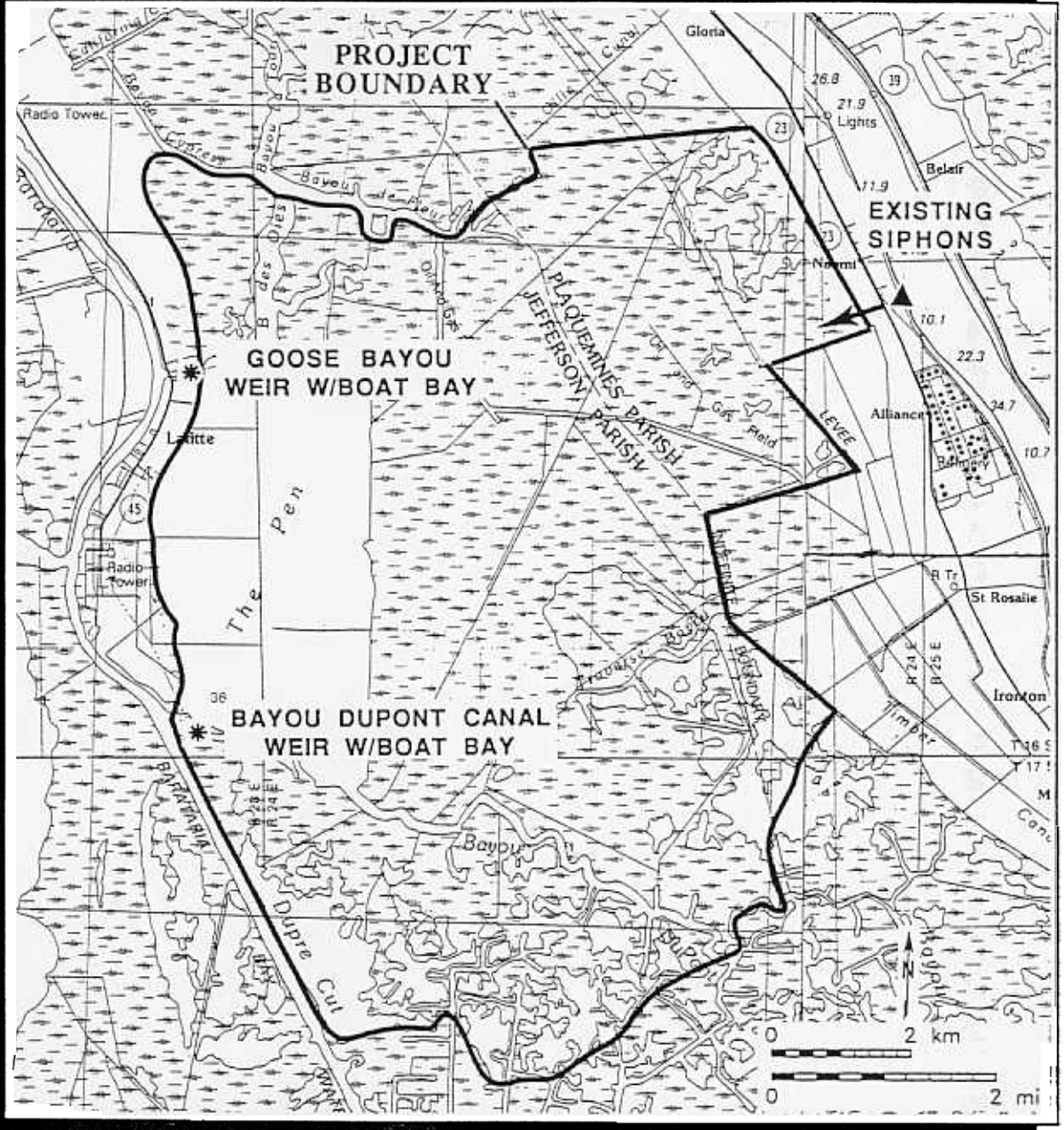
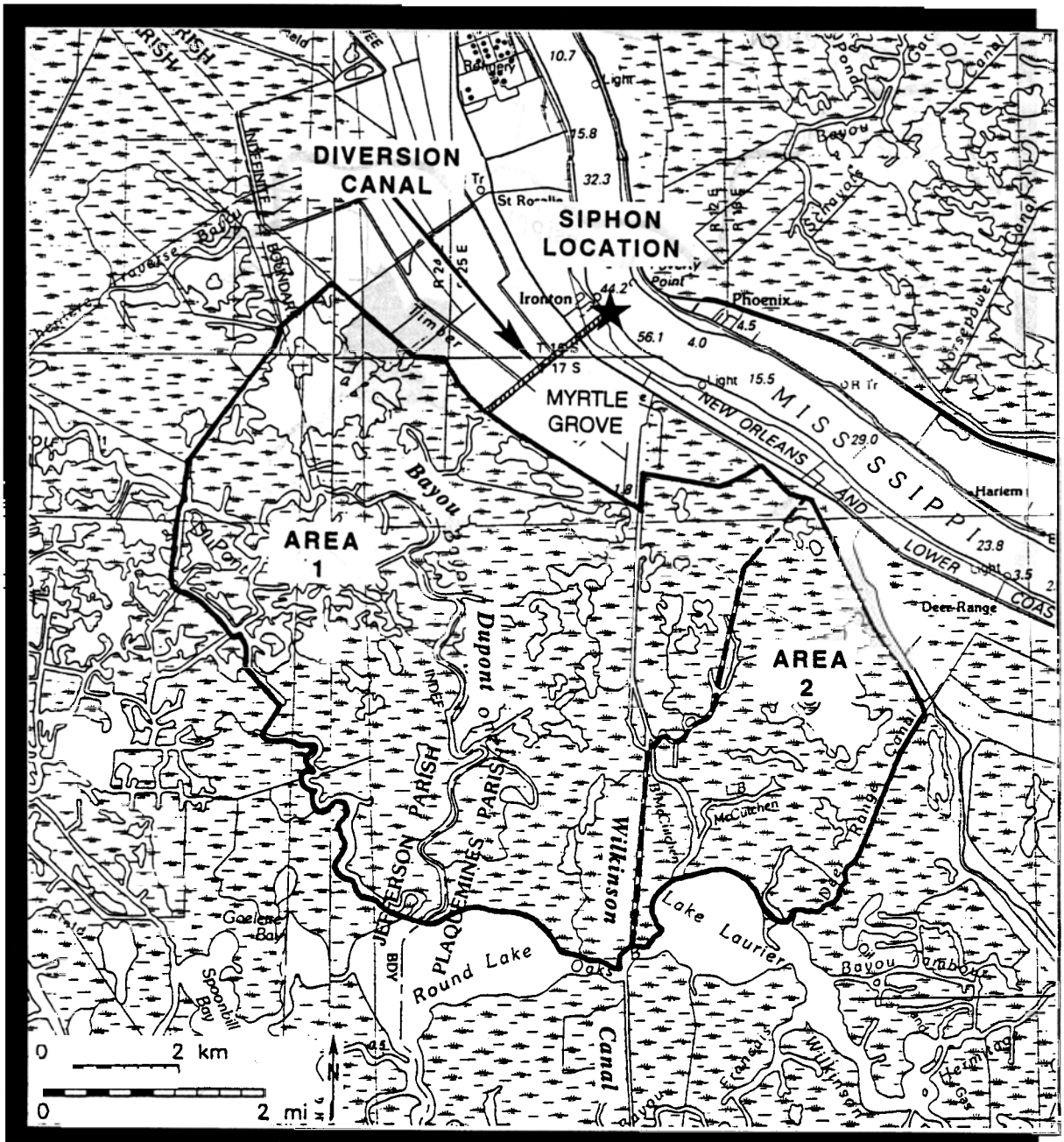


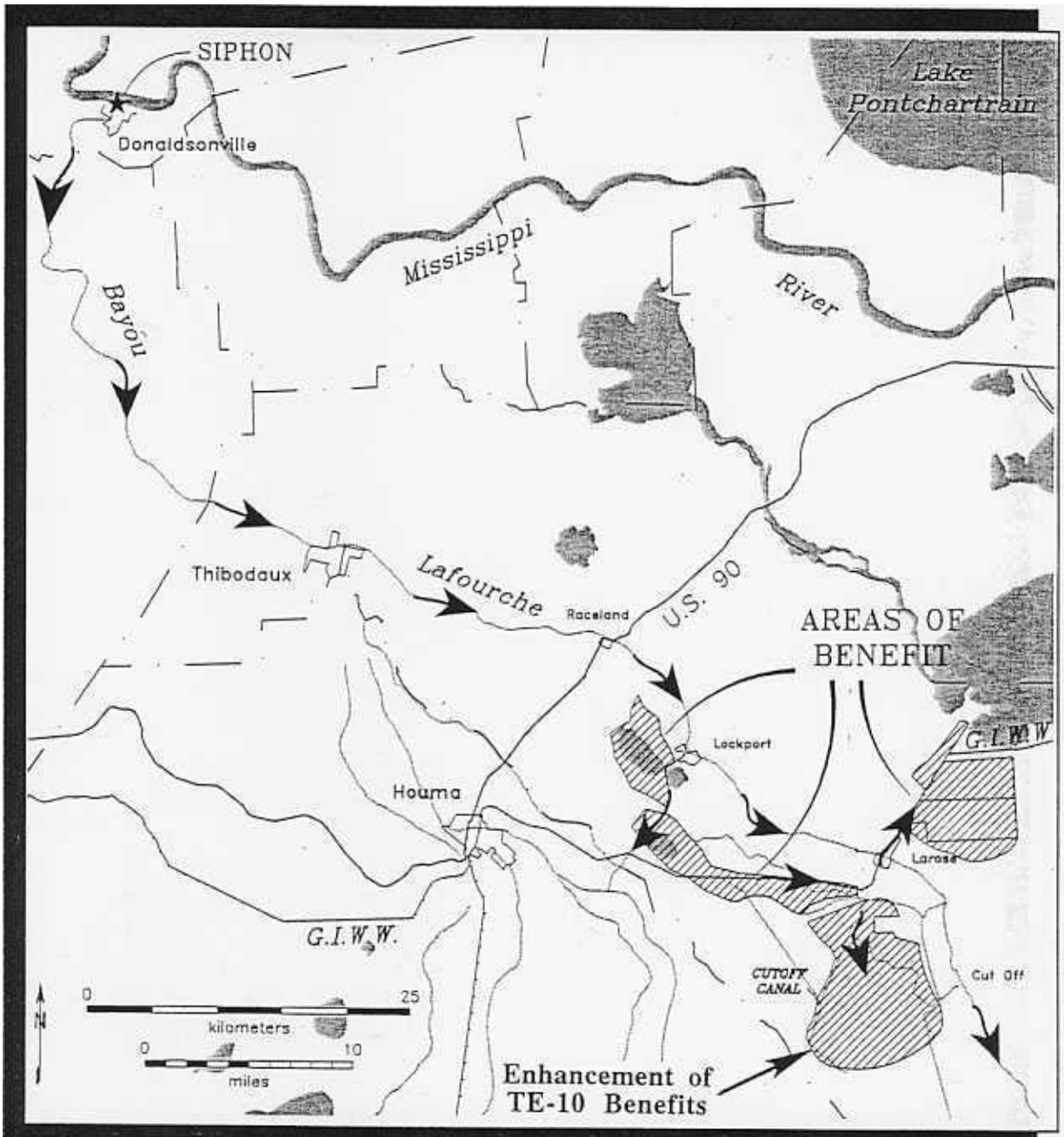
BA-3c. NAOMI SIPHON OUTFALL MANAGEMENT

The construction of siphon, in 1992, has allowed the introduction of Mississippi River water into wetlands near the community of Naomi. Eight, 72-inch diameter siphon pipes deliver up to 2,144 cfs of freshwater and associated sediments and nutrients. By managing the outfall from the siphon, greater utilization can be achieved of the diverted river water for maintenance of 26,603 acres of intermediate and brackish marshes. The management will provide for better water distribution, and greater sediment retention and nutrient uptake. The project includes a fixed-crest weirs with provision for small-boat access on Goose Bayou Canal and Dupont Canal. The estimated cost of the project is $1,744,000.



BA-24. MYRTLE GROVE DIVERSION SIPHON

The construction of siphons, like to those at Naomi and West Point a la Hache, allow a partial restoration of the seasonal introduction of Mississippi River water into adjacent marshes. The construction of a siphon near the community of Myrtle Grove will provide freshwater, sediment, and nutrients to a 15,894-acre area of intermediate and brackish wetlands. Eight, 6-foot diameter pipes will divert up to 2,100 cfs into an outfall canal. Other structures will help provide distribution of the water and extend the area of benefit. Operation of the siphon diversion is expected to protect 1,117 acres of brackish marsh, create 150 acres of new marsh, and enhance 3,572 acres of aquatic habitat. The project cost is estimated to be $15,526,000.



BA-25. BAYOU LAFOURCHE DIVERSION SIPHON

The maintenance and restoration of the deltaic plain marshes is dependent foremost on the introduction of water and sediments from the Mississippi River. Bayou Lafourche, historically, distributed water to the wetlands of the Barataria Terrebonne estuaries until its closure in 1908. A siphon at Donaldsonville will restore diversion through Bayou Lafourche within the constraints of channel capacity and development along the bayou. The siphon will provide flows up to 2,000 cfs, to be distributed through the GIWW and the Company Canal. The siphon is estimated to benefit an area of 28,843 acres and will enhance benefits from the GIWW/Grand Bayou Diversion Project (TE-10). The estimated project cost is $24,487,000.

TERREBONNE BASIN

TERREBONNE BASIN

MAJOR PROBLEMS

Subsidence, wave erosion, tidal processes, and a lack of sediments continue to cause wetland loss in the southeastern part of the Basin.

Impaired drainage, subsidence, and lack of sediments limit regeneration of swamp forests in the upper (Verret) Basin.

Extensive hydrologic changes have led to rapid exchange of freshwater and saltwater between the Gulf and the estuaries and between water bodies and wetlands.

Integrity of the barrier island system that shelters the estuary from the Gulf of Mexico has greatly diminished.

Backwater conditions adversely affect sediment supply and drainage of marshes in the western (Penchant) Basin.

Wetland loss from bank erosion along major navigation channels.

PROTECTION, RESTORATION, ENHANCEMENT OBJECTIVES

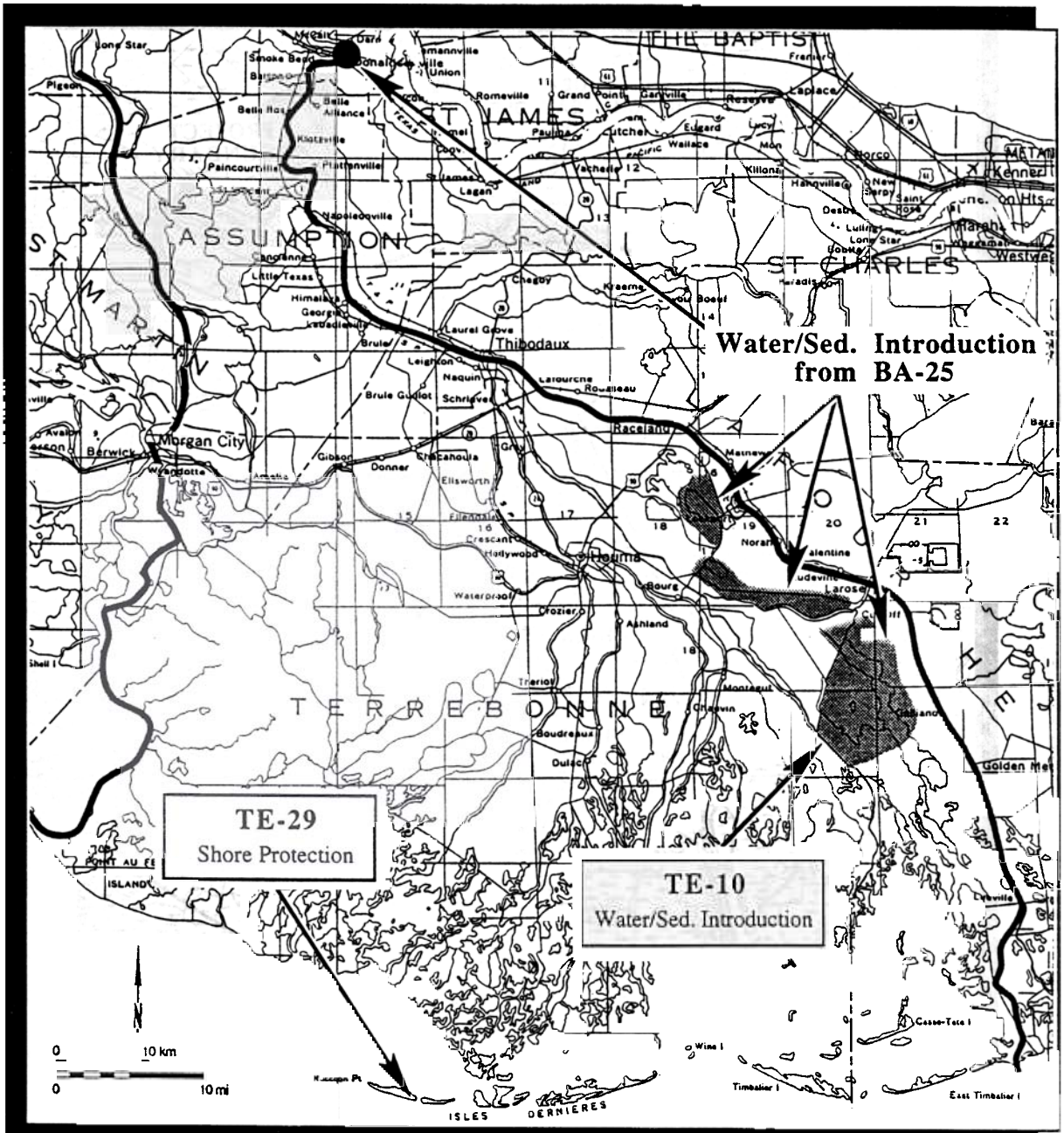
Reduce the rate of unavoidable loss by maintenance of protective features such a strategic barrier island segments, ridges, and critical flood protection features.

Optimize use of Atchafalaya River water and sediment to maintain marshes in the southwestern (Penchant) Basin.

Optimize use of freshwater and nutrient resources and reduce saltwater intrusion within the eastern (Terrebonne/Timbalier) Basin through water management.

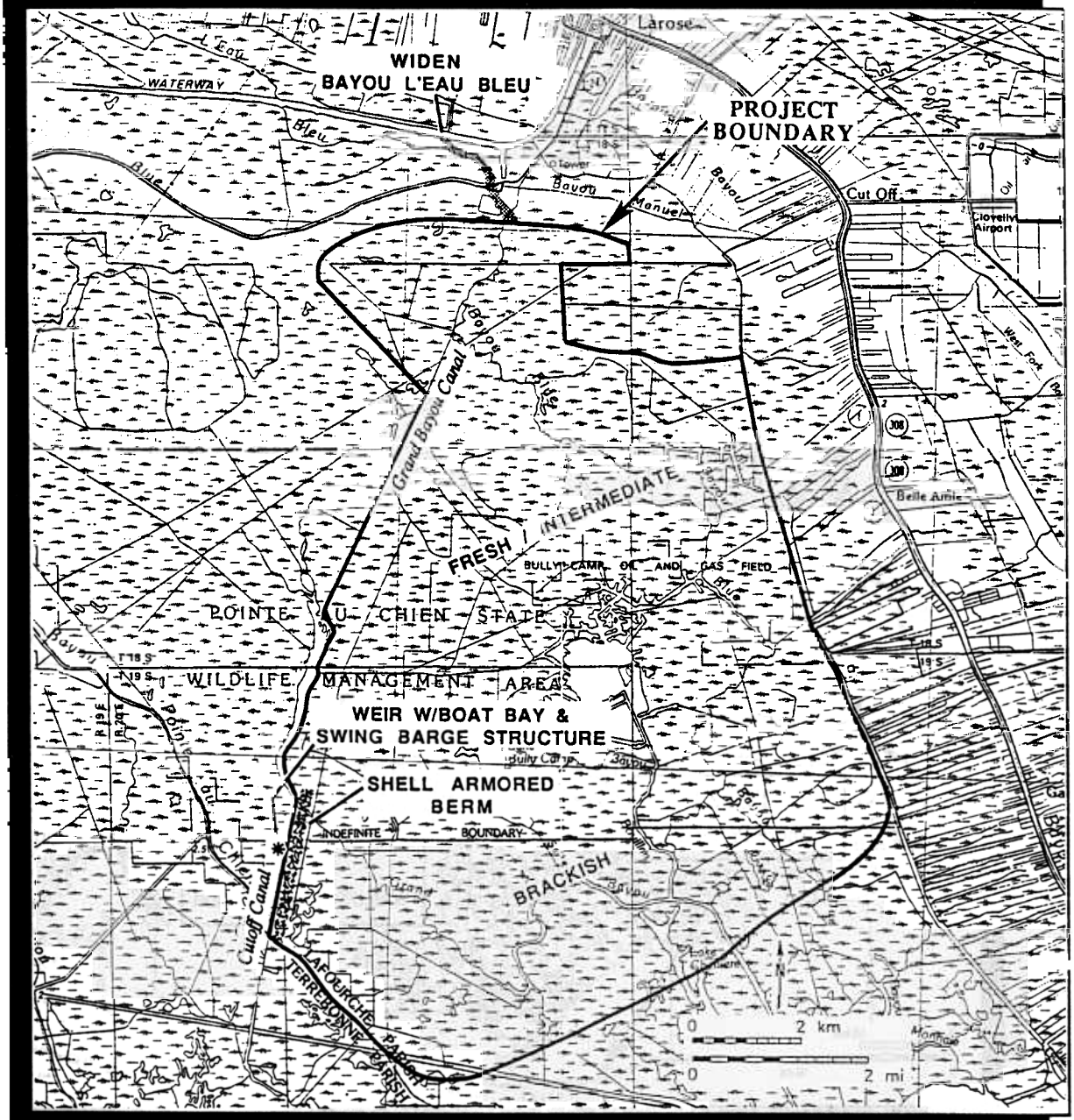
Reduce saltwater intrusion through Houma Navigation Canal.

Address critical, localized wetland loss.



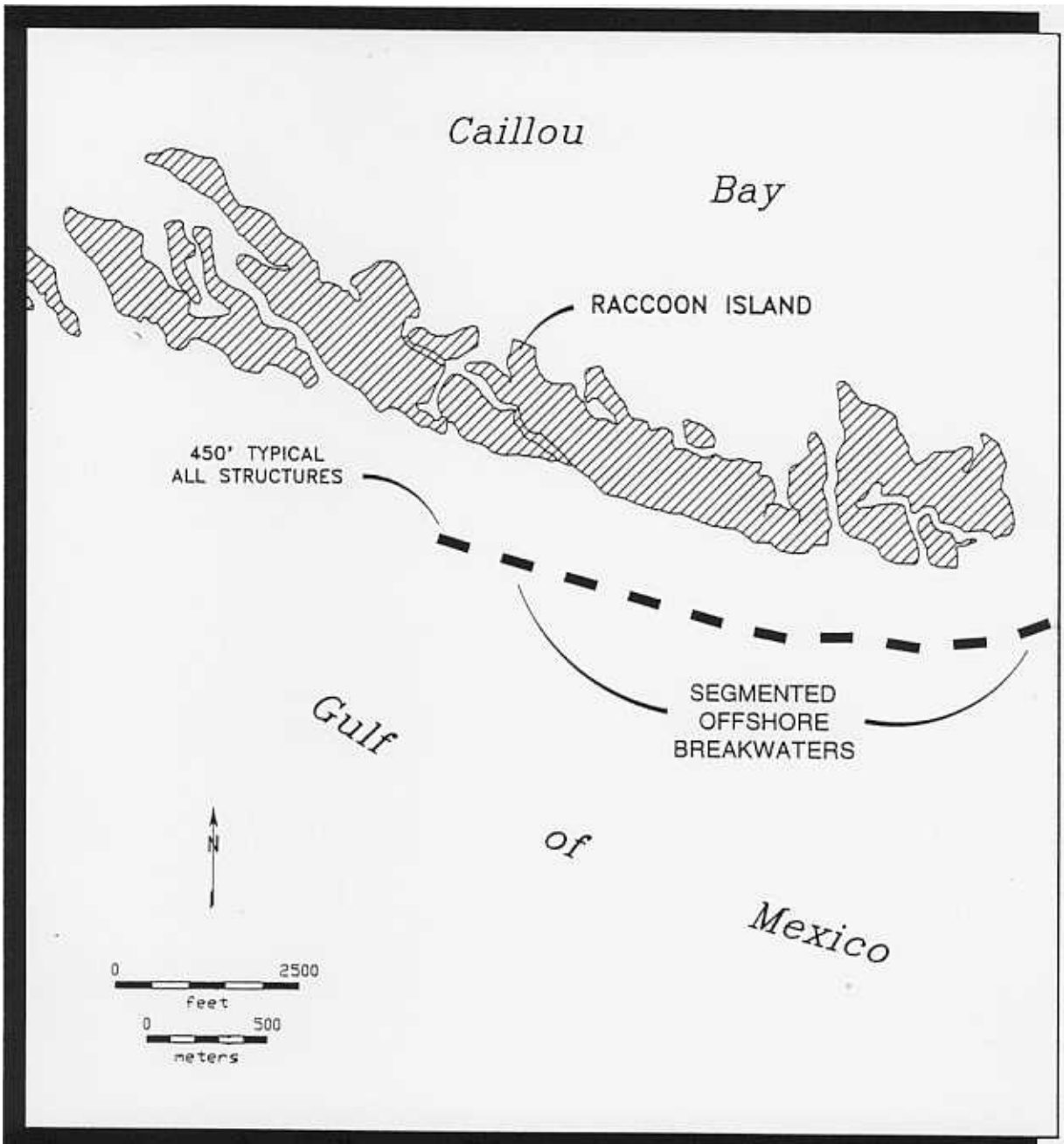
PROJECTS IN THE TERREBONNE BASIN

TE-10	Grand Bayou/GIWW Diversion
TE-29	Raccoon Island Breakwater Demonstration



TE-10. GIWW/GRAND BAYOU DIVERSION WITH CUTOFF CANAL STRUCTURE

By enlarging the Bayou l'Eau Blue connection between the GIWW and Grand Bayou, greater volumes of freshwater and sediment will be introduced from the GIWW into intermediate and brackish marshes around the Bully Camp Oil and Gas Field. Benefits will extend over a 26,530-acre area where wetland losses have been substantial. With inclusion of a navigable structure in the Cutoff Canal to control saltwater intrusion, the project will protect 1,575 acres. The benefits from this diversion could be further enhanced with a future, seasonal increase in the suspended sediment load as a result of the Davis Pond Diversion project and the proposed Bayou Lafourche Siphon (BA-25). The project is estimated to cost $5,136,000.



TE-29. RACCOON ISLAND BREAKWATER DEMONSTRATION

Wave erosion and washover during storms continue to cause a rapid decline in the elevation and areal extent of Raccoon Island. Restoration efforts after landfall of hurricane Andrew in 1992 provided only for temporary abatement of the rate of loss, and further reduction of the island's integrity is predictable. The project will evaluate the use of segmented breakwaters as a means to reduce the rate of barrier island erosion. Limestone breakwater segments will be placed parallel to the Gulf shore along the eastern end of the island. The estimated project cost is $1,500,000.

TECHE / VERMILION BASIN

TECHE / VERMILION BASIN

MAJOR PROBLEMS

Erosion along bay shores and navigation channels.

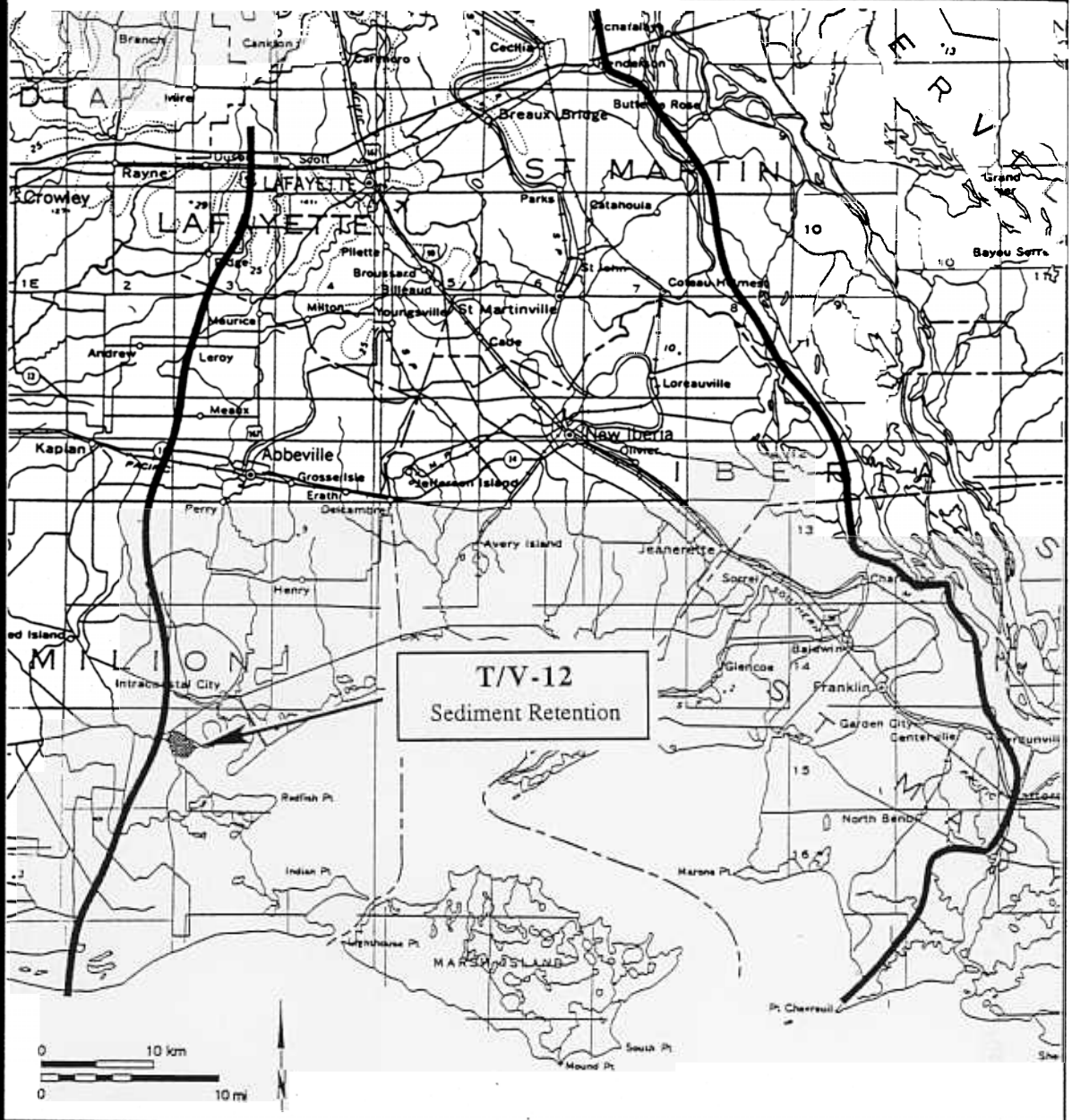
Localized wetland losses resulting form human-made changes in hydrology.

PROTECTION, RESTORATION, ENHANCEMENT OBJECTIVES

Full utilization of available sediment resources.

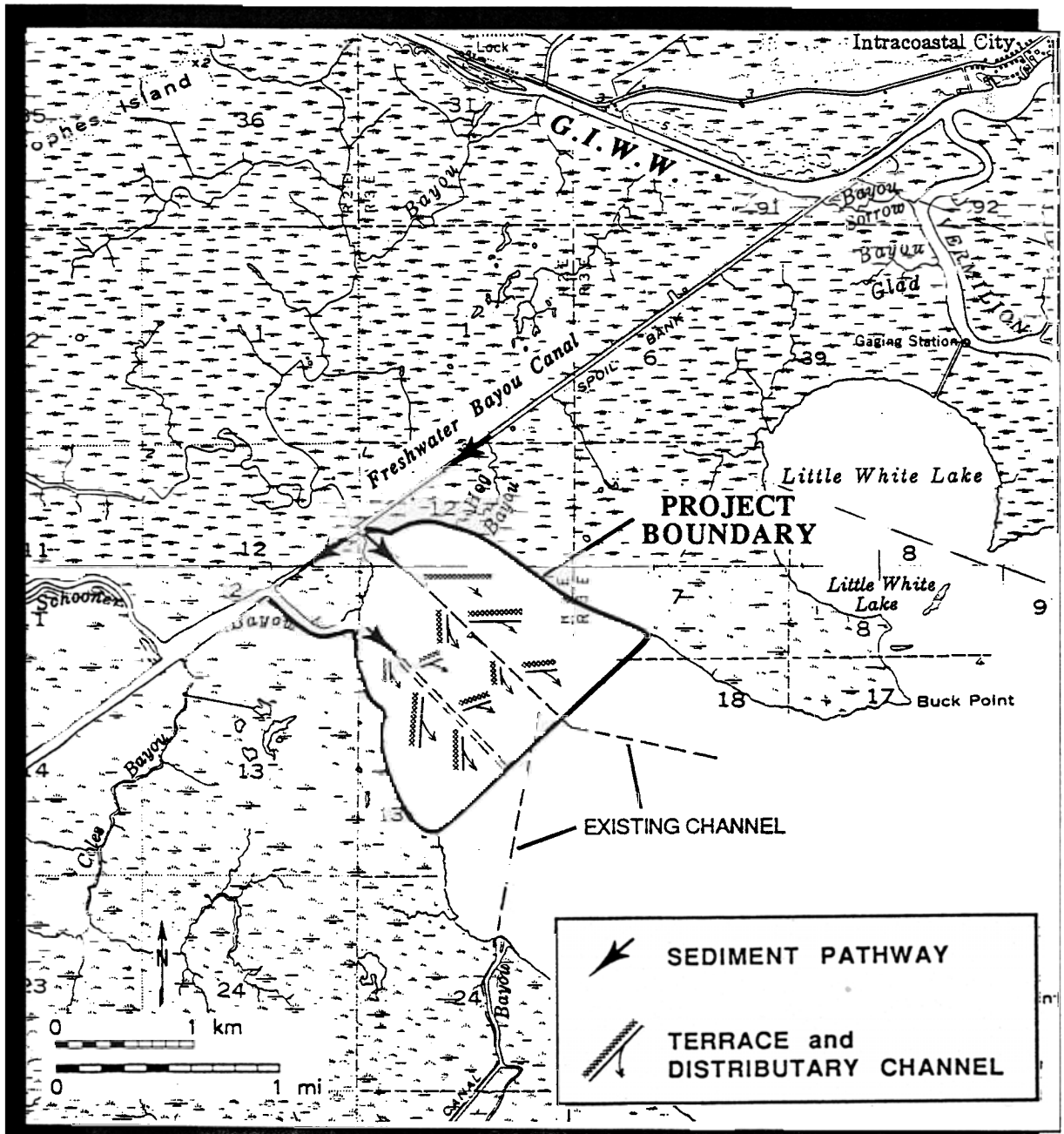
Increase sediment retention in sheltered areas.

Address critical, localized wetland loss.



PROJECTS IN THE TECHE/VERMILION BASIN

T/V-12 Little Vermilion Bay Sediment Trapping



T/V-12. LITTLE VERMILION BAY SEDIMENT TRAPPING

Much of the sediment introduced annually into water bodies such as the Cote Blanche and Vermilion bays is deposited in deep water or transported out of the bays. This project intends to improve retention of Atchafalaya River sediments that are introduced through the Gulf Intracoastal Waterway into Little Vermilion Bay. Sediment deposition will be enhanced by creating a distributary channel network that directs water and sediments from two navigation channels to areas that are sheltered from wave action by terraces constructed with dredged material from the distributary channels. The project is expected to protect 51 acres and create 390 acres of marsh. The project cost is estimated to be $940,000.

MERMENTAU BASIN

MERMENTAU BASIN

MAJOR PROBLEMS

Subsidence, impaired drainage, and water management conflicts cause excessive water levels in White Lake - Grand Lake portion of the Basin.

Limited freshwater introduction, loss of freshwater retention, and increased saltwater exchange in Chenier portion of the Basin.

Wetland loss caused by erosion along lake shores and navigation channel banks.

Saltwater introduction through the Mermentau Ship Channel.

PROTECTION, RESTORATION, ENHANCEMENT OBJECTIVES

Maintain integrity of present water management system.

Transfer of freshwater across Grand Chenier Ridge.

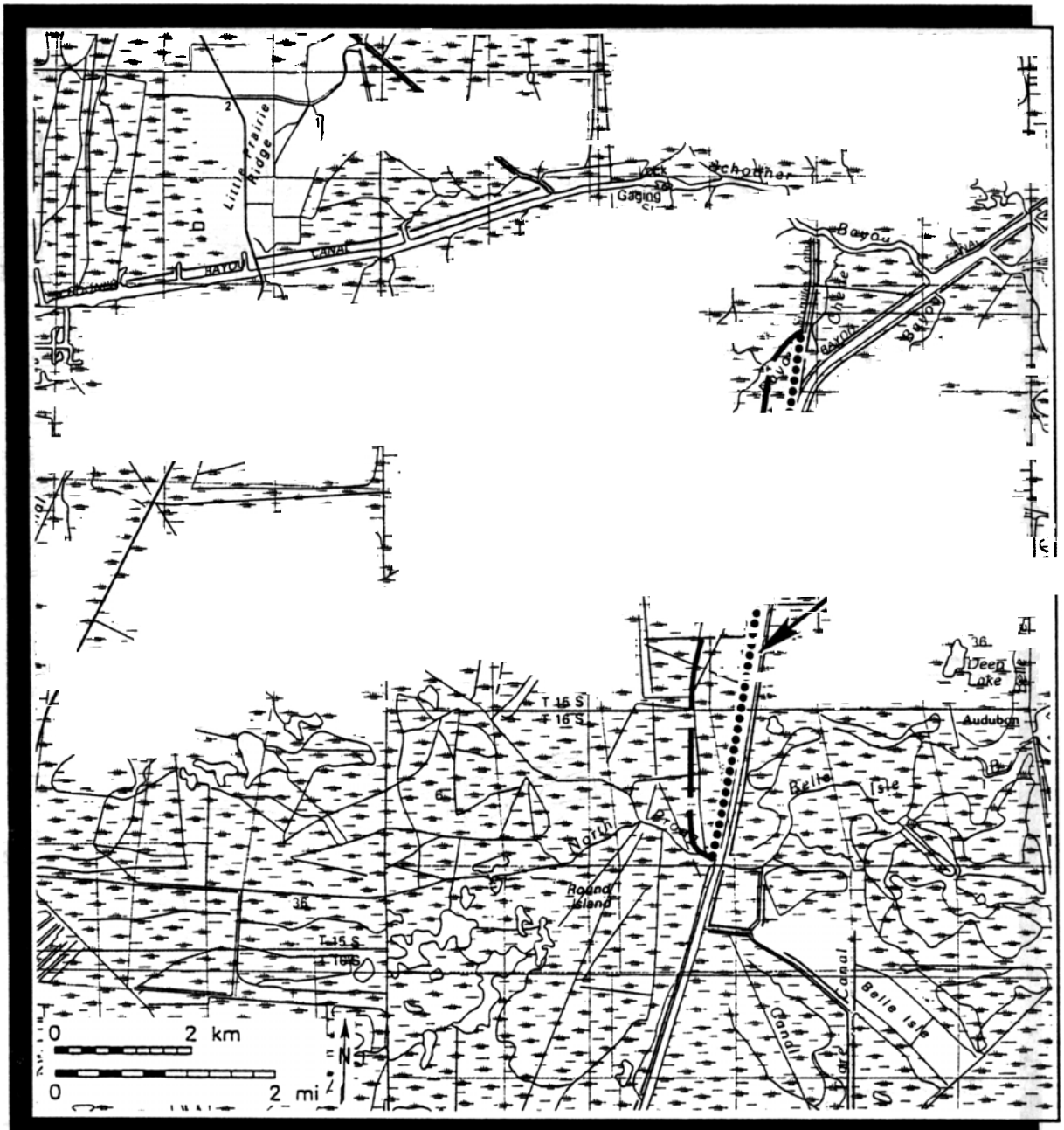
Optimize water management for multi-purpose objectives.

Full utilization of available sediment resources, including dredged material.

Address critical, localized wetland loss.

PROJECTS IN THE MERMENTAU BASIN

ME-13 Freshwater Bayou Bank Stabilization (Phase 3)



ME-13. FRESHWATER BAYOU BANK STABILIZATION (PHASE 3)

Major navigation channels continue to be a cause of wetland loss in much of the Louisiana coastal area. In the Chenier Plain, the loss results from bank erosion as well as the loss of water management capability when erosion connects these channels to interior water bodies, allowing excessive water level fluctuation and saltwater introduction. A rock embankment will protect approximately 4.5 miles of the western bank of Freshwater Bayou from further erosion by boat wakes. The project will benefit approximately 511 acres of intermediate marsh, and allows for the formation of 13 acres of marsh in the sheltered area between the current bank and the rock embankment. The project is estimated to cost $3,999,000.

CALCASIEU / SABINE BASIN

CALCASIEU / SABINE BASIN

MAJOR PROBLEMS

Extensive hydrologic changes have led to rapid exchange of freshwater and saltwater between the Gulf and Calcasieu Lake and between water bodies and wetlands in the central Basin.

Reduced freshwater retention and increased salinity variation continue to result in wetland loss.

Large-scale conversion of marsh to open water has increased water turbidities and wave erosion.

Shore erosion along the Gulf of Mexico threatens physical integrity of the entire Basin by breaching of protective barrier.

Wetland loss along major navigation channels.

PROTECTION, RESTORATION, ENHANCEMENT OBJECTIVES

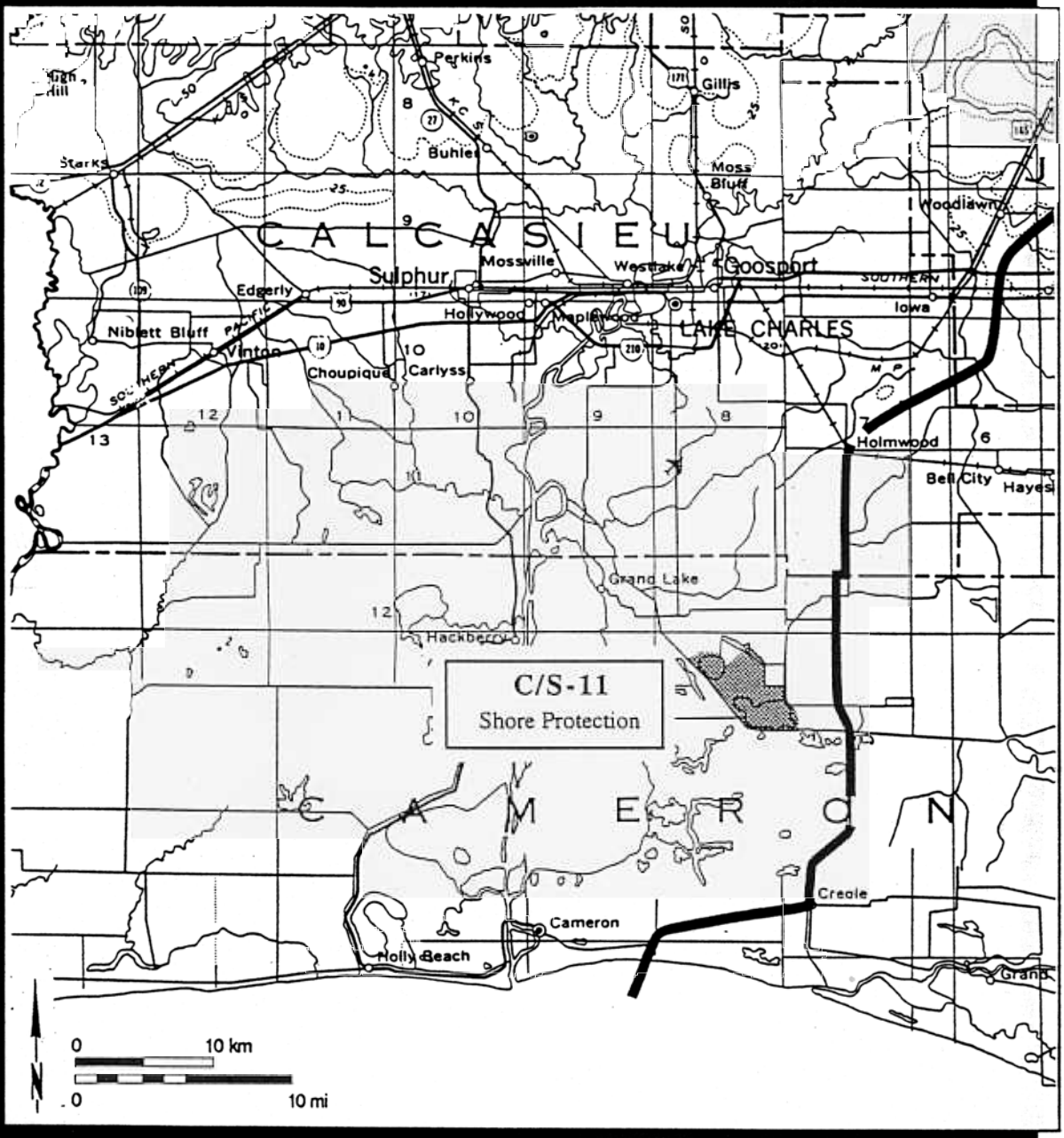
Maintain integrity of Gulf shore barrier, including both structural and non-structural elements.

Improve protection from saltwater incursions and prevent rapid loss of freshwater through water management.

Full utilization of available sediment resources, including dredged material.

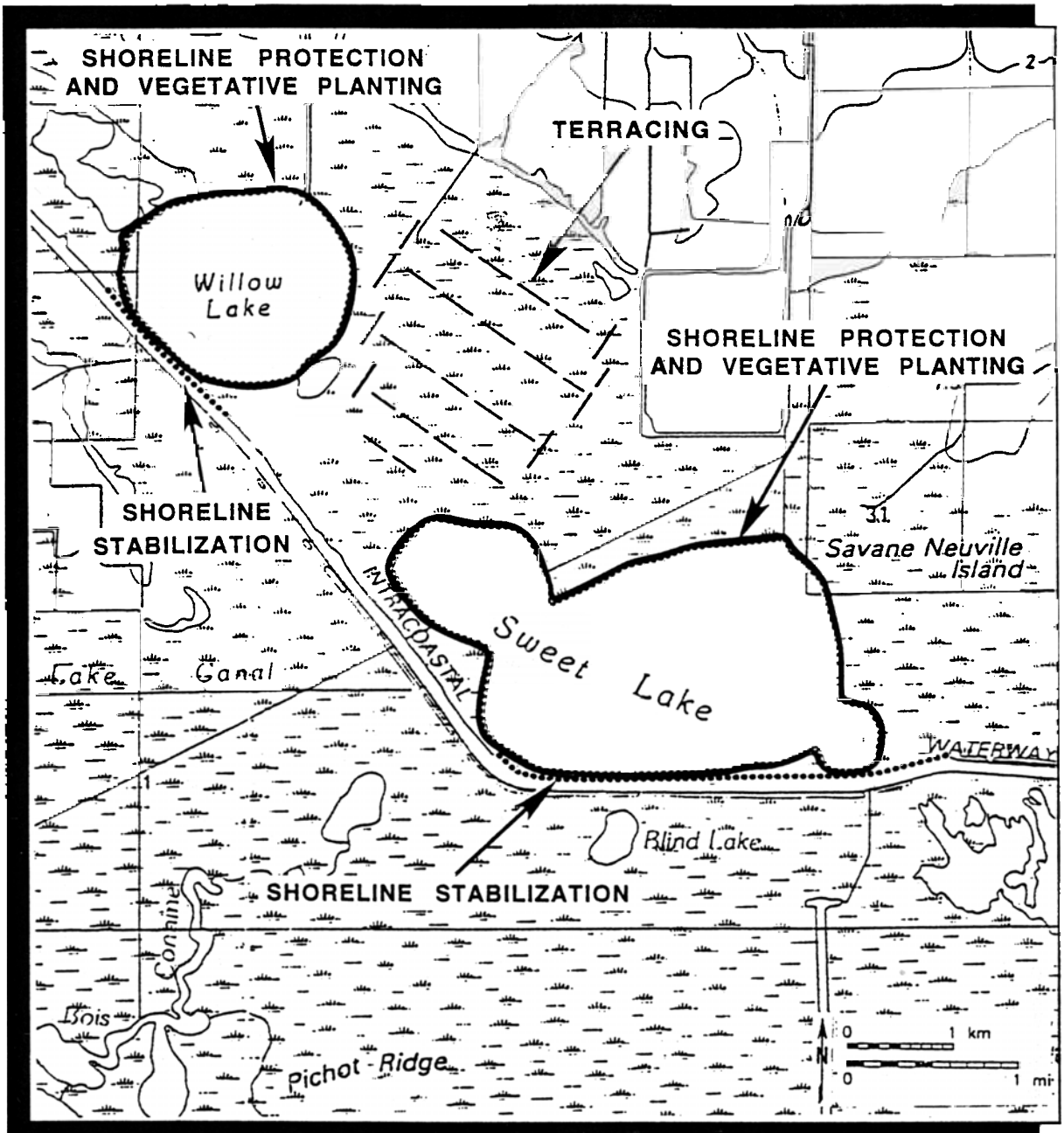
Restoration of interior marsh through water management and planting.

Address critical, localized wetland loss.



PROJECTS IN THE CALCASIEU/ SABINE BASIN

C/S-11 Sweet Lake/Willow Lake Shore Protection

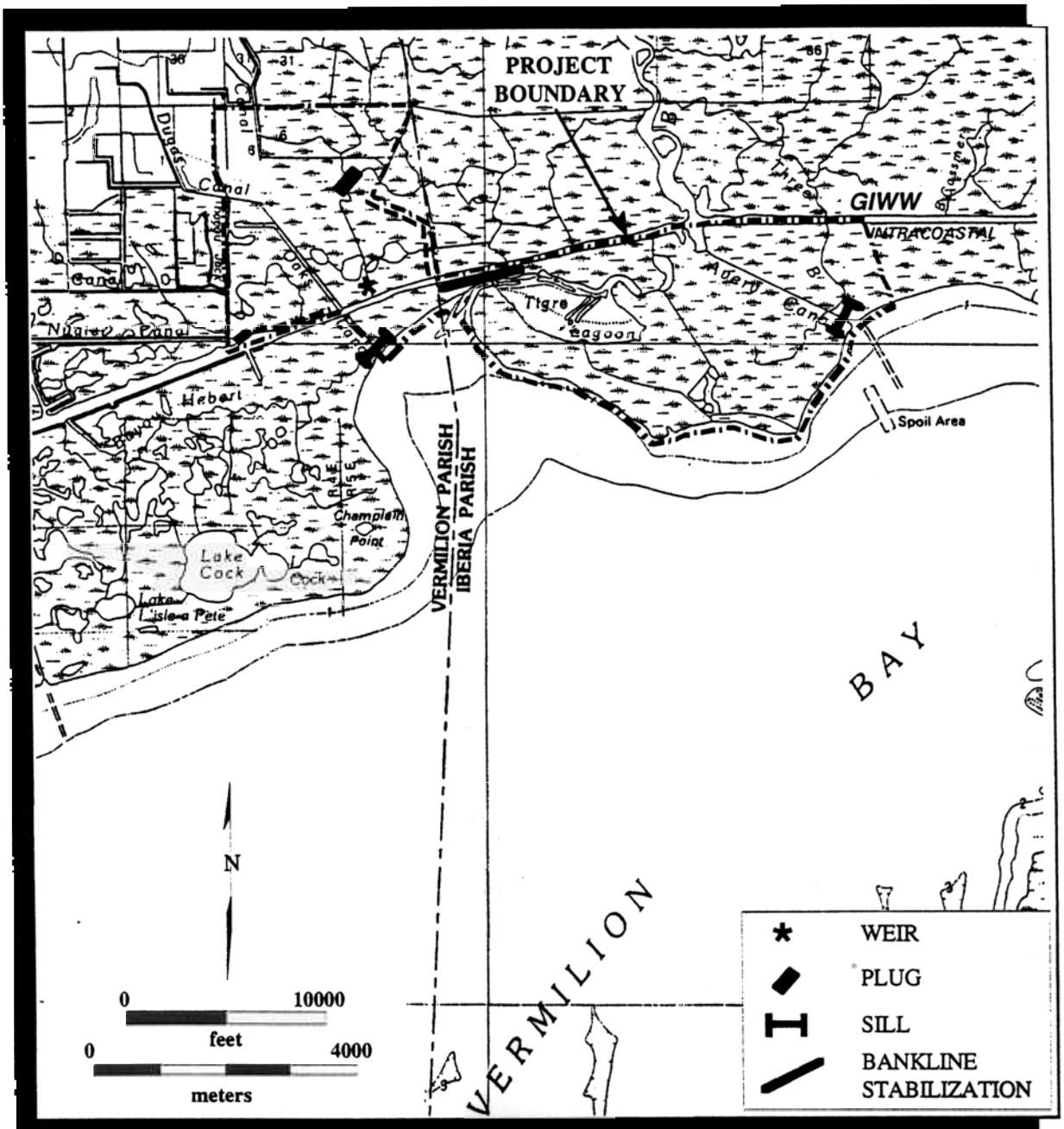


C/S-11. SWEET LAKE/WILLOW LAKE SHORE PROTECTION

Widening of the Gulf Intracoastal Waterway as a result of bank erosion has caused the loss of wetlands that separated Willow Lake and Sweet Lake from the waterway. This has increased water movement in the lakes with resultant increases in water turbidity and erosion of the lake shore. To reestablish a sheltered environment in each of the two lakes and protect the adjacent wetlands, rock breakwaters will be constructed along the GIWW, eroded sections of the bank rebuilt, and earthen terraces constructed between the lakes. The rebuilt banks and terraces will be planted. The project expands the authorized Sweet Lake/ GIWW Bank Restoration to include Willow Lake and benefits 320 acres of marsh at an estimated cost of 4,763,000.

APPENDIX C

DESIGN MODIFICATIONS FOR AUTHORIZED PROJECTS



T/V-13. OAKS/AVERY CANAL HYDROLOGIC RESTORATION (OAKS CANAL / VERMILION BAY SHORE PROTECTION)

Wave erosion along the GIWW and Vermilion Bay threatens to directly connect these two waterbodies and augment the adverse tidal effects on interior wetlands caused presently by the Oaks and Avery Canals. To protect a 5,365-acre wetland area against further wave erosion, limit the rates of water exchange with Vermilion Bay via the GIWW, and diminish water-level and salinity fluctuations, the original project design and scope have been modified to include: 1) a low sill structure at the mouth of each, the Oaks Canal and Avery Canal, 2) about 6,000 ft of bank stabilization along the GIWW, 3) two water control structures at connections with oil field access, and 4) about 1,000 ft of bank maintenance along an oil field access canal.

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