the optimum equilibrium range.
3. From an economic point of view, we hypothesize that a delta is sustainable if the output of economic goods and services is greater than the economic inputs or subsidies required for production.

Natural Functioning of Deltas: Pulse Subsidized Sustainability

General Conceptual Model of Deltaic Functioning

A generalized model of the ecological functioning of typical deltas in a natural state is presented in Figure 1. One of the purposes of this model is to diagrammatically present

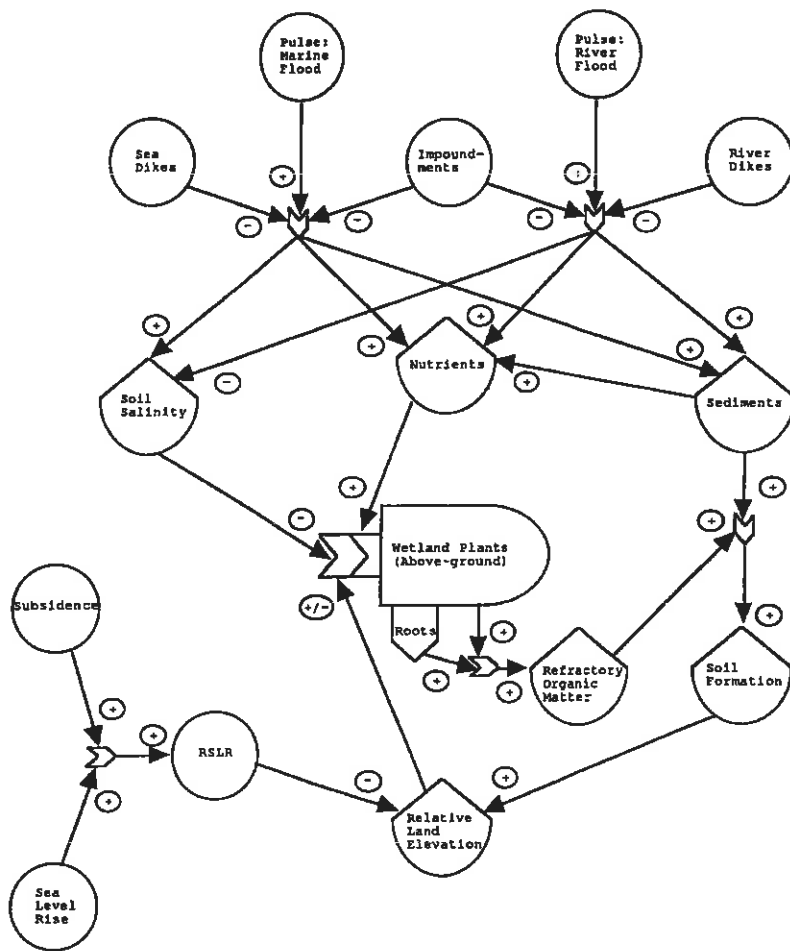


Figure 1. Conceptual model of deltaic functioning. The model shows how natural pulses of freshwater, nutrients, and sediments enhance productivity and soil formation, and buffer against relative sea-level rise (RSLR). Soil formation is broken down into inorganic and organic fractions, and organic matter production depends on relative land elevation, a balance between RSLR and soil formation. The symbols + and - indicate whether interactions are positive or negative. (From J. W. Day et al., 1995.)

the hypothesis of the relationship between overall deltaic functioning and energetic inputs. The focus is mainly on the annual cycle of riverine flooding. In the natural state, deltas are broad areas of near-sea-level wetlands interlaced with channels through which freshwater and seawater mix. Each year, the river flood supplies a pulse of freshwater, suspended sediments, inorganic nutrients, and organic materials. These stimulate primary and secondary production. Increased plant production leads to higher rates of food production for consumers and to increased organic soil formation. Sediments and nutrients fertilize wetland plants. Freshwater input also maintains a salinity gradient from fresh to saline that creates estuarine conditions and supports a high diversity of wetland and aquatic habitats which are optimal for estuarine species. The increased area and

productivity of wetlands resulting from riverine input lead to higher secondary production of fisheries and wildlife. Wetlands also assimilate and process nutrients. This leads to higher wetland productivity and lessens water quality problems. The relationship between riverine input and the productivity of estuaries has been demonstrated by a number of authors (Boynton et al., 1982; Cadee, 1986; Moore et al., 1970; Nixon, 1982). Over the longer term, rising water levels due to a combination of subsidence and eustatic sea-level rise poses particular problems for deltas. This is addressed in the following section.

Subsidence, Relative Sea-Level Rise, and the Functioning of Deltas

Deltas are particularly sensitive to sea-level rise. As indicated above, subsidence in deltas leads to an RSLR rate which is often much greater than eustatic rise. For example, while the current rate of eustatic rise is between 1 and 2 mm/yr (Gornitz et al., 1982), the RSLR in the Mississippi delta is in excess of 10 mm/yr; thus, eustatic sea-level increase accounts for only 10–15% of total RSLR in these deltas. The RSLR in the Nile is as high as 5 mm/yr, and is between 2 and 6 mm/yr for the Rhone and Ebro deltas (Baumann et al., 1984; Conner & Day, 1991; Day & Templet, 1989; Ibañez et al., 1996; L'Homer, 1992; L'Homer et al., 1981; Sestini, 1992). Subsidence in deltas results naturally from compaction, consolidation, and dewatering of sediments. Because of the high rate of RSLR, deltas can serve as models for the impacts of accelerated eustatic sea-level rise in other coastal systems (Day & Templet, 1989).

Sinking of the land surface can be caused by factors other than geological subsidence. The sinking rate can be increased locally due to withdrawals of water, oil, and gas. Perhaps the most well-known example is that of Venice where groundwater withdrawal between 1930 and 1970 led to an RSLR of 24 cm, about half of which was due to groundwater withdrawals (Bondesan et al., 1995; Sestini, 1992). Natural gas withdrawal led to high subsidence rates in the Po delta and large areas of the delta are more than 2 m below sea level (Sestini, 1992; Figure 2). Drainage of wetlands also can lead to subsidence rates due to oxidation of soil organic matter which are much greater than geologic subsidence rates. There have been enhanced rates of subsidence in the Rhine and Sacramento deltas because of soil oxidation. In the Sacramento delta, for example, over 100,000 ha of reed swamp have been drained for agriculture and are now constantly pumped (Newmarch, 1981; Weir, 1950). Initial subsidence rates were greater than 20 cm/yr, and it is predicted that after 100 years the rate will be 3.2 cm/yr. In the Mississippi delta, initial rates of subsidence in drained wetlands were on the order of 10 cm/yr (Okey, 1918).

If wetlands in deltas do not accrete vertically at a rate equal to the rate of RSLR, they will become stressed due to waterlogging and salt stress, and ultimately will disappear (Mendelssohn & McKee, 1988). Current evidence indicates that water-level rise (due to both eustatic rise and subsidence) is leading to wetland loss, coastal erosion, and saltwater intrusion in a number of coastal areas (Clark, 1986; Conner & Day, 1989; Hackney & Cleary, 1987; Kana et al., 1986; Salinas et al., 1986; Sestini, 1992; Stanley, 1988; Stevenson et al., 1988; Templet & Meyer-Arendt, 1988). The relative elevation of the land with respect to sea level is a function of the balance between RSLR and accretion. The rate of accretion is a function of the combination of the inputs of both inorganic and organic material to the soil. Inorganic sediments can come either from the sea or from terrestrial (usually riverine) sources. Organic material is usually from in situ plant production. The higher the inputs of both organic and inorganic material to the

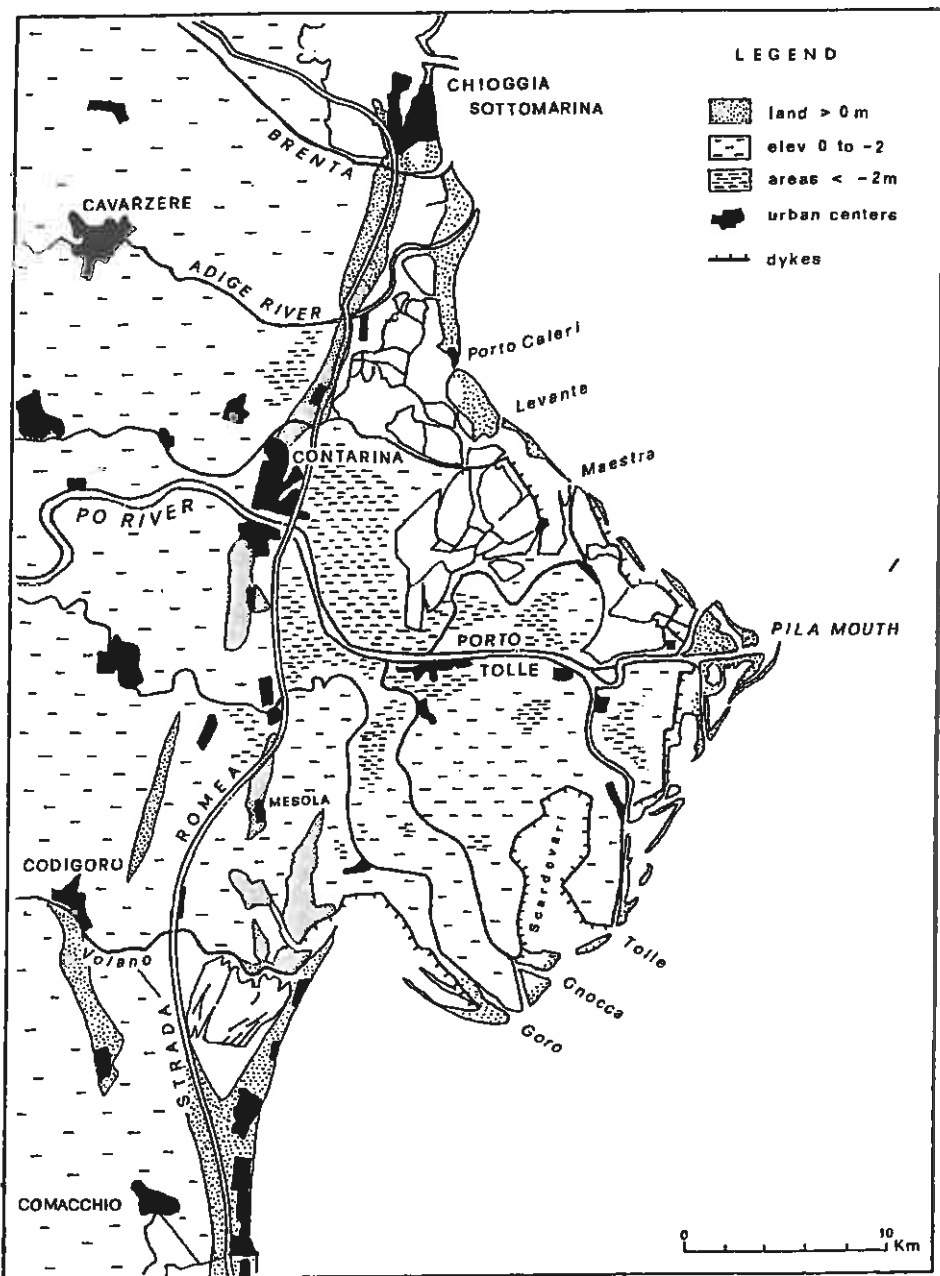


Figure 2. Map of the Po delta in Italy showing areas of the delta which are 2-4 m below sea level because of subsidence due primarily to extraction of shallow reserves of natural gas. This delta is not sustainable without large inputs of outside energy and resources. (From Sestini, 1992.)

soil, the higher is the rate of RSLR which can be tolerated without loss of wetland surface elevation. Therefore, management should attempt to increase both organic soil formation and the input of inorganic sediments. Using river water to bring in sediments also brings nutrients, which enhances organic soil formation. Thus, management to increase the ability of deltas to survive rising water levels also will enhance deltaic functioning in terms of higher productivity.

Coastal managers must now contend with global warming and an acceleration in the rate of rise in sea level which will exacerbate problems associated with rising water levels. The Intergovernmental Panel on Climate Change (IPCC) has recently reviewed the issues of global warming and acceleration of sea-level rise. The IPCC has projected that sea level will likely rise by 21–71 cm by the year 2070, with a best estimate of 44 cm (Wigley & Raper, 1992). There is no conclusive evidence that the rate of sea-level rise has accelerated during this century, but there is some indication that sea-level rise in the twentieth century has been faster than in the previous two centuries (Warrick & Oerlemans, 1990). Most of this rise has been due to an intensification of the factors causing present sea-level rise; thermal expansion of ocean water, and melting of mountain glaciers and the margins of the Greenland ice sheet. Melting of Antarctic ice is not expected to contribute to sea-level rise in the next century. The projected rate of sea-level rise in the twenty-first century is 3–6 times higher than that of the past 100 years.

A Spatial-Temporal Hierarchy of Natural Subsidies

As indicated above, the functioning of deltas is the result of external and internal inputs of energy and materials. These inputs are not constant over time, but occur as pulses, which happen over different spatial and temporal scales (J. W. Day et al., 1995). This type of pulsing is not exclusive to deltas, but applies to many natural systems, especially coastal ecosystems (e.g., *Estuaries*, Vol. 18, 1995). These pulsing events have a hierarchical distribution and produce benefits over different temporal and spatial scales. These energetic events range from daily tides to switching of river channels, which occurs on the order of every 1,000 years, and include storm fronts, normal river floods, strong storms, and great river floods (J. W. Day et al., 1995; Table 1). The primary importance of the infrequent events such as channel switching, great river floods, and very strong storms like hurricanes is in sediment delivery to the delta and major spatial changes in geomorphology. The more frequent events such as annual river floods, seasonal storms, and tidal exchange are also important in maintaining salinity gradients, delivering nutrients, and regulating biological processes.

The major growth cycles of deltas take place through the formation of new delta lobes. A series of overlapping deltaic lobes is an efficient way to distribute sediments and continually build land over the entire coastal plain. Evidence of major changes in a river's route to the sea, which occur approximately every 1,000 years (Roberts et al., 1980), and affect thousands of kilometers, has been documented for many deltaic systems (Figure 3) (Coleman & Wright, 1971; Freeman, 1928; Kazmi, 1984; Ibañez et al., 1997; Stanley & Warne, 1993; Todd & Eliassen, 1938; Tornqvist et al., 1996; Van Andel, 1967; Wells & Coleman, 1984). Channel switching occurs as the existing channel lengthens, the slope decreases, and the channel becomes less efficient. Eventually, the height of the river bed is raised (Freeman, 1928) and the upstream natural levee is breached permanently in favor of a more hydraulically efficient, shorter, and steeper route to the sea. This process is generally pulse dependent as the breaching of the levee takes place during large flood events. Natural river flow is never confined to one

Table 1
Temporal scale of pulsing events in deltaic systems

Event	Timescale	Impact
River switching	1,000 yrs	Deltaic lobe formation Net advance of deltaic landmass
Major river floods	50–100 yrs	Channel switching initiation Crevass splay formation Major deposition
Major storms	5–20 yrs	Major deposition Enhanced production
Average river floods	Annual	Enhanced deposition Freshening (lower salinity) Nutrient input Enhanced 1° and 2° production
Normal storm events (Frontal passage)	Weekly	Enhanced deposition Organism transport Net material transport
Tides	Daily	Drainage/marsh production Low net transport

Modified from J. W. Day et al. (1995).

channel, but generally the primary channel receives on the order of 80% of total discharge with the remainder divided among older distributaries (Gagliano & Becker, 1973), thus ensuring efficient dispersal of sediments over the entire deltaic plain.

Major river floods occur once or twice a century. When conditions are right for channel switching, the major shift in flow between channels normally occurs during great river floods. In addition, these floods are important in delivering major sediment pulses to the delta plain. Both of these processes are exemplified for the Atchafalaya delta in the great flood of 1973 on the Mississippi River (Belt, 1975). Peak discharge for the 1973 flood was $64,051 \text{ m}^3\text{s}^{-1}$ (2,261,000 cfs), compared with a peak discharge of $66,345 \text{ m}^3\text{s}^{-1}$ for the great 1927 flood (U.S. Army Corps of Engineers, 1987). For several decades prior to the 1973 flood, Atchafalaya Bay filled with fine-grained sediments. In 1973, large amounts of coarse sediments were mobilized and the Atchafalaya delta became subaerial for the first time (van Heerden & Roberts, 1980). It is mainly during major floods, such as 1973, that current velocities and bedload are large enough for coarse-grained material to reach a new delta lobe and provide a foundation on which to build land (Roberts et al., 1980). The 1973 flood almost undermined the control structure at Old River that prevents the Atchafalaya from capturing the Mississippi. If the control structure had not been in place, the major portion of the Mississippi probably would have been captured by the Atchafalaya. While every major river flood does not

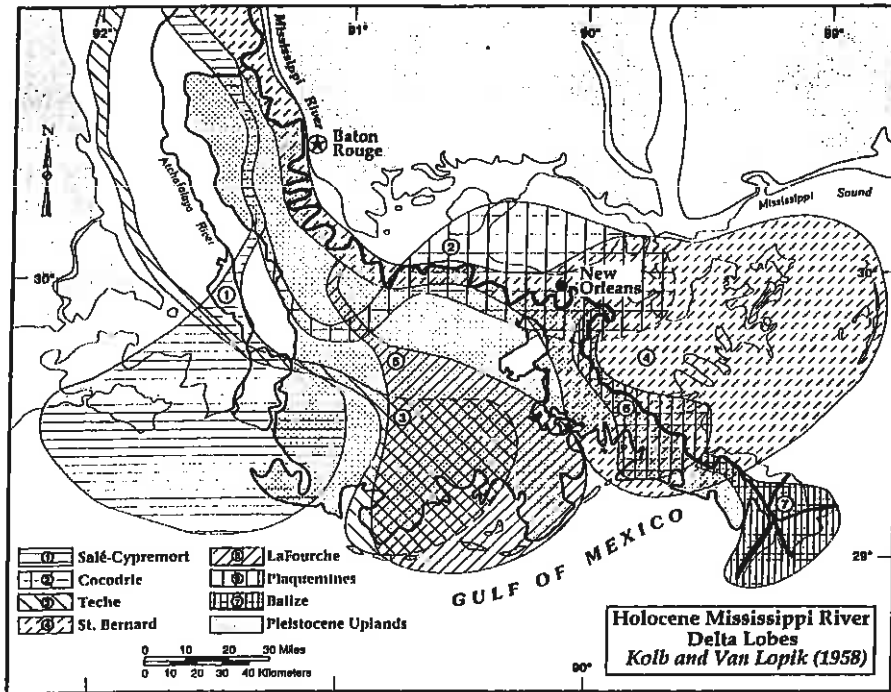


Figure 3. Major deltaic lobes that make up the active delta of the Mississippi River. (Modified from Kolb & Van Lopik, 1958.)

result in channel switching, natural levees normally are breached and large amounts of sediments contribute to the delta plain via overbank flooding at crevasses (Kesel, 1988). In the Ebro delta in Spain, the last major switch in the position of the river mouth occurred during the large flood in 1937 (Ibañez et al., 1996, 1997). The effects of such events are clearly evident in areas affected by floodwaters. In 1993–94, there were two “100-year” floods on the Rhône River. Massive flooding of the upper delta occurred as the levee along the Petit Rhône broke at separate locations during each flood. In sites affected by the escaped river, there was accretion up to 24 mm (Hensel, 1997). Accretion in impounded habitats not impacted by the river was very low, showing that these habitats were largely uncoupled from riverine processes.

Large storms such as hurricanes and typhoons, occurring every 10 to 20 years, are another pulsing mechanism which supplies deltaic wetlands with sediments. Baumann et al. (1984) reported that two tropical storms were responsible for 40% of total accretion over a 5-year period in salt marshes in the Mississippi delta. Cahoon et al. (1995b) reported that during the passage of Hurricane Andrew in 1992, short-term sedimentation rates in Mississippi delta marshes were between 3 and 8 g m⁻² d⁻¹ as compared with rates generally less than 0.5 g m⁻² d⁻¹ during nonstorm periods. Longer term accretion as measured by marker horizons was 2–12 times higher than nonhurricane periods. Storm events resuspend a large quantity of the bottom sediments of coastal bays and the near-shore coastal ocean, and deposit it on coastal wetlands. Strong storms breach barrier islands, but they also mobilize a large volume of sand from offshore and move it in front of beaches, where it is then transported to barrier islands by normal waves and winds.

Yearly river floods are another hierarchical level of the pulses responsible for distributing riverine sediments and freshwater throughout the delta. Similar to major river floods, but to a lesser extent, yearly floods overtop natural levees about 50% of the time and supply a pulse of sediments, nutrients, and freshwater to wetlands. The regularity of these pulses results in an annual, and predictable, reduction of salinity and an input of nutrients throughout the delta. The biota within deltaic systems have adapted to this seasonality, and therefore are dependent on their regular occurrence (J. Day et al., 1989).

Frontal passages associated with storms have been shown to be important in causing sedimentation in deltaic areas of low tidal range (Baumann et al., 1984; Cahoon et al., 1995b; J. W. Day et al., 1995; Hensel, 1997; Reed, 1989; Roberts et al., 1989). Currents generated by winds associated with storm fronts are also important in transporting organisms and organic matter into and out of estuaries. The mixing and transport of nutrients by the daily rise and fall of tides lead to higher biological production and enhanced interaction between wetlands and adjacent water bodies. The rise and fall of the tide allow drainage of wetland sediments and permit fish to use the surface of the marsh for feeding during periods of high tide. Because of this, E. P. Odum (1971) called estuaries "tidally subsidized, fluctuating water level ecosystems."

Ecological and Economic Value of Deltas

It is now well-known that coastal wetlands are ecologically and economically important. Ecologically, coastal wetlands provide a habitat for fish and wildlife, produce food, regulate chemical transformations, improve water quality, store and release water, and buffer storm energy (J. Day et al., 1989). These processes support economically important activities. For example, approximately 60% of the estuaries and marshes of the Gulf of Mexico are located in Louisiana (J. Day et al., 1989). Commercial fishing harvests in 1995 for the State of Louisiana accounted for approximately 81% of the total catch in the Gulf of Mexico and 40% of the market value. The majority of this harvest (76%) was caught within 3 miles of the coast. (National Marine Fisheries Service, Fisheries Statistics Division, 1995). The Gulf of Mexico is one of the most commercially important fishing areas in the United States. Total catch surpasses the entire Atlantic coast (e.g., 1994 landings: 976,000 kg for the Gulf of Mexico vs. 792,000 for Atlantic coast) (NMFS, FSD 1995).

Current wetland estimates for the entire Mississippi delta indicate that there are 963,000 ha of wetlands remaining (National Wetlands Research Center, 1994). These wetlands support a diversity of economic activities vital to local economies. Fishing alone contributes over \$1 billion dollars annually. This includes monies collected from fishing licenses and associated goods and services. Other wetland-related activities, such as ecotourism, hunting, production of wild furs, and alligator harvest, generate well over \$1 billion when associated good and services are incorporated (Table 2). Shrimp production associated with the Grijalva-Terminos delta system in Mexico has a dockside value of about \$150 million per year (Yañez-Arancibia, 1985). Wetlands are therefore very valuable, and much of the world's coastal wetlands occur in deltas. Table 3 shows the area of a number of the major deltas of the world. A considerable portion of this area is, or was, wetlands. A few deltas still are relatively natural, such as the Lena, MacKenzie, and Orinoco, but most deltas have been seriously altered. However, deltaic wetlands still represent one of the most important ecological resources of the planet.

Table 2
Nonfishing wetland dependent sources of income^a

Sources	Income
Waterfowl hunting	\$430 million in 1991
Ecotourism	\$220 million in 1991
Cattle production	\$25 million/per year
Wild furs and hides	\$20 million, 40% of U.S. production/per year
Alligator harvest	\$13.5 million/per year

^aLouisiana Coastal Wetlands Conservation and Restoration Task Force (1993).

Human Impact in Deltas: The Reduction of Pulses and Loss of Sustainability

Human activities have had a pervasive impact on deltaic ecosystems. These impacts most often are classified and discussed in terms of the types which occur. Thus, for example, there are discussions of water quality deterioration in terms of eutrophication and toxic materials; physical alterations such as dredging, channelization, and filling; habitat loss; heat pollution and entrainment by electricity generating stations; declines in fishery populations; and introduction of exotic species (e.g., J. Day et al., 1989). Many solutions have been proposed to deal with these individual impacts. But, from a comprehensive, holistic point of view, human activity has systematically isolated deltas from the river and the sea which sustained them and reduced the inputs of energy and materials at all spatial and temporal scales.

At the longest temporal scale and the broadest spatial scale, channel switching and new delta lobe development have been stopped for many deltas. This has been done using water control structures, closure of minor distributaries, and construction of dikes. In the Mississippi delta, for example, there currently are two functioning distributaries: the lower Mississippi River and the Atchafalaya River, which carries about one-third of the flow of the Mississippi. There were at least four other distributaries which carried significant flows at the beginning of European colonization, but these all have been closed. Crevasse splays from breached levees also have been largely eliminated.

Most important rivers have been dammed, which has reduced floods and resulted in a reduction in the pulses of freshwater and sediments reaching the deltas. The amount of sediment carried in the Nile, Indus, and Ebro has been reduced by over 95%; for the Po, the reduction is about 75%, and for the Rhône and Mississippi, the reduction is greater than 50% (Day & Templet, 1989; Kessel, 1988; L'Homer, 1992; Milliman et al., 1984; Sestini, 1992; Stanley & Warne, 1993; Varela et al., 1983). Reduction of freshwater flood surges and average flow can lead to salinity intrusion, and in arid and semi-arid areas, to hypersalinity which in turn can lead to wetland vegetation death. In the Indus delta, for example, more than 99% of the original quarter million ha of mangroves has disappeared, primarily because of hypersalinity (Snedaker, 1984). Hypersalinity and increased waterlogging due to lack of sedimentation are leading to wetland deterioration in the Rhône delta (D. Pont, personal communication, 1997, Laboratoire d'Ecologie, Arles, France; Hensel et al., 1997).

Within many deltas, the canals, dikes, diversions, and impoundments have isolated large parts of the delta plain from riverine input. River dikes prevent changes in the

Table 3
Area of several major deltas throughout the world^a

Delta	Country	Area of deltaic plain (km ²)
Amazon	Brazil	467,078
Ganges-Brahmaputra	Bangladesh	105,641
Mekong	South Vietnam	93,781
Yangtze-Kiang	China	66,669
Lena	Russia	43,563
Hwang Ho	China	36,272
Indus	Pakistan	29,524
Mississippi	United States	28,568
Volga	Russia	27,224
Orinoco	Venezuela	20,642
Irrawaddy	Burma	20,571
Rhine	The Netherlands	20,000
Niger	Nigeria	19,135
Shatt al Arab	Iraq	18,497
Grijalva/Usumacinta	Mexico	17,028
Po	Italy	13,398
Nile	Egypt	12,512
Red	North Vietnam	11,903
Chao Phraya	Thailand	11,329
Mackenzie	Canada	8,506
Godavari	India	6,322
Paraná	Brazil	5,440
Senegal	Senegal	4,254
Ord	Australia	3,896
Tana	Kenya	3,659
Danube	Romania	2,740
Burdekin	Australia	2,112
Klang	Malaysia	1,817
Rhône	France	1,736
Magdalena	Columbia	1,689
Colville	United States	1,687
Sagavanirktok	United States	1,178
São Francisco	Brazil	734
Ebro	Spain	624

^aWright et al. (1974).

course of the lower river; the development of crevasse splays; and input of riverine freshwater, sediments, and nutrients to the deltaic plain during river floods. Sea dikes and canals, with their associated spoil banks, inhibit water movement into marshes and the deposition of sediments during pulsing events such as coastal storms and frontal passages (Reed, 1992; Swenson & Turner, 1987). Wetland loss rates in the Mississippi delta, for example, are proportional to canal densities (Scaife et al., 1983). Impound-

ments consisting of a system of dikes and water control structures have been shown to reduce tidal exchange and the influx of suspended sediments, lower accretion rates, lower productivity, and reduce the movement of migratory fishes (Boumans & Day, 1994; Cahoon, 1994; Hensel et al., 1997; Reed, 1992; Rogers et al., 1992).

Reclamation of deltaic wetlands and shallow water bodies for agricultural, urban, and industrial development is widespread in deltas and is, in essence, the complete elimination of the energy subsidies which maintain deltas. Practically all of the Nile, Ebro, Po, Rhine, Sacramento, and a number of other deltas has been reclaimed (Ibañez et al. 1997; Knights, 1979; Newmarch, 1981; Sestini, 1992; Stanley, 1988; Stanley & Warner, 1993; Weir, 1950); while in others, such as the Mississippi and Rhône (Corre, 1992; J. W. Day et al., 1995; R. Day et al., 1990; Day & Templet, 1989; Harrison & Kollmorgen, 1948; Tamisier, 1990), large portions have been reclaimed. Reclamation and drainage almost always lead to high rates of subsidence due to soil oxidation so that the reclaimed land sinks below sea level and must permanently be put under pump (Kazmann & Heath, 1968; Knights, 1979; Wagner & Durabb, 1976). Removal of subsurface fluids can greatly increase the rate of subsidence. In the Po delta, for example, extraction of high water content natural gas led to total subsidence of 2–4 m (Sestini, 1992).

Drainage from reclaimed agricultural and developed areas often leads to eutrophication in adjacent waters. This is due to both high nutrient concentrations and changes in hydrology (Ibañez et al., 1997). Under natural conditions, much water flow was through wetlands where nutrient assimilation and transformation took place. Agricultural runoff is normally channelized directly to water bodies. This not only leads to eutrophication of receiving bodies, but also deprives wetlands of nutrients which would increase productivity and organic soil formation, thus helping to decrease accretion.

Management for Sustainability: Reintegrating Natural Subsidies

In order to deal with the problems of deltas, especially within the context of rising water levels, comprehensive management is needed because these problems cannot be solved in a piecemeal way. It is the unorganized, fragmented way that deltas have been managed in the past which has reduced the energy pulses that sustain deltas and given rise to the problems which exist today. Management must take into consideration not only the delta itself, but also the drainage basin. Within the overall context of sustainability, the following specific management needs must be addressed: sediment management, nutrient management, fresh/saline water and hydrological management, and maintenance of habitat quality and quantity.

Sediment Management

Sediment management should include plans for both transport of sediments in the river and retention of suspended sediments within deltas, as well as utilization of dredged sediments whenever possible. Important sources of sediments are river water and resuspended sediments from coastal lakes and bays and those transported shoreward from the nearshore zone. For example, much of the sediments deposited on the surface of coastal marshes in the Mississippi delta are resuspended from bay bottoms or transported from the nearshore area (Baumann et al., 1984; Cahoon et al., 1995b; Reed, 1989). The work of resuspending and transporting these sediments is done by natural forces of wind, waves, and tidal currents. Brush fence baffles have been used in the Dutch Wadden Sea and in the Mississippi delta to encourage settling of suspended sedi-

ments and inhibit resuspension (Boumans, 1994; Schoot & de Jong, 1982). This raises the elevation of the sediment surface, allowing revegetation to occur. Along the north coast of the Netherlands, thousands of hectares of new wetlands have been created using sediment fences. Dredge spoil also should be used to create habitat whenever possible.

As discussed above, the quantity of freshwater reaching deltas and deltaic lagoons has been reduced, and in the case of some rivers (e.g., the Nile, Ebro, and Indus Rivers), the input of sediments and freshwater has been almost completely eliminated. For sustainable management to take place, there likely will have to be some degree of mobilization of the sediments which are now trapped in reservoirs (Wasp et al., 1977). There is a great need for engineering methods to accomplish this, and then to move these segments toward the coastal zone.

Nutrient Management

Enrichment with excess nutrients is leading to eutrophication in many deltaic systems (Nielson & Cronin, 1981; Turner & Rabalais, 1991). Well-designed management to control eutrophication should include plans to reduce the sources of nutrients and to enhance their uptake in coastal wetlands. Management activities such as better agricultural practices, use of vegetation buffer strips along waterways, and use of nonphosphate detergents can reduce nutrient input. Management also should include the use of wetlands and shallow waters to assimilate nutrients at a rate which would increase productivity but lessen the problems of enrichment. The use of wetlands for cleansing water is particularly appropriate in deltas, because there are several possible routes of permanent uptake and reduction of nutrients in runoff water (Breux & Day, 1994). The high rate of subsidence in most deltas provides a mechanism for the burial of materials, and thus a permanent loss pathway. Denitrification is a permanent loss of nitrogen to the atmosphere. Finally, if plants are harvested, then plant uptake is also a permanent loss pathway. It is important that the application rate of nutrients (the loading rate) be managed so that it is equal to the uptake rate (Kadlec & Knight, 1996). If this is done, there will be a balanced and sustainable system. When wetlands are properly managed for nutrient uptake, there are a number of ecological and economic advantages: (1) water quality can be improved, (2) habitat quality and productivity can be increased, (3) accretion can be stimulated, and (4) wetland treatment generally is more economical than traditional methods of treatment. Wetland waste treatment is being used successfully in the Mississippi delta to clean water and increase the productivity of wetlands (Breux & Day, 1994).

Fresh/Saline Water and Hydrological Management

In many deltas, there have been great changes in hydrology leading to alterations in the fresh/saline water balance and changes in the way water flows (J. W. Day et al., 1995; Day & Templet, 1989; Ibañez et al., 1997). In order to maintain and restore wetlands, as well as improve water quality, there needs to be better management of hydrology. This management should include controlling both the amount and timing of water flowing into coastal systems, as well as the pathways of flow within the systems.

As indicated above, many rivers are channeled and diked all the way to the sea. River water should be diverted into deltaic areas to enhance accretion and maintain high productivity, wetland habitat, and low salinity areas. Such freshwater diversions are now being carried out in the Mississippi delta (Day & Templet, 1989). Large-scale diversions already are carried out in many deltas of the world for irrigation purposes and these

could be incorporated into an overall management plan for salinity, sediments, and nutrients. Salinity intrusion often is reduced by the use of barriers which lead to isolation of deltaic systems from marine water. Salinity management uses freshwater to form a buffer against saltwater intrusion and allows the coastal systems to remain open to some extent, thus allowing the movement of fishery species which use brackish water and wetlands as important habitat. This also maintains important energetic pulses originating from the sea, such as storms.

Channelization and construction of canals has led to hydrological changes resulting in more rapid flushing of some water bodies, isolation of wetlands behind spoil deposits, and saltwater intrusion (Boumans & Day, 1994; Swenson & Turner, 1987). Impoundments consisting of a system of dikes and water control structures have been widely used in deltaic and lagoon areas. Studies have shown that these impoundments can reduce the influx of suspended sediments, lower accretion rates, lower wetland productivity, and reduce the movement of migratory marine fishes. Careful planning of canal construction and development of impoundments are necessary if the negative impacts are to be avoided. Care should be taken not to isolate wetlands so that tidal action is maintained. The proper design of systems to deliver freshwater, sediments, and nutrients to deltaic areas will enhance the conservation and productivity of natural habitat. Proper planning also will ensure that there is a diversity of fresh, brackish, and saline habitats including wetlands, submerged vegetation, and open water, which leads to an enhancement of fisheries and wildlife.

Agriculture in Deltas

The sustainability of agriculture in deltas depends on its location and the degree to which it is integrated into the natural functioning of deltas. Agriculture generally exists in two locations in deltas; on the elevated natural levees bordering river channels or in reclaimed wetlands or shallow water bodies. We contend that agriculture on natural levees can be sustainable, while that in reclaimed areas generally cannot. Agriculture which is integrated into the natural functions of a delta utilizes the freshwater, nutrient, and sediment resources of the river to maintain high productivity and accretion rates, and wetlands to filter nutrients and maintain water quality.

There are a number of problems associated with agriculture in reclaimed wetlands and water bodies. Foremost among these is enhanced subsidence. Wetlands generally have a high organic content, and when these soils are exposed to air, the organic matter oxidizes and the remaining soils consolidate. High rates of subsidence have been reported for many areas, including the Sacramento, Rhine, and Mississippi deltas (Knights, 1979; Newmarch, 1981; Okey, 1918). Once reclaimed wetlands subside below sea level, there basically are two options: abandonment or putting the areas permanently under pump. In the Mississippi delta, most of the drained impoundments failed rather quickly due both to subsidence and heavy rainfall during hurricanes (Okey, 1918). These areas are visible today as large rectilinear ponds (Turner & Neill, 1983). Some areas which remain under pump, such as much of metropolitan New Orleans, flood regularly during heavy rains.

Using constant pumping to maintain water levels below natural equilibrium is costly. In the Netherlands, large areas of the Rhine delta have been reclaimed and are now up to 6 m below sea level. The Dutch have used a variety of drainage methods, including low tide drainage, windmills, and electric pumps. Over the centuries, the system has failed repeatedly, with great loss of life and property. To counter this, the Dutch have

continually upgraded the system so that now there is a countrywide drainage system which consumes a considerable portion of the national budget. Much of the Sacramento delta also is maintained below sea level at a considerable expense (Newmarch, 1981). The fringes of the Ebro delta are sinking below sea level and an extensive pumping system is being put in place (Ibañez et al., 1997). Much of the Po delta is 2–4 m below sea level, due to pumping of shallow reserves of natural gas (Sestini, 1992). In the Nile delta, a considerable portion of the eastern part of the delta may become unsuitable for agriculture in the next century, due to subsidence and saltwater intrusion (Stanley & Warne, 1993). For delta management plans to function properly, there should be an appropriate balance of aquatic, wetland, and agricultural habitats. In many deltas, it is likely that some agricultural habitats will have to be converted back to wetland or shallow water habitat. Agricultural areas which are now below sea level and heavily subsidized are good candidates for this.

Holistic Management of Deltas

Management actions for deltas should be part of a holistic strategy which aims to reintegrate the natural subsidies into deltaic functioning. A number of elements of such an approach have been proposed, including construction of salt marshes and tidal flats with dredge material, vegetative plantings, reintroduction of river inflow to deltas for sediments and salinity management, and use of wetlands to reduce nutrient levels. Pethick (1993), Day and Templet (1989), and Templet and Meyer-Arendt (1988) have proposed such holistic management approaches for the southeastern coast of the United Kingdom and the Mississippi delta. Management should anticipate future change, especially accelerated sea level, since coastal wetlands are very sensitive to water-level changes. A reintegration of the natural energy pulses into delta management does not mean that humans cannot continue to utilize delta areas. However, it requires changes in present practices. Navigation, flood control, agriculture, and urban development can coexist in a sustainable delta. But, the approach of confining rivers with continuous levees so that they are isolated from the delta plain must be changed, using other approaches such as diversions and ring levees. What has to change is the large-scale alteration of deltaic hydrology. Features such as canals, spoil banks, and impoundments cannot be placed in a manner so that salinity balances, sediment flows, and wetland drainage are altered to the detriment of the system. In most cases, agriculture in reclaimed wetlands and impoundments probably is not sustainable, except at great cost.

Approaches to Measuring Sustainability

In this final section, we will discuss several tools or approaches which have been used to measure sustainability of deltas. In doing so, we present some results that exemplify both sustainable and nonsustainable management. This should not, however, be considered a comprehensive discussion of ways to quantify sustainability. These should serve as examples, and perhaps, to stimulate further thinking about ways that sustainability can be measured and put into practice.

Geomorphic Sustainability

It is hypothesized that deltaic wetlands are sustainable if the long-term net change in wetland surface elevation is greater than or equal to RSLR. Various techniques are now

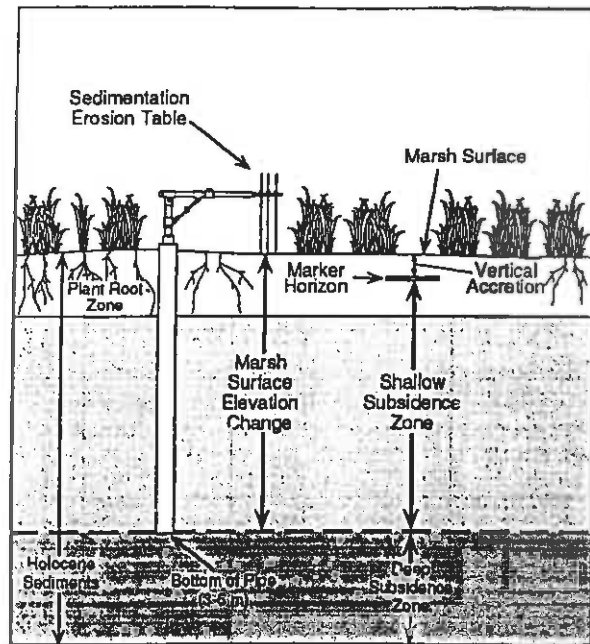


Figure 4. Conceptual diagram showing two important techniques which can be used to measure accretion (marker horizons) and surface elevation change (sedimentation-erosion table [SET]) in deltas to test geomorphic sustainability. The diagram differentiates between those portions of the soil profile being measured by the SET and the marker horizon techniques. The boundary separating the shallow and deep subsidence zones is defined operationally by the bottom of the SET pipe. (From Cahoon et al., 1995a.)

available to directly measure both rates of accretion and surface elevation change. Accretion can be measured as the accumulation of sediments over marker horizons or radioactive markers, and elevation change can be measured with a sedimentation-erosion table (SET) (Boumans & Day, 1993; Cahoon & Turner, 1989). These are shown diagrammatically in Figure 4 (Cahoon et al., 1995b). These rates are then compared to RSLR to determine if the area is sustainable. Cahoon (1994) showed that accretion in an impounded marsh in the Mississippi delta area had accretion rates 10 times lower than natural marshes (Figure 5), indicating that the natural marshes were sustainable while the impounded marshes, where energy pulses had been reduced, were not.

Accretion alone is not always sufficient to determine sustainability. Cahoon et al. (1995a) measured both accretion and surface elevation change in two Mississippi delta marshes, and found that one marsh in an advanced state of deterioration had high accretion rates but no increase in elevation (Figure 6). The soil strength was so weak in this marsh that newly deposited sediments could not be supported. This was in contrast to the other marsh near the river mouth, where accretion and elevation gain were highly correlated. These results show that the deteriorating marsh is not sustainable, but the riverine marsh is, because of regular inputs of riverine sediments. In a similar study, Hensel (1997) used both marker horizons and a SET to show that both accretion and surface elevation change were much higher in riverine marshes compared with impounded

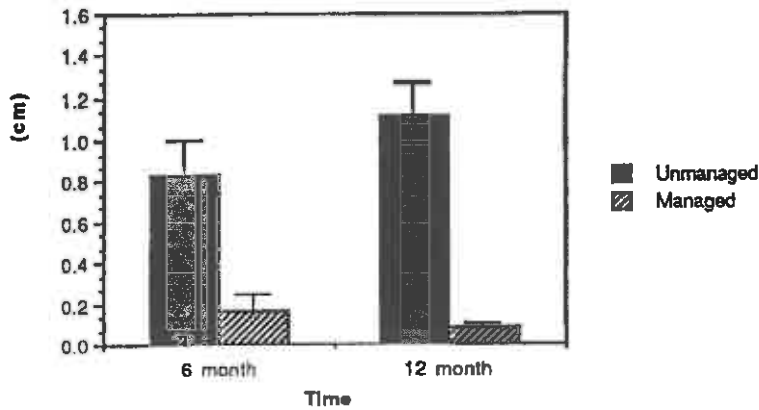


Figure 5. Vertical accretion as measured by marker horizons in two brackish marshes in coastal Louisiana. One of the sites was an impounded (managed) marsh and the other was a nearby nonimpounded area (unmanaged). The accretion rate in the nonimpounded site is approximately equal to local relative sea-level rise and thus is geomorphically sustainable. (Modified from Cahoon, 1994.)

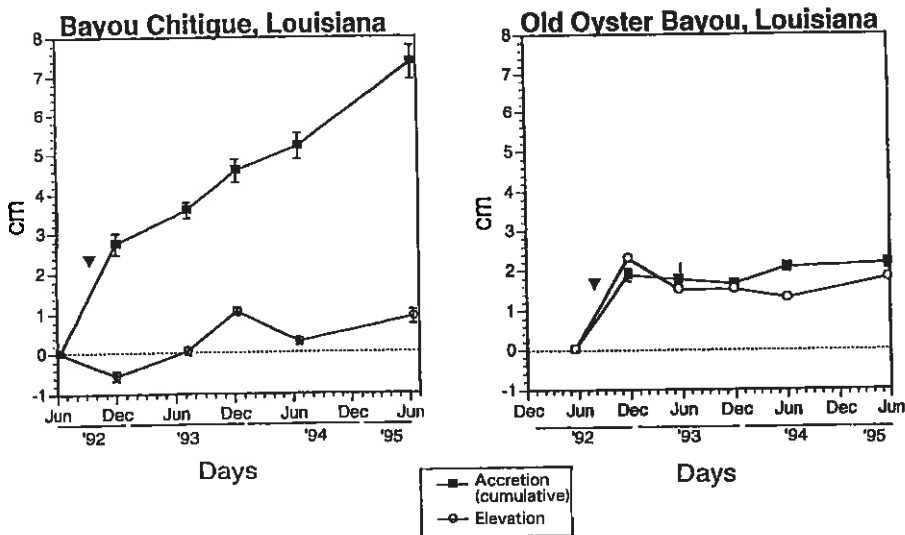


Figure 6. Marsh surface elevation change and vertical accretion at two sites in the Mississippi delta. Open circles, elevation change measured with the SET; shaded squares, vertical accretion measured with marker horizons. Bayou Chitigue is a deteriorating marsh and Old Oyster Bayou is a healthy marsh near the river mouth. Arrows indicate the passage of Hurricane Andrew. In the healthy site, accretion led to elevation gain, while in the deteriorating site, soil strength was weak and accretion did not lead to elevation gain. See text for further explanation. (Modified from Cahoon et al., 1995b.)

and marine marshes in the Rhône delta. The riverine marsh was sustainable, while the impounded marshes were dying because the lack of accretion led to low elevation and plant stress due to excessive waterlogging.

Measurements of accretion and elevation change, when compared with local RSLR, give a clear indication of the sustainability of deltaic wetlands. Rybczyk (1997) has developed a site specific model of soil processes to predict whether different deltaic marshes will survive, and if not, how long it will take for the marshes to deteriorate due to rising water levels. The techniques used for these measurements are relatively inexpensive, and we suggest that a network of monitoring stations be established in different deltas to determine the sustainability of representative wetland areas.

Ecological Sustainability

It is hypothesized that a delta is ecologically sustainable if the change in NPP is greater than or equal to 0. Estimates of total NPP can be determined for different deltas in a straightforward manner from changes in different habitat types over time. This information is available for many deltas from maps and aerial imagery. For example, in the Ebro, Po, and Nile deltas, almost all wetland habitats have been converted to agriculture (Ibañez et al., 1997; Sestini, 1992; Stanley & Warne, 1993), and over half of wetlands in the Rhône delta have been reclaimed (Tamisier, 1990). In the Mississippi delta, wetland deterioration during the twentieth century has been well-documented (Britsch & Dunbar, 1993; Gagliano et al., 1981). The rate of wetland loss has been very high; for example, decreases in the Barataria and Terrebonne basins of the Mississippi deltaic plain from about 820,000 ha in the 1950s to about 560,000 ha in the late 1980s (Figure 7). The NPP can be calculated using estimates of productivity rates for different habitats, which indicate that total NPP for these two basins decreased from 2.82×10^{10} to 2.08×10^{10} kg of dry plant material yr^{-1} or by 26% over a period of three decades (Table 4, Figure 7; Bahr et al., 1982). If present management continues, loss rates of this magnitude are expected to continue for the next several decades. These losses of wetland and reduction of NPP are directly due to the systematic reduction of the energetic pulses which formerly maintained the delta. Clearly, much of Mississippi delta is not ecologically sustainable at present. Similar calculations can be done in other deltas to determine if they are ecologically sustainable. Ecological productivity also is important because it is related to economic health. For example, Templet (1995a) has calculated NPP for 95 countries and used it to evaluate appropriate economic scale and gross national product (GNP). In developing countries, NPP relates significantly and positively to GNP in a multiple regression analysis.

It is clear that new management approaches are needed which will reintegrate the uses of deltaic areas with the energy pulses of the river and sea. One technique which can be used to evaluate the potential success of new management proposals is landscape modeling. In the past, suggested management solutions often have been evaluated independently of each other. Modeling offers an objective integrated approach of evaluation. In the Mississippi delta, spatial simulation landscape models have been used to investigate the effects of different management scenarios on coastal wetland loss (Costanza et al., 1988, 1990; Sklar et al., 1985; White et al., 1991). In this modeling technique, the landscape is divided into a grid of cells, each of which contains a unit model with exchanges of water and materials with each adjacent cell (Figures 8 and 9). Water crossing from one cell to another carries both organic and inorganic

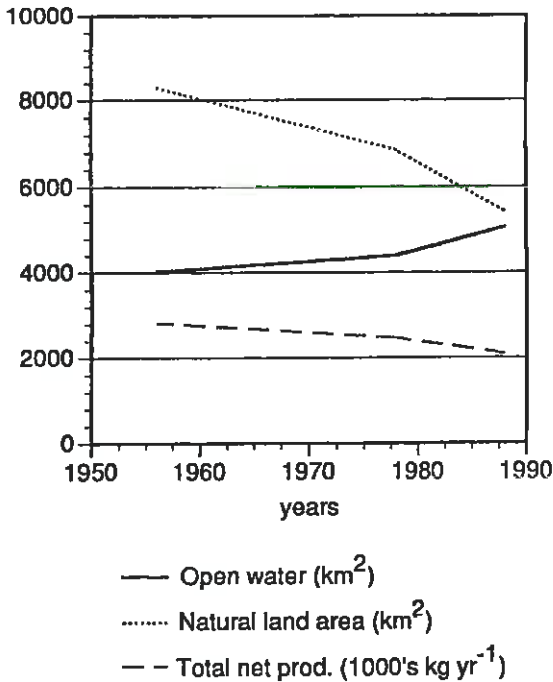


Figure 7. Landcover and net productivity (dry weight) changes within the Barataria and Terrebonne basins of the Mississippi delta. Natural land area includes swamp, fresh, brackish, and salt marshes, and excludes agriculture and developed areas. Net productivity within agricultural and developed areas was accounted for in total net production.

materials. The suspended particles can be deposited, resuspended, lost due to subsidence, or carried to the next cell depending on conditions in the model. The relative rates of each of these exchanges in each location is a function of habitat type. Plants and nutrients within each cell also influence these exchanges and flows. Changes in other abiotic material concentrations (i.e., salts) also are a function of water flow between cells and concentration of materials in the cells, along with internal deposition and re-suspension.

Habitat succession occurs in the model when the physical conditions in a cell become indicative of a different habitat type. The state variables in each cell are monitored and compared with the physical environment (e.g., salinity, elevation, water level). If the values of the state variables change to the extent that the environment in the cell is outside the range for the currently designated habitat type, then the cell's habitat type and all the associated parameter settings are switched to a new, better adapted set (Figure 10). This modeling approach has been used to investigate the impacts of river diversions, hydrologic modification, and sea-level rise (Costanza et al., 1990; White et al., 1991). Such models can be used to investigate questions like the impacts of different rates of sea-level rise and subsidence on delta survival, impacts of salinity and water-logging on wetland survival and growth, and the role of new sediment input in combating sea level rise.

Table 4
 Landcover and net productivity changes within the Barataria and Terrebonne
 basins of the Mississippi delta. Natural land area includes swamp and all marsh types

Habitat type	Landcover km ²			Net P.P. ^a (kg km ⁻² yr ⁻¹) ^b			Total net productivity (kg yr ⁻¹)		
	1956	1978	1988	1956	1978	1988	1956	1978	1988
Swamp	1,825	1,691	1,436	1.59E + 6	2.69E + 9	2.28E + 9	2.90E + 9	2.69E + 9	2.28E + 9
Fresh marsh	3,539	1,863	1,876	2.70E + 6	5.03E + 9	5.07E + 9	9.56E + 9	5.03E + 9	5.07E + 9
Brackish marsh	2,327	1,882	1,317	4.40E + 6	8.28E + 9	5.79E + 9	1.02E + 10	8.28E + 9	5.79E + 9
Salt marsh	592	1,401	802	3.00E + 6	4.20E + 9	2.41E + 9	1.78E + 9	4.20E + 9	2.41E + 9
Open water	4,013	4,386	5,053	8.90E + 5	3.90E + 9	4.50E + 9	3.57E + 9	3.90E + 9	4.50E + 9
Agriculture/developed	143	384	572	1.33E + 6	5.11E + 8	7.61E + 8	1.90E + 8	5.11E + 8	7.61E + 8
Natural land area	8,283	6,837	5,431						
Total annual net productivity (kg yr ⁻¹)							2.97E + 10	2.46E + 10	2.08E + 10

^aBahr et al. (1982).

^bDry weight plant material.

Abbreviations: P.P., Primary Productivity.

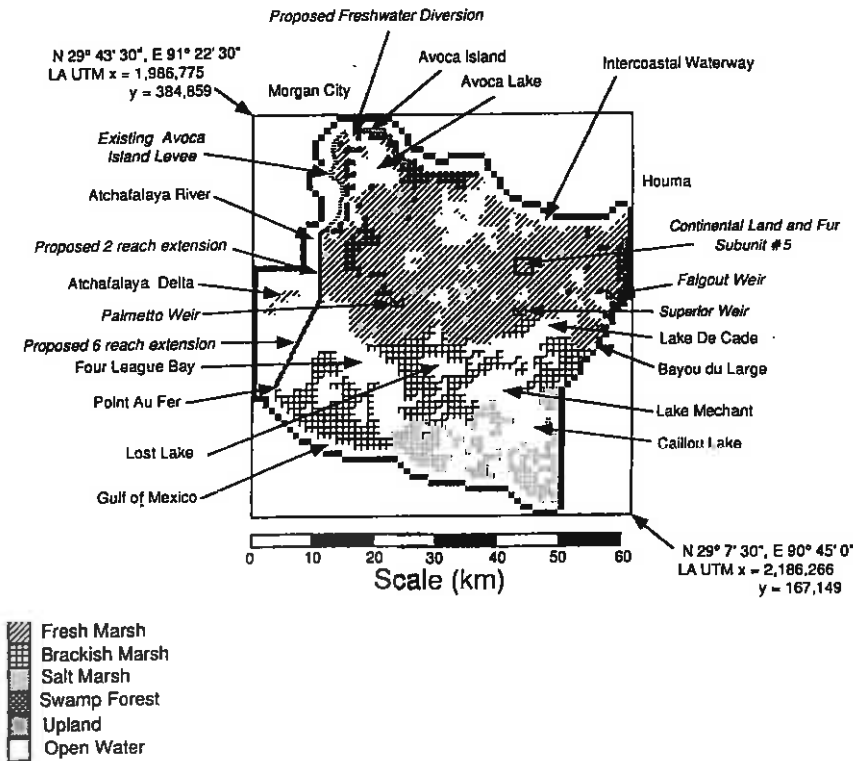


Figure 8. Diagram showing the spatial grid of 1 km² cells used to model landscape interactions in the Atchafalaya/Terrebonne portion of the Mississippi delta. The map shows major geographic features, aquatic and wetland habitat types, and the locations of management options analyzed with model simulations. (From Costanza et al., 1990.)

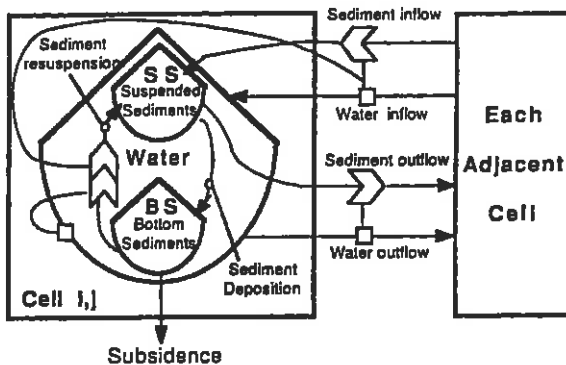


Figure 9. Diagram of the unit model for sediments and water showing storages (tank symbols) and flows (lines) of water and sediments. This unit model is in each cell of the landscape model shown in Figure 8. Fluxes of suspended sediments are a function of water flows and sediment concentrations. (From Costanza et al., 1988.)

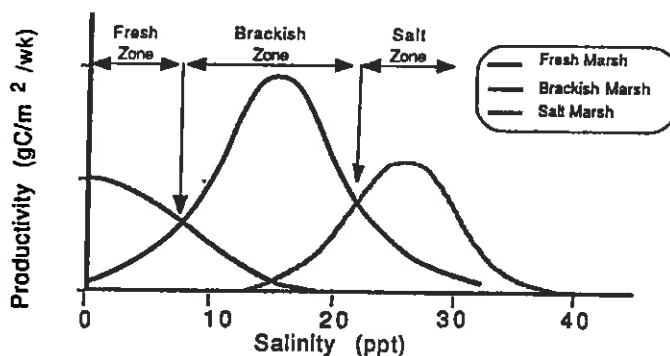


Figure 10. Conceptual diagram showing how the habitat switcher functions in terms of the effects of salinity on wetland habitat type. Plant primary production is a function of salinity, and the diagram shows the salinity levels where habitat succession takes place in the model for three of the habitat types. Habitat productivity peaks from left to right; fresh marsh, brackish marsh, and salt marsh. (From Costanza et al., 1988.)

Economic Sustainability

From a historical perspective, economic growth has resulted in the substitution of human capital for natural capital, because the benefits resulting from the use of human capital can be more easily directed to certain groups or individuals. For example, leveeing the Mississippi River improved navigation and flood control, thus subsidizing and benefiting those dependent on these activities. However, a severe opportunity cost was incurred in that natural capital (i.e., the sediments in the river were no longer used constructively and the resulting accretion deficit led to a loss of wetlands and the services they provide). The costs were externalized to those benefiting from the wetlands (i.e., the citizens of Louisiana and the public commons). Templett (1995b) showed that increasing manmade subsidies leads to poorer environmental and socioeconomic conditions, and less sustainability. The subsidies are the result of externalities created for the purpose of maximizing one economic sector's returns. He found that "[t]he effect of the externalization then is a net loss to public welfare with private interests benefiting while public interests lose considerably more, i.e. public costs exceed private benefits and distributional inequities arise." This analysis applies to the deltaic case because deltas are among the most productive of all ecosystems, and the loss of such systems incurs very large opportunity costs which would make the deltaic region economically and environmentally poorer and less sustainable. If instead of substituting nonrenewable fossil fuel energies for natural capital energy, natural capital, in conjunction with other energies, was to be used in reaching economic goals, then less would be expended to achieve more and attain a higher level of sustainability. Practically, this means using manmade energies to engineer the system to allow the river's water and sediment and other energy pulses to sustain and build wetlands, which then would produce goods and services at minimum cost.

The natural losses mentioned above occur because economic projections traditionally have calculated inputs and outputs irrespective of environmental costs. Increasingly, economists are including the costs of consumed natural capital goods and services into the cost of economic activities (Costanza, 1991; Costanza, 1996; Daily & Ehrlich, 1996; Daly, 1991; O'Neill, 1996). Central to this thesis is the idea that economic estimates

which incorporate environmental degradation reveal true costs of operating in those environments. This ultimately could result in better environmental management, due to long-term economic incentives. In the case of deltas, determining economic stability is intimately tied to the existence of the delta itself which depends on geomorphical and ecological sustainability, which in turn, often are dependent on economic decisions. Recognizing this mutual codependence is a central feature involved in designing sustainable system management.

Sea-level rise places additional pressures on coastal wetlands. As atmospheric warming continues and sea level rises, wetlands may deteriorate, resulting in lost productivity that translates into economic losses. Projections for coastal wetlands losses (Table 5) in the United States estimate a 48% loss with a 1 m rise in sea level. Economically, the loss would be over \$20 billion annually. A portion of these losses comes from declines in fishery productivity. Dow et al. (1987) modeled declines in marsh primary productivity and predicted that a reduction of 50% could result in a 15–20% drop in estuarine dependent fish harvests. Declines naturally would increase with prolonged periods of reduced productivity.

Such a scenario has grim implications for the state of Louisiana, the most deltaic state in the nation. Louisiana has lost a significant portion of its wetlands, due to natural and human impacts. The Birdfoot delta of the Mississippi River deltaic plain basin, for example, has lost 70% of historic wetlands (over 40,000 ha) since 1932 (see Table 6). Currently, there are 25,000 ha of coastal marshes left in this area. Predictions for the next 20 and 50 years indicate that another 35% (8,700 ha) and 87% (22,000 ha), respectively, of existing wetlands will be lost.

Projections for the entire Mississippi deltaic plain also indicate pronounced losses. In 50 years, over 240,000 ha could be lost (see Table 7). The cost to the local economy would be well over \$3 billion dollars annually. This does not account for lost natural services provided, such as waste assimilation and flood protection. In 1993, Louisiana suffered over \$10 million dollars in flood damage in spite of the billions already spent on levees and other flood protection devices (approximately \$12 billion; Louisiana Coastal Wetlands Conservation and Restoration Task Force [LA C.W.C.R.T.F.], 1993).

Local efforts to harness pulsing events such as floods, with levees, canals, and impoundments, effectively accentuate sea-level rise and accelerate decline of the delta. Milliman et al. (1989) reported the risks associated with sea-level rise in the Nile and Ganges deltas, and illustrated the economic implications of rising sea levels in deltaic

Table 5
Projected wetlands and dollar losses for sea-level rise in the United States

Sea-level increase (m)	Wetlands lost (km ²)	Wetlands lost (acres)	U.S. wetlands lost (%)	Estimated dollars lost ^a (in billions)
0.5	6,229	1.54 × 10 ⁶	17	7.70
1.0	17,169	4.24 × 10 ⁶	48	21.20
2.0	22,618	5.59 × 10 ⁶	63	27.95
3.0	27,387	6.77 × 10 ⁶	76	33.85

Adapted from Bigford (1991).

^aBased on a \$5,000 value per acre as established by Costanza et al. (1989).

Table 6
Historic wetlands loss in the Bird Foot delta
of the Mississippi River drainage basin

Time period	Total acres lost	Estimated dollars lost (in millions)
1932-58	49,928	249.6
1958-74	46,237	231.1
1974-83	8,021	40.1
1983-90	9,125	45.6
Total	113,311	566.4

Adapted from LA C.W.C.R.T.F. (1993).

environments. They projected that Egypt and Bangladesh could lose 19% and 22%, respectively, of their gross domestic product (GDP) in the affected areas due to a combination of subsidence and eustatic sea-level rise. The Mississippi delta has a higher rate of RSLR than either the Nile or the Bengal, thus similar impacts presumably can be expected for Louisiana.

Loss of the natural system has important economic consequences, because energy analysis (Templet, 1996) shows that those countries and states which rely most heavily on commercial energy (i.e., fossil fuels) to generate GNP generally have the poorest economic and environmental conditions. Their energy intensity (the amount of energy necessary to generate a unit of GNP) is high, which results in more pollution, poorer socioeconomic conditions, and restricted development. Relying more on natural energies, such as the power of rivers to build wetlands, would lower the energy intensity and improve conditions. High energy intensity is a sign of early economic development, analogous to early ecological succession, in which the benefits of stability, efficiency, and equitable distribution of goods characteristic of mature systems are forgone (E. P. Odum, 1969). Economic systems in early development can be held for long periods by particular economic sectors which may be benefiting. However, such states are highly consumptive of resources and are not sustainable indefinitely. In the case of the Mississippi delta, a loss of natural energies has promoted higher commercial energy intensities, with negative economic and environmental impacts.

Table 7
Projected wetlands losses in the Mississippi delta^a

Years	Projected wetlands loss (acres)	Percent projected loss	Estimated economic loss (in billions of dollars)
20	263,650	11	1.3
50	631,290	27	3.1

^aIncludes the following drainage basins: Atchafalaya, Barataria, Breton Sound, Mississippi River delta, Ponchartrain, Teche/Vermillion, and Terrebonne. Excludes: Chenier plain.

These results indicate a net loss of economic activity in deltas when pulsing energies are reduced, especially with accelerated sea-level rise. This suggests there will have to be an increasing input of subsidies from outside the delta if the level of economic activity is to be maintained. Based on the hypothesis, this situation indicates a lack of sustainability. Deltas can, and should, be economically sustainable. In other words, deltas should be net yielding to the larger society. Originally, this was the case. The first civilizations arose in deltaic situations, reflecting the rich net production of these ecosystems (J. Day et al., 1989). The net yield has become a net sink for many deltas, because of the loss of natural subsidies. There has been a substantial investment in deltas, but much of this activity has led to a deterioration of deltas because of the loss of sustaining energy pulses. An important goal for the future is to use further investment to build a system for humans and nature where society is better integrated into natural deltaic functioning.

Determining Overall System Sustainability: EMergy Analysis

In this section, the authors use EMergy analysis to quantify the sustainability of different management scenarios for deltas. EMergy analysis offers a holistic approach for evaluating economic and environmental alternatives, which integrates all system components to arrive at quantitative conclusions about system sustainability. As opposed to evaluating deltas independently on economic, ecological, and geological bases, or assigning dollar values to system functions and outputs, EMergy is a unifying analysis which evaluates both natural and human-related systems using a common basis. Applying economic values to ecological and environmental processes may provide an incomplete or inaccurate understanding of these processes, because the value of the dollar fluctuates and is circularly based on the resources that it is valuing. EMergy analysis is a form of energy analysis that determines values of resources and other inputs on a similar basis, and is capable of deriving the value of nature to the human economy (H. T. Odum, 1988). Solar EMergy is used to determine the value of environmental and human work within the system on a common basis; namely, the equivalent solar energy required to produce the work. Its fundamental assumption is that the value of a resource is proportional to the energy required to produce the resource. This technique previously was used to quantitatively explore proposals of dam construction on the Mekong River and to make recommendations for sustainable patterns of development (Brown & McClanahan, 1996). The analysis below was performed following the procedure demonstrated in the EMergy analysis concerning the Mekong River, and the reader can refer to this source for a complete explanation of terms and methodology.

Definitions for some of the key concepts related to EMergy analyses follow (Brown & McClanahan, 1996).

EMergy: an expression of all the energy used in the work processes that generate a product or service in one type of energy.

Transformity: the ratio obtained by dividing the total EMergy that was used in a process by the energy yielded by the process. Transformities have the dimensions of EMergy/energy. A transformity for a product is calculated by summing all the EMergy inflows and dividing by the energy of the product. Transformities are used to convert energies of different types to EMergy of the same type. Transformities for many types of energy, resources, and goods have been calculated in previous studies (H. T. Odum, 1996).

Solar EMjoule (sej): The units of solar energy previously used to generate a product; for instance, the solar EMergy of wood is expressed as units of joules of solar energy that were required to generate it. These are usually expressed and recorded as solar EMjoules per year (sej/yr) (Table 8).

Methods. The general methodology for EMergy analysis is a "top-down" systems approach (H. T. Odum, 1988, 1996). The initial step is the construction of systems diagrams that organize relationships among components and pathways of resource flow (Figure 11). In diagramming the system, it is important to include all critical driving energies and relevant interactions. Important energy inputs common to deltas include the sun, rain, river, wind, waves, and imported fuels and goods. Pertinent interactions within these settings are the productivity of natural areas such as wetlands and estuaries, agricultural production, the processing of nonrenewable resources such as oil and natural gas, river management plans such as levees, and the combination of flows involved in industrial activity. The systems diagrams are a prerequisite to EMergy analysis tables, which are constructed directly from the diagrams (Table 8). Each row in Table 8 is an inflow or outflow pathway in the system diagram. The pathways are evaluated as fluxes in units per year. The raw units column gives the total annual flow of each item in units of energy (J, joules), grams, or dollars. Solar EMergy is calculated as the product of raw units and the transformity, and reflects the equivalent annual amount of solar energy for each process. In the final step, several EMergy indexes are calculated using data from the tables (Figure 12; Table 9). These indexes, which relate flows of the economy to flows of the environment, are used to predict economic viability and carrying capacity, and to suggest which management options are more sustainable. When two alternative systems are compared, the one which contributes the most EMergy to the public economy and minimizes environmental losses is considered best (Brown & McClanahan, 1996). With regard to sustainability, the system which relies more heavily on internal sources of energy and renewable energies provided by nature, as opposed to inputs from outside the system, is considered more competitive. Indexes which are helpful in comparing future management alternatives in terms of system functioning and sustainability are the EMergy investment ratio, the environmental loading ratio, and the renewable carrying capacity (Table 9). These are discussed in more detail below.

An EMergy analysis was carried out on four scenarios for the Mississippi delta to demonstrate the manner in which this technique can be used as an aid in management decisions leading to sustainable deltaic functioning. The base case considered the current status of the delta and was based on 1983 conditions. A pristine situation was analyzed to represent predeveloped conditions at the turn of the century. For comparison, the Orinoco and MacKenzie deltas still are largely pristine and representative of what the authors have in mind for the second scenario. Two future scenarios also were evaluated: Future I, a business as usual future where the management of the Mississippi delta continues unchanged, and Future II, a future in which new management approaches are designed to enhance delta survival and sustainability. The business as usual scenario assumed the maintenance of the system of levees, which largely isolates the river from the deltaic plain and continues high rates of land loss. The new management scenario assumed use of the resources of the river (e.g., diversions) to maintain the delta. Parameter values for each of the cases are given in Table 10.

Results. Values for the complete EMergy analysis are given in Table 8 for the base case, and summary values for the three other cases are presented in Table 9. More

Table 8
EMergy evaluation of resource basis for Mississippi delta, base case scenario 1983

No.	Item	Raw units	Transformity (sej/unit)	Solar EMergy (sej/yr) (1E20 sej)
<u>Renewable resources</u>				
1	Sunlight	1.31E + 20 J	1.00E + 0	1.31
2	Rain, chemical	2.01E + 17 J	1.54E + 4	31.06
3	Rain, geopotential	0 J	8.89E + 3	0.00
4	Wind, kinetic	1.11E + 17 J	6.23E + 2	0.69
5	Waves	3.11E + 16 J	2.59E + 4	8.05
6	Tide	6.19E + 15 J	2.36E + 4	1.46
7	Wetland water use	2.00E + 17 J	2.36E + 4	47.23
8	River sediments/nutrients	3.33E + 13 g	1.79E + 9	569.43
9	Offshore sediments	1.66E + 12 g	1.79E + 9	28.47
<u>Indigenous renewable energy</u>				
10	Agriculture/livestock production	1.59E + 16 J	2.00E + 5	31.82
11	Fisheries	3.20E + 15 J	2.00E + 6	64.00
12	Timber (not important)	0	3.50E + 4	0.00
13	Furs, hides, and game	3.25E + 13 J	2.00E + 6	0.65
<u>Nonrenewable sources from within system</u>				
14	Natural gas	2.23E + 15 J	4.80E + 4	1.07
15	Oil	1.48E + 18 J	5.30E + 4	784.40
<u>Imports and outside sources</u>				
16	Oil and natural gas	0	5.30E + 4	0.00
17	Phosphorus	3.70E + 10 J	4.14E + 7	0.02
18	Nitrogen	2.50E + 12 J	1.69E + 6	0.04
19	Pesticides	2.07E + 13 J	1.97E + 7	4.07
20	Food	1.03E + 13 J	8.50E + 4	0.01
21	Mechanical and trans- portation equipment	1.04E + 12 g	1.40E + 9	14.56
22	Services	7.76E + 8 \$	3.80E + 12	29.49
<u>Exports</u>				
23	Oil	3.15E + 18 J	5.30E + 4	1669.50
24	Natural gas	4.79E + 15 J	4.80E + 4	2.30
25	Cash crops	5.04E + 16 J	2.00E + 5	100.77
26	Fisheries	1.18E + 16 J	2.00E + 6	236.00
27	Furs, hides, and game	1.20E + 13 J	2.00E + 6	0.24
28	Service in exports	7.76E + 8 \$	3.80E + 12	29.49

For data sources and calculations refer to Martin (1996).
Abbreviations: J, Joules; g, grams; sej, solar EMjoules.

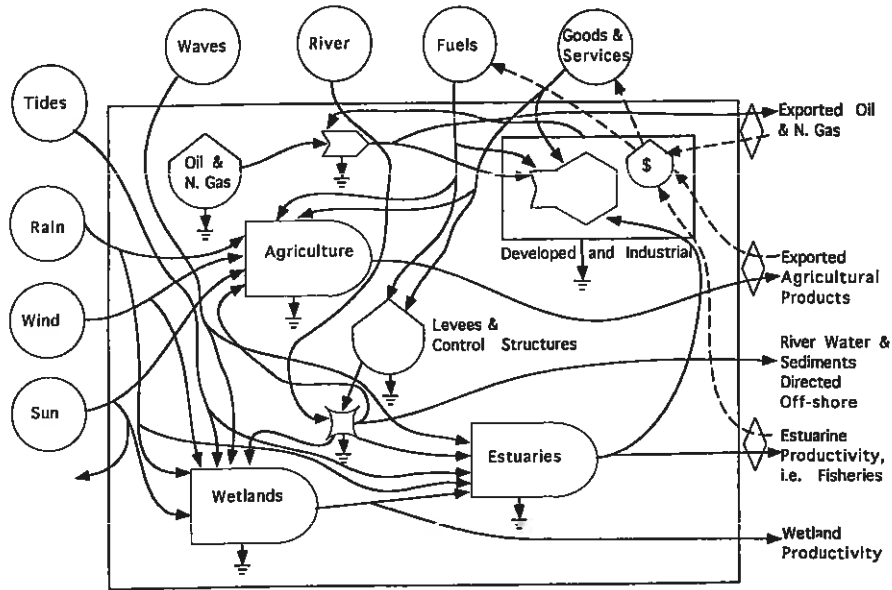


Figure 11. Aggregated energy diagram of the Mississippi delta showing how renewable inputs (waves, wind, river, rain, and sun) interact with imported fuels, goods, services, and nonrenewable resources (NRR) such as oil and natural gas. The importance of levees and control structures in directing riverine inputs is also illustrated. This is a representation of the base case scenario for the EMerger analysis. A diagram without NRR can be used to simulate both future scenarios.

detailed calculations and references corresponding to each pathway, along with variations for the three other cases, may be obtained from the authors (Martin, 1996). An aggregated systems diagram (Figure 12) identifies which pathways were used to calculate the indexes in Table 9.

The EMerger Investment Ratio. The EMerger investment ratio is the quotient of purchased imports (F, G, S; Figure 12) divided by EMergeries derived from local sources (N, R). The

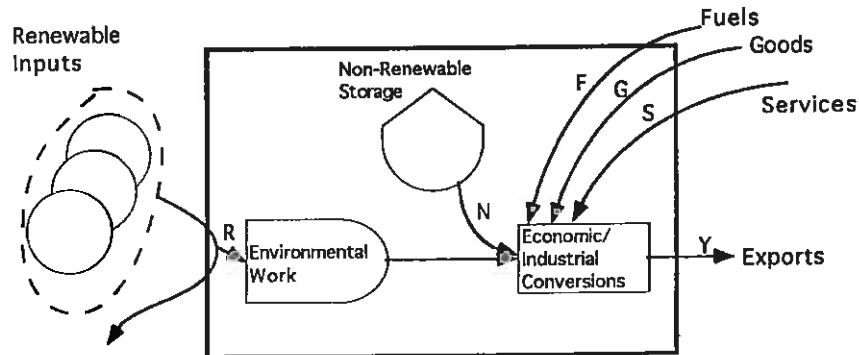


Figure 12. Illustration of a system that imports resources (F, G, S) which interact with renewable inputs (R), and nonrenewable storages (N) to produce outputs (Y). Letters denote pathways used in the calculation of indexes (Table 9).

Table 9
Overview indices of four scenarios for the Mississippi delta^a

Description	Calculation*	Units	Scenario			
			Base (1983)	Pristine	Future I	Future II
Renewable EMergy flow	R	1E20 sej/yr	635.13	3749.69	642.89	853.93
Flow from indigenous NRR	N	1E20 sej/yr	2457.27	0.00	0.00	0.00
Flow of imported EMergy	F + G + S	1E20 sej/yr	48.19	0.02	832.18	440.31
Total EMergy inflow	R + N + F + G + S	1E20 sej/yr	3150.59	3749.71	1475.07	1294.25
Total exported EMergy	Y	1E20 sej/yr	2010.98	0.08	242.31	377.93
Fraction used that is renewable	$R/(R + N + F + G + S)$		0.44	1.00	0.44	0.66
EMergy investment ratio	$(F + G + S)/(R + N)$		0.03	0.00	1.29	0.52
Environmental loading ratio	$(N + F + G + S)/R$		2.29	1.00	2.29	1.52
Renewable carrying capacity	$(R/(R + N + F + G + S))/\text{population}$	People	8.73E + 5	2.00E + 6	8.72E + 5	1.32E + 6

^aThe base case represents 1983 conditions. The delta during the early 1900s is represented by the pristine case. Future I represents the outcome of unchanged management practices at a time in the future when nonrenewable resources have been exhausted in the delta. Future II represents the system for the same time period resulting from suggested management plans based on system functioning.

*Refer to Figure 12 for explanation of abbreviations.

index measures the degree to which the economic system has invested EMergy from outside sources as compared with internal energy flows. Larger investment ratios indicate a larger investment from the economy which results in decreased efficiency, and possibly increased production. Systems with lower investment ratios receive more of their EMergy free from natural sources, indicative of a more sustainable system, and require less purchased inputs from outside the system. The relatively low investment ratios (overall U.S. investment ratio equals 7.0) for all four scenarios (Table 9) demonstrate large levels of local environmental energies available in deltaic settings, largely accounted for by riverine sediments (Table 8). The extremely low value for the base case (0.03) is due to large amounts of oil, which were withdrawn from the system with little investment from outside the system compared with the high EMergy content of the oil.

Changes in management of local environmental energies result in differences in the two future scenarios. In Future II, 33% more sediments are captured on the landscape compared with Future I (Table 10). This results in greater renewable EMergy flow directly from the sediments, due to land creation leading to increased wetland water use and fisheries production. As a further consequence, less purchased inputs are required from outside the system, and the flow of imported EMergy is reduced. Due to these factors, the investment ratio for Future II (0.52) is less than half of that for Future I (1.29). Although a greater amount of EMergy is exported from Future II, greater than twice the investment from outside the system was required for Future I compared with Future II. Future II requires less inputs from outside the system, relying more on renew-

Table 10
Base case values and assumptions made for parameters
which varied during the four EMergy analyses

Parameter	Units	Scenario			
		Base (1983)	Pristine	Future I	Future II
Agricultural area ^a	m ²	3.79E + 9	1.94E + 8	3.61E + 9	1.95E + 9
Water area ^a	m ²	1.68E + 10	1.51E + 10	1.76E + 10	1.60E + 10
Wetland area ^a	m ²	1.32E + 10	1.91E + 10	1.25E + 10	1.58E + 10
Urban/developed area ^a	m ²	7.61E + 8	9.69E + 7	7.25E + 8	7.97E + 8
Captured sediments ^{b,c}	g yr ⁻¹	3.33E + 13	2.14E + 14	3.33E + 13	4.44E + 13
Agricultural production ^a	g m ⁻² yr ⁻¹	1.05E + 3	1.05E + 1	1.05E + 3	1.05E + 3
Phosphorus ^a	g m ⁻² yr ⁻¹	8.50E - 1	0.00E + 0	8.50E - 1	8.50E - 1
Nitrogen ^a	g m ⁻² yr ⁻¹	3.71E + 0	0.00E + 0	3.71E + 0	3.71E + 0
Pesticides ^a	g m ⁻² yr ⁻¹	5.80E - 1	0.00E + 0	5.80E - 1	5.80E - 1
Fishery production ^a	J yr ⁻¹	3.20E + 15	3.20E + 10	1.60E + 15	4.00E + 15
Natural gas	J yr ⁻¹	2.23E + 15	0.00E + 0	2.23E + 15*	2.23E + 15*
Oil	J yr ⁻¹	1.48E + 18	0.00E + 0	1.48E + 18*	7.41E + 17*
Services in ^a	\$ m ⁻² yr ⁻¹	1.02E + 0	7.61E - 4	1.02E + 0	1.02E + 0
Services out ^a	\$ m ⁻² yr ⁻¹	1.02E + 0	7.61E - 4	1.02E + 0	1.02E + 0

*Nonrenewable energy sources were assumed to be eliminated in these scenarios, therefore these were contributed from outside the system.

Sources (for base case): ^aCostanza et al. (1983), ^bKesel (1988), ^cOdum et al. (1987).

able energies supplied by nature. This indicates that the Future II scenario is more sustainable, because it requires less inputs from the larger system. Processes and systems which produce the most EMergy for the least amount of input will be selected for competitiveness over time.

Both Future I and Future II assume that oil and gas resources have been exhausted and that the sustainability of the region will be more dependent on natural resource productivity than it is now. Future II assumes that diversions from the river are used to create and maintain a much larger wetland area which provides a greater stream of natural resource benefits.

Renewable Versus Nonrenewable EMergy: The Environmental Loading Ratio. Most productive human activities depend on the interaction of nonrenewable energies (e.g., fossil fuels) with environmentally supplied renewable energies (e.g., sunlight, wetland productivity, fish production). Through this interaction, the environment is loaded or stressed. The environmental loading ratio quantifies this concept and is the ratio of nonrenewable to renewable EMergy flows. The EMergy yield ratio reflects the importance of natural system processes. However, high environmental loading will disrupt normal system functioning, as exemplified by the many environmental impacts discussed in this paper. The deterioration of Louisiana coastal marshes following levee construction and intense fossil fuel extraction, and the release of concentrated wastewater into water bodies are examples of this phenomena. A value of one for the environmental loading ratio for the pristine case represents low environmental impact. The decreased dependence on outside energy sources and increased reliance on local renewable resources for Future II results in less stress on the environment compared with Future I. A low environmental loading ratio reflects long-term functioning of interactions producing renewable EMergy, and therefore, system sustainability.

The amount of renewable versus nonrenewable inputs has further implications on the sustainability of a system. Nonrenewables, such as oil and natural gas are becoming more scarce, exemplified by drastic production decreases within the Mississippi delta. Greater reliance on renewable energies will be more sustainable in the future. The pristine case is indefinitely sustainable because all of the EMergy used is locally renewable. The fraction of energy which is renewable drops to 0.44 for both the base and Future I scenarios. This indicates that greater than 55% of the inputs are derived from outside the system. The Future II case is more reliant on locally renewable energies, and consequently, has a greater fraction used that is locally renewable (0.66; Table 9). Due to the continued destruction of natural resources, such as wetland loss, more outside energy must be purchased in Future I. The Future II case assumes that the natural functioning of the delta is maintained to a greater extent, which supplements inputs from outside the delta. These natural functions include the use of riverine sediments and nutrients to build and maintain wetlands and a more productive fishery.

Population: Renewable Carrying Capacity. This index provides an estimate of the population which could be sustainably maintained in the system with only renewable inputs. The large renewable EMergy flows of the pristine and Future II cases support the highest sustainable populations. This index clearly shows the importance of maintaining the functioning of the natural system, even during times of heavy reliance on nonrenewable energies. The preservation of the natural system will allow a smooth transition from nonrenewable to renewable energies as fossil fuel resources are depleted, and a quicker approach toward sustainability.

Summary: EMergy Analysis. The EMergy analysis supports the central theme developed in this paper that sustainable management of deltas depends on the utilization of natural renewable energy subsidies such as river floods and storm events. The results also are consistent with other measures of sustainability. During periods of high rates of extraction and utilization of nonrenewable resources such as fossil fuels, part of the energy should be used to ensure the maintenance of renewable energy sources. This is just the opposite of what has happened in most deltas. In the Mississippi delta, huge amounts of energy have been spent to isolate the delta from natural energy inputs. This has resulted in deterioration of the delta and unsustainable management. This analysis indicates that some of the nonrenewable energies should now be used to implement new management approaches which enhance the effects of the natural pulsing events on the delta.

Summary and Conclusions

In this article, we discussed sustainable management of deltas in a comprehensive and integrated way. Deltas yield enormous economic and ecological values to society. They are sustained by a number of energetic pulses which occur over different spatial and temporal scales, and it is these pulses which support the values of deltas. Many of the environmental problems of deltas stem from a systematic reduction or elimination of these pulses at all pertinent spatial and temporal scales. The elimination of these pulses represents, in economic terms, an externality. Traditional economic analyses generally recognize that, when externalities are large, market failure occurs because prices do not reflect all costs and optimality declines, meaning that allocation of resources is not efficient or equitable. These conditions are not sustainable because the lost natural capital is invisible to market forces and does not enter into decision processes. Yet, the lost natural capital is itself an economic asset on which the market system depends. Under the condition of large externalities, the economic system, in effect, cannibalizes itself.

For deltas to become sustainable once again, management must return to a situation where the natural energy pulses are used to maintain deltas. But, this must be done in a sophisticated return to the natural. It does not mean that human society will have to abandon deltas. There are many activities which can be continued, albeit in a different manner. There are some activities which should not be done, at least not on a large scale. Flood control, navigation, and most development can be achieved in a way that does not significantly reduce important energy pulses. For the most part, levees are continuous along rivers. Changing to a system which emphasizes the use of natural capital by techniques such as ring levees and controlled diversions can allow development to exist with a functioning natural system.

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