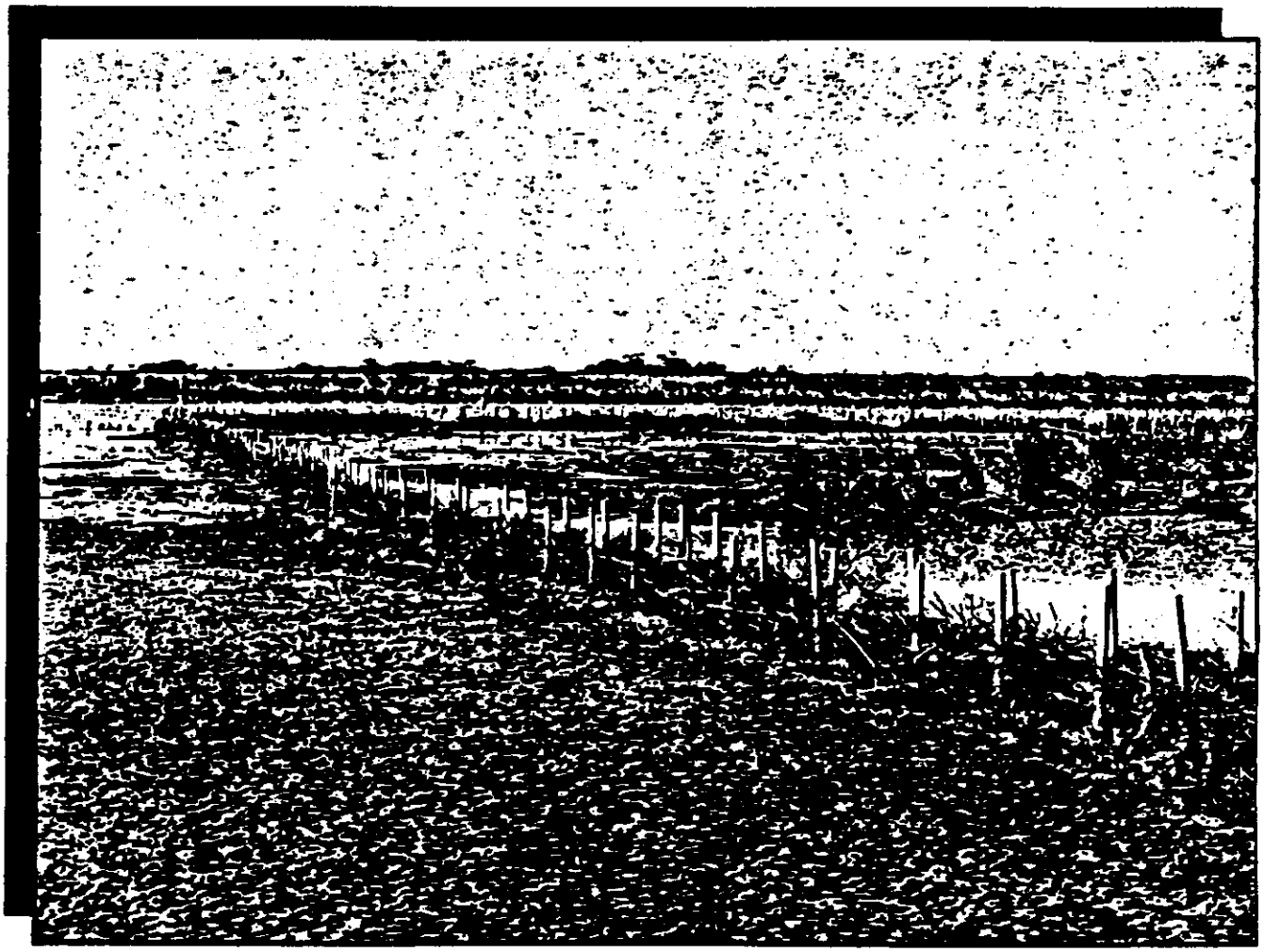
COASTAL-WETLANDS CONSERVATION AND RESTORATION PLAN

(Fiscal Year 1992-93)



Submitted to the
House and Senate Committees
on
Natural Resources

March 1992

This public document is published at a total cost of $ 1229.90 .
300 copies of this public document were published in this first printing at a cost of $ 1229.90 . The total cost of all printings of this document including reprints is $ 1229.90 .
This document was published by the Department of Natural Resources, Coastal Restoration Division, P. O. Box 94396, Baton Rouge, LA 70804 for distribution to the Caernarvon Interagency Advisory Committee under authority of R.S. 49:213 - 214.5. This material was printed in accordance with standards for printing by State Agencies established pursuant to R.S. 43:31.

COASTAL WETLANDS CONSERVATION AND RESTORATION PLAN

(Fiscal Year 1992-93)

Submitted to the
House and Senate Committees
on
Natural Resources

March 1992

PREFACE

The Wetlands Conservation and Restoration Task Force is pleased to submit to the House and Senate Natural Resource Committees for their approval during the 1992 session of the Louisiana Legislature the Coastal Wetlands Conservation and Restoration Plan developed pursuant to R.S. 49:213.6, as amended, for conserving and restoring the state's coastal vegetated wetlands, consistent with legislative intent and with the policy developed by the Coastal Restoration Authority.

Leonard Bahr
Executive Assistant,
Coastal Activities

Jack McClanahan
Secretary, Department of
Natural Resources

Joseph Herring
Secretary, Department of
Wildlife and Fisheries

Kai Midboe
Secretary, Department of
Environmental Quality

Eugene Waguespack
Acting Secretary,
Department of Transportation
and Development

Bradley E. Spicer
Assistant Commisioner,
Department of
Agriculture and Forestry

Raymond J. Laborde
Commissioner of
Administration

ACKNOWLEDGEMENTS

The current plan incorporates recommendations from Federal, state, and local government; representatives of various interest groups; and other individuals knowledgeable about Louisiana's coastal wetlands. The House and Senate Natural Resources Committees approved this Plan in hearings held on March 16, 1992. The report also draws upon results of past and ongoing wetland investigations and comments by universities and consultants. Furthermore, the constructive review comments provided by state agencies, and the participation in the planning process of each coastal parish are also acknowledged.

The following persons contributed directly to this report:

Governor's Office of Coastal Activities
- David Chambers, Executive Assistant
- Leonard Bahr, Technical Assistant

Department of Natural Resources
- David Soileau, Assistant Secretary, OCRM
- Bill Good, Acting Administrator, CRD
- Gerry Duszynski, Assistant Administrator, CRD

Department of Environmental Quality
- Dugan Sabins, Environmental Quality Coordinator, OWR

Department of Wildlife and Fisheries
- Johnnie Tarver, Administrator, HCD

Department of Transportation and Development
- Ed Preau, Chief, WRDD

Governor's Office of Environmental Affairs
- Karen Gautreaux, Special Assistant

Coastal Environments, Inc.
- Johannes van Beek, Project Manager
- Glenn Thomas, David Roberts

The report was produced by Coastal Environments, Inc., under contract to the Department of Natural Resources, Coastal Restoration Division. Cartography was done by Curtis Latiolais, editing by Linda Abadie.

CONTENTS

LIST OF TABLES

INTRODUCTION

Act 6 of the Second Extraordinary Session of the 1989 Louisiana Legislature created the Wetlands Conservation and Restoration Authority (Authority) within the Office of the Governor, and the Office of Coastal Restoration and Management (OCRM) within the Department of Natural Resources (DNR). In addition, it created the statutorily dedicated Wetlands Conservation and Restoration Fund (Wetlands Fund).

The Authority consists of the governor's executive assistant for coastal activities and The Wetlands Conservation and Restoration Task Force (Task Force). The Task Force is composed of the following members:

(1) Executive Assistant, Coastal Activities
(2) Secretary, Department of Natural Resources (DNR)
(3) Secretary, Department of Wildlife and Fisheries (DWF)
(4) Secretary, Department of Environmental Quality (DEQ)
(5) Secretary, Department of Transportation and Development (DOTD)
(6) Executive Assistant, Environmental Affairs
(7) Commissioner of Administration
(8) Director, State Soil and Water Conservation Committee

The executive assistant serves as chairman of the Task Force and is responsible for developing procedures for its operation.

The legislature placed responsibility for the direction and development of the state's annual Coastal Wetlands Conservation and Restoration Plan (Plan) within the Office of the Governor. The Authority has the responsibility to develop a comprehensive policy (Policy) addressing the conservation and restoration of coastal wetlands resources, and to annually develop the Coastal Wetlands Conservation and Restoration Plan. The Plan and Policy will serve as the state's overall strategy for conserving, enhancing, restoring, and creating coastal wetlands. Act 6 provides for the Office of Coastal Restoration and Management in DNR to perform the functions of the state relative to conservation, development, restoration, and enhancement of the state's coastal wetlands resources, and to serve as the primary state agency for implementation of the Plan. Within the Office, the Coastal Management Division has the responsibility of implementing the coastal zone management program, and the Coastal Restoration Division performs the functions of the state relating to conservation, restoration, creation, and enhancement of coastal wetlands in Louisiana.

Act 6 requires that the Plan developed annually by the Authority address coastal wetland loss problems from both short- and long-range perspectives; incorporate structural, management, and institutional components; and include the following:

(1) A list of projects and programs required for the conservation and restoration of coastal wetlands.

(2) A schedule for the implementation of each project or program included in the Plan.

(3) The rationale for incorporation of each project or program and, in particular, a description of how each project or program advances the Plan objectives with respect to the management, conservation, or enhancement of vegetated wetland areas.

The Plan must be submitted to the House and Senate Natural Resources Committees of the Legislature before the first day of the regular legislative session of each year for their approval. If approved, the Plan is then submitted to the full legislature for approval by resolution adopted by a majority vote of the members of each house provided that such resolution is adopted on or before June 1 of each calendar year. Upon approval, the Coastal Restoration Division shall undertake project planning and programs in conformity with the order of priority contained in the Plan.

COASTAL WETLANDS CONSERVATION AND RESTORATION POLICY

The following policy statements are not rules or regulations, but rather are intended to generally guide the state's future coastal wetland conservation and restoration efforts, including structural, management, and institutional programs.

(1) Coastal vegetated wetlands--by virtue of their value as the basis for present and future fish and wildlife productivity, and related economic and recreational benefits; as natural protection for coastal towns and cities against the effects of storm damages; and for other reasons pertaining to the public health and welfare--are deemed to be uniquely important to this state and deserving of special safeguards and efforts related to their conservation, enhancement, restoration, and creation. Accordingly, it is the policy of the state to elevate coastal vegetated wetland conservation, enhancement, restoration, and creation to a level of importance equal to flood control, navigation, or other development activities so that a proper balance is achieved.

(2) It is the policy of the state to aggressively identify and implement projects and programs to offset coastal vegetated wetland losses that have resulted from past human activities and ongoing natural processes. It would be inappropriate, then, to allow future permitted developments that adversely impact coastal vegetated wetlands to go unmitigated. Accordingly, this state has enacted legislation and is developing rules (via the Administrative Procedure Act process) that define and establish procedures needed to achieve, at a minimum, compensation for coastal wetland functional values lost due to future permitted activities. Overall functional coastal wetland value losses, which result from future permitted activities, are to be offset by concurrent measures required in a permit (pursuant to R.S. 49: 213.4) to restore these values to the state. In this manner, public trust values (e.g., fish and wildlife values) lost as a result of permitted activities would be offset. Certain activities, as a result of their current exemption from the coastal use permitting process, will not be affected by these rules or legislation. These activities include: (1) agricultural, forestry, and aquacultural activities on lands consistently used in the past for such activities; (2) normal maintenance or repair of existing structures; (3) construction of a residence or camp; (4) activities that do not have a direct and significant impact on coastal waters, (5) activities occurring entirely on lands 5 ft or more above mean sea level or within fastlands, unless discharges or changes in existing water flow from such activities cause a direct and significant impact on coastal waters, and (6) activities that occur outside the state's designated coastal zone as defined in R.S. 49:213.4, unless such activities cause a direct and significant impact on coastal waters.

(3) Expenditures from the state's Wetlands Conservation and Restoration Fund shall be made in accordance with priorities established primarily on the basis of the effectiveness of each expenditure in conserving, enhancing, restoring, and creating coastal vegetated wetlands. Projects that introduce freshwater and sediments into wetlands shall have a high priority. These projects will be coordinated with DEQ and DHH to assure that introduced water is of acceptable quality.

(4) The State of Louisiana recognizes the economic significance and importance of coastal activities such as navigation, including ports and waterways; seafood and wildlife-related industries; oil and gas exploration and production; chemical production; and agriculture, aquaculture, and silviculture. Accordingly, it is the policy of the state to consider the impacts of coastal wetland conservation and restoration programs and projects as they relate to these activities in our state's coastal area.

PLAN OBJECTIVES

(1) To plan, design, and complete in the near-term, projects and programs designed to conserve, enhance, restore, and create vegetated wetlands.

(2) To plan, evaluate, implement, or cost-share in implementation of long-range projects (with complex socioeconomic interactions) designed to provide widespread and continuing long-term benefits to vegetated wetlands (e.g., large-scale freshwater and sediment diversions).

(3) To make projects and programs within hydrologic basins mutually compatible and to make them collectively serve the coastal wetland resource base.

(4) Through appropriate rule-making processes, develop policies and procedures that would provide, at a minimum, for replacement of functional coastal wetland values lost due to future activities for which a coastal use permit is issued (see Appendix A, Table 6.A.1, for specific recommended measures).

(5) Take steps necessary to:

(a) improve predictability and efficiency of the Coastal Use Permitting process; and

(b) make operation and implementation of Federal water resources projects consistent with the policy of the state to elevate coastal vegetated wetland conservation, enhancement, restoration, and creation to a level of importance equal to flood control, navigation, or other development activities.

PLAN DEVELOPMENT AND CONTENTS

The current Plan was developed through a process that involved the integration of a large number of recommendations from Federal, state, and local governmental entities; representatives of various interest groups; and other individuals knowledgeable about Louisiana's coastal processes and resources. Recommendations from state agencies were

obtained through Cabinet Secretaries serving on the Governor's Wetland Conservation and Restoration Task Force. Federal participation came through implementation of the Coastal Wetlands Planning, Protection and Restoration Act (PL 101-646). Project identification was further advanced through coordination between the Governor's Office of Coastal Activities and local governments and interest groups. Meetings were held with representatives of each of the coastal parishes to determine whether support existed for projects recommended by the state and to solicit input concerning possible additional projects resulting from local recommendations.

Recommendations were subsequently built upon and evaluated through coordination between the Governor's Office of Coastal Activities and a technical committee consisting of the members of the Governor's Task Force or their representatives. This resulted in two groups of recommended measures. The first group consists of projects that can be implemented in a short time-frame at a comparatively moderate cost to the state, have local support, and would likely involve less than three years of planning and design. This group includes new projects, listed in Table 1, as well as those projects that were authorized under previous Plans but still require appropriation of funds. Projects in Table 1 are to be implemented under the Coastal Wetlands Planning, Protection, and Restoration Act (Public Law 101-646, Title III) and are listed also in Appendix A by hydrologic basin (Table 1), and by parish (Table 2). Projects authorized under previous state Plans but still requiring appropriation of funds, are listed in Appendix A by basin (Table 3) and by parish (Table 4). These tables also summarize project status. A more detailed description of the status of these projects is presented in a document entitled "Status of the 1990-92 Coastal Wetlands Conservation and Restoration Plan" and submitted under separate cover.

The second group of recommended measures consists of programs and measures that are general in nature or require extensive public and legislative review because of their social ramifications, are dependent on Federal participation because of high cost or Federal responsibilities, or are long-range and complex in nature. They are incorporated in Appendix A, Tables 5 and 6, which list all such programs and measures presently being undertaken by the Office of Coastal Restoration and Management. The status is provided by the 1990-92 status report.

All of the measures described above are recommended under the Wetlands Fund. Those listed in Table 1 would be implemented under PL 101-646 with 75% of the cost to be borne by the Federal government and 25% by the State or other non-Federal entity. For most projects listed in Tables 3 and 4 of Appendix A, the entire funding comes from the Wetlands Fund except in those cases where costs are shared by local government or the landowner.

Projects and Programs

Projects recommended for funding from the Wetland Funds during Fiscal Year 1992-93 are generally of four types:

- Introduction of freshwater, mineral sediments, and nutrients to conserve, enhance, restore, and create vegetated wetlands
- Management of surface water to protect vegetated wetlands from saltwater intrusion and erosion by tidal currents
- Marsh restoration, sedimentation, and low-cost shore protection to maintain and enhance physical integrity of vegetated wetlands
- Gulf shore protection along critical areas

Table 1. New Projects (to be implemented under PL 101-646) 1)

	Project	Parish
1. Projects recommended for the 1992/93 Priority Project List		
BA-18	Fourchon Wetland Restoration	Lafr
BA-2	GIWW to Clovelly Wetland Restoration (A)	Lafr
C/S-17	Cameron Creole Watershed Protection	Camr
PO-16	Bayou Sauvage Refuge Restoration	Orls
PO-10	Turtle Cove Shore Protection (A)	StJn
C/S-18	Sabine Refuge Protection	Camr
ME-8	DeWitt-Rollover Plantings	Vrml
TE-17	Falgout Canal Plantings	Terb
CS-19	West Hackberry Plantings	Camr
TE-18	Timbalier Island Plantings	Terb
MR-3	West Bay Sediment Diversion	Plqs
BA-19	Barataria Bay Waterway Wetland Creation	Jefn
TE-19	Lower Bayou La Cache Wetland Restoration	Terb
PO-17	Bayou La Branche Wetland Creation	StCs
ME-9	Cameron Prairie Refuge Protection	Camr
T/V-3	Vermilion River Cutoff Wetland Creation (A)	Vrml
TE-20	Eastern Isles Dernieres Restoration	Terb
2. Project recommended but tentatively deferred for action 2).		
BA-6	Hwy 90 to GIWW Wetland Protection (A)	Lafr
MR-4	Tiger Pass Wetland Creation	Plqs
TE-21	Falgout Canal South Wetland Creation	Terb
BA-16	Segnette (L. Salvador) Wetland Protection (A)	Jefn

1) All projects are eligible for 75/25 percent Federal/state cost sharing under PL 101-646. Within each group, projects are listed in order of decreasing cost effectiveness.

2) Action on projects within group 2 will be deferred unless they are pursued under the authorization of a previous state Plan or unless one of the projects of group 1 is delayed for some unforeseen reason.

(A) Authorized under a previous state Plan.

Basins:

BA	=	Barataria	PO	=	Pontchartrain
C/S	=	Calcasieu/Sabine	TE	=	Terrebonne
ME	=	Mermentau	T/V	=	Teche/Vermilion
MR	=	Mississippi River Delta			

Parishes:

Camr	=	Cameron	Orls	=	Orleans	StJn	=	St. John the Baptist
Jefn	=	Jefferson	Plqs	=	Plaquemines	Terb	=	Terrebonne
Lafr	=	Lafourche	StCs	=	St. Charles	Vrml	=	Vermilion

Each individual project is identified by a letter/number combination, the letters representing the name of the hydrologic basin in which the project is located (e.g. PO-1). The numbers are unique, and those for new projects are sequential relative to numbers used for projects contained in Plans of previous years. An illustrated description of the new projects is provided in the last part of this report. A map of coastal Louisiana with project locations precedes that section of the report (Figures 1 and 2). Individual project descriptions are grouped according to the hydrologic unit in which they are located (Appendix A, Table 1). In each case a basin map showing the location and general area of benefit for each project precedes the project descriptions. The description of the projects contained in Appendix A, Tables 3 and 4, can be found in the 1990/91 Plan and 1991/92 Plan documents.

The new projects are listed statewide in Table 1, which constitutes the 1991 Priority Project List that has been submitted under PL 101-646, Title III, Section 303(a). The Priority Project List is composed of two groups. The first group contains those projects for which immediate implementation is recommended. Projects in the second group have been tentatively deferred unless one or more projects are deleted from the first group, in which case projects from the second group may be advanced. Within each group, projects are listed in order of decreasing cost effectiveness, as determined by the Federal/state Coastal Wetlands Conservation and Restoration Task Force. To facilitate project review, the same projects are listed by hydrologic basin and by parish in Appendix A, Table 1 and Table 2 respectively.

Authorization is also requested to continue expenditures for completion of 1990-91 and 1991-92 projects approved under previous Plans and listed in Appendix A, Tables 3 and 4, including design changes presented in Appendix C. Depending on the status of the project, contractual agreements for project implementation may presently be in place requiring no additional appropriations. However, the autority is required to allow the Deopartment of Natural Resources to expend funds on these projects to ensure their successful completion. The description of the projects contained in Appendix A, Tables 3 and 4, can be found in the 1990/91 Plan and 1991/92 Plan documents.

Additionally recommended for new or continued funding from the Wetlands Fund during Fiscal Year 1992-93 are certain programs and measures. The programs include both long- and short-range programs and are listed in Appendix A, Table 5, with a short description of their objective and status. It is furthermore recommended that a number of institutional and structural measures be advanced for state and Federal action, or efforts on them continued, for the purpose of conservation, restoration, and creation of wetlands. These are identified in Appendix A, Table 6, with funding requested for (1) matching federal or local monies for various dredged material disposal or other programs to create, restore, enhance, or protect vegetated coastal wetlands; (2) assisting local governments in rerouting runoff waters through wetlands; (3) cost-sharing in the restoration of back-barrier wetlands by the Corps of Engineers during navigation channel dredging; and (4) operation of various structures, if needed, to offset saltwater intrusion, retain freshwater, or to remove excess water from marsh areas.

Priorities and Implementation

The number of proposed projects and available funding make it necessary to establish a priority among the projects in order to guide project-related activities and expenditures. This process is complicated by a number of factors including the difficulty of an accurate determination of cost effectiveness prior to project authorization and resultant acquisition of engineering and environmental information. For this reason the 1991/92 Plan proposed a dual ranking system in which projects are first ranked on a limited information basis for the purposes of determining the order in which they will be subjected

to detailed feasibility and benefit analysis. When the cost of projects that have been determined to be feasible exceeds available funds, results of this analysis then become the basis for a second ranking that establishes the priority for project construction purposes. It is recommended that activities and expenditures for all projects listed in Tables 3 and 4 continue to be governed by these procedures until current rulemaking procedures have been completed and a new ranking system has been adopted. For projects listed in Table 1 it is proposed that expenditures are made in accordance with the need to expedite project implementation while federal funding is available.

Feasibility analysis has been completed for projects contained in Table 1 that were authorized under a previous State Plan, and for many projects listed in Appendix A, Tables 3 and 4. Analyses will be completed for the remaining projects in the order established in the state's 1991/92 Plan so that projects continue to be advanced for permitting, engineering, and design. Highest priority is placed on completion of projects that are currently in the permitting, engineering, design, or construction phase, and on advancing projects to these phases where analysis has shown a project to be feasible and beneficial. All the 1990-92 projects requiring appropriation for those purposes are listed in Appendix A, Tables 3 and 4.

Insofar as projects still require feasibility analysis at this time, such analysis will generally follow the same order as that in Table 3 of the 1991/92 Plan. A priority for implementation has not been established for the newly proposed projects listed in Table 1 of the present Plan other than the division of the projects into the two groups discussed above. These projects will be administered by the various Federal agencies sponsoring each project, and implementation is expected to proceed simultaneously, although some projects may advance more rapidly because permits have already been obtained through the state's efforts.

The priority according to which project feasibility analyses will continue to be undertaken is based on general estimation of a number of project parameters. They are:

- Area of anticipated benefit to conservation, restoration, enhancement, and creation of vegetated wetlands
- Cost
- Social, geographic, biological, and economic significance, and apparent need
- Introduction or utilization of freshwater
- Introduction of sediments

Using these five factors, each project was assigned a value. The criteria used in the assignment of values to each project and in determining project rank for feasibility analysis are given in Table 2. Secondary criteria can be used to further evaluate project merit in the event that funds within a given category are insufficient to implement all projects. These include:

- Local support/cost sharing
- Time required for implementation

In general, values of 1 through 6 were used as relative expressions of the area of benefit (V1), and 1 through 5 for the project cost (V2). A value of 1 was assigned for the smallest area as well as for the highest cost. Numbers from 0 through 6 were computed to indicate a value relative to social and economic aspects that may be called "project quality." The quality value (V3) for each project was arrived at by summing individual values of 0, 1, or 2 that were assigned to each of the following project aspects: (1) probability of success and longevity of the produced benefits as related to physical setting; (2) compatibility and benefits related to economic development and social values including importance to fish and wildlife, flood and erosion protection, water quality, and recreation; and (3) apparent need as related to present conditions and long-term trends. To reflect the value placed on remedial measures involving the suppletion of freshwater and sediment, those aspects were also expressed numerically. Values of 0 to 3 were assigned as a relative measure of freshwater benefits (V4), while values of 0 to 4 were used for sediment introduction (V5). In both cases, a value of 0 denotes the absence of significant benefits related to freshwater or sediment, and an increase in value reflects an increase in the volume of materials introduced.

Table 2. Criteria Used to Rank Projects for Feasibility Analysis.

Area of Benefit (V1)	Value	Cost (V2)	Value
1 - 50 ac	1	< $ 500,000	5
50 - 500 ac	2	$ 500,000 - 2,000,000	4
500 - 1,000 ac	3	$ 2,000,000 - 5,000,000	3
1,000 - 5,000 ac	4	$ 5,000,000 - 10,000,000	2
5,000 - 10,000 ac	5	$ > $ 10,000,000	1
> 10,000 ac	6		

Project Quality (V3)	Value ranges from 0 to 6	
V3 = l + c + u	l = longevity	(0 = low, 1 = moderate, 2 = high)
	c = compatibility	(0 = low, 1 = moderate, 2 = high)
	u = apparent need	(0 = low, 1 = moderate, 2 = high)

Freshwater introduction or utilization (V4)	Value	Sediment introduction (V5)	Value
none	0	none	0
runoff	1	turbid water/sediment fencing	1
non-flowing water bodies	2	river freshwater diversion	2
rivers and streams	3	use of available dredged material	3
		river sediment diversion	4

Project rank is obtained from: $\text{Rank} = 3 \cdot V1 + V2 + 3 \cdot V3 + 2 \cdot V4 + 4 \cdot V5$.

In producing a single number for project ranking, it was believed that, initially, greater weight should be given to the area of benefit and to special aspects in order to emphasize project quality and long-term restoration and conservation of vegetated wetlands. With a value of 4, sediment introduction was weighted most. A relative weight of 3 was given to both the area and the quality value, and a weight of 2 to freshwater benefits. Cost received a weight of 1. Addition of these values, as shown in Table 2, then produced the final ranking value and the order in which project feasibility analyses are being undertaken. The estimated area of benefit was used to order projects having the same rank. Projects receiving the highest rank are those where large areas of wetland are benefitted through the introduction or greater utilization of freshwater and sediments, and

that provide fish and wildlife as well as additional benefits, such as improvement of water quality, and flood and erosion protection for a long period.

At this time, the ranking of projects other than for feasibility analysis has not been necessary. Available funding has allowed all eligible projects for which feasibility analysis was completed to be advanced for subsequent phases of project implementation. Should the cost of projects begin to exceed available funding, which will occur when an increasing number of projects begin to enter the construction phase, the above ranking method would be applied until a new ranking system is approved under the Administrative Procedures Act.

Coordination with various entities will be a significant aspect of all phases of project development, implementation, and operation. This coordination is a requirement partly because of governmental mandates of state and Federal agencies and because a number of projects were identified for which costs are to be shared by state, local, or Federal government. Some parishes have indicated a willingness to share in the cost of design and construction of several projects. Currently, rules dealing with cost-sharing are being developed by DNR. Equally important, however, public hearings and associated comments by private citizens and elected officials have pointed out three major issues of concern in the efforts of wetland conservation and restoration. These are the rights of the landowner and the associated need for early coordination of project features; the need to assure that conservation-management programs serve both the fisheries and the wetland restoration and conservation needs; and the assurance that long-term operation and management of projects is provided for. It is the intention of the State to fully deal with these concerns during the feasibility analysis phase that is required prior to implementation of each project. Landowners will be contacted at the earliest possible time and meetings will be scheduled with elected officials as representatives of the public interest to discuss both public and private resource uses and access that may be affected.

FUNDING

It is proposed that state funding be provided for project implementation on a priority basis rather than a project basis, and that such funding includes necessary expenditures for projects in Table 1 to take advantage of the 3:1 Federal cost sharing available for those projects. Under this funding provision, project initiation will continue to occur according to the established and legislatively approved priority and will not be adversely affected by uncertainties about feasibility, permitting, and other project elements. After feasibility analysis, projects will be reevaluated according to their cost-effectiveness, that is, cost per acre of wetlands to be created, restored, or maintained throughout the project life. This reevaluation will be made after obtaining the necessary feasibility information, and will determine the implementation order of projects, unless problems arise that delay project implementation. In that case, work will begin on the project with the next highest priority.

Line-item funding is requested for the Plan components detailed in Table 1 and in Appendix A, Tables 4, 5, and 6 as follows:

1.	Project Implementation	$ 19,500,000
	(a) 1990-91 state Projects remaining to be funded	
	(b) 1991-92 state Projects remaining to be funded	

	(c) 1992-93 state/Federal Projects to be cost-shared under PL 101-646		
2.	Long and Short-Range Programs	$	5,500,000
3.	Measures Recommended for Action or Funding	$	2,000,000
	Total	$	27,000,000

Approval is also requested to transfer up to 20% of allocated funds from any one category to other categories as needed to prevent undesirable and costly delays in project planning and implementation.

APPENDIX A

LISTS OF PROJECTS AND MEASURES RECOMMENDED FOR FUNDING

Table 1. New Projects (to be implemented under PL 101-646), Listed by Hydrologic Basin. 1)

	Project	Parish
A. Projects recommended for immediate implementation		
1. Pontchartrain Basin		
PO-16	Bayou Sauvage Refuge Restoration	Orls
PO-10	Turtle Cove Shore Protection *(A)	StJn
PO-17	Bayou La Branche Wetland Creation	StCs
2. Mississippi River Delta		
MR-3	West Bay Sediment Diversion	Plqs
3. Barataria Basin		
BA-18	Fourchon Wetland Restoration	Lafr
BA-2	GIWW to Clovelly Wetland Restoration (A)	Lafr
BA-19	Barataria Bay Waterway Wetland Creation	Jefn
4. Terrebonne Basin		
TE-17	Falgout Canal Plantings	Terb
TE-18	Timbalier Island Plantings	Terb
TE-19	Lower Bayou La Cache Wetland Restoration	Terb
TE-20	Eastern Isles Dernieres Restoration	Terb
5. Teche/Vermilion Basin		
T/V-3	Vermilion River Cutoff (A)	Vrml
6. Mermentau Basin		
ME-8	DeWitt-Rollover Plantings	Vrml
ME-9	Cameron Prairie Refuge Protection	Camr
7. Calcasieu/Sabine Basin		
C/S-17	Cameron Creole Watershed Protection	Camr
C/S-18	Sabine Refuge Protection	Camr
C/S-19	West Hackberry Plantings	Camr
B. Projects recommended but tentatively deferred for action 2)		
1. Mississippi River Delta		
MR-4	Tiger Pass Wetland Creation	Plqs

(Table 1 continued)

Project		Parish
2. Barataria Basin		
BA-6	Hwy 90 to GIWW Wetland Protection (A)	Lafr
BA-16	Segnette Wetland (L. Salvador) Protection (A)	Jefn
3. Terrebonne Basin		
TE-21	Falgout Canal South Wetland Creation	Terb

1) All projects are eligible for 75/25 percent Federal/state cost sharing under PL 101-646.. Within each Basin, Projects are listed in order of decreasing cost effectiveness

2) Action on projects within group B will be deferred unless they are pursued under the authorization of a previous state Plan or unless one of the projects of group A is delayed for some unforeseen reason.

(A) Authorized under a previous state Plan.

Basins:

BA	=	Barataria	PO	=	Pontchartrain
C/S	=	Calcasieu/Sabine	TE	=	Terrebonne
ME	=	Mermentau	T/V	=	Teche/Vermilion
MR	=	Mississippi River Delta			

Parishes:

Camr	=	Cameron	Orls	=	Orleans	StJn	=	St. John the Baptist
Jefn	=	Jefferson	Plqs	=	Plaquemines	Terb	=	Terrebonne
Lafr	=	Lafourche	StCs	=	St. Charles	Vrml	=	Vermilion

Table 2. New Projects (to be implemented under PL 101-646), Listed by Parish. 1)

A. <u>Projects recommended for immediate implementation.</u>

1. **Cameron Parish**

   C/S-17 Cameron Creole Watershed Protection
   C/S-18 Sabine Refuge Protection
   C/S-19 West Hackberry Plantings
   ME-9 Cameron Prairie Refuge Protection

2. **Jefferson Parish**

   BA-19 Barataria Bay Waterway Wetland Creation

3. **Lafourche Parish**

   BA-18 Fourchon Wetland Restoration
   BA-2 GIWW to Clovelly Wetland Restoration (A)

4. **Orleans Parish**

   PO-16 Bayou Sauvage Refuge Restoration

5. **Plaquemines Parish**

   MR-3 West bay Sediment Diversion

7. **St. Charles Parish**

   PO-17 Bayou La Branche Wetland Creation

8. **St. John the Baptist Parish**

   PO-10 Turtle Cove Shore Protection (A)

9. **Terrebonne Parish**

   TE-17 Falgout Canal Plantings
   TE-18 Timbalier Island Plantings
   TE-19 Lower Bayou La Cache Wetland Restoration
   TE-20 Eastern Isles Dernieres Restoration

10. **Vermilion Parish**

    ME-8 DeWitt-Rollover Plantings
    T/V-3 Vermilion River Cutoff (A)

B. <u>Projects recommended but tentatively deferred for action.</u>

1. **Jefferson Parish**
   BA-16 Segnette Wetland (L. Salvador) Protection (A)

(Table 2 concluded)

2. Lafourche Parish

BA-6 Hwy 90 to GIWW Wetland Protection (A)

3. Plaquemines Parish

MR-4 Tiger Pass Wetland Creation

4. Terrebonne Parish

TE-21 Falgout Canal South Wetland Creation

1) All projects are eligible for 75/25 percent Federal/state cost sharing under PL 101-646. Within each parish, projects are listed in order of decreasing cost-effectiveness.

(A) Authorized under a previous state Plan; for other abbreviations see Table 1.

Table 3. Approved 90/92 Projects Requiring Authorization and Appropriation for FY 92/93, Listed by Hydrologic Basin [1].

	Project	Status	Parish
1. Pontchartrain Basin			
PO-1	Violet Siphon Diversion		StBd
	a) Diversion	C	
	b) Enlargement	F	
	c) Outfall management	F	
PO-2	Sediment Trapping/vegetation planting/shore protection		Orls
	b) Alligator Point Shore Protection	P	
	c) Bayou Chevee Wetland-protection	C	
PO-3	La Branche Wetland - protection and enhancement		StCs
	a) Completion of management plan	F,P	
	b) Stabilize critical reaches of shoreline	F	
PO-4	Bonnet Carré Freshwater Diversion - partial cost-sharing for portion of project to benefit wetlands	F	StCs
PO-5	Southeast Lake Maurepas Wetland		StJn
	a) Reduce ponding of water	F	
	b) Small diversion of Mississippi River water	F	
PO-6	Fritchie Wetland - marsh restoration	F	StTm
PO-7	North Shore Wetland - marsh restoration	F	StTm
PO-8	Central Wetlands Pump Outfall-enhancement	C	StBd
PO-10	Turtle Cove Shore Protection * (P)	F	StJn
PO-11	Cutoff Bayou Marsh Management	F	Orls
PO-12	West LaBranche Wetland Management	F	StCs
PO-13	Tangipahoa/Pontchartrain Shore Protection	F	Tang
PO-14	Green Pt./Goose Pt. Marsh Restoration	F	StTm
PO-15	Alligator Point Marsh Restoration	F	Orls
2. Breton Sound Basin			
BS-1	Bohemia Diversion Structure		Plqs
	a) Achieve operation of existing structure	C	
	b) Outfall management	F	
BS-3	Caernarvon Diversion Outfall		Plqs/StBd
	a) management north of Lake Lery	F	
	b) management south of Big Mar	F	
BS-4	White's Ditch Diversion Siphon		Plqs
	a) outfall management	F	
	b) enlargement	F	
BS-5	Bayou LaMoque Diversion - outfall management	F	Plqs
3. Mississippi River Delta			
MR-1	Small Sediment Diversions		
	b) Delta National Wildlife Refuge	C	Plqs
MR-2	Pass-a-Loutre Sediment Fencing	F	Plqs

(Table 3 continued)

4. Barataria Basin

BA-1	Davis Pond Freshwater Diversion *	P,D	StCs
BA-2	GIWW to Clovelly Wetland-protection and enhancement *(P)	D	Lafr
BA-3	Naomi (LaReussite) Diversion Siphon		Plqs/Jefn
	a) Siphon Construction	C	
	b) Enlargement of diversion capacity	F	
	c) Outfall management	F	
BA-4	West Point a la Hache Diversion Siphon		Plqs
	a) Siphon Construction	C	
	b) Enlargement of diversion capacity	F	
	c) Outfall management	C	
BA-5	Sediment Trapping/vegetation planting/shoreline protection		StCs
	b) Queen Bess Island-habitat restoration	P	
BA-6	Highway 90 to GIWW Wetland - protection * (P)	C	Lafr
BA-7	Couba Island - restore canal closure	P	StCs
BA-8	Lake Cataouatche Shore Protection	F	StCs
BA-9	Salvador WMA Gulf Canal Project	F	StCs
BA-10	Davis Pond Diversion Outfall Mgt.	F	StCs
BA-11	Tiger/Red Pass Diversion and Outfall Management	F	Plqs
BA-12	Grand/Spanish Pass Diversion	F	Plqs
BA-13	Hero Canal Diversion	F	Plqs
BA-14	Little Lake Marsh Management	F	Jefn
BA-15	Lake Salvador Shore Protection	F	StCs
BA-16	Segnette Wetland Protection * (P)	F	Jefn
BA-17	City Price Diversion †	F	Plqs

5. Terrebonne Basin

TE-1	Montegut Wetland-protection and enhancement	P,D	Terb
TE-2	Falgout Canal Wetland-protection and enhancement	C	Terb
TE-3	Bayou la Cache Wetland-protection and enhancement	P	Terb
TE-4	Sediment trapping/vegetation planting		Terb
	b) Barrier Islands-sediment protection	F	
TE-5	Grand Bayou Wetland	P	Lafr
TE-6	Pointe au Chien Wetland - protection and enhancement	F	Terb
TE-7	Lake Boudreaux Wetland - protection		Terb
	a) Upper Petit Caillou management area	P	
	b) Lower Petit Caillou management area	F	
	c) Bayou Grand Caillou management area	P	
	d) Water management Lake Boudreaux sub-basin	F	
TE-8	Bayou Pelton Wetland - protection	P	Terb
TE-9	Bully Camp Marsh Management	F	Lafr
TE-11	Isle Dernieres Cut Closure	F	Terb
TE-12	Bird Island Restoration	F	Terb
TE-13	Trinity Bayou Pilot Project	F	Terb
TE-14	Pt. Farm Refuge Planting	F	Terb
TE-15	GIWW Levee Planting	F	Terb
TE-16	St. Louis Wetland Restoration	F	Terb

(Table 3 continued)

6. Teche/Vermilion Basin			
T/V-1	Sediment trapping/vegetation planting/shore protection		Ibra
	b) Shark Island/Weeks Bay - protection	F	
T/V-2	Cote Blanche Wetlands-protection		StMy
	a) Hammock Lake-protection/restoration	P	
	b) Yellow Bayou Wetland	P	
T/V-3	Vermilion River Cutoff - restoration * (P)	F	Vrml
T/V-4	Cote Blanche Marsh Management	F	StMy
T/V-5	Marsh Island Canal Backfilling	F	Ibra
T/V-6	Marsh Island Control Structures	F	Ibra
T/V-7	Marsh Island Sediment Fencing	F	Ibra
T/V-8	Redfish Point Shore Protection	F	Vrml
T/V-9	Boston Canal Bank Protection	F	Vrml
T/V-10	Weeks Bay Shore Restoration	F	Ibra
T/V-11	Freshwater Bayou Bank Protection †	F	Vrml
7. Mermentau Basin			
ME-1	Pecan Island Freshwater Introduction		Vrml
	a) Pecan Island Structure	C	
	b) Outfall management	P	
ME-2	Hog Bayou Wetland - restoration and enhancement	P	Camr
ME-4	Freshwater Bayou Wetland - diminish ponding of water	F	Vrml
ME-5	White Lake Shore Protection	F	Vrml
ME-6	Big Burn Marsh Management	F	Camr
ME-7	Deep Lake Marsh Protection	F	Vrml
8. Calcasieu/Sabine Basin			
C/S-1	Calcasieu-Sabine Wetland - Gulf shore protection from		Camr
	a) Peveto Beach to Holly Beach	C	
	b) Holly Beach to Calcasieu	F,D	
	c) Constance Beach to Ocean View	F,D	
C/S-2	Rycade Canal-closure to Black Lake	P	Camr
C/S-4	Cameron-Creole Watershed		Camr
	a) Operation of control structure	D	
	b) Freshwater introduction-from GIWW	P,D	
C/S-5	Sabine Freshwater Introduction - diversion Sabine R. water	F	Camr
C/S-6	Black Lake South Shore Protection	F	Camr
C/S-7	Black Lake West Shore Protection	F	Camr
C/S-8	Black Lake North Marsh Management	F	Camr
C/S-9	Brown Lake Marsh Management	F	Camr
C/S-10	Grand Lake Ridge Marsh Management	F	Camr
C/S-11	Sweet Lake/GIWW Bank Restoration	F	Camr
C/S-12	Black Bayou Marsh Management	F	Camr
C/S-13	Back Ridge Freshwater Introduction	F	Camr
C/S-14	Tripod Bayou Control Structure	F	Camr
C/S-15	Boudreaux/Broussard Marsh Protection	F	Camr
C/S-16	Black Bayou Culverts	F	Camr

(Table 3 concluded)

1) Within each Basin projects are listed in numerical order; the order of implementation is determined by the results of the feasibility analysis as authorized.

† Design modification presented in Appendix C.

* Federal and state cost-sharing

(P) To be implemented under Public Law 101-646 with 75/25 Federal/state cost-sharing.

Status:

F = Feasibility Study in progress
P = Permitting in progress
D = Design in progress
C = Contracting/Construction in progress
Z = All steps completed.

For other abbreviations, see Table 1.

Table 4. Approved 90/92 Projects Requiring Authorization and Appropriation for FY 92/93, Listed by Parish [1].

	Project	Status
1.	**Cameron Parish**	
ME-2	Hog Bayou Wetland	P
ME-6	Big Burn Marsh Management	F
C/S-1	Calcasieu-Sabine Wetland - Gulf shore protection from	
	a) Peveto Beach to Holly Beach	C
	b) Holly Beach to Calcasieu	F, D
	c) Constance Beach to Ocean View	F, D
C/S-2	Rycade Canal	P
C/S-4	Cameron-Creole Watershed	
	a) Operation control structure	D
	b) Freshwater introduction from GIWW	P,D
C/S-5	Sabine Freshwater Introduction - freshwater diversion from the Sabine River	F
C/S-6	Black Lake South Shore Protection	F
C/S-7	Black Lake West Shore Protection	F
C/S-8	Black Lake North Marsh Management	F
C/S-9	Brown Lake Marsh Management	F
C/S-10	Grand Lake Ridge Marsh Management	F
C/S-11	Sweet Lake/GIWW Bank Restoration	F
C/S-12	Black Bayou Marsh Management	F
C/S-13	Back Ridge Freshwater Introduction	F
C/S-14	Tripod Bayou Control Structure	F
C/S-15	Boudreaux/Broussard Marsh Protection	F
C/S-16	Black Bayou Culverts	F
2.	**Iberia Parish**	
T/V-1	Sediment trapping/vegetation planting/shore protection	
	b) Shark Island/Weeks Bay - protection	F
T/V-5	Marsh Island Canal Backfilling	F
T/V-6	Marsh Island Control Structures	F
T/V-7	Marsh Island Sediment Fencing	F
T/V-10	Weeks Bay Shore Restoration	F
3.	**Jefferson Parish**	
BA-3	Naomi (LaReussite) Diversion Siphon	
	a) Siphon construction	C
	b) Enlargement of diversion capacity	F
	c) Outfall management	F
BA-14	Little Lake Marsh Management	F
BA-16	Segnette Wetland Protection * (P)	F

(Table 4 continued)

4. Lafourche Parish		
BA-2	GIWW to Clovelly Wetland - protect/enhance * (P)	D
BA-6	Highway 90 to GIWW Wetland - protection * (P)	C
TE-5	Grand Bayou Wetland - protection	P
TE-9	Bully Camp Marsh Management	F
5. Orleans Parish		
PO-2	Sediment trapping/vegetation planting/shore protection	
	b) Alligator Point shore protection	P
	c) Bayou Chevee wetland protection	C
PO-11	Cutoff Bayou Marsh Management	F
PO-15	Alligator Point Marsh Restoration	F
6. Plaquemines Parish		
BS-1	Bohemia Diversion Structure	C
	a) Operation of existing structure	C
	b) Outfall management	F
BS-3	Caernarvon Diversion Outfall -	
	b) management south of Big Mar	F
BS-4	White's Ditch Diversion Siphon	
	a) Outfall management	F
	b) Diversion enlargement	F
BS-5	Bayou LaMoque Diversion - outfall management	F
MR-1	Small Sediment Diversions	
	b) Delta National Wildlife Refuge	C
MR-2	Pass a Loutre Sediment Fencing	F
BA-3	Naomi (LaReussite) Diversion Siphon	
	a) Siphon construction	C
	b) Enlargement of diversion capacity	F
	c) Outfall management	F
BA-4	West Point a la Hache Diversion Siphon	
	a) Siphon construction	C
	b) Enlargement of diversion capacity	F
	c) Outfall management	C
BA-11	Tiger/Red Pass Diversion and Outfall Management	F
BA-12	Grand/Spanish Pass Diversion	F
BA-13	Hero Canal Diversion	F
BA-17	City Price Diversion †	F
7. St. Bernard Parish		
PO-1	Violet Siphon Diversion	
	a) Diversion operation	C
	b) Enlargement	F
	c) Outfall management	F
PO-8	Central Wetlands Pump Outfall - enhancement	C

(Table 4 continued)

BS-3	Caernarvon Diversion Outfall	
	a) management north of Lake Lery	F
8.	**St. Charles Parish**	
PO-3	La Branche Wetland - protection and enhancement	
	a) Complete management plan	F,P
	b) Stabilize critical reaches of shoreline	F
PO-4	Bonnet Carré Freshwater Diversion - partial cost-sharing for portion of project to benefit wetlands	F
PO-12	West LaBranche Wetland Management	F
BA-1	Davis Pond Freshwater Diversion *	P,D
BA-5	Sediment trapping/vegetation planting/shore protection	
	b) Queen Bess Island - habitat restoration	P
BA-7	Couba Island - protection/restoration	P
BA-8	Lake Cataouatche Shore Protection	F
BA-9	Salvador WMA Gulf Canal Project	F
BA-10	Davis Pond Diversion Outfall Management	F
BA-15	Lake Salvador Shore Protection	F
9.	**St. John the Baptist Parish**	
PO-5	Southeast Lake Maurepas Wetland	
	a) Reduce ponding of water	F
	b) Small diversion of Mississippi River water	F
PO-10	Turtle Cove Shore protection * (P)	F
10.	**St. Mary Parish**	
T/V-5	Cote Blanche Wetland Protection	
	a) Hammock Lake - protection/restoration	P
	b) Yellow Bayou Wetland	P
T/V-4	Cote Blanche Marsh Management	F
11.	**St. Tammany Parish**	
PO-6	Fritchie Wetland - marsh restoration	F
PO-7	North Shore Wetland - marsh restoration	F
PO-14	Green Pt./Goose Pt. - marsh restoration	F
12.	**Tangipahoa Parish**	
PO-13	Tangipahoa/Pontchartrain Shore Protection	F
13.	**Terrebonne Parish**	
TE-1	Montegut Wetland - protection and enhancement	D
TE-2	Falgout Canal Wetland - protection and enhancement	C
TE-3	Bayou la Cache Wetland - protection and enhancement	P
TE-4	Sediment trapping/vegetation planting	
	b) Barrier island - sediment protection	F
TE-5	Grand Bayou Wetland	P

(Table 4 concluded)

TE-6	Pointe au Chien Wetland - protection and enhancement	F
TE-7	Lake Boudreaux Wetland - protection	
	a) Upper Petit Caillou management area	P
	b) Lower Petit Caillou management area	P
	c) Bayou Grand Caillou management area	P
	d) Water management Lake Boudreaux sub-basin	F
TE-8	Bayou Pelton Wetland - protection	P
TE-9	Bully Camp Marsh Management	F
TE-11	Isle Dernieres Cut Closure	F
TE-12	Bird Island Restoration	F
TE-13	Trinity Bayou Pilot Project	F
TE-14	Pt. Farm Refuge Planting	F
TE-15	GIWW Levee Planting	F
TE-16	St. Louis Wetland Restoration	F
14. Vermilion Parish		
T/V-3	Vermilion River Cutoff - restoration * (P)	F
T/V-8	Redfish Point Shore Protection	F
T/V-9	Boston Canal Bank Protection	F
T/V-11	Freshwater Bayou Bank Protection †	F
ME-1	Pecan Island Freshwater Introduction	
	a) Pecan Island Structure	C
	b) Outfall management	P
ME-4	Freshwater Bayou Wetland - diminish ponding of water	F
ME-5	White Lake Shore Protection	F
ME-7	Deep Lake Marsh Protection	F

1) Within each Parish projects are listed in numerical order by hydrologic basin; the order of implementation is determined by the results of feasibility analyses as authorized.

† Design modification presented in Appendix C.

* Federal and state cost-sharing

(P) To be implemented under Public Law 101-646 with 75/25 Federal/state cost-sharing.

For status abbreviations, see Table 3.

Table 5. Long- and Short-range Programs to be Funded.

Objective: Investigate potential measures requiring further evaluation as part of comprehensive planning efforts to maximize the use of available water and sediment resources to restore and enhance coastal vegetated wetlands. Some of these measures will be implemented through Federal/State programs under the Wetlands Planning, Protection, and Restoration Act (PL 101-646, Title III)

1. Section 303. Priority Louisiana Coastal Wetlands Restoration Projects (Federal/State)*

303a. Priority Project List (Federal/State)*

Objective: 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.
Status: completed.

303b. Federal and State Project Planning and Implementation (Federal/State)*

Objective: To develop and implement a comprehensive coastal wetlands restoration plan that addresses large-scale and long-term requirements for the conservation, restoration, and enhancement of Louisiana's coastal wetlands with Federal participation. The plan would contain projects in order of priority.
Status: ongoing.

(a) Develop and implement a plan to allocate water and sediments of the Atchafalaya and Mississippi Rivers, considering the proposed measures listed below, in order to maximize maintenance, restoration, enhancement, and creation of vegetated wetlands.

- Major diversion into Lake Verret watershed from the Atchafalaya River.
- Diversion from the Atchafalaya River through the Avoca Island levee south of Morgan City
- An alternate Mississippi River navigation channel
- Major intermittent diversion near Des Allemands
- Major intermittent diversion north of Bonnet Carré Spillway
- Major diversion below Caernarvon
- Major diversion below Port Sulphur
- Major diversion into West Bay

(b) Develop and implement a water management plan for the marshes between Calcasieu and Sabine Lakes.

(Table 5 continued)

(c) Isolate Houma Navigation Canal via construction of a floodgate in the canal and stabilize canal banks.

(d) Construct a water-control structure at Black Bayou, Cameron Parish.

(e) Rebuild and protect back-barrier marsh platform of barrier islands through dredged material placement, structural measures, or combinations as appropriate.

(1) East Timbalier to Cat Island Pass
(2) Cat Island Pass to Whiskey Pass
(3) Whiskey Pass to Raccoon Point
(4) Sandy Point to Belle Pass

(f) Develop and implement a plan for freshwater and sediment diversions into wetlands in the vicinity of the Bonnet Carré. Spillway.

(g) Increase delivery of sediment through the Atchafalaya River.

2. Section 304. Louisiana Coastal Wetlands Conservation Planning (Federal/State)*

304 a. Development of Conservation Plan (Federal/State)*

Objective: Develop a wetlands conservation plan that has a goal of achieving no net loss of wetlands in Louisiana as a result of development activities, exclusive of any wetlands gains achieved through implementation of Secs. 303a and b.
Status: ongoing.

3. Land Loss and Marsh Creation Study (Federal/State)*

Objective: Identify, evaluate, and implement measures to create marsh using diversion of sediment from the Mississippi River and dredged material.
Status: ongoing.

4. Project Operation/Maintenance/Rehabilitation/Monitoring

Objective: To provide for (1) operation, maintenance, and monitoring, and (2) emergency repairs for projects that have been implemented under the authorized Plan.
Status: ongoing.

(Table 5 concluded)

5. National Estuary Program (EPA/State)*

Objective: To develop and implement plans to protect the integrity of the Barataria-Terrebonne estuaries.
Status: ongoing.

6. Vegetation, Sedimentation, and Demonstration Program (CRD-DNR)

Objective: To plan and implement marsh restoration and conservation using vegetation planting, sediment trapping, low-cost shore protection, or approved demonstration technology.

Status: ongoing.

(a) Sediment Trapping and Outfall Management in the Mississippi River and Atchafalaya Deltas.

(b) Sediment trapping, vegetation planting, and other low-cost protection along shorelines of coastal bays and lakes.

(c) Approved demonstration of new wetland protection technology.

(d) Herbivore control.

7. Basin Level Hydrologic Evaluation Program (CRD-DNR)

Objective: To assure mutual compatibility of proposed projects with regard to hydrology of each coastal basin.
Status: ongoing.

8. Office of Coastal Activities (Governor's Office)

Objective: To execute powers and duties as provided by Act 6.
Status: ongoing.

9. DNR Coastal Restoration Division / Executive Division

Objective: To execute powers and duties as provided by Act 6.
Status: ongoing.

10. Match Federal funding on coastal vegetated wetlands projects (Federal/State) *

Objective: To provide for timely use of Federal funding when available.
Status: ongoing.

* Federal and state cost-sharing

Table 6. Measures Recommended for State and Federal Action or Funding.

A. For State Action

1. **Replacement of the loss of functional coastal wetland values.**

   Objective: Develop rules and regulations to provide, at a minimum, for replacement of the loss of functional coastal wetland values which result from permitted activities in the coastal zone and to help ensure that Federal activities are undertaken in a manner that is consistent with the federally approved Louisiana Coastal Resources Program.
   Status: legislation enacted, rule-making in progress.

2. **Mitigation banking.**

   Objective: Develop rules for mitigation banking.
   Status: ongoing.

3. **State Mineral Board advertisement.**

   Objective: Institute state mineral board advertisement of environmental conditions prior to mineral lease sale on state water bottoms.
   Status: ongoing.

4. **Verret Basin - Southwest Terrebonne Parish.**

   Objective: Request congressional authorization for a comprehensive flood control and wetland restoration and enhancement plan to protect industries and residences that desire protection from backwater flooding and to provide maximum benefits to the wetlands in western Terrebonne Parish and in the Verret Basin. The plan should include provisions by the Corps for federally maintained forced drainage of the Verret Basin and for an appropriately sized freshwater and sediment diversion in the existing levee south of Morgan City. The plan should provide increased flood protection to the Morgan City - Amelia - Verret Basin area, while still protecting, restoring, and enhancing wetlands.
   Status: new.

5. **Atchafalaya River Delta.**

   Objective: Recommend that measures be implemented to enhance growth of the Lower Atchafalaya River Delta within the constraints of flood protection for the Morgan City - Amelia - Verret Basin area. These measures should reduce the capture of flow (and sediment) by the navigation channel to the minimum volume required to maintain the presently-authorized channel dimensions, and increase diversion of flow and sediment through distributary channels so as to promote growth of the emergent delta within Atchafalaya Bay. All materials dredged for maintenance and development of the navigation channel should be used toward this end in order to be consistent with the federally approved Louisiana Coastal Resources Program and State Water Quality Certification.
   Status: ongoing.

(Table 6 continued)

6. **Non-point source discharges.**

Objective: Route non-point-source discharges and, where appropriate, point-source discharges through wetlands to offset saltwater intrusion, enhance vegetation growth, and improve water quality.
Status: ongoing.

B. <u>For Federal Action.</u>

1. **Atchafalaya Delta.**

Objective: Increase delivery of sediment through the Atchafalaya River for marsh building in the Atchafalaya Delta, in a manner that will produce no additional flooding of Morgan City and other coastal communities.
Status: ongoing.

2. **Wax Lake Outlet.**

Objective: Maintain at least 30% of total Atchafalaya River flow through Wax Lake Outlet during normal flows.
Status: ongoing.

3. **Atchafalaya Delta.**

Objective: Implement a management plan for maximizing growth of the Atchafalaya Delta within the constraints of flood protection and navigation requirements.
Status: ongoing.

(a) Use dredged material: (1) to expand the area of wetlands, (2) to manage flows so that flow requirements for navigation and flood control are reduced and diversion through distributary channels is increased, and (3) in a manner consistent with the Louisiana Coastal Resources Program and State Water Quality Certification.

(b) Improve efficiency of distributary channels for marsh creation through selective dredging and enhance diversion of flow and sediments into distributaries by restricting further discharge increases of the lower navigation channel.

(c) Enhance sedimentation through the use of sediment fencing.

(Table 6 continued)

4. **Verret Basin - Southwestern Terrebonne Parish.**

Objective: Request congressional authorization for a comprehensive flood control and wetland restoration and enhancement plan to protect industries and residences that desire protection from backwater flooding and to provide maximum benefits to the wetlands in western Terrebonne Parish and in the Verret Basin. The plan should include provisions by the Corps for federally maintained forced drainage of the Verret Basin and for an appropriately sized freshwater and sediment diversion in the existing levee south of Morgan City. The plan should provide increased flood protection to the Morgan City - Amelia - Verret Basin area, while still protecting, restoring, and enhancing wetlands.
Status: new.

5. **Bonnet Carré Floodway.**

Objective: Operate Bonnet Carré Floodway for freshwater diversion when feasible and needed.
Status: ongoing.

6. **Freshwater Bayou Structure.**

Objective: Operate Freshwater Bayou Structure to remove excess water from marshes in eastern Vermilion Parish.
Status: ongoing.

7. **Algiers Lock.**

Objective: Operate Algiers Lock for freshwater diversion.
Status: ongoing.

8. **Violet Floodgate.**

Objective: Operate Violet Floodgate for freshwater retention and water-level control.
Status: ongoing.

9. **Grand - White Lakes Area.**

Objective: Reduce Mean Water Levels in the Grand-White Lakes impoundment.
Status: ongoing.

10. **Cameron Creole Watershed.**

Objective: Assure continued operation of the Cameron Creole Watershed Project in accordance with both fisheries and wetland restoration and conservation needs.
Status: ongoing.

(Table 6 concluded)

11. **Teche-Vermilion Diversion.**

Objective: Achieve full design capacity of the Teche-Vermilion Diversion Project.
Status: ongoing.

12. **Navigation-Channel Banks**

Objective: Bank stabilization and dredged material use from Federally maintained navigation channels.

(a) Stabilize and maintain banks of navigation channels in Louisiana where necessary to prevent wetlands loss.

- Mississippi River
- Mississippi River Gulf Outlet
- Freshwater Bayou
- Gulf Intracoastal Waterway
- Barataria Waterway
- Vermilion River Cutoff
- Calcasieu Ship Channel
- Mermentau Ship Channel
- Bayou Lafourche
- Houma Navigation Channel

Status: ongoing.

(b) Create marsh and nourish beaches with dredged materials from Federally maintained channels where not required for 12 a.

Status: ongoing.

13. **Gulf Intracoastal Waterway.**

Objective: Oppose plans for enlargement of the Gulf Intracoastal Waterway.
Status: ongoing.

14. **(Non)-Point-Source Discharges.**

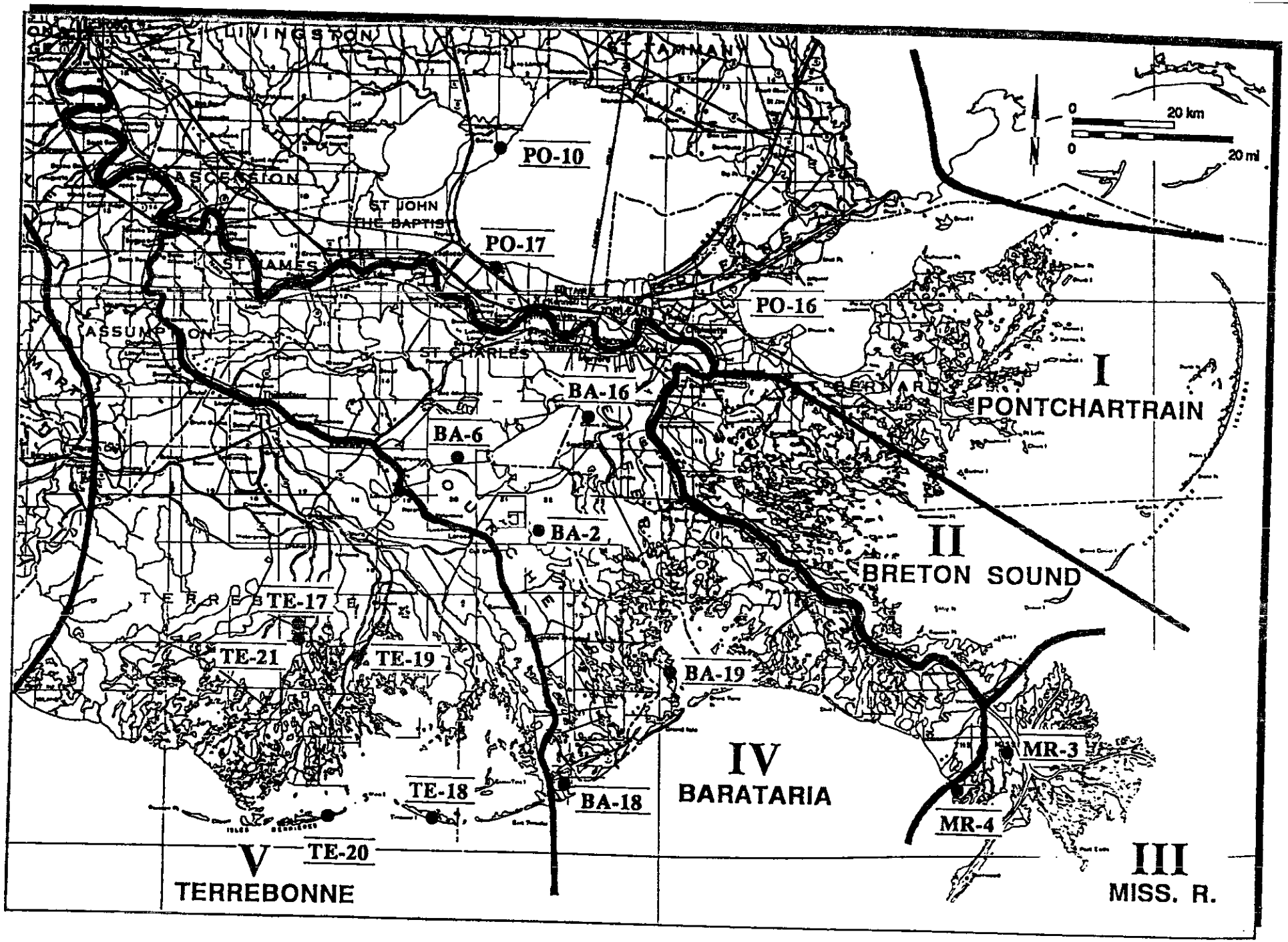
Objective: Route non-point-source discharges and, where appropriate, point-source discharges through wetlands to offset saltwater intrusion, enhance vegetation growth, and improve water quality.
Status: ongoing.

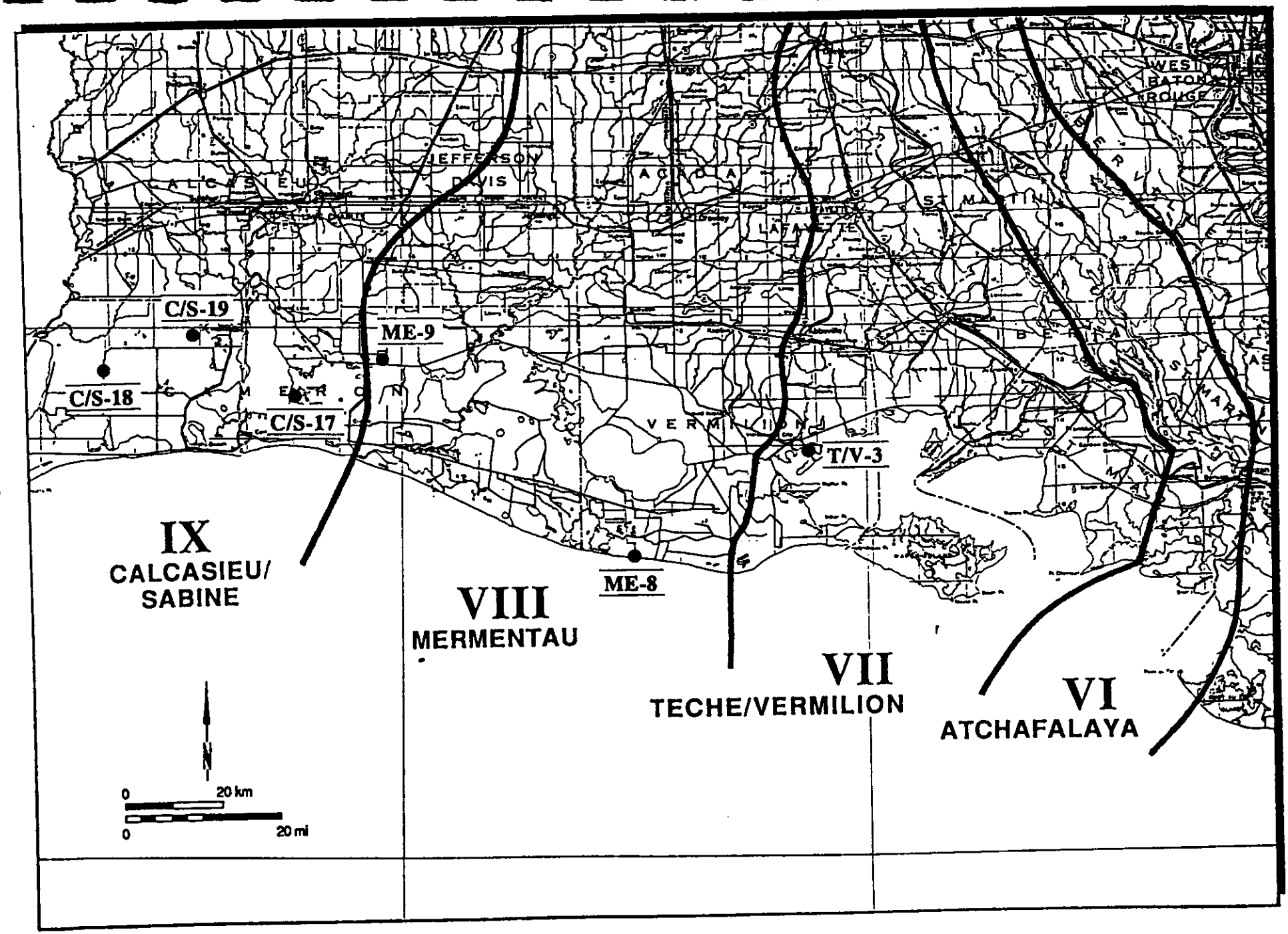
15. **Cost-Sharing.**

Objective: Match Federal funding on projects to create, restore, enhance, or conserve coastal vegetated wetlands.
Status: new

APPENDIX B

PROJECT DESCRIPTIONS


LIVINGSTON
ST TAMMANY
ASCENSION
ST JOHN THE BAPTIST
ST JAMES
ASSUMPTION
ST CHARLES
PO-10
PO-17
PO-16
BA-16
BA-6
BA-2
BA-19
BA-18
TE-17
TE-21
TE-19
TE-18
TE-20
MR-3
MR-4
0
20 km
0
20 mi
I
PONTCHARTRAIN
II
BRETON SOUND
IV
BARATARIA
V
TERREBONNE
III
MISS. R.

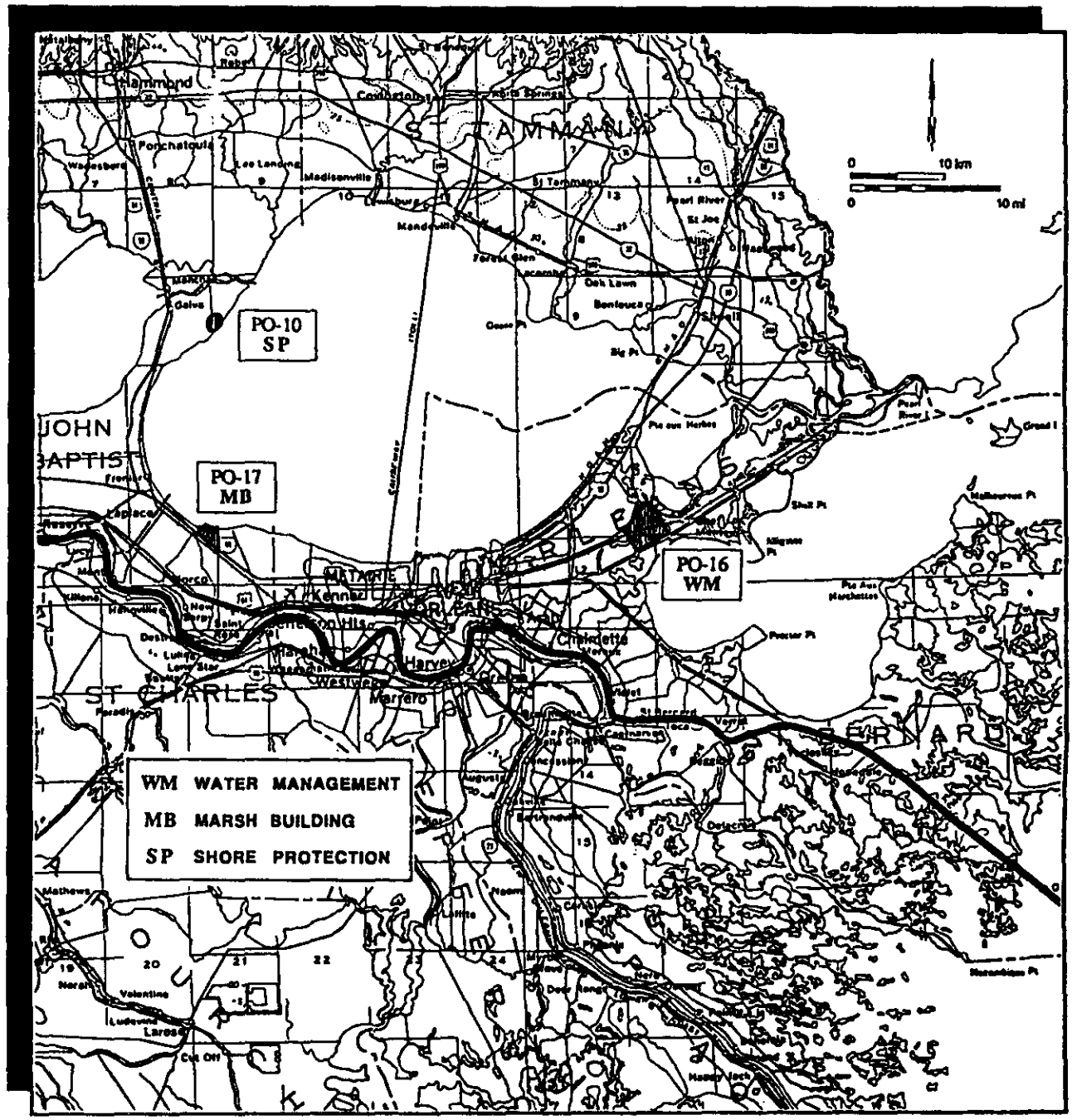

C/S-19
ME-9
C/S-18
C/S-17
T/V-3
ME-8
IX
CALCASIEU/
SABINE
VIII
MERMENTAU
VII
TECHE/VERMILION
VI
ATCHAFALAYA
JEFFERSON
DAVIS
ACADIA
LAFAYETTE
ST. MARTIN
VERMILION
IBERIA
ST. MARY
WEST BATON ROUGE
N
0
20 km
0
20 mi

PONTCHARTRAIN BASIN

PONTCHARTRAIN BASIN

PO-10	Turtle Cove Shore Protection
PO-16	Bayou Sauvage Refuge
PO-17	Bayou La Branche Wetland Creation

Figure PO-0. Location and estimated area of benefit for projects proposed in the Pontchartrain Basin.


PO-10
SP
PO-17
MB
PO-16
WM
WM WATER MANAGEMENT
MB MARSH BUILDING
SP SHORE PROTECTION
0 10 km
0 10 mi

PO-10. Turtle Cove Shore Protection

Location and Size

The project area is located in the Manchac Wildlife Mangement Area in northern St. John the Baptist Parish between Lakes Maurepas and Pontchartrain. Successful implementation of this shore protection project will directly benefit 800 ac of marsh and shallow open water, and could ultimately prevent serious deterioration over a large portion of the 8,300 ac WMA.

Objectives

The project will protect a narrow strip of land between the Prairie (an 800 ac shallow open water and some flotant marsh) and Lake Pontchartrain that has been eroding at 14 ft/yr since 1970. Currently, less than 200 ft of land separates the Prairie from Lake Pontchartrain. This strip will be lost within 15 years at current erosion rates, though a single large storm could breach the area at any time. With the loss of this hydrologic barrier, high rates of flow will begin to occur in the trenasses and canals between Lake Pontchartrain and Pass Manchac, with resultant erosion, salinity increases, and loss of vegetated area.

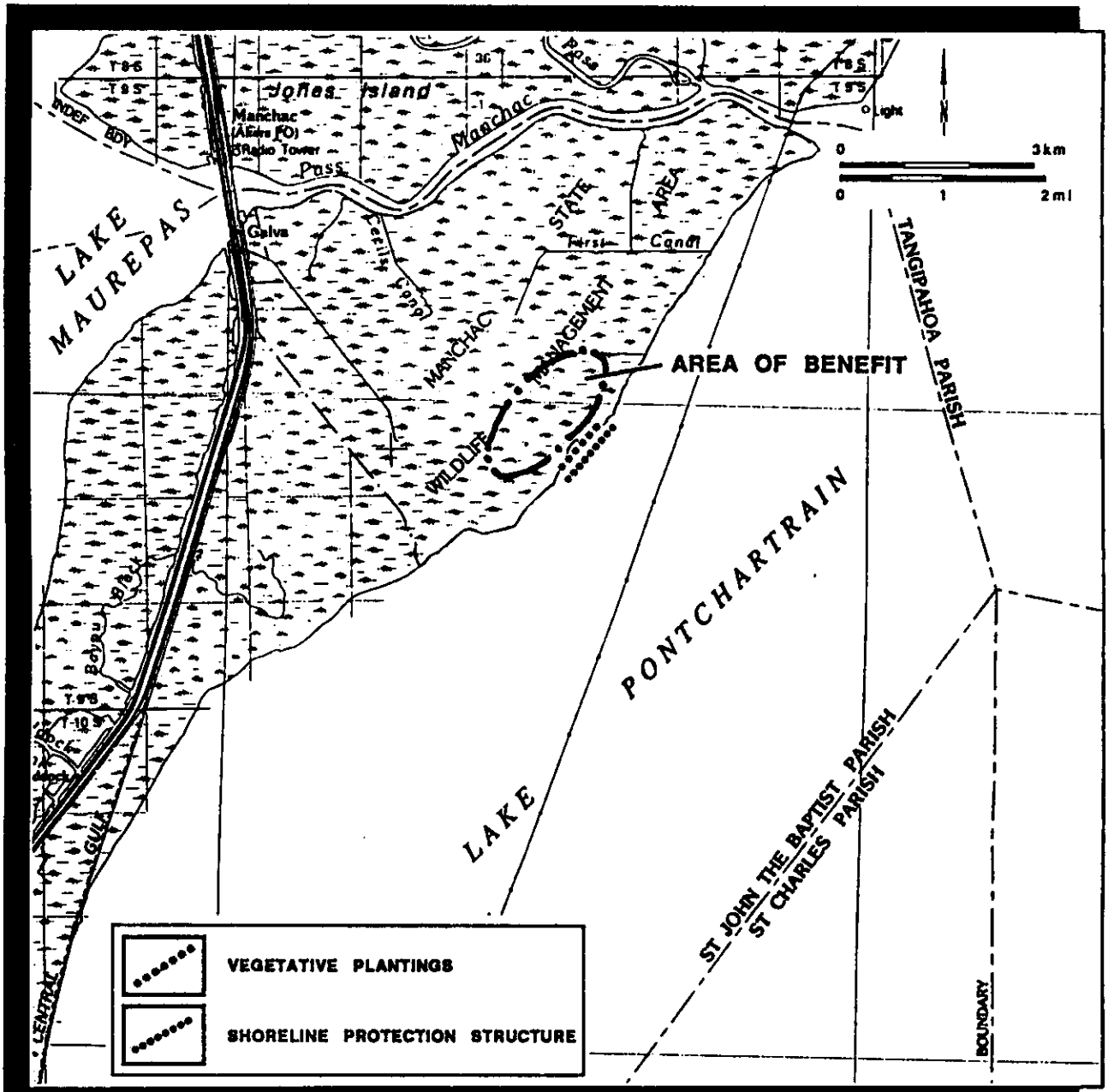
The Army Corps of Engineers has proposed the construction of 4.5 miles of breakwater protection along this shoreline as mitigation for other construction. The project proposed here will protect the most critical segment of shoreline until the Corps can institute the breakwater project.

Project Features

Two 500-ft sand-filled Longard Tubes will be installed just off the shoreline, with vegetation planted in the protected area to help promote accretion.

Status

NEPA requirements have been fulfilled. Section 10/404 and Coastal Use permits, and the Louisiana Water Quality Certification have been received. The project was first proposed in the State's 1991-92 Plan. the project is estimated to save about 104 acres over a 20 year period.



PO-10. TURTLE COVE SHORE PROTECTION

Hydrologic Basin: Pontchartrain
Parish: St. John the Baptist
Acreage Benefitted: 184

Description: This project maintains vegetated wetlands by preventing accelerated erosion of the hydrologic barrier between Lake Pontchartrain and Lake Maurepas.

PO-16. Bayou Sauvage Refuge Restoration

Location and Size

The project area is located in the Bayou Sauvage National Wildlife Refuge in Orleans Parish. The 3,800 acre site is south of U.S. Highway 90, west of the Pontchartrain Hurricane Protection Levee, north of the GIWW, and east of the Maxent Canal Levee.

Objectives

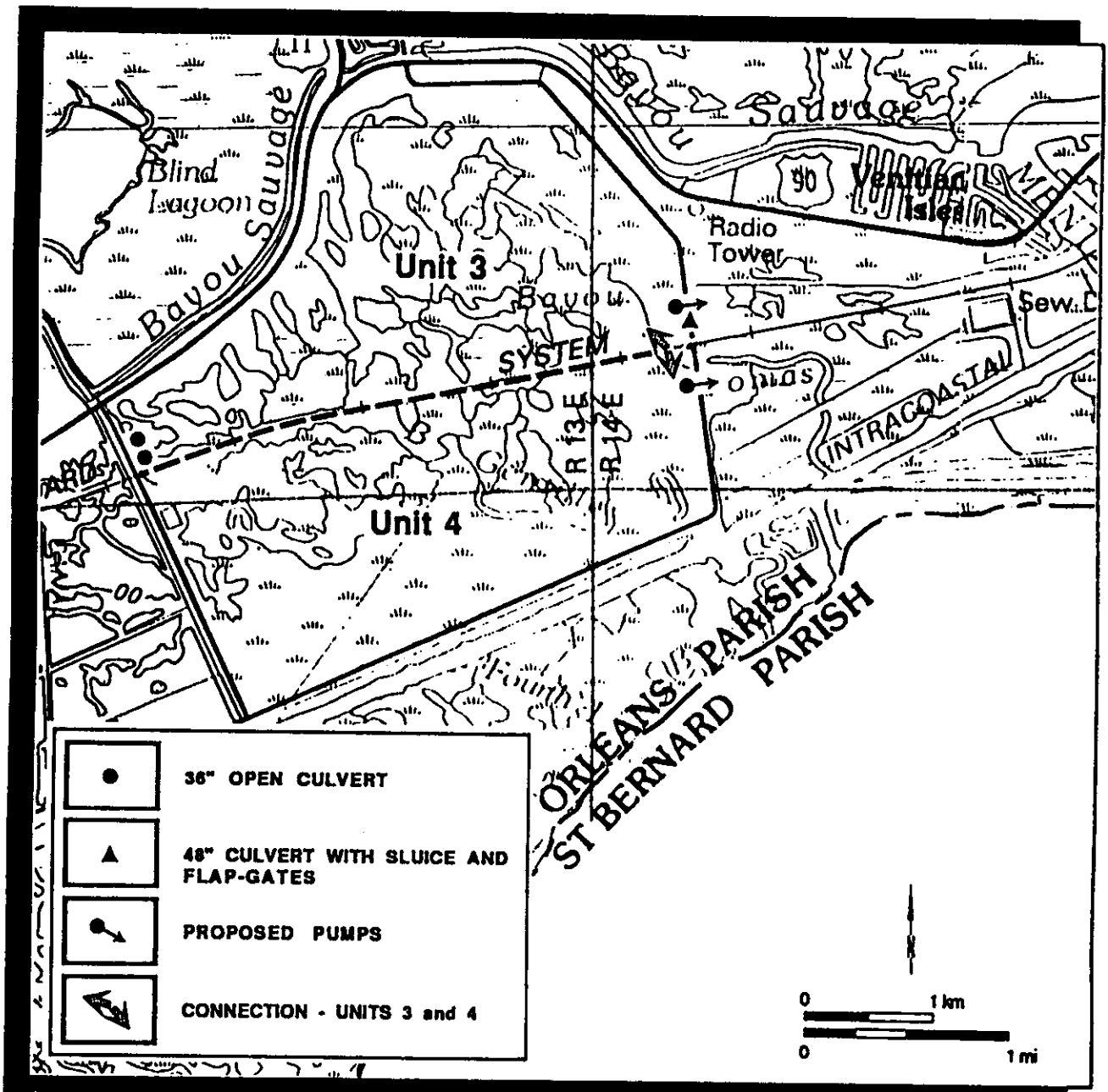
The Lake Pontchartrain Hurricane Protection levee has isolated the project area from the surrounding marsh, and the water control structures installed during levee construction do not dewater the area adequately. Elevated water levels have caused significant wetland degradation, with resultant loss of waterfowl and wading bird habitats. Installation and operation of pumps will make an additional 1,050 acres available to annual plant production, providing habitat for some 35,000 additional overwintering waterfowl and 2,000 nesting sites for wading birds.

Project Features

The proposed project involves the purchase, installation, operation, and maintenance of two 48-inch pumps located at the east boundary of the project area.

Status

The FWS will prepare an Environmental Assessment per NEPA guidelines. No threatened or endangered species will be affected; formal Section 7 Evaluation will be conducted. Engineering evaluation of the site will be required to determine the need for Section 404 and Louisiana Water Quality Certification permitting; these permits will not be required unless some dredging/earth moving is necessary for pump siting. The Louisiana Department of Natural Resources - Coastal Management Division will need to conduct a consistency review of the project.



PO-16. BAYOU SAUVAGE REFUGE RESTORATION

Hydrologic Basin: Pontchartrain
Parish: Orleans
Acreage Benefitted: 1,050

Description: The project will restore some 1,050 acres of fresh marsh which has been degraded by excessive water levels.

PO-17. Bayou La Branche Wetland Creation

Location and Size

The proposed project area is located in the Bayou La Branche wetlands adjacent to the Lower Guide Levee of the Bonnet Carre Flooodway in St. Charles Parish. The project would create about 254 acres of intermediate marsh within a 487 acre area.

Objectives

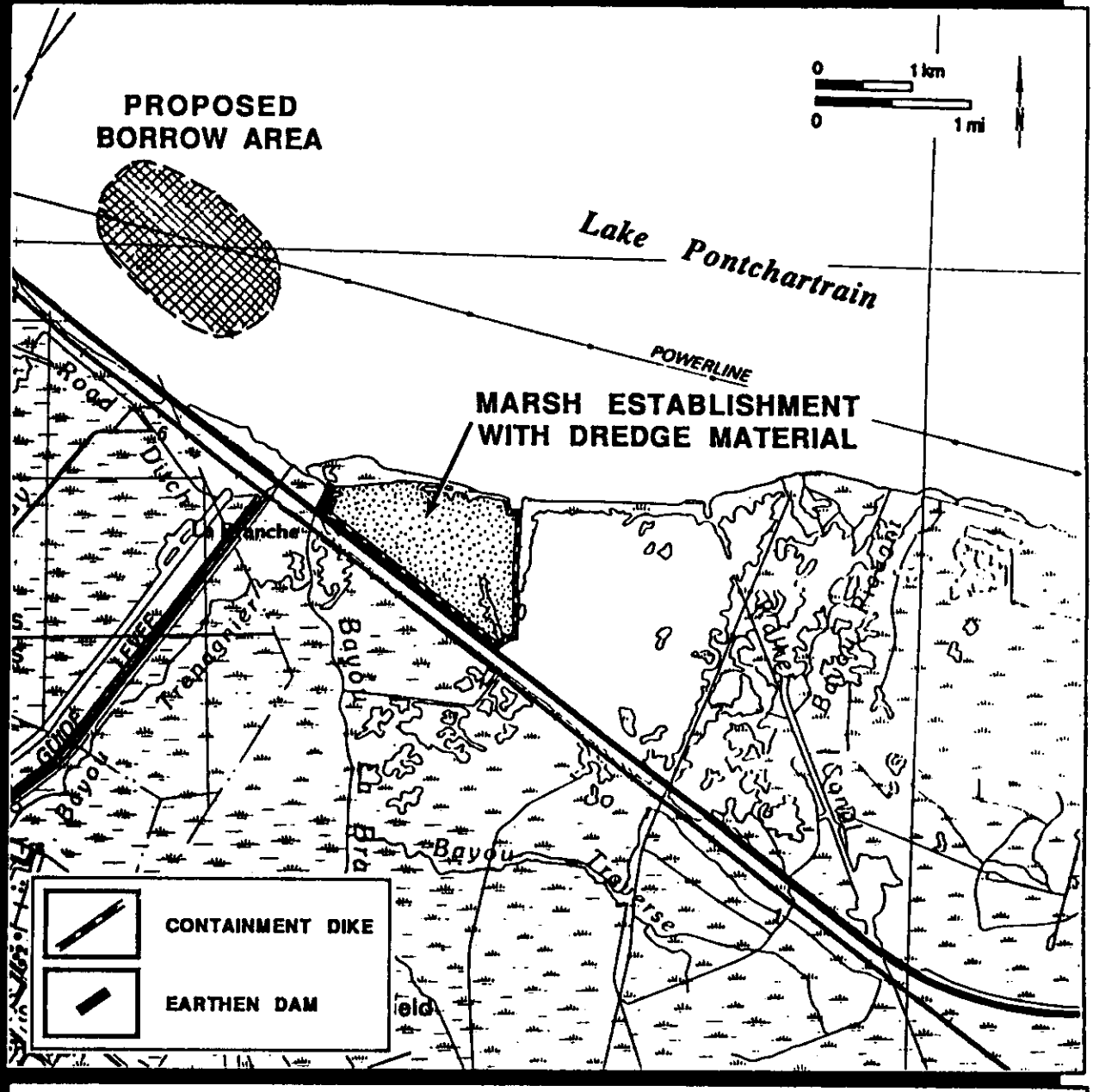
New subaerial land creation and nourishment of deteriorated marsh would be accomplished through dedicated dredging and spoil deposition.

Project Features

Sediment from a small submerged delta in Lake Pontchartrain, at the mouth of the Bonnet Carre Floodway, would be pumped into a 487 acre open water area confined by dikes. About 254 acres would be brought to an elevation suitable for colonization by wetland vegetation. Retention dikes would be breached following sediment consolidation.

Status

Compliance with regulations of NEPA, Sections 10/404, Louisiana Coastal Management Program, Louisiana Water Quality Certification, and the Endangered Species Act remains to be established.



PO-17. BAYOU LA BRANCHE WETLAND CREATION

Hydrologic Basin: Pontchartrain
Parish: St. Charles
Acreage Benefitted: 254

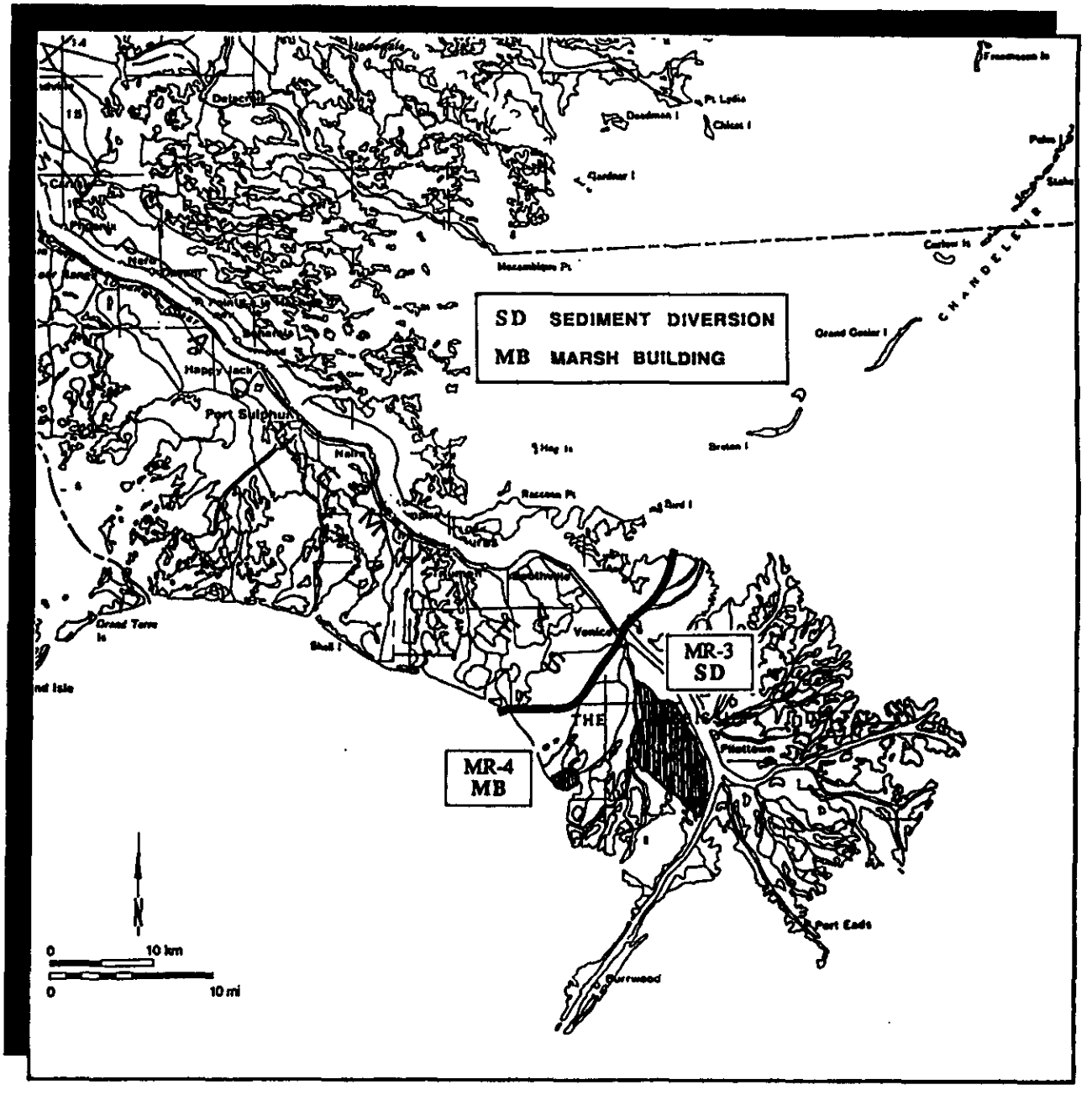
Description: The project will create 254 acres of intermediate marsh by depositing dredged material at elevations suitable for natural re-vegetation.

MISSISSIPPI RIVER DELTA

MISSISSIPPI RIVER DELTA

MR-3	West Bay Sediment Diversion
MR-4	Tiger Pass Wetland Creation

Figure MR-0. Location and estimated area of benefit for projects proposed in the Mississippi River Delta.


SD SEDIMENT DIVERSION
MB MARSH BUILDING
MR-3
SD
MR-4
MB
THE
0
10 km
0
10 mi

MR-3. West Bay Sediment Diversion

Location and Size

The proposed project would be located on the west bank of the Mississippi River at mile 4.7 Above Head of Passes. The project would create approximately 9,831 acres of fresh to intermediate marsh within the 12,910 acre project area over a 20 year period.

Objectives

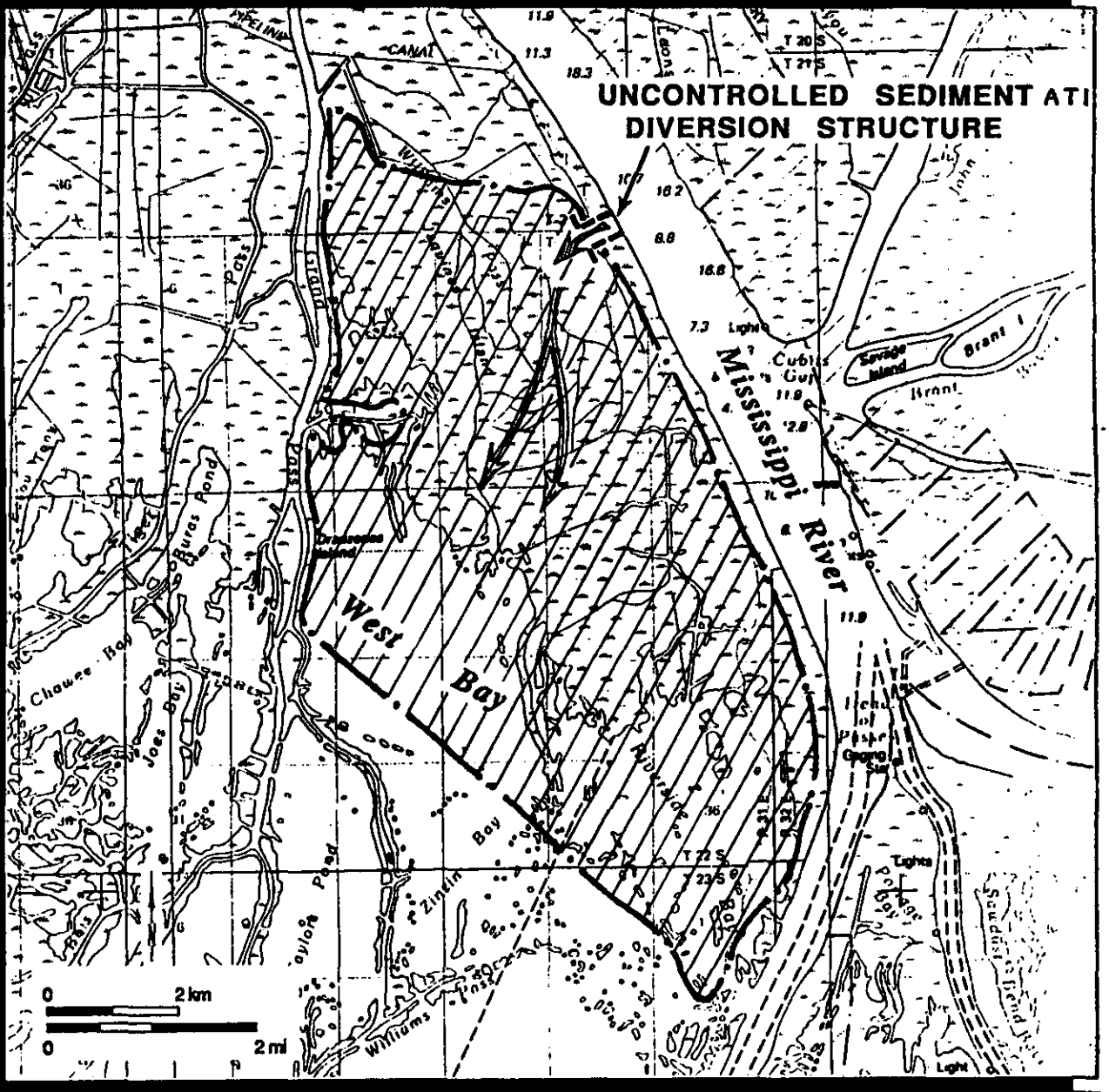
The project would recapture a small portion of the land-building capacity of the Mississippi River that is now lost to deep Gulf waters.

Project Features

The proposed project involves construction of a sediment diversion channel and earthen broad-crested weir in two phases; the first to divert 20,000 cfs, and the second to provide an additional 30,000 cfs. Sediment retention dikes would be constructed below the conveyance channel. As new delta formed, bifurcations would be dredged to maximize continued subaerial development. Intensive monitoring is planned. Excessive scour and channel enlargement will necessitate closure of the diversion.

Status

Relocation of a Chevron pipeline will be necessary. Sections 10/404 permitting is complete; compliance with NEPA, Louisiana Coastal Management coastal use policy, Louisiana Water Quality Certification, and the Endangered Species Act remains to be established.



MR-3. WEST BAY SEDIMENT DIVERSION

Hydrologic Basin: Mississippi River Delta
Parish: Plaquemines
Acreage Benefitted: 9,831

Description: This project is expected to create approximately 9,831 acres of fresh/intermediate marsh through diversion and capture of Mississippi River sediments.

MR-4. Tiger Pass Wetland Creation

Location and Size

The proposed project would be located on the west side of the Mississippi River delta in Plaquemines Parish, at the mouth of Tiger Pass. Creation of 415 acres of brackish and intermediate marsh is expected over a period of 20 years.

Objectives

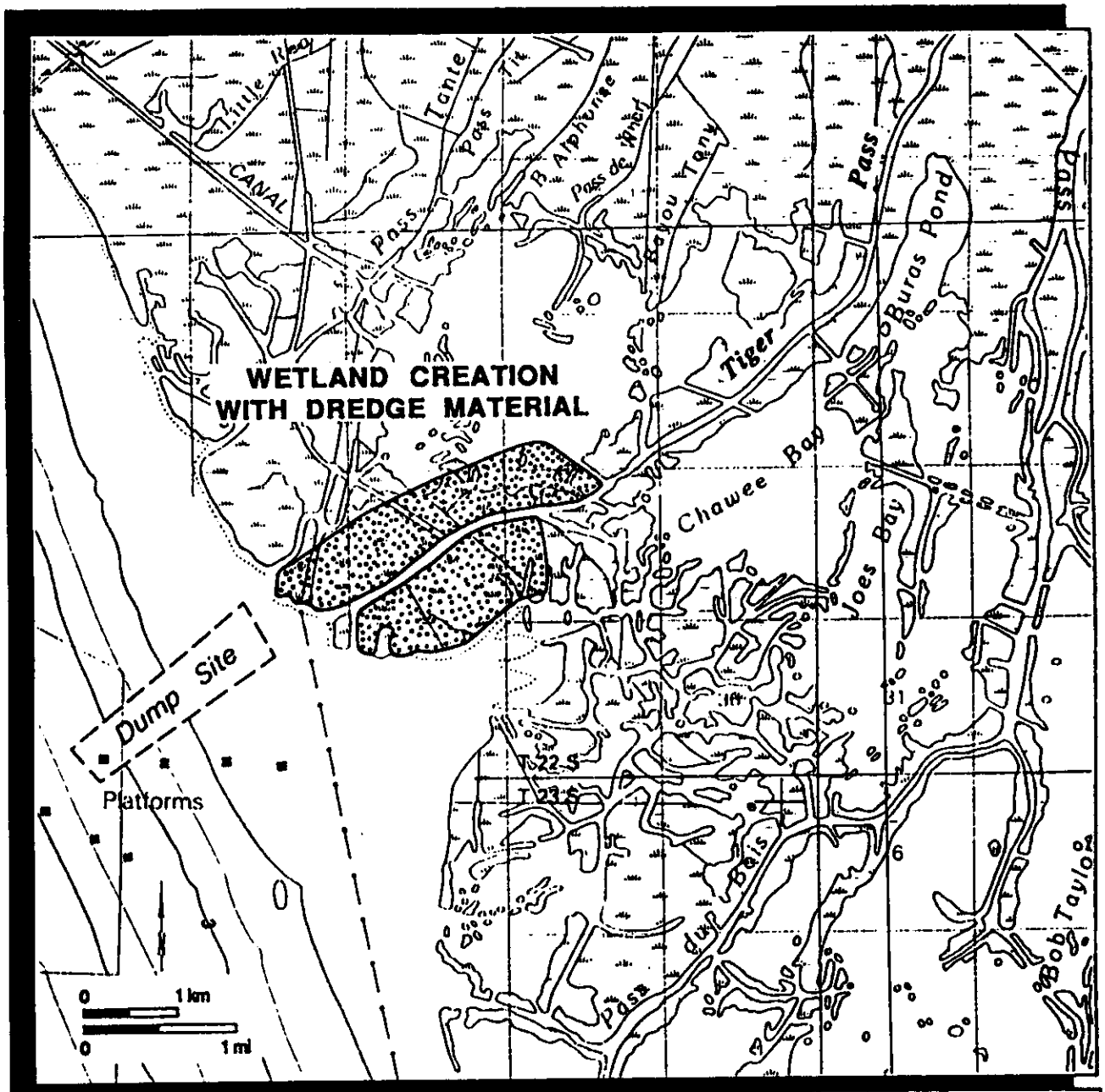
The project would utilize sediments dredged from the bar at Tiger Pass every 3 years to create vegetated wetlands.

Project Features

Unconfined deposition of hydraulically-dredged material would take place on both sides of Tiger Pass. Placement to +4.0 ft NGVD should result in consolidation at +1.5 to +2.5 ft NGVD, which elevation is conducive to revegetation by native species.

Status

Compliance with Sections 10/404 and Louisiana Water Quality Certification has been established. A Draft Environmental Impact Statement has been completed but has not yet been released for public review. Compliance with regulations of the Louisiana Coastal Management Program and the Endangered Species Act must be established.



MR-4. TIGER PASS WETLAND CREATION

Hydrologic Basin: Mississippi River Delta
Parish: Plaquemines
Acreage Benefitted: 415

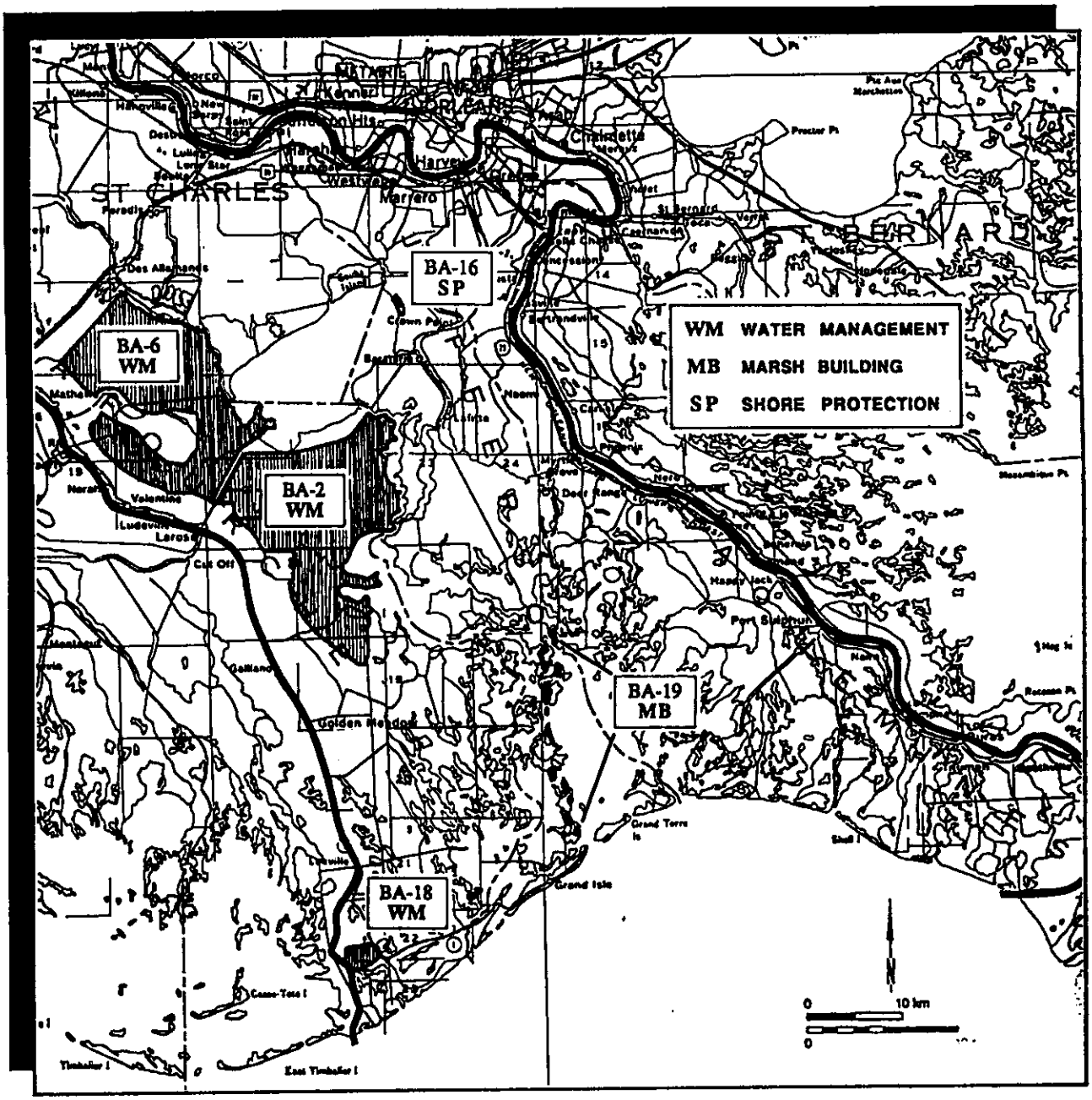
Description: Implementation of the project is expected to create approximately 415 acres of intermediate marsh by unconfined disposal of sediments from maintenance dredging.

BARATARIA BASIN

BARATARIA BASIN

BA-2	Gulf Intracoastal Waterway to Clovely Wetland
BA-6	Gulf Intracoastal Waterway to Highway 90
BA-16	Segnette Wetland Protection
BA-18	Fourchon Wetland Restoration
BA-19	Barataria Bay Waterway Wetland Restoration

Figure BA-0. Location and estimated area of benefit for projects proposed in the Barataria Basin.


ST CHARLES
JEFFERSON
ORLEANS
PLAQUEMINES
BA-16
SP
BA-6
WM
BA-2
WM
BA-19
MB
BA-18
WM
WM WATER MANAGEMENT
MB MARSH BUILDING
SP SHORE PROTECTION
0
10 km
0

BA-2. Gulf Intracoastal Waterway to Clovelly Wetland Restoration

Location and Size

The project area is located in Lafourche Parish southeast of the GIWW, east of Bayou Lafourche, and north of the Superior Canal. The area is comprised of 60,000 acres of contiguous fresh and low-salinity wetlands.

Objectives

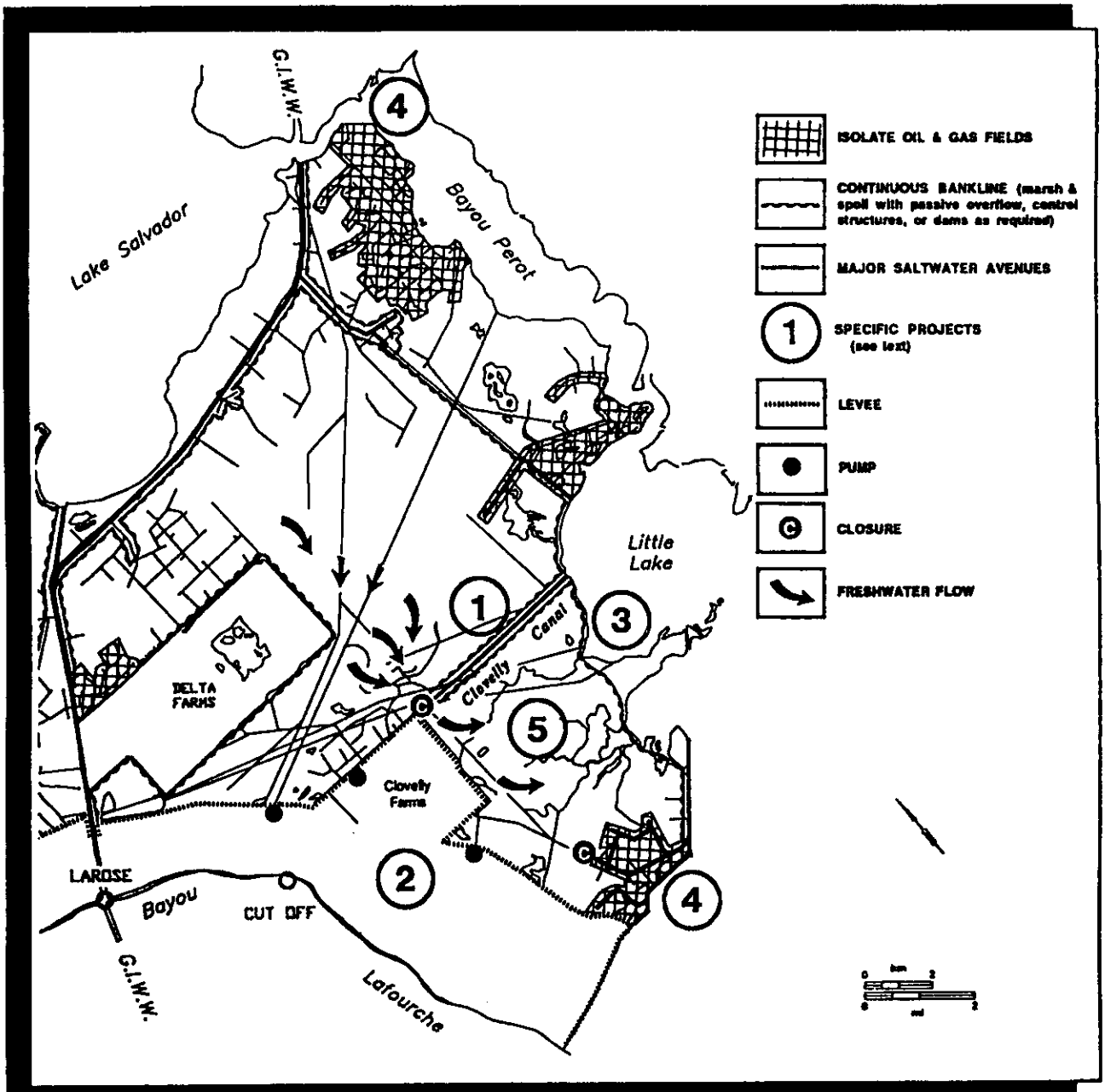
The project provides protection of low salinity wetlands, established on highly organic substrate, by restoring hydrologic conditions that promote greater use of available freshwater, water exchange through overbank flow, and limit rapid water level and salinity changes.

Project Features

Major aspects of the project include (1) utilization of freshwater from pumping stations, (2) maintenance and restoration of a continuous marsh shore along Little Lake and Bay l'Ours, (3) isolation of the Clovelly canal, (4) isolation of major oil and gas canal systems, and (5) constraining development of major tidal channel systems. Measures included for this purpose are: wetland restoration using dredged material, twelve acres of critical area plantings including some sediment fencing; twelve water control stuctures; twenty-six earthen canal plugs, including five gated plugs for freshwater introduction from the GIWW; thirty-four miles of intermittent bank restoration; fifty miles of shoreline vegetative plantings for erosion control; and routing of the outfall from four pumping plants. Implementation of these features is expected to save 7144 ac of marsh over a 20 year period.

Status

Detailed planning, engineering, and design remain to be undertaken. NEPA evaluation has been satisfied; a Section10/404 Permit has been approved; a Coastal Use Permit has been received; Louisiana Water Quality Certification has been received; Endangered Species Act compliance has been established. The project was first proposed in the state's 1990-1991 Plan.



BA-2. GULF INTRACOASTAL WATERWAY TO CLOVELLY WETLAND RESTORATION

Hydrologic Basin: Barataria
Parish: Lafourche
Acreage Benefitted: 60,000

Description: This project utilizes many techniques, including freshwater introductions, water management, and revegetation to protect and restore historical hydrologic conditions to a contiguous tract of fresh and low-salinity wetlands.

BA-6. Gulf Intracoastal Waterway to Highway 90 Wetland Protection

Location and Size

The project area is located in Lafourche Parish and is bounded by Bayou Lafourche, U.S. 90, Bayou des Allemands, and the GIWW. The area is comprised of 40,000 acres of fresh and intermediate marsh.

Objectives

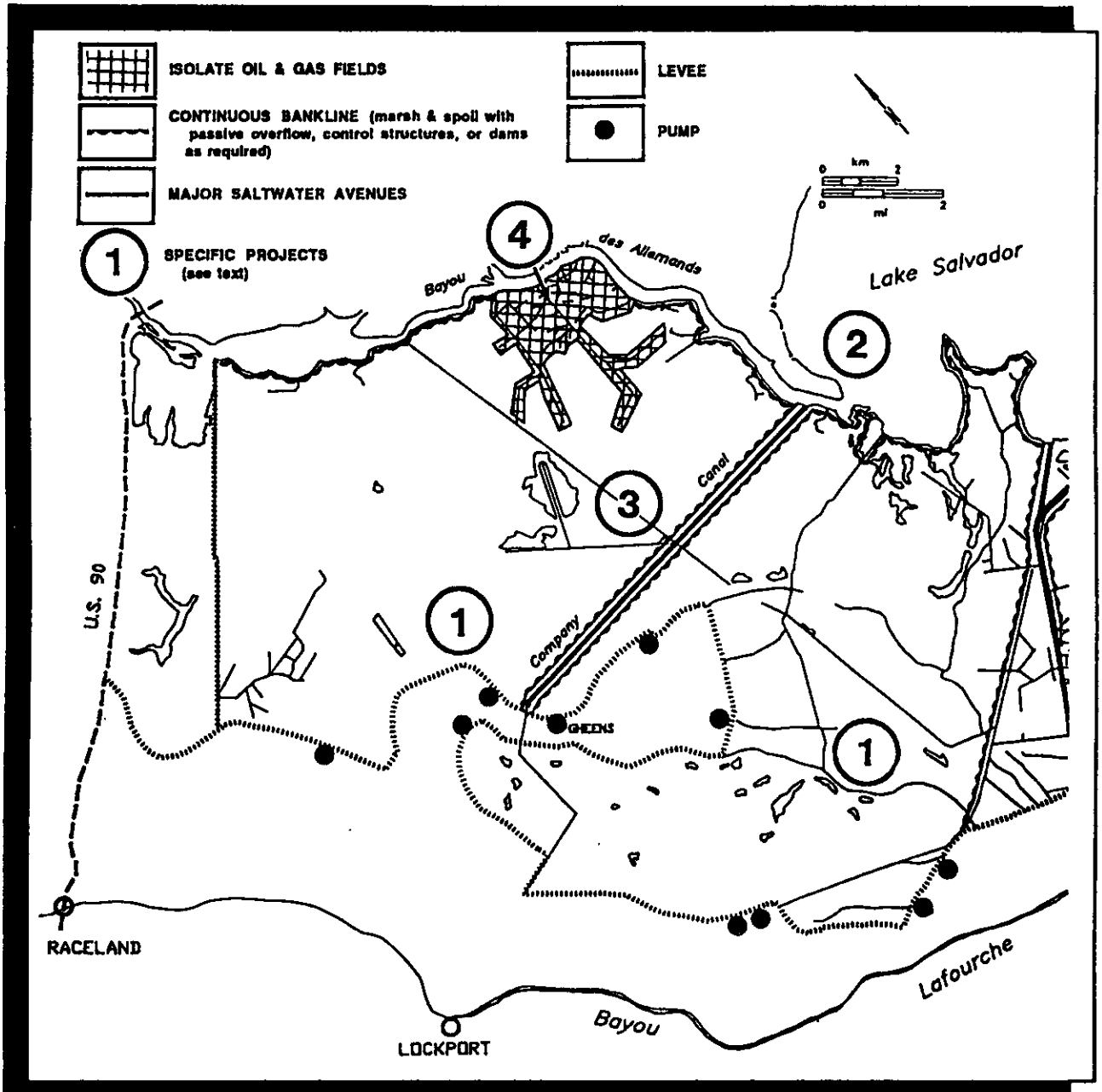
To prevent future loss of wetlands as a result of large salinity fluctuations, rapid salinity increases, and high velocity water exchange between the marsh and adjacent water bodies, the project provides hydrologic conditions that promote: (1) greater use of local freshwater sources, and (2) water exchange through overbank flow.

Project Features

Major aspects of the project include (1) utilization of freshwater from pumping stations, (2) maintenance of a continuous marsh shore along Lake Salvador, (3) isolation of the Company canal, (4) isolation of major oil and gas canal systems, and (5) prevention of the development of major tidal channels. Measures included for this purpose are: nineteen miles of shoreline and critical area vegetative plantings; five rock weirs (sills) to reduce flows; five earthen channel plugs; and routing of adjacent pumping outfalls. Implementation of these features is expected to save 3200 ac of marsh over a 20 year period.

Status

The following permits have been received: Section 10/404; LA Coastal Use Permit; LA Water Quality Certification; and Scenic Stream Permit. No endangered species would be affected. A NEPA environmental assessment remains to be completed. The project was first proposed in the state's 1990-1991 Plan.



BA-6. GULF INTRACOASTAL WATERWAY TO HIGHWAY 90 WETLAND PROTECTION

Hydrologic Basin: Barataria
Parish: Lafourche
Acreage Benefitted: 40,000

Description: This project includes application of vegetative plantings, flow-reducing rock sills, channel plugs, bank diking, and routing of pump outfalls to protect an area of fresh and intermediate marsh before rapid deterioration occurs.

BA-16. Segnette Wetland (L. Salvador) Protection

Location and Size

The proposed project is located on the eastern shore of Lake Salvador in Jefferson Parish. The project would protect 77 acres of marsh from erosion, and create 11 acres of emergent wetland.

Objectives

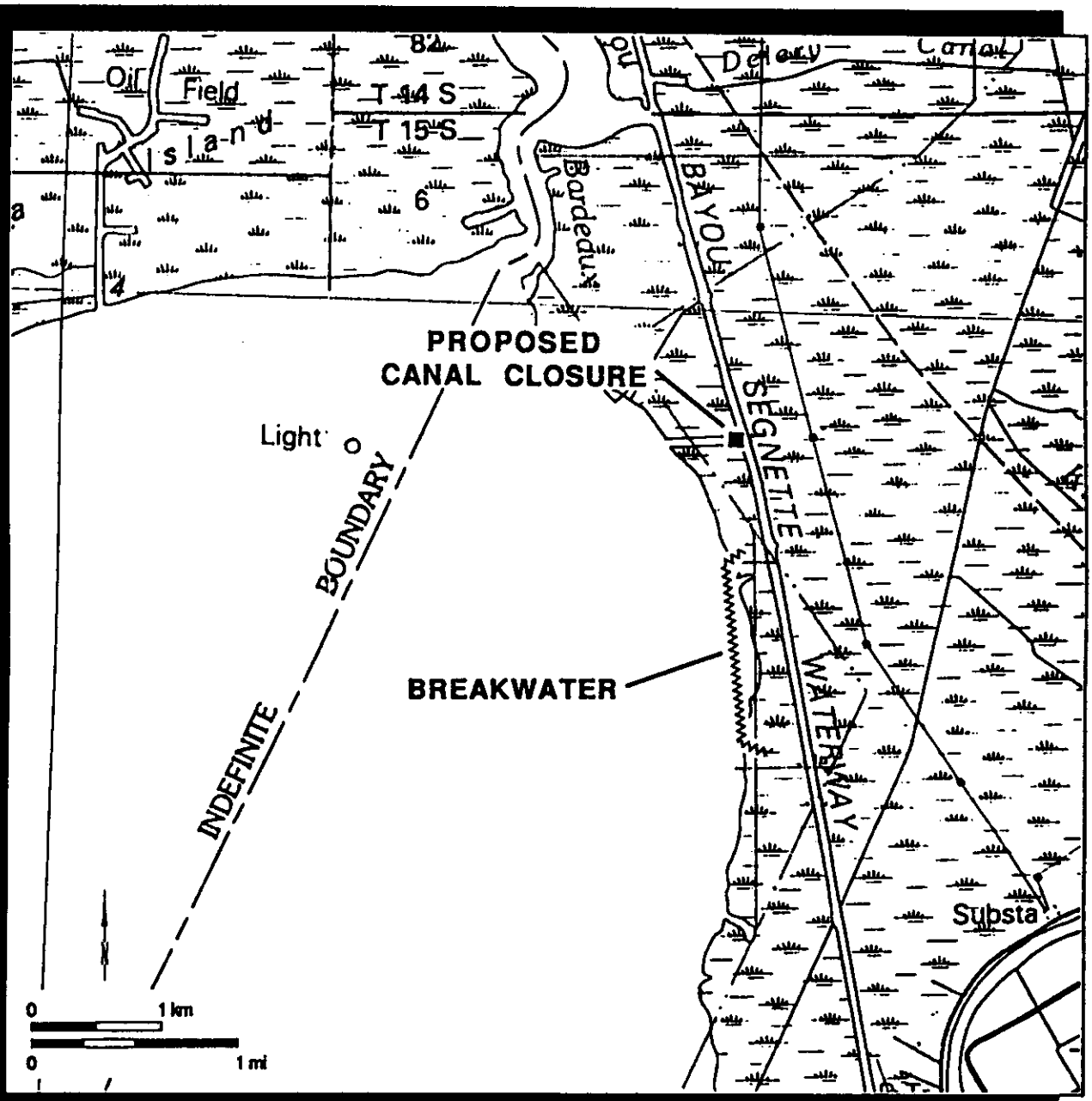
Protection of the eastern bank of Lake Salvador will prevent the imminent breaching of the isthmus separating the Lake and the Bayou Segnette Waterway. This breach would subject the marshes of Jean Lafitte National and Historical Park and Preserve to erosion from waves generated across the reach of the Lake and the Waterway.

Project Features

A 5,000 foot long, multi-celled, sand-filled fabric-bag breakwater would be placed parallel to the eroded Lake Salvador shoreline. Sediment accretion and natural revegetation behind the breakwater would be expected to eventually create new marsh. An earthen canal plug would be constructed in an abandoned access canal at the north end of the project area.

Status

Compliance with regulations of NEPA, Sections 10/404, Louisiana Coastal Management Program, Louisiana Water Quality Certification, and the Endangered Species Act remains to be established.



BA-16. BAYOU SEGNETTE (L. SALVADOR) PROTECTION

Hydrologic Basin: Barataria
Parish: Jefferson
Acreage Benefitted: 88

Description: Shoreline erosion control on the eastern shore of Lake Salvador would prevent breaching between the Lake and Bayou Segnette Waterway, thus protecting the adjacent marshes of Jean Lafitte National Historical Park and Preserve.

BA-18. Fourchon Wetland Restoration

Location and Size

The project is located in lower Lafourche Parish between State Road 3090 and Bayou Lafourche. A 2,400 acre spoil impoundment area would be restored to limited tidal exchange.

Objectives

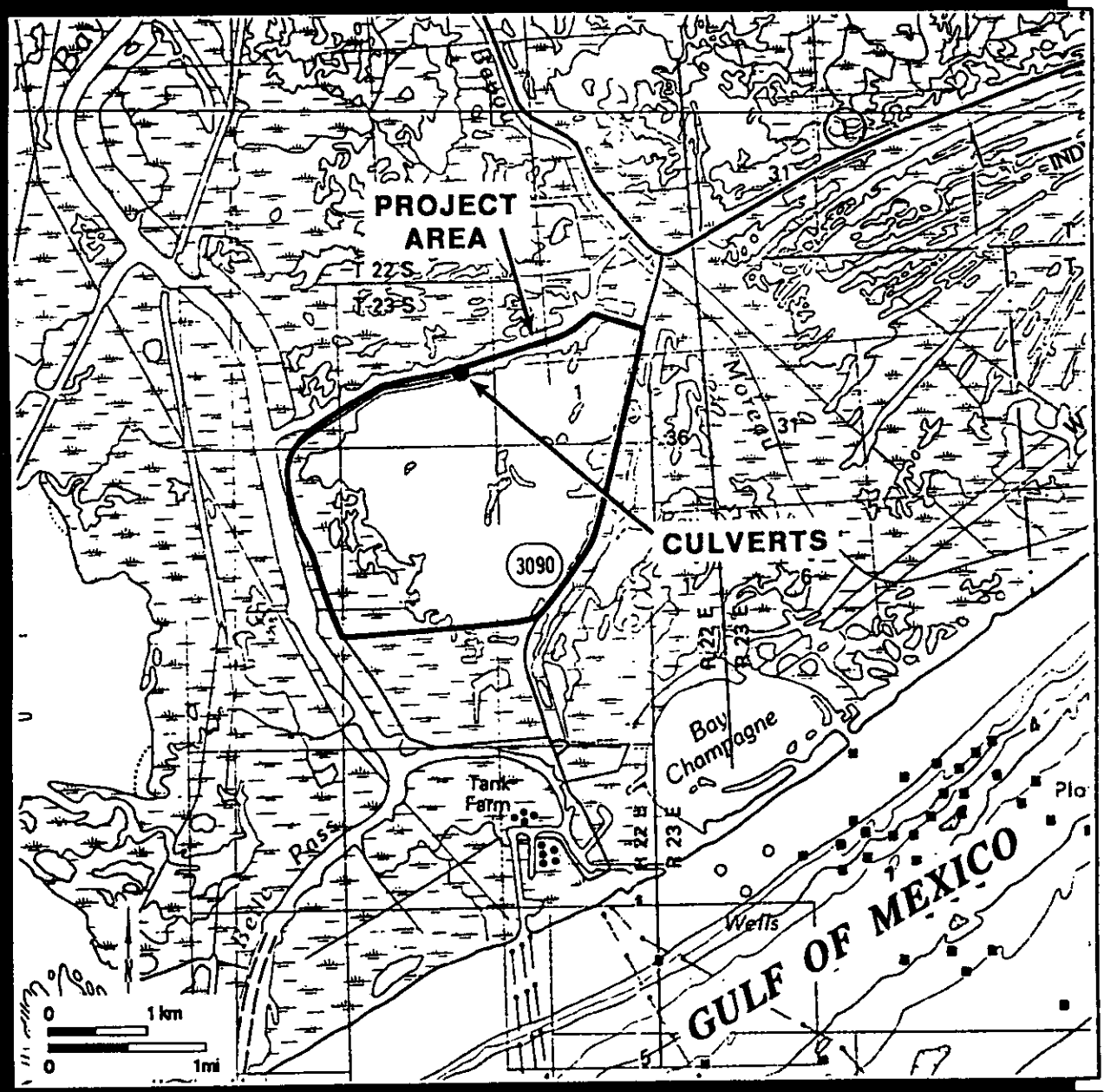
Water exchange between the spoil impoundment area and adjacent water bodies is currently limited to the high-water events. Restoration of tidal exchange would allow ingress and egress of marine fauna, and would result in lower mean water levels and the presence of an additional 145 acres of saline marsh vegetation over a 20 year period.

Project Features

At least two 48" culverts will be installed through a shell road at the northern perimeter of the impoundment. Shell armoring of levee faces will be required to prevent scouring.

Status

The project will require feasibility analysis, planning, and permitting (including Section 10/404, Coastal Use Permit, and Louisiana Water Quality Certification). Factors in feasibility include: use of the area by the Port of Fourchon for spoil disposal (planned for 1991-1992); other use by the land owners.



BA-18. FOURCHON WETLAND RESTORATION

Hydrologic Basin: Barataria
Parish: Lafourche
Acreage Benefitted: 145

Description: The project is intended to restore typical estuarine functions to an impounded area by establishing regular tidal exchange and reduced mean water levels.

BA-19. Barataria Bay Waterway Wetland Restoration

Location and Size

The proposed project involves use of material dredged from miles 0-16 of the Barataria Bay Waterway in Barataria Bay, Jefferson Parish. Some 445 acres of open water would be converted to emergent wetlands in 18 sites of 15- to 133- acres size each.

Objectives

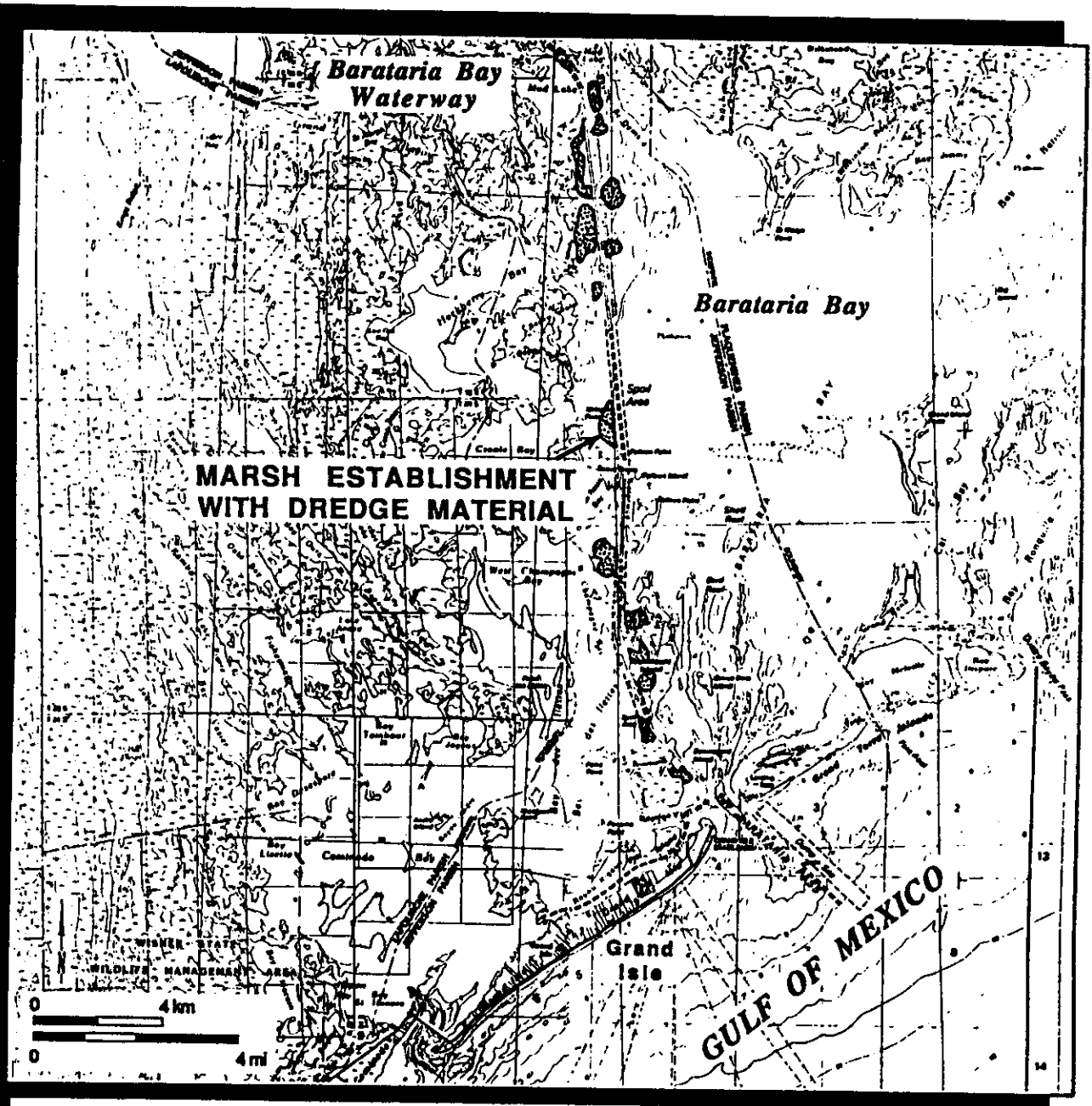
New marsh would be created and existing marsh nourished using sediments dredged during normal maintenance of the Barataria Bay Waterway.

Project Features

Three- to five-foot soil dikes would be constructed around 18 sites within or adjacent to existing marsh areas near the Waterway. Over the course of maintenance channel dredging (five cycles over 20 years), these areas would be filled with sediment to +4 ft NGVD. Within twelve months following each six-month dredging cycle, sediments will have consolidated to +2 ft NGVD. Funding for costs above those of present disposal plans are solicited.

Status

Compliance with regulations of NEPA, Sections 10/404, Louisiana Coastal Management Program, Louisiana Water Quality Certification, and the Endangered Species Act remains to be established. A draft EIS has been prepared.



BA-19. BARATARIA BAY WATERWAY WETLAND RESTORATION

Hydrologic Basin: Barataria
Parish: Jefferson
Acreage Benefitted: 445

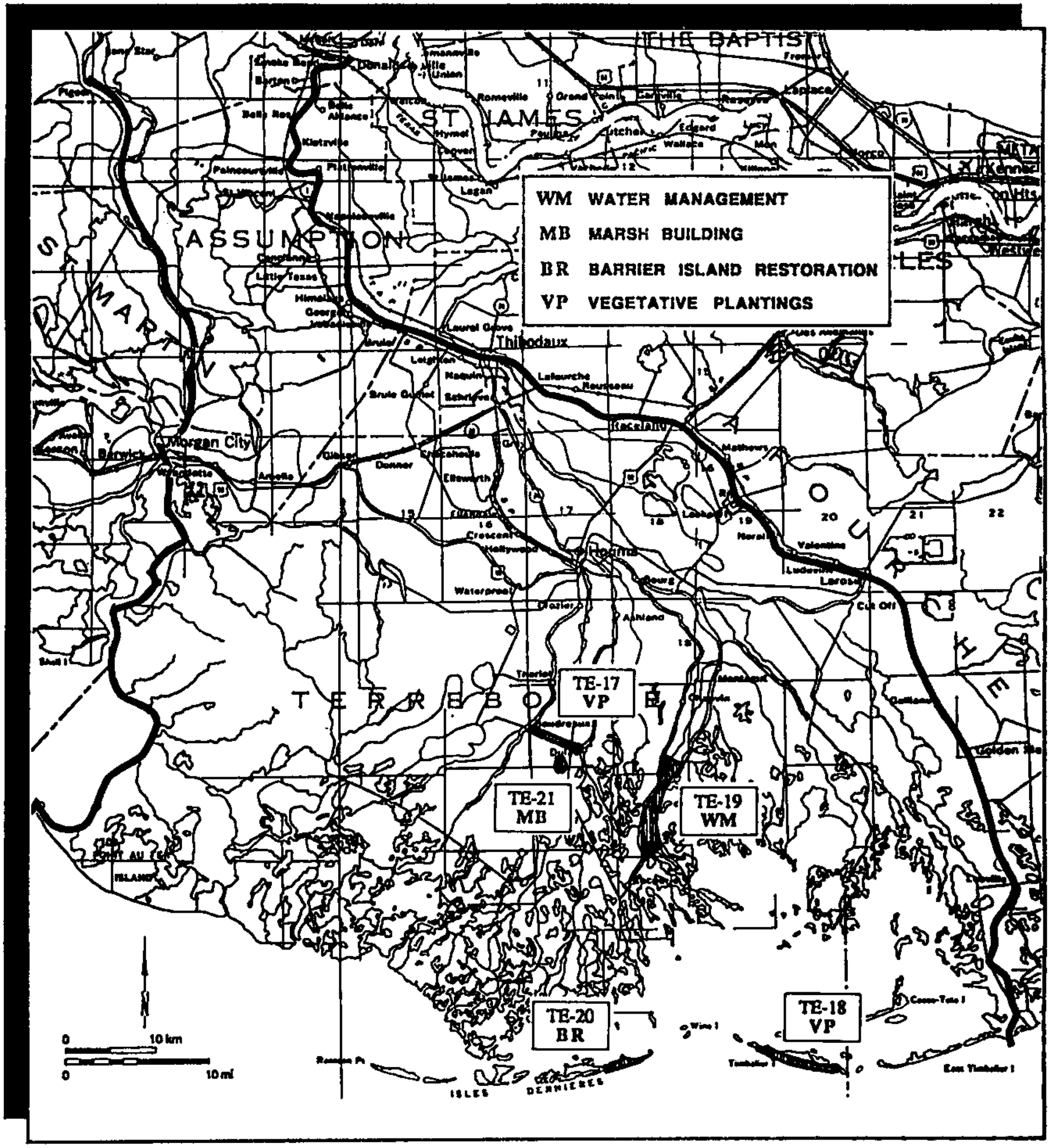
Description: The project will create 445 acres of sub-aerial sediment deposits at a final elevation of +2 ft NGVD, suitable for natural revegetation, at a number of sites adjoining natural wetlands adjacent to the Waterway.

TERREBONNE BASIN

TERREBONNE BASIN

TE-17	Falgout Canal Plantings
TE-18	Timbalier Island Plantings
TE-19	Lower Bayou La Cache Wetland Restoration
TE-20	Eastern Isles Dernieres Restoration
TE-21	Falgout Canal South Wetland Creation

Figure TE-0. Location and estimated area of benefit for projects proposed in the Terrebonne Basin.


WM WATER MANAGEMENT
MB MARSH BUILDING
BR BARRIER ISLAND RESTORATION
VP VEGETATIVE PLANTINGS
TE-17 VP
TE-21 MB
TE-19 WM
TE-20 BR
TE-18 VP
ASSUMPTION
Thibodaux
Morgan City
Berwick
Houma
Raceland
Lafourche
Larose
Golden Meadow
ISLES DERNIERES
0 10 km
0 10 mi

TE-17 Falgout Canal Plantings

Location and Size

The proposed project area includes the northern bank of the Falgout Canal from Bayou Du Large to the Houma Navigation Canal.

Objectives

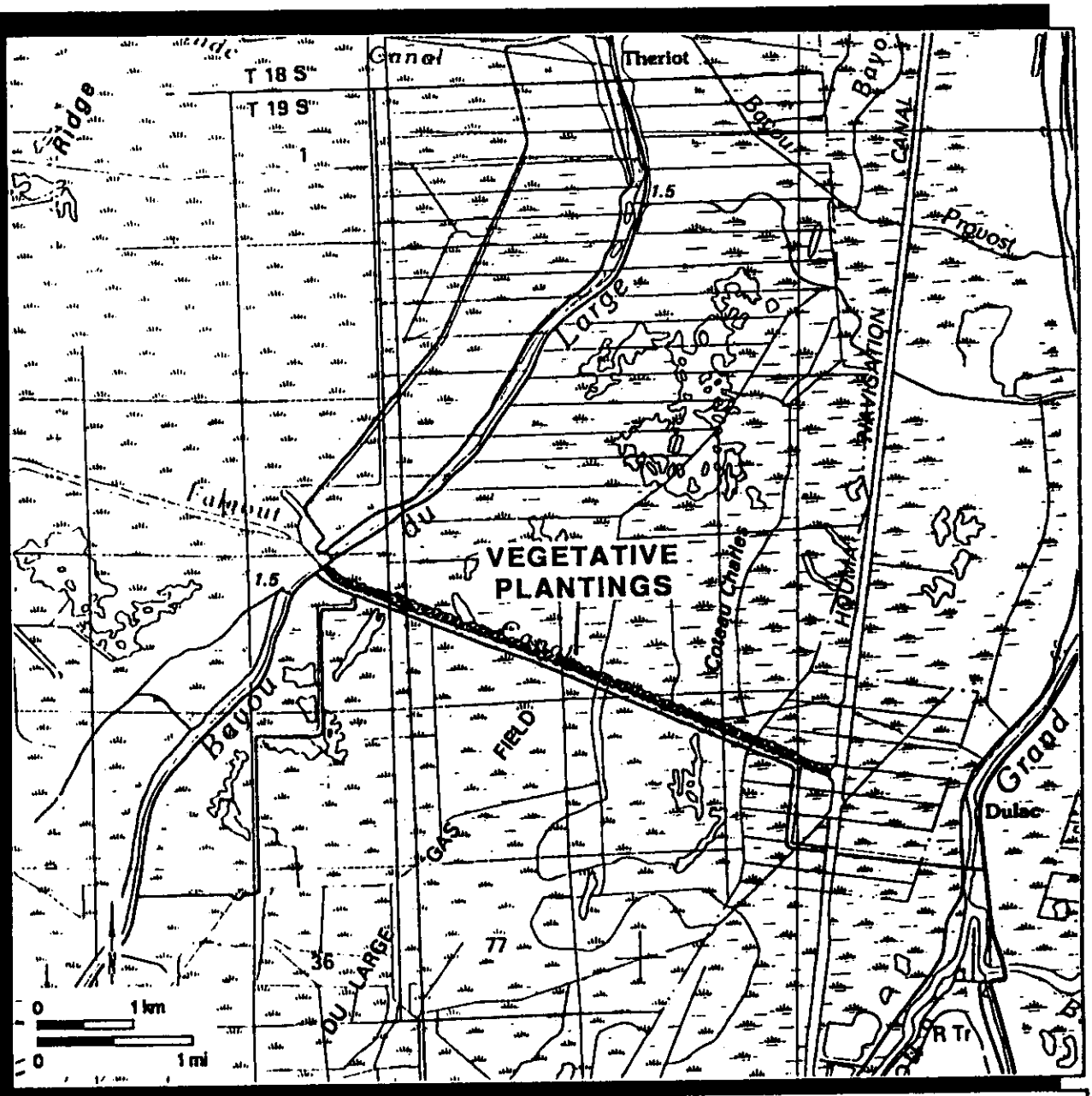
The project is a part of the Statewide Vegetative Plantings Project with elements in the Chenier Plain, Deltaic Plain, and Barrier Island physiographic environments. The objectives include implementation of innovative vegetative planting techniques, for the protection of inland wetlands and barrier islands, and incorporation of vegetative techniques in all restorative work when applicable.

Project Features

The project features include plantings of Smooth Cordgrass to reduce boat wake erosion along the canal and protect a management levee. The plantings are estimated to produce a net benefit of 18 ac over 20 years.

Status

Compliance with NEPA, Sections 10/404, Louisiana Coastal Management Program regulations, Louisiana Water Quality Certification, and the Endangered Species Act remain to be established.



TE-17. FALGOUT CANAL PLANTINGS

Hydrologic Basin: Terrebonne
Parish: Terrebonne
Acreage Benefitted: 18 ac

Description: The project will reduce erosion along the Falgout Canal by vegetation planting techniques. This is part of the statewide vegetation program..

TE-18. Timbalier Island Plantings

Location and Size

The proposed project area incorporates many sites on the Gulf of Mexico side of Timbalier Island located near Latitude 29° 03' N, Longitude 90° 28' W.

Objectives

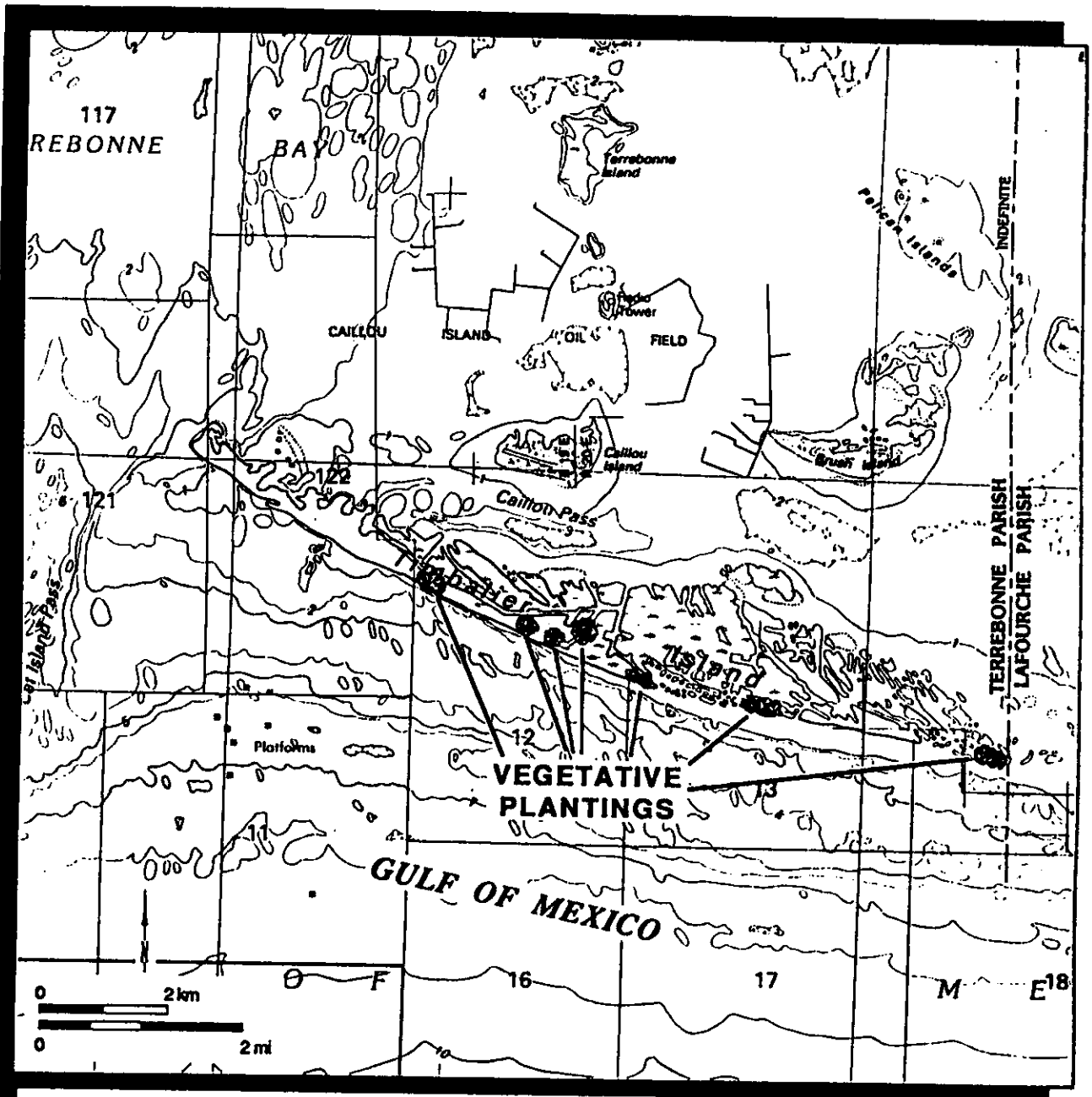
The project is a part of the Statewide Vegetative Plantings Project with elements in the Chenier Plain, Deltaic Plain, and Barrier Island physiographic environments. The objectives include implementation of innovative vegetative planting techniques, for the protection of inland wetlands and barrier islands, and incorporation of vegetative techniques in all restorative work when applicable.

Project Features

The project calls for plantings of several species at 7 locations on the island to colonize and stabilize dunes and wetlands. Trapping of sediment by the plants will expand wetland acreage. The plan is expected to produce a net benefit of 137 ac over 20 years.

Status

Compliance with NEPA, Sections 10/404, Louisiana Coastal Management Program regulations, Louisiana Water Quality Certification, and the Endangered Species Act remain to be established.



TE-18. TIMBALIER ISLAND PLANTINGS

Hydrologic Basin: Terrebonne
Parish: Terrebonne
Acreage Benefitted: 137 ac

Description: The project will reduce barrier island erosion along Timbalier Island by vegetation planting techniques. This is part of the statewide vegetation program..

TE-19. Lower Bayou La Cache Wetland Restoration

Location and Size

The proposed project area surrounds Lower Bayou La Cache in southern Terrebonne Parish. The 4,558-acre area is bounded by Bayou Petit Caillou to the west, Bayou Terrebonne to the east, Bush Canal to the north, and Bay Lucien to the south.

Objectives

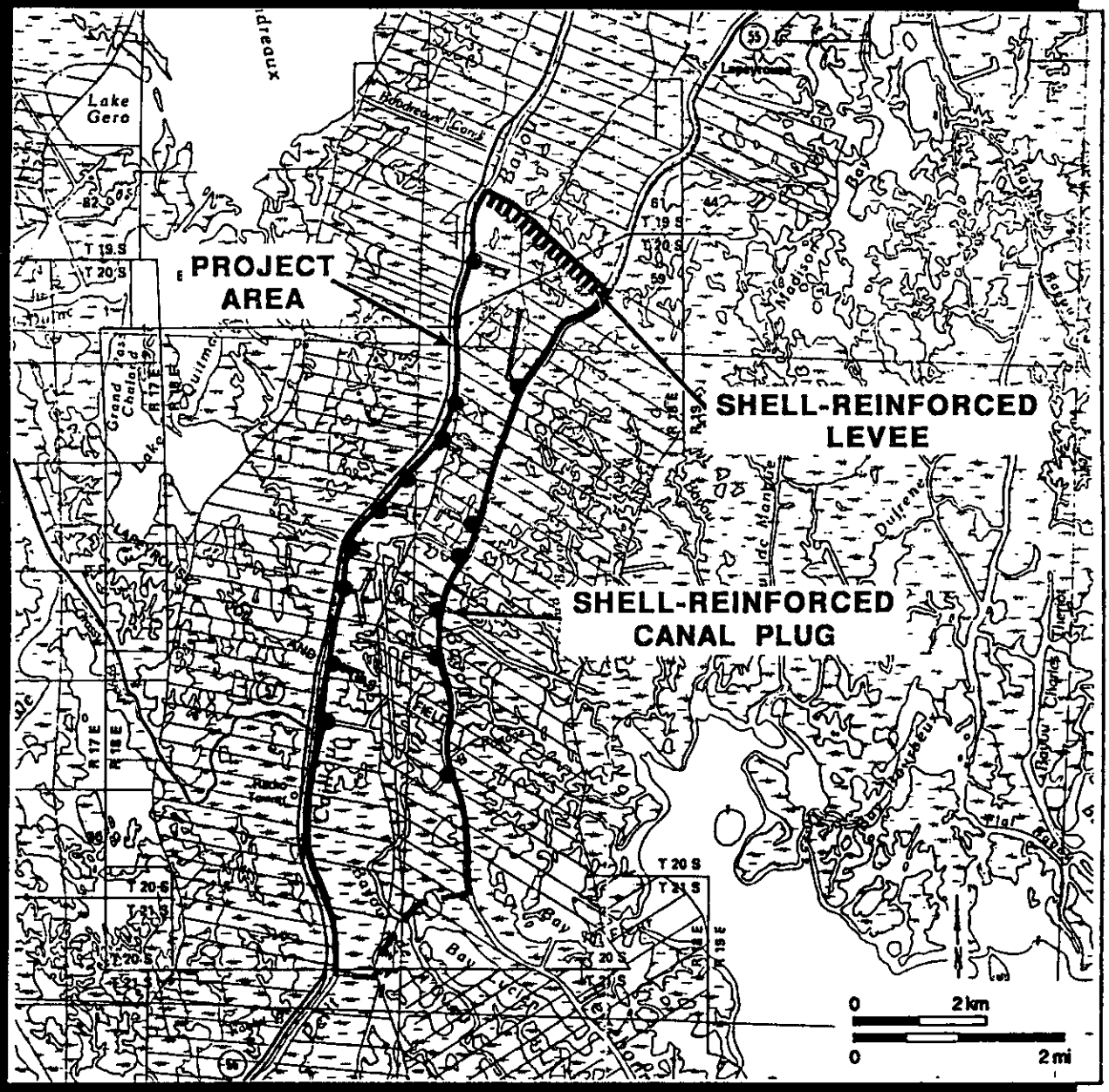
Improved utilization of freshwater from rainfall and reduction of rapid saltwater ingress and tidal scour will be accomplished through closure of waterways on the northern, eastern and western borders. Currently, conversion to open water in this area totals about 13 acres/year. The project is expected to save 171 acres of marsh over a 20 year period.

Project Features

The northern perimeter of the area will be closed at Bush Canal by levee reconstruction. Fifteen shell-reinforced canal plugs will be placed in the mouths of access canals at the eastern and western borders of the area. Ringing of active mineral extraction sites and/or installation of passive water control structures may be required, depending on the nature of easements granted.

Status

Compliance with regulations of NEPA, Sections 10/404, Louisiana Coastal Management Program, Louisiana Water Quality Certification, and the Endangered Species Act remains to be established.



TE-19. LOWER BAYOU LA CACHE WETLAND RESTORATION

Hydrologic Basin: Terrebonne
Parish: Terrebonne
Acreage Benefitted: 171

Description: The project will reduce marsh loss by restoring the area to limited paths of freshwater egress and saltwater ingress, while maintaining open flows at the southern borders for migration of aquatic fauna.

TE-20. Eastern Isles Dernieres Restoration

Location and Size

This project involves restoration of the Eastern Isles Dernieres barrier island in Terrebonne Parish. Initially, about 105 acres of saline marsh will be directly restored by the project.

Objectives

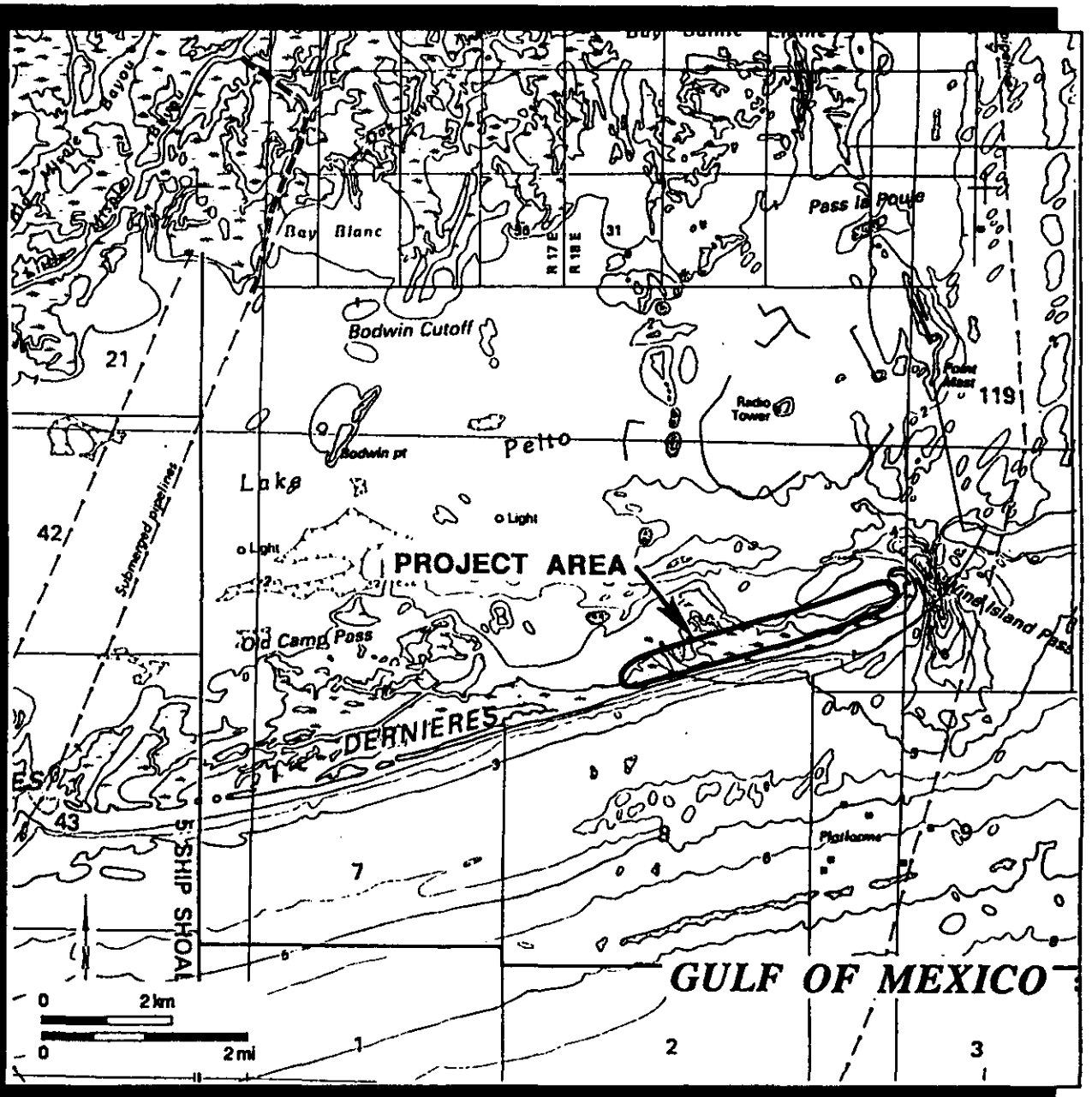
Barrier islands protect landward estuaries from increased wave energies and reduce saltwater incursions, and adverse tidal effects. Restoration of the coastal dunes and wetlands of Eastern Isles Dernieres will enhance the physical integrity of the islands, providing dune and wetland habitats while serving to protect the lower Terrebonne estuary and associated wetlands against direct exposure to the Gulf of Mexico.

Project Features

Two miles of fore-dune area will be built up to a height of 8 feet using overwash sediments; dunes will then be seeded. An earthen retaining dike will be constructed behind the island, and dredged sediments will be used to create about 105 acres of saline marsh, which will also be planted. This is expected to provide a net benefit of 61 acres over the life of the project.

Status

An Environmental Assessment and Finding should be completed in early 1992. Compliance with the regulations of Sections 10/404, Louisiana Coastal Management Program, Louisiana Water Quality Certification, and the Endangered Species Act remains to be completed.



TE-20. EASTERN ISLES DERNIERES RESTORATION

Hydrologic Basin: Terrebonne
Parish: Terrebonne
Acreage Benefitted: 61

Description: The project will restore 61 acres of back-barrier saline marsh and continue to protect inland terrestrial and aquatic habitats.

TE-21. Falgout Canal South Wetland Creation

Location and Size

This project area is south of Falgout Canal in Terrebonne Parish, between Bayou Dularge and the Houma Navigation Canal. A 220 acre site will be restored and enhanced, providing about 102 acres of additional marsh.

Objectives

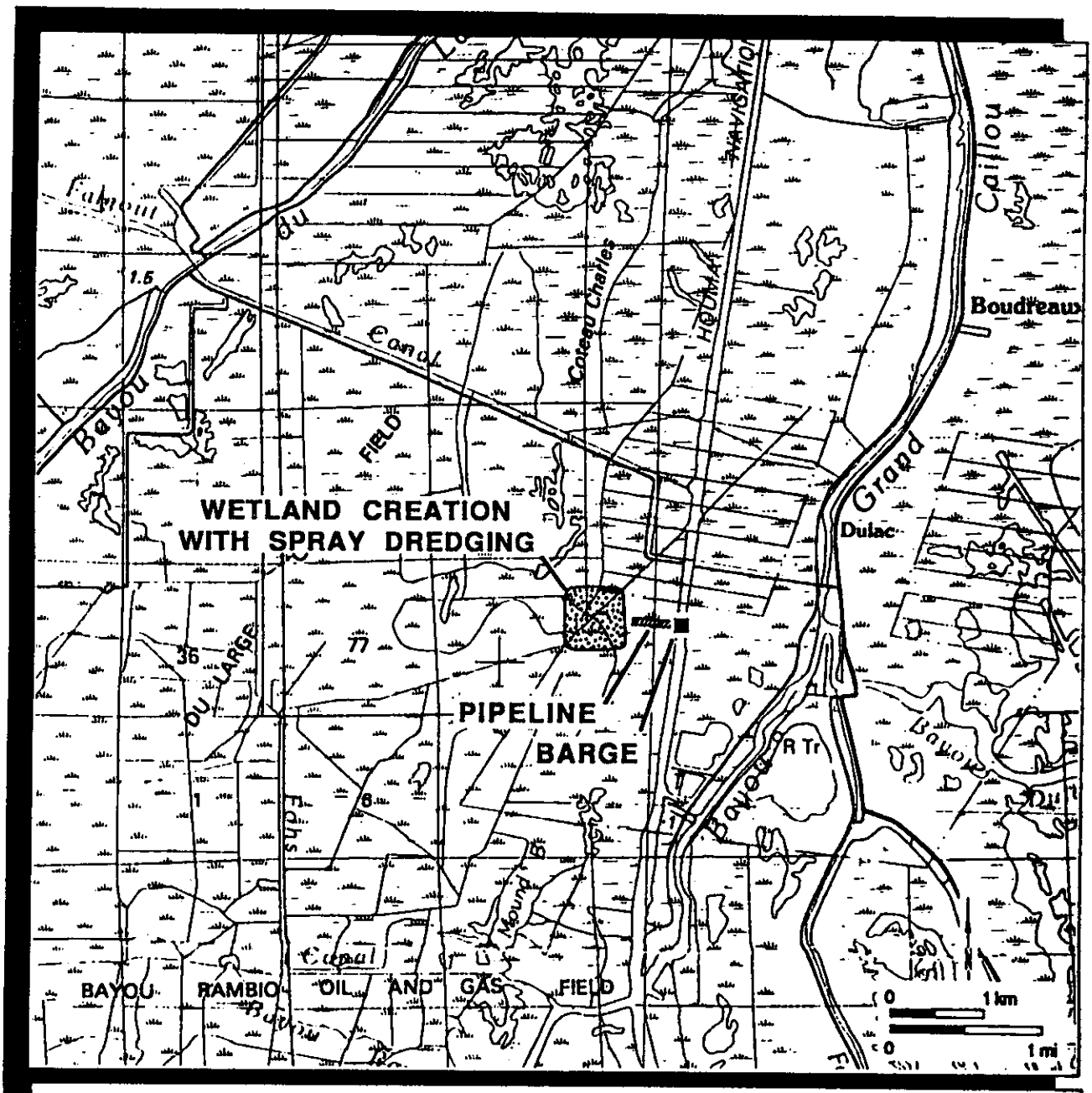
Sediment application will be used to build 120 acres of land suitable for colonization by marsh plants and 100 acres of very shallow hard-bottom. New techniques for distribution and spray application of sediment s will be evaluated to promote growth of submerged aquatic vegetation.

Project Features

The project includes hydraulic dredging of coarse Mississippi River sediment; batture impoundment and dewatering of sediment; reloading of sediment into trucks, and then hopper barges; a mobile barge-mounted unloader/booster facility; 23,000 feet of HDPE piping with multiple spray nozzles; and two marsh buggies for deployment of piping. About 600,000 cubic yards of sediment would be applied in shallow open waters to create subarial and subaqueous deposits suitable for colonization by marsh flora and fauna.

Status

Compliance with the regulations of NEPA, Sections 10/404, Louisiana Coastal Management Program, Louisiana Water Quality Certification, and the Endangered Species Act remains to be completed.



TE-21. FALGOUT CANAL SOUTH WETLAND CREATION

Hydrologic Basin: Terrebonne
Parish: Terrebonne
Acreage Benefitted: 102

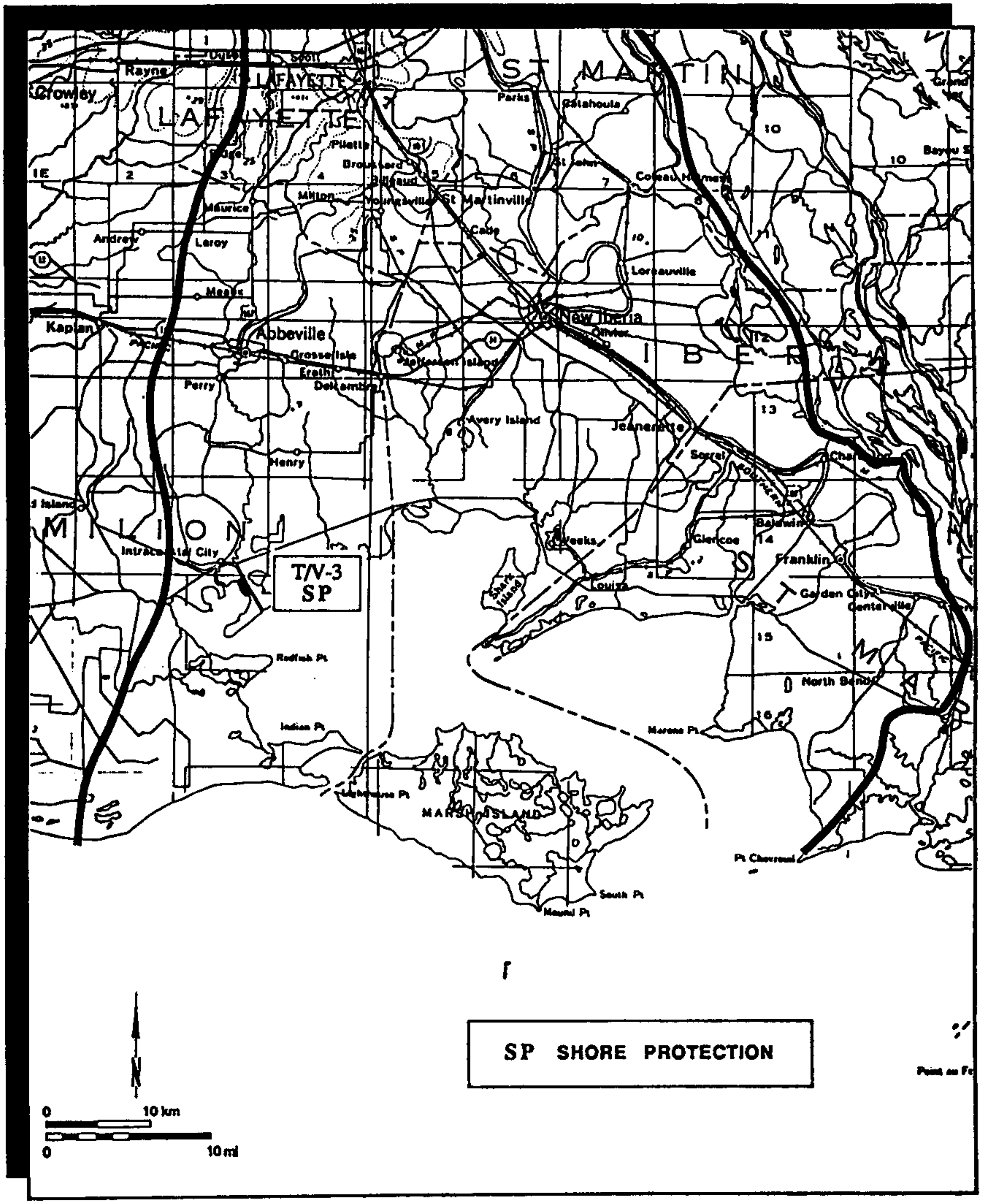
Description: The project will create 102 acres of new brackish marsh by the addition of mineral sediment obtained and transported from the Mississippi River.

TECHE / VERMILION BASIN

TECHE/VERMILION BASIN

T/V-3 Vermilion River Cutoff

Figure T/V-0. Location of projects proposed in the Teche/Vermilion Basin.


Rayne
Crowley
LAFAYETTE
ST MARTIN
Parks
Catahoula
Broussard
Milton
Youngsville
St Martinville
Maurice
Andrew
Leroy
Loreauville
New Iberia
Kaplan
Abbeville
Grosse Isle
Erath
Delcambre
Perry
Avery Island
Jeanerette
Henry
Sorrel
Intracoastal City
Weeks
Glencoe
Baldwin
Franklin
Louisa
Garden City
Centerville
North Bend
Redfish Pt
Indian Pt
Marone Pt
Lighthouse Pt
MARSH ISLAND
Pt Chevreuil
South Pt
Mound Pt
T/V-3
SP
SP SHORE PROTECTION
N
0
10 km
0
10 mi

T/V-3. Vermillion River Cutoff

Location and Size

The Vermilion River Cutoff, near Intracoastal City in Vermilion Parish, connects the Vermilion River and the GIWW with Vermilion Bay for navigational purposes. The proposed project should create about 11 acres of vegetated marsh and prevent erosion of 54 acres.

Objectives

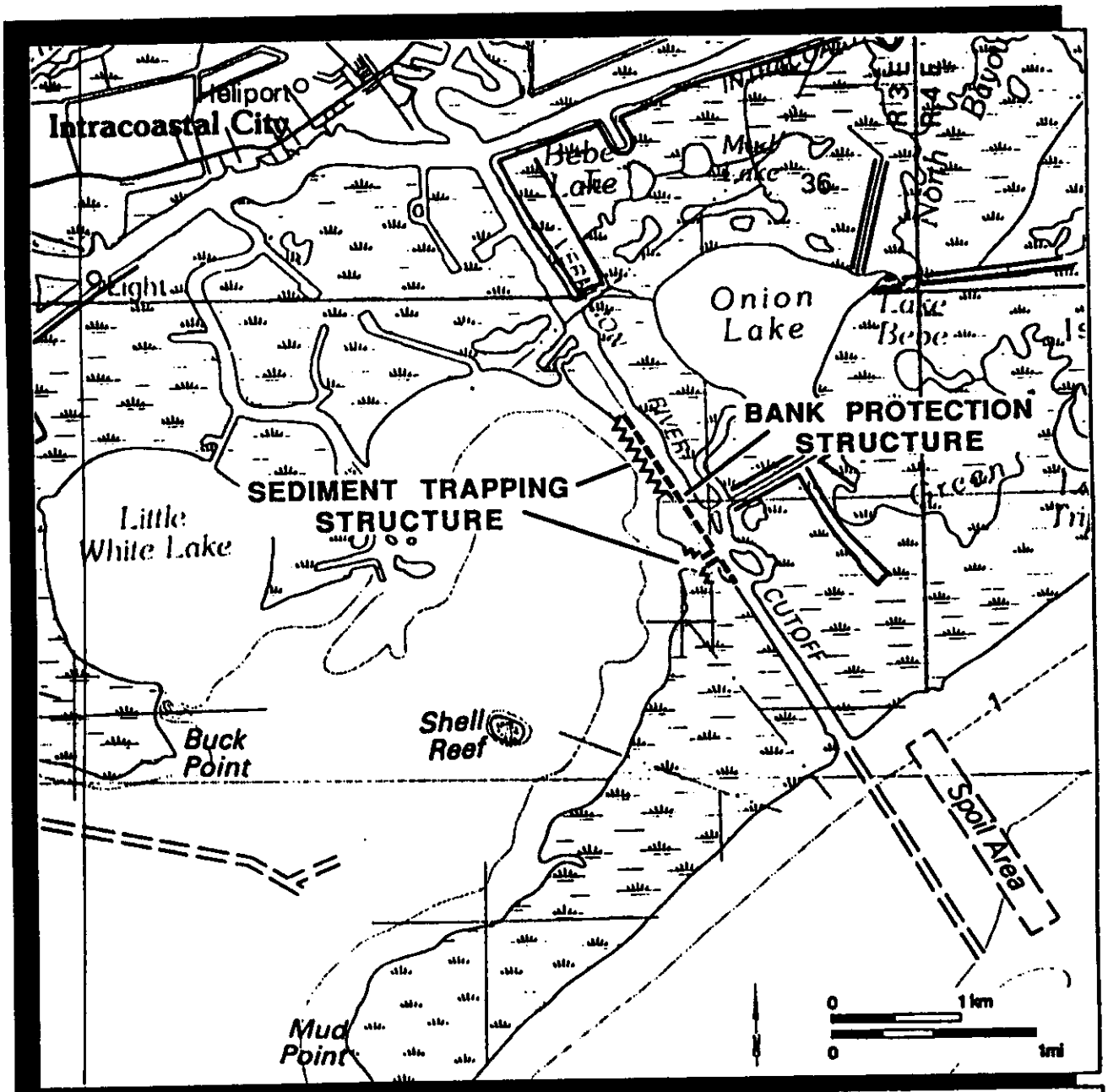
A large section of the west bank of the Vermilion River Cutoff has been lost to erosion. Where the natural channel between the Cutoff and Vermilion Bay was at one time only 100 feet in width, the two water bodies are now continuous for some 6200 feet. Shoreline protection, sediment accretion, and vegetative plantings will recreate the natural barrier, reducing erosion and dredging needs, while allowing continued passage of aquatic fauna.

Project Features

A rock armor dike will be constructed along a 6,200 foot section of the west channel bank. A wave dampening brush fence will be built 350 feet behind the dike to reduce wave energy and collect suspended sediments. Subaerial deposits will be planted to increase accretion and stabilization.

Status

Compliance with the regulations of NEPA, Sections 10/404, Louisiana Coastal Management Program, Louisiana Water Quality Certification, and the Endangered Species Act remains to be finalized. The project has been subject to public review during 1990-91 Coastal Wetlands Conservation and Restoration planning. CRD has a general use permit for brush fence construction. The project was first proposed in the State's 1990-91 Plan.



T/V-3. VERMILION RIVER CUTOFF

Hydrologic Basin: Teche/Vermilion
Parish: Vermilion
Acreage Benefitted: 65

Description: The project is expected to restore approximately 11 acres of brackish marsh by sediment capture and vegetative plantings, and prevent the further erosion of 54 acres of marsh through construction of an armored shoreline protection structure.

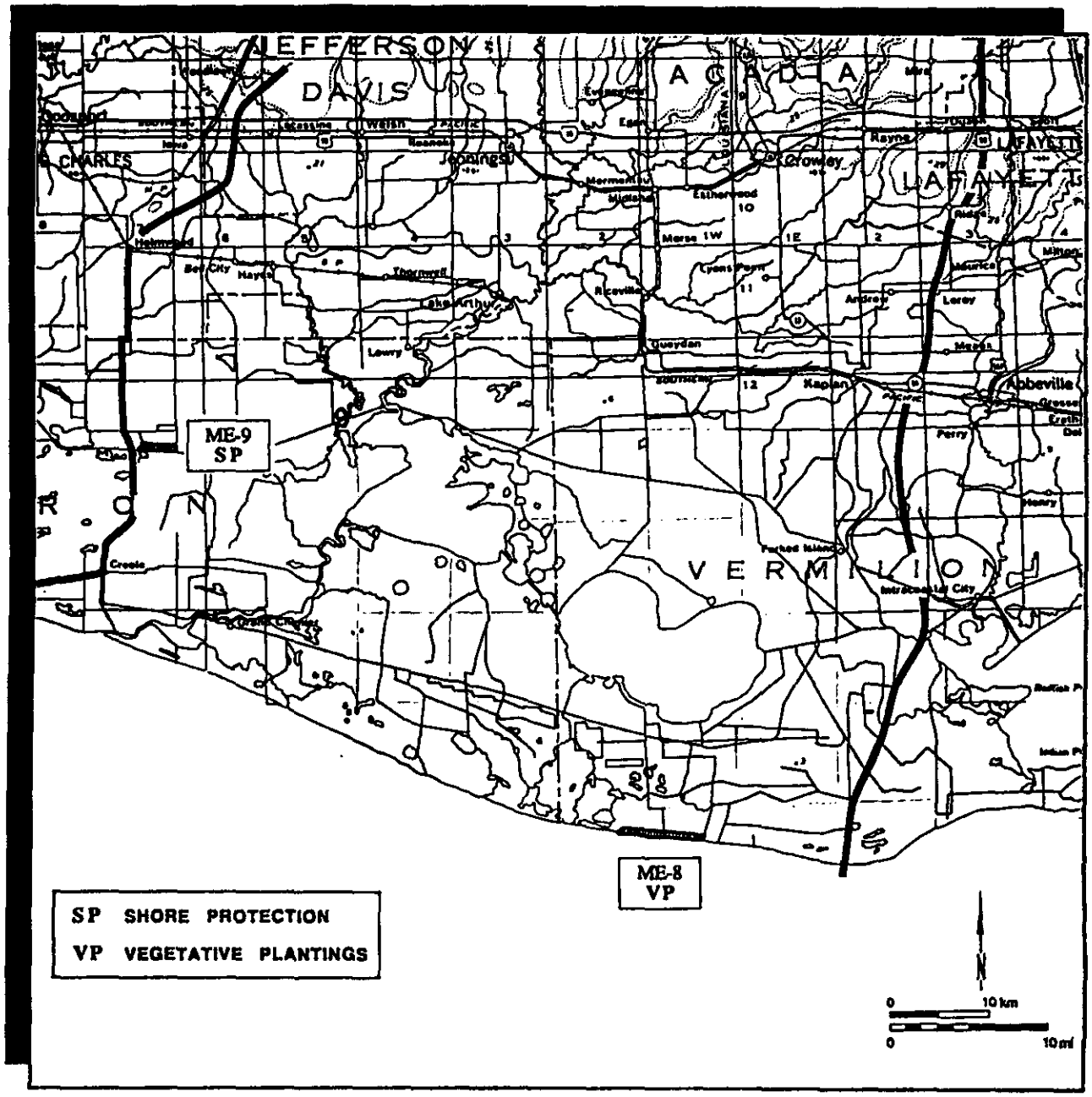
MERMENTAU BASIN

MERMENTAU BASIN

ME-8 Dewitt-Rollover Plantings

ME-9 Cameron Prairie Refuge Protection

Figure ME-0. Location and estimated area of benefit for projects proposed in the Mermentau Basin.


JEFFERSON
DAVIS
ACADIA
CHARLES
LAFAYETTE
VERMILION
ME-9
SP
ME-8
VP
SP SHORE PROTECTION
VP VEGETATIVE PLANTINGS
0 10 km
0 10 mi

ME-8. Dewitt-Rollover Plantings

Location and Size

The proposed project area is 6 mi due south of Pecan Island along the Gulf of Mexico. The project runs along the beach from Dewitt Canal west to Rollover Bayou, approximately 6 mi.

Objectives

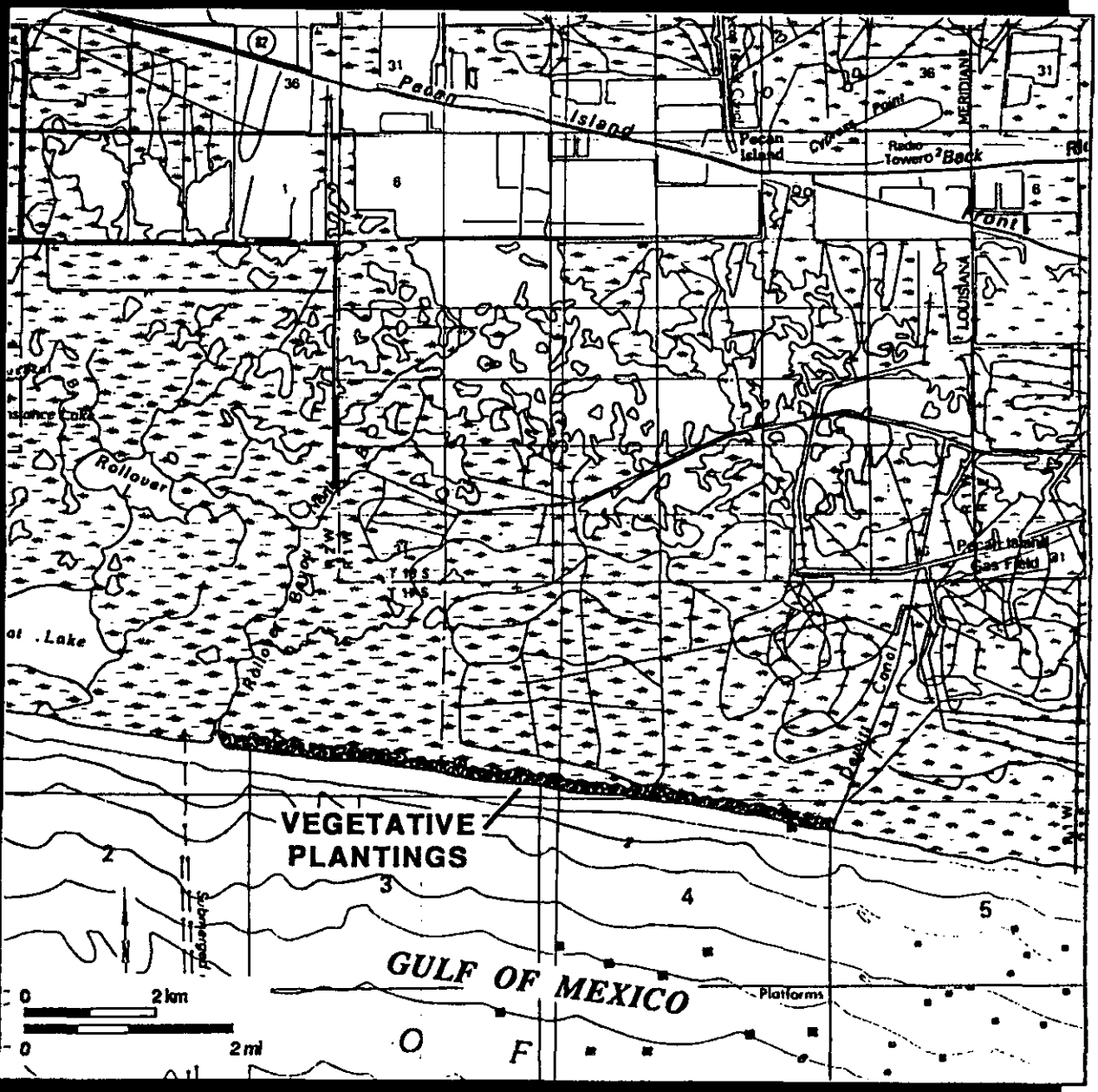
The project is a part of the Statewide Vegetative Plantings Project with elements in the Chenier Plain, Deltaic Plain, and Barrier Island physiographic environments. The objectives include implementation of innovative vegetative planting techniques, for the protection of inland wetlands and barrier islands, and incorporation of vegetative techniques in all restorative work when applicable.

Project Features

6 miles of the Gulf shore will be planted with Smooth Cordgrass and Marshay Cordgrass. The project will reduce the 30 ft/yr beach erosion rate. The project is also expected to save about 102 acres over a 20 year period.

Status

Compliance with NEPA, Sections 10/404, Louisiana Coastal Management Program regulations, Louisiana Water Quality Certification, and the Endangered Species Act remain to be established.



ME-8 DEWITT-ROLLOVER PLANTINGS

Hydrologic Basin: Mermentau
Parish: Vermilion
Acreage Benefitted: 102 ac

Description: The project will reduce beach erosion from Dewitt Canal to Rollover Bayou by vegetation planting techniques. This is part of the statewide vegetation program..

ME-9. Cameron Prairie Refuge Protection

Location and Size

The proposed project area is 640 acres in size. It is located within Unit 8 of the Cameron Prairie National Wildlife Refuge in north central Cameron Parish.

Objectives

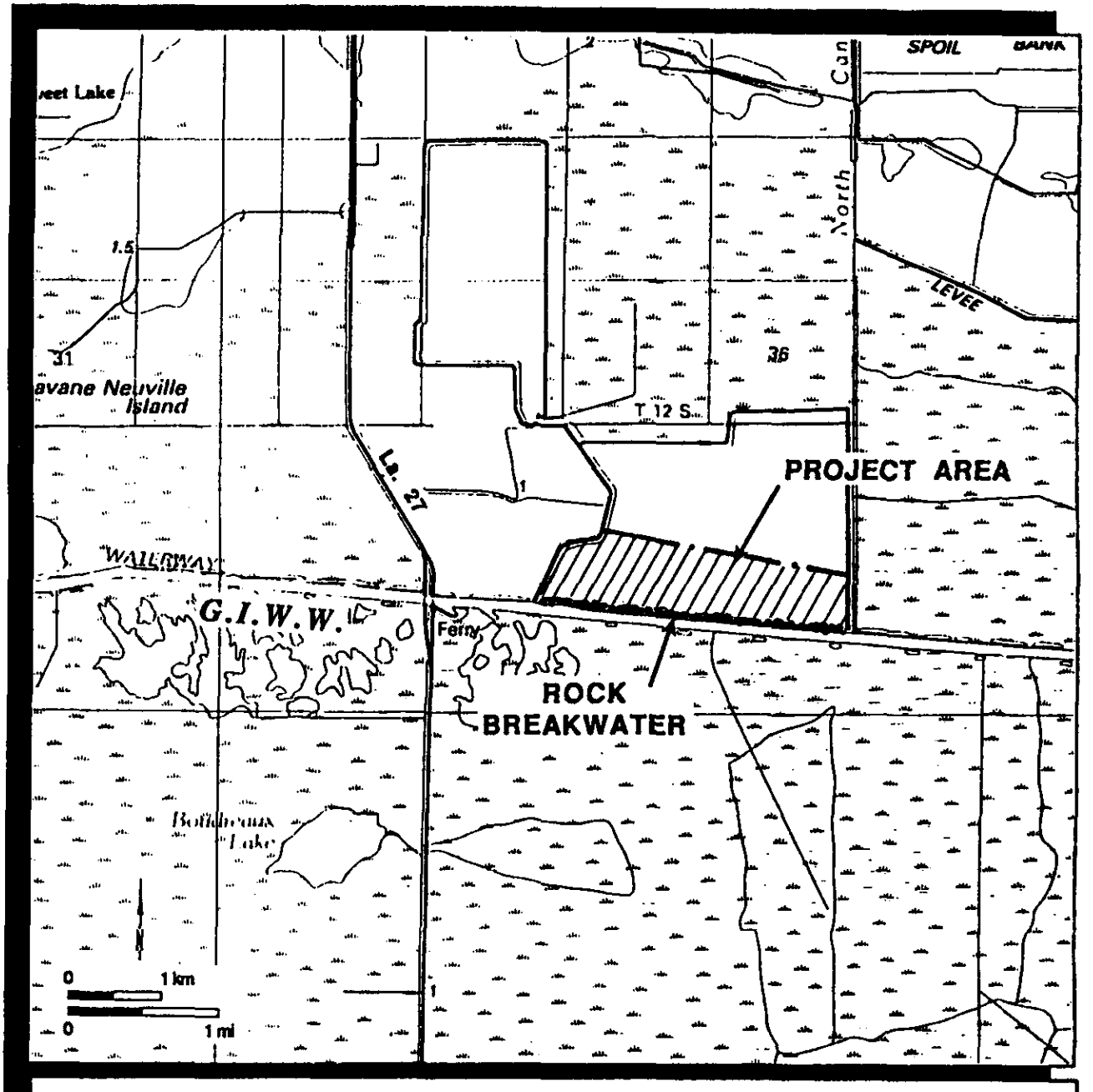
The area is bounded on the south by the Gulf Intracoastal Waterway, where severe erosion has damaged the levee separating the project area from the channel. Repair of the levee would prevent imminent breaching and subsequent interior erosion, increased turbidity, and loss of valuable freshwater vegetation and habitat for waterfowl and aquatic species. The project is expected to save about 247 acres of marsh over a 20 year period.

Project Features

The project calls for the construction of a rock breakwater, approximately two miles in length, adjacent to the eroded soil levee which separates the area from the GIWW.

Status

Application for a Section 10/404 permit has been submitted. A Louisiana Coastal Use Permit will not be required for this site. Submissions for Louisiana Water Quality Certification and compliance with the Endangered Species Act remain.



ME-9. CAMERON PRAIRIE REFUGE PROTECTION

Hydrologic Basin: Mermentau
Parish: Cameron
Acreage Benefitted: 247

Description: Construction of a rock dike is proposed for protection of approximately two miles of eroded levee separating a 640-acre fresh marsh site from the high turbidities and erosive forces of the Gulf Intracoastal Waterway.

CALCASIEU / SABINE BASIN

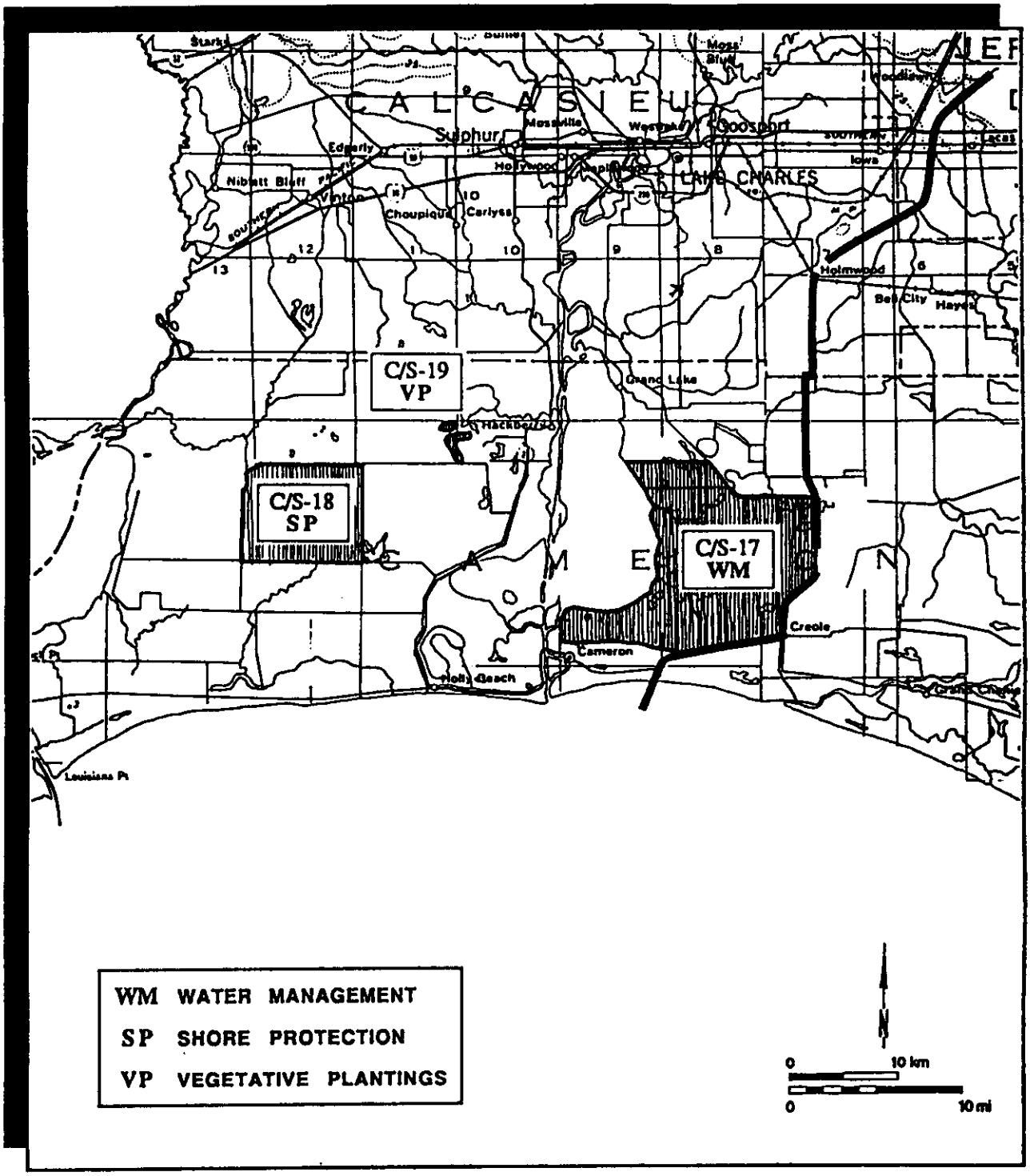
CALCASIEU/SABINE BASIN

C/S-17 Cameron-Creole Watershed Protection

C/S-18 Sabine Refuge Protection

C/S-19 West Hackberry Plantings

Figure C/S-0. Location and estimated area of benefit for projects proposed in the Calcasieu/Sabine Basin.


C/S-19
VP
C/S-18
SP
C/S-17
WM
WM WATER MANAGEMENT
SP SHORE PROTECTION
VP VEGETATIVE PLANTINGS
0 10 km
0 10 mi

C/S-17. Cameron-Creole Watershed Protection

Location and Size

The proposed project area encompasses 10,500 acres within the Cameron-Creole Watershed Project in extreme southwest Louisiana.

Objectives

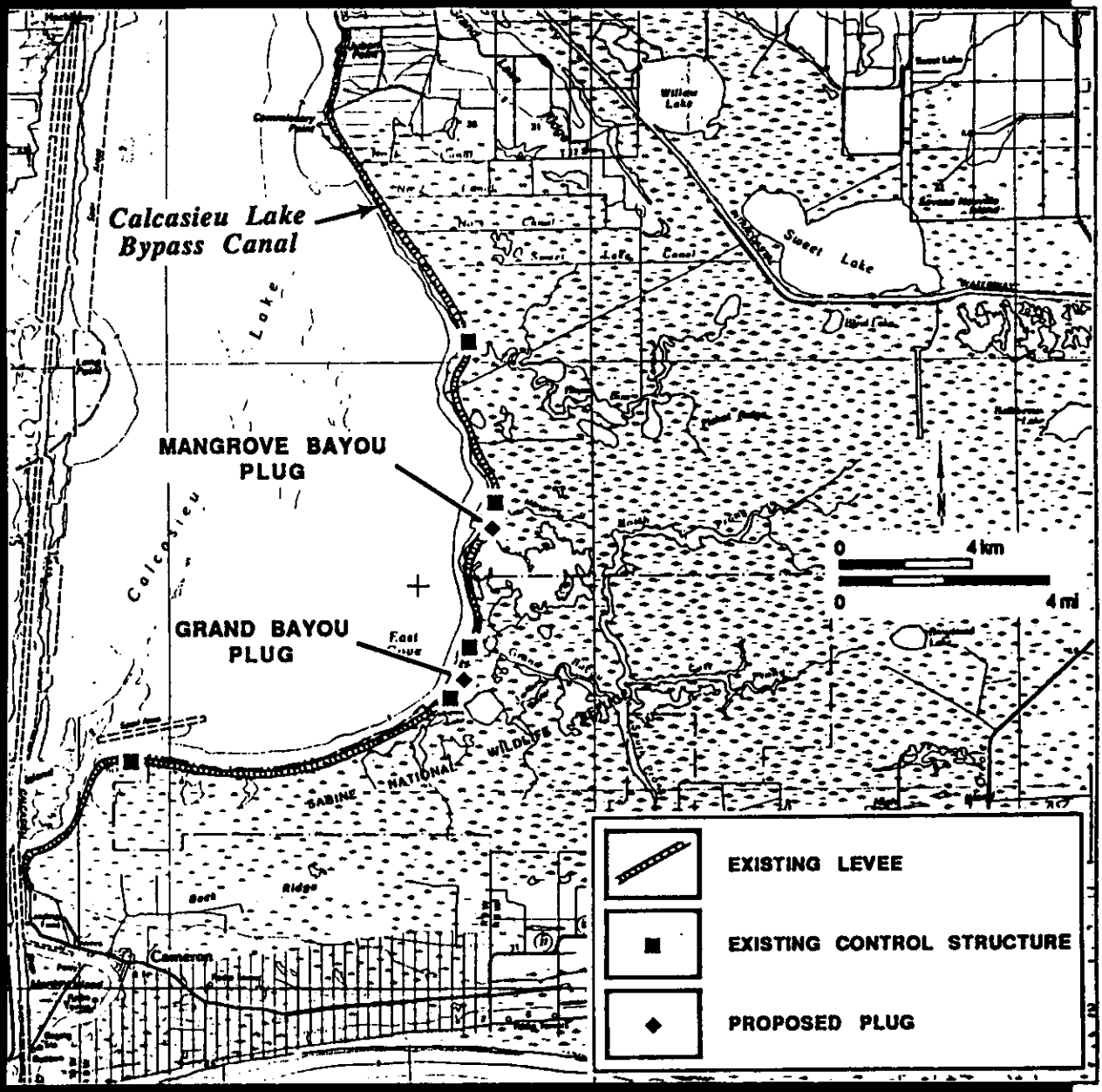
Plugging the Calcasieu Lake borrow canal will reduce rapid movement of saline water through the area, lowering marsh salinities to the north and reducing excessive water pooling to the south, thereby reducing wetland loss. The project is expected to save 375 acres of marsh over a 20 year period.

Project Features

Two sheet metal plugs (with sacrificial anodes) would be installed in the lakeshore borrow canal. The plugs would be set at normal marsh level, and provided with a boat bay/water control structure.

Status

The project will require feasibility analysis, planning, and permitting (including Section 10/404, Coastal Use Permit, and Louisiana Water Quality Certification).



C/S-17. CAMERON-CREOLE WATERSHED PROTECTION

Hydrologic Basin: Calcasieu/Sabine
Parish: Cameron
Acreage Benefitted: 375

Description: The proposed project will help limit salinity influxes and excessive water pooling within an area adjacent to Calcasieu Lake in the Cameron-Creole Watershed Project.

C/S-18. Sabine Refuge Protection

Location and Size

The project area is located on the 13,000 acre Sabine National Wildlife Refuge in western Cameron Parish.

Objectives

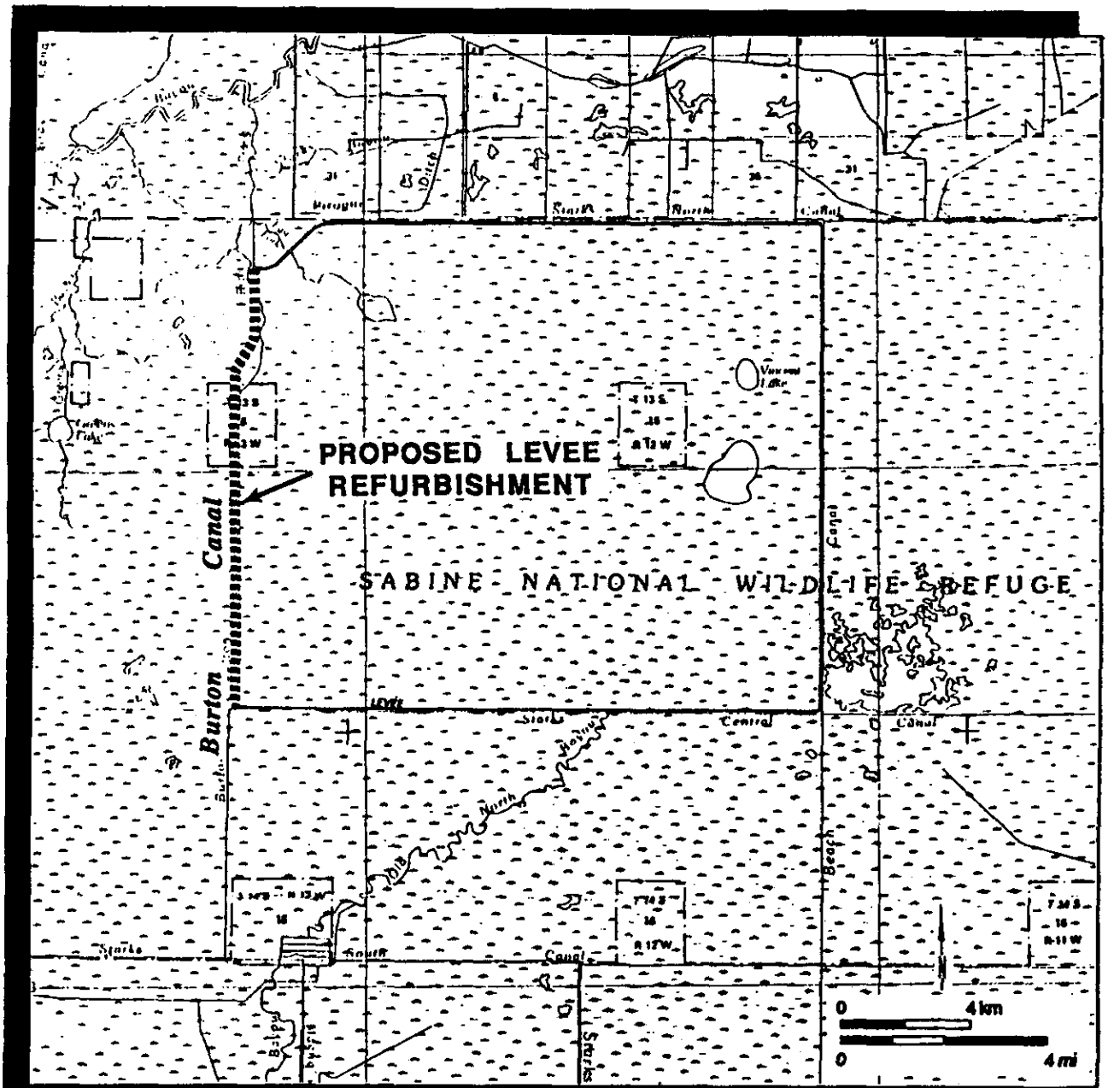
The west levee of Impoundment 3 has become badly eroded from boat wakes in Burton Canal. Multiple levee breaches are imminent, and would result in sudden increases in salinity and hydrologic forces within the impounded fresh marsh area. Significant loss of vegetated wetlands would occur. the project is expected to save about 2207 acres of freshwater marsh.

Project Features

The 5.5 mi levee would be restored with dredged material to 6 ft height where eroded, and the entire levee facing Burton Canal rip-rapped and planted with *Spartina.*

Status

Sections 10/404 and Louisiana Water Quality certification will be satisfied by the refuge's existing General Permit NOD - 25. A Louisiana Coastal Management Program consistency review will be needed, as well as a NEPA review. No conflict with the Endangered Species Act is likely.



C/S-18. SABINE REFUGE PROTECTION

Hydrologic Basin: Calcasieu/Sabine
Parish: Cameron
Acreage Benefitted: 2,207

Description: This project is intended to protect an impounded freshwater marsh by reinforcing an eroded levee.

C/S-19. West Hackberry Plantings

Location and Size

The proposed project area is located 7 mi southwest of the town of Hackberry and just south of Black Lake.

Objectives

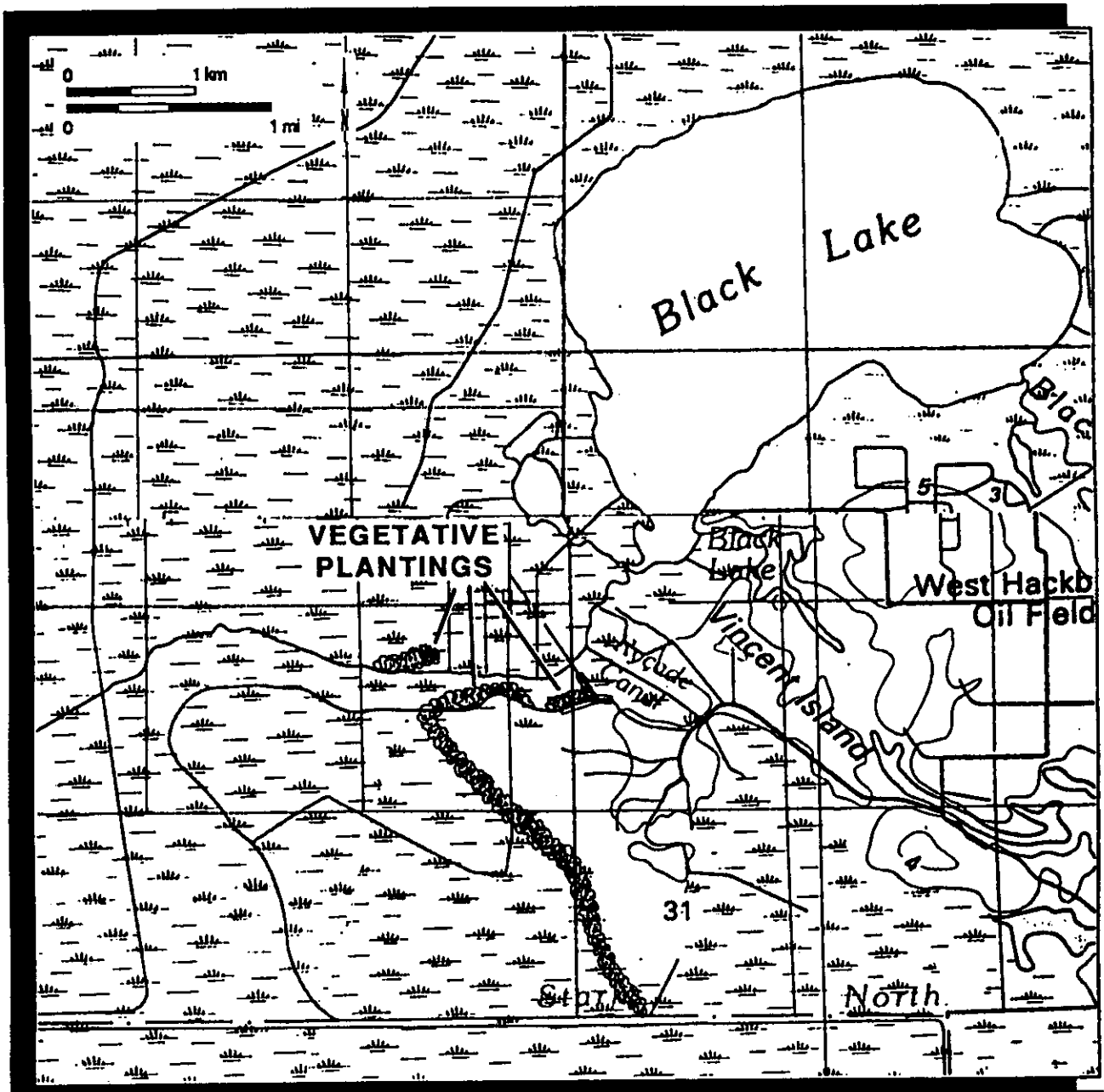
The project is a part of the Statewide Vegetative Plantings Project with elements in the Chenier Plain, Deltaic Plain, and Barrier Island physiographic environments. The objectives include implementation of innovative vegetative planting techniques, for the protection of inland wetlands and barrier islands, and incorporation of vegetative techniques in all restorative work when applicable.

Project Features

The project features includes Cattails and Smooth Cordgrass plantings to deter erosion along shallow interior lakes caused by wind-induced waves. It is estimated that 96 acres of marsh will be saved over a 20 year period.

Status

Compliance with NEPA, Sections 10/404, Louisiana Coastal Management Program regulations, Louisiana Water Quality Certification, and the Endangered Species Act remain to be established.



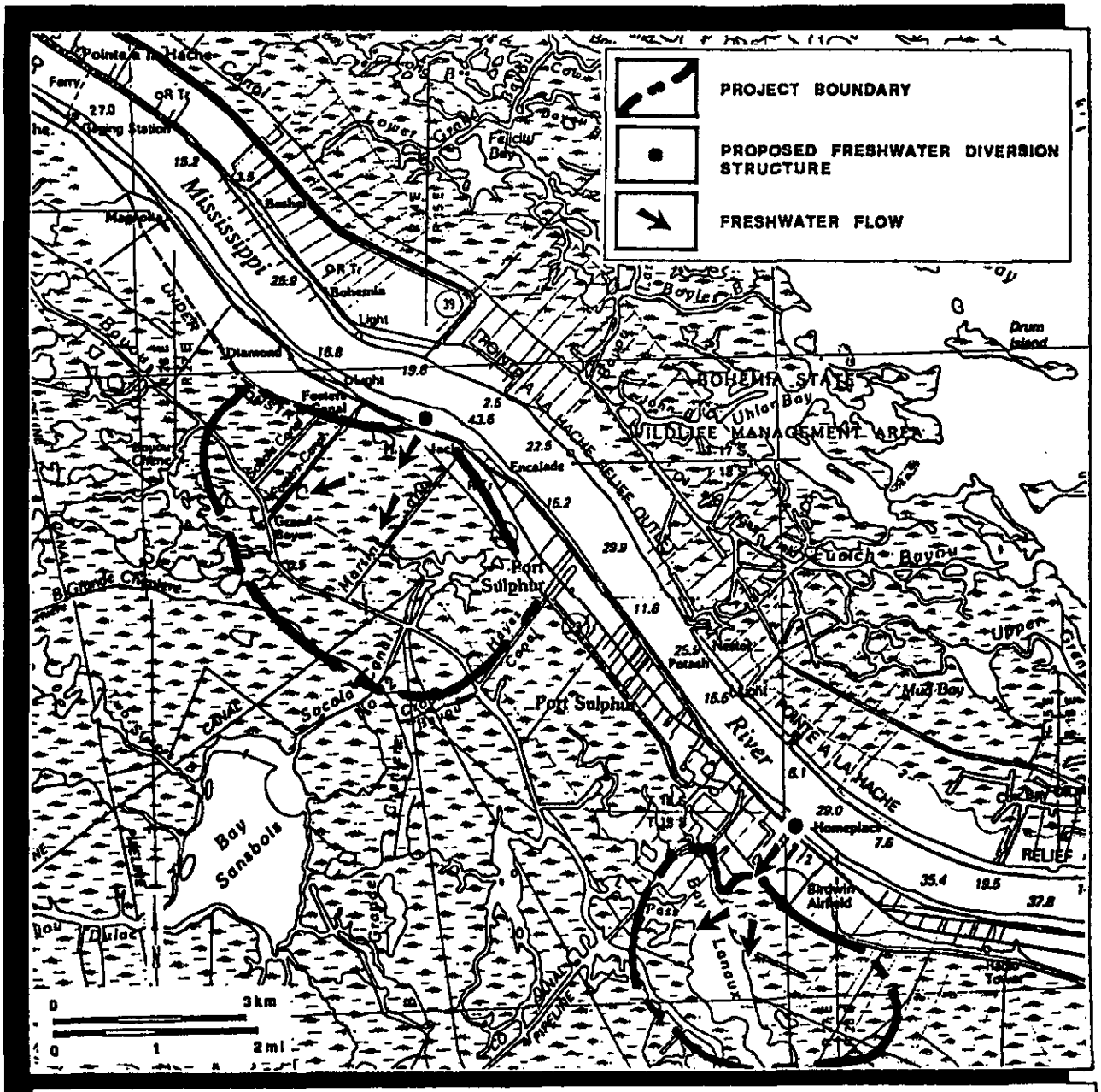
C/S-19 WEST HACKBERRY PLANTINGS

Hydrologic Basin: Calcasieu/Sabine
Parish: Cameron
Acreage Benefitted: 96 ac

Description: The project will reduce marsh erosion from interior open water wave energy by vegetation planting techniques. This is part of the statewide vegetation program..

APPENDIX C

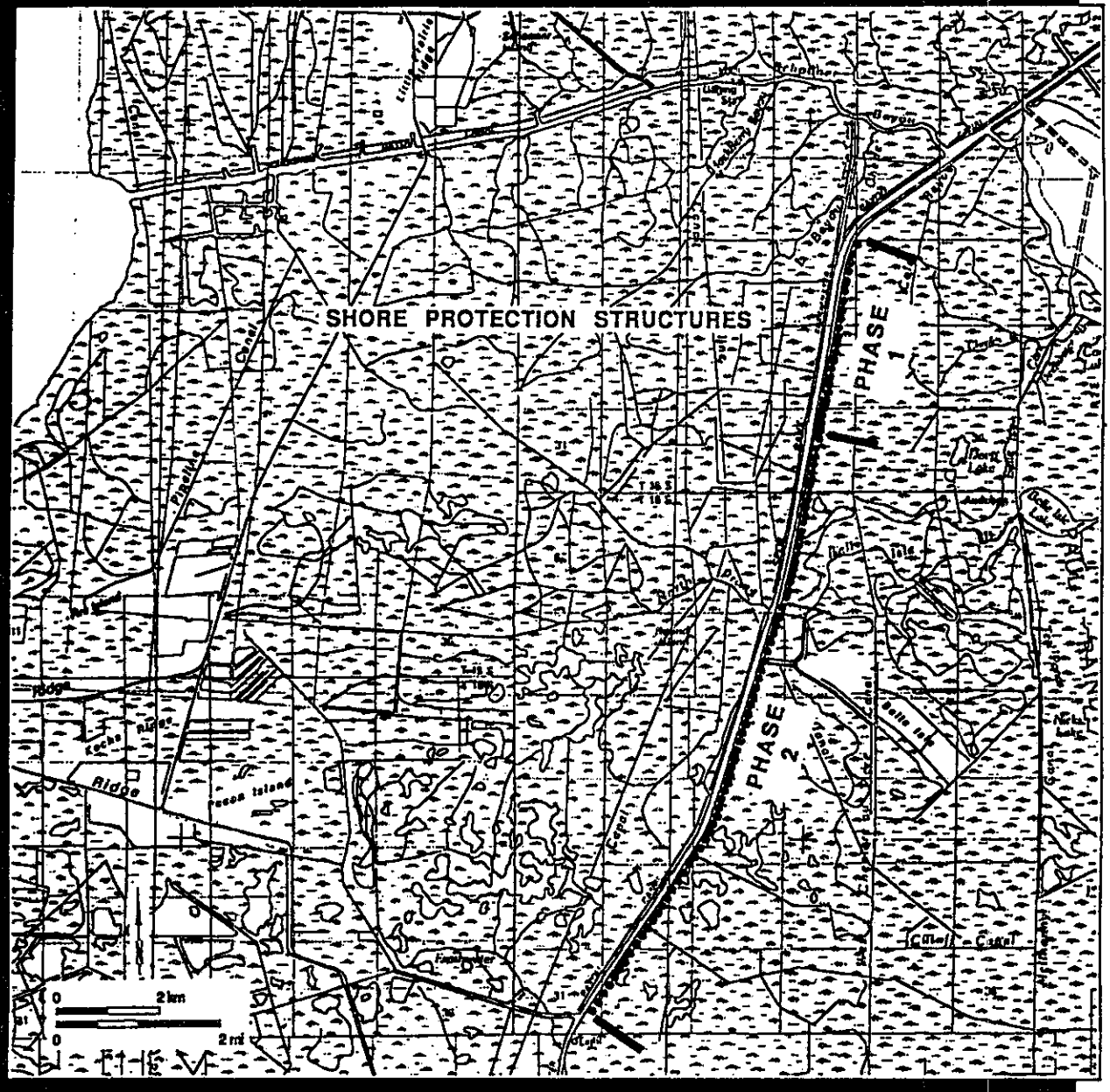
RECOMMENDED DESIGN MODIFICATIONS



BA-17. CITY PRICE DIVERSION

Hydrologic Basin: Barataria
Parish: Plaquemines
Acreage Benefitted: 3,200

Description: Due to hydrologic constraints, a design modification is proposed to divide the single City Price diversion into two smaller diversions of four pipes each at Homeplace and Happy Jack respectively. This project will help conserve, enhance, and restore vegetated wetlands by providing Mississippi River water and associated nutrient and sediments.



T/V-11. FRESHWATER BAYOU BANK PROTECTION

Hydrologic Basin: Teche/Vermilion
Parish: Vermilion
Acreage Benefitted: 4,205

Description: A design modification is proposed whereby the intended 20,000 ft of continuous restoration and protection measures under Phase I and II are distributed intermittently along 50,000 ft of the east bank to achieve a greater measure of wetland protection. The project will conserve vegetated wetlands by maintaining the physical integrity of marshes that separate Freshwater Bayou and interior water bodies.