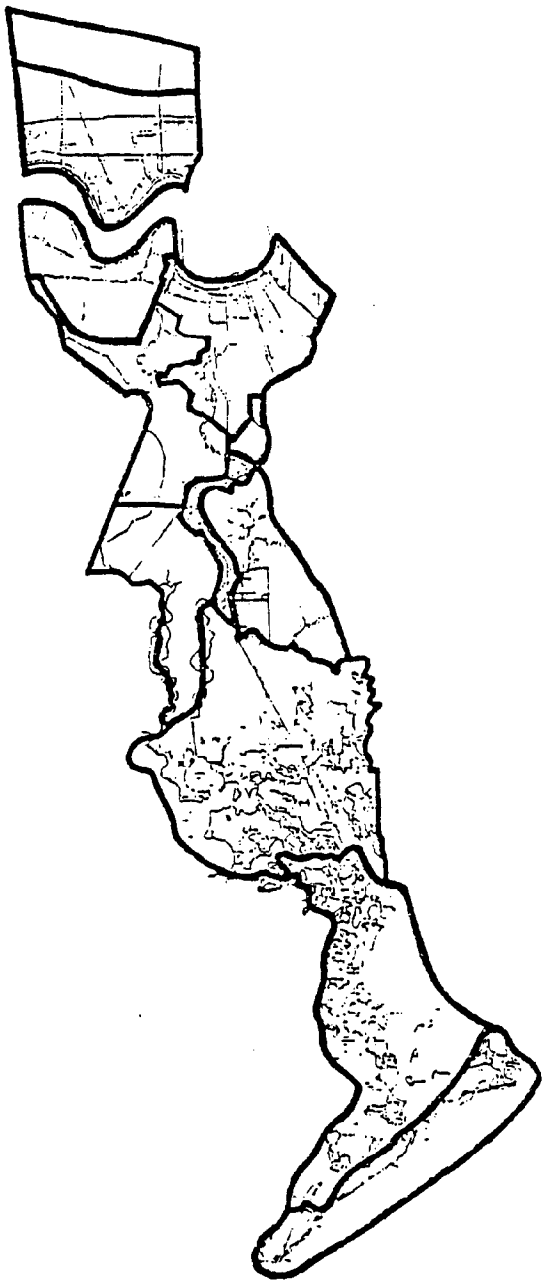
JEFFERSON PARISH, LOUISIANA

COASTAL ZONE MANAGEMENT PROGRAM



FINAL PROGRAM
SEPTEMBER 1982
(Rev. 9/83)
(Rev. 11/84)

FINAL
JEFFERSON PARISH, LOUISIANA
COASTAL ZONE MANAGEMENT PROGRAM
SEPTEMBER, 1982
REVISED SEPTEMBER, 1983 AND NOVEMBER, 1984

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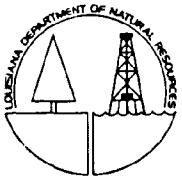

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This document should be referenced as Curry, M. G., S. W. Holder and B. D. Burglass. 1984. Jefferson Parish, Louisiana Coastal Zone Management Program. Jefferson Parish Environmental and Development Control Department, Metairie, Louisiana.

The Parish of Jefferson does hereby certify that the Local Coastal Resources Program adopted pursuant to La. R. S. 49:213, its guidelines, rules and regulations, is consistent with the Louisiana Coastal Resources Program, its policies and objectives, and that the Parish of Jefferson Local Coastal Resources Program shall be interpreted and administered consistently with such policies, objectives and guidelines."

Jefferson Parish Coastal Zone Management Ordinances were adopted 4 May 1983 as follows:

No. 15529. Adoption of Program
No. 15530. Adoption of Administrator
No. 15528. Adoption of fees

ERRATA

All references to the "Coastal Management Section" should read "Coastal Management Division."

All references to "Management Unit" should read "Environmental Management Unit."

The policy on the discharge of hydrocarbons should read "Hydrocarbons, drilling mud and brine from oil and gas activities should not be discharged into wetlands or water bodies."

The "Guidelines" on page II-24 are "proposed" and, by adopting this CZM Program, the Jefferson Parish Council does not adopt the proposed guidelines.

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INTRODUCTION

A. Purposes of State and Local Program

Jefferson Parish lies entirely within the Louisiana Coastal Zone established by the State and Local Coastal Resources Management Act of 1978 (Act 361), whose purposes are

- to protect, develop, and restore or enhance coastal resources;

- to assure that constitutional and statutory authorities affecting uses of the coastal zone are included in the Louisiana Program and that guidelines and regulations adopted pursuant thereto are not interpreted to expand governmental authority beyond those laws;

- to express certain regulatory and non-regulatory policies for the program;

- to support and encourage multiple use of coastal resources consistent with the maintenance and enhancement of renewable resource management and productivity, the need to provide adequate economic growth and development and the minimization of adverse effects of one resource use upon another without imposing undue restriction on any user;

- to employ procedures and practices that resolve conflicts among coastal uses in accordance with Act 361 and to simplify administrative procedures;

- to develop and implement a coastal resources management program based on our resources and the needs of the people of the state and the nation;

- to enhance the recreational values of the coastal zone; and

- to develop and implement an equitable management program with sufficient expertise to determine future development and conservation of the coastal zone and to ensure that state and local governments have the primary authority for managing coastal resources.

Because Jefferson Parish lies entirely within the Louisiana Coastal Zone, the impact of the State's Coastal Zone Management Program is vitally imporant to the future of Jefferson Parish. In recognition of that impact, the Jefferson Parish Council established the Jefferson Parish Citizens Coastal Zone Management Advisory Committee. This 22-member committee was selected in order to represent the multiple interests of the Jefferson Parish Coastal Zone in the development of a local coastal management plan.

The committee's purposes were

- to act as a liaison between the general public and the parish administration,
- to inform the Parish Council of various coastal problems,
- to provide input for the parish's program,
- to determine changes to be made in the state's Coastal Resources Program.

In order to more adequately meet the coastal and environmental needs of the parish, the following goals have been set for the local coastal management program:

- to improve the quality of the water discharged from the parish's sanitary sewer system and drainage system
- to review and monitor permits for dredging, filling or draining activities in parish wetlands
- to encourage compatible multiple use of the parish's coastal resources.

B. Scope of the Parish Program

In late 1976, Jefferson Parish initiated the first steps toward developing a coastal zone management program. During the next four years, the various issues and problems characterizing the parish's coastal resources were identified and discussed. For many of those issues, there were no generally acceptable solutions, but for all issues there were many opinions, the merits of which were considered in developing a sound basis for coastal zone management in Jefferson Parish. During the fourth year, the insight and information gleaned from the activities of the three previous years were used to compile a workable inventory of Jefferson's coastal resources, issues, problems, possible solutions, and program guidelines and implementation plans.

For the purpose of this study, the parish was divided into twelve environmentally distinct Management Units, each having somewhat uniform development potential based on previous development and land usage, soil types, subsidence potential and vegetation. Included were general inventories of the physical characteristics, natural resources, natural resource users, present development, development plans, and special problems of each Management Unit. Developments of special interests, problems of parish-wide importance and recommended solutions for these problems were also explored. Present permitting and management laws and regulations that affect construction, dredging, drilling, and waste disposal in the coastal zone were also evaluated.

Where management unit policies refer to a use of State concern, the policies are intended only as recommendations to the State program managers and are not legally binding on the permit applicant or the State program.

C. Periodic Review of Local and State Programs

Upon adoption of the Coastal Management Ordinance by the Jefferson Parish Council, changes to this program can be made only by passage of additional ordinances by the full Council for the purpose of amending the Coastal Zone Management Ordinance. The Citizens Coastal Zone Management Advisory Committee will continue to act in an advisory capacity to the Council upon request of the Council.

Jefferson Parish shall submit an annual report on the activities of the local program to the Louisiana Department of Natural Resources, Coastal Management Section. The annual report shall include the following information.

- The number, type, and characteristics of applications for coastal use permits.
- The number, type, and characteristics of coastal use permits granted, conditioned, denied, and withdrawn.
- The number, type, and characteristics of permits appealed in accordance with Act 361, as amended.
- Results of any appeals.
- A record of all variances granted.
- A record of any enforcement actions taken.
- A description of any problem areas within the state or local program and proposed solutions to any such problems.
- Proposed changes in the state or local program.

The State Administrator shall from time to time, and at least every two years, review this program to determine the extent to which its implementation is consistent with and achieving the objectives of the state and local programs.

Should the Secretary determine that any part of this program is not consistent with the state program or is not achieving its stated objectives or is not effective, he shall notify Jefferson Parish and recommend changes and modifications which will assure consistency with, and achievement of, the objectives of the overall coastal program or improve the efficiency and effectiveness of the local program.

If Jefferson Parish fails to give official assurance within one month after receipt of the Secretary's notice that it intends to modify the local program in a timely manner to conform to those recommendations or, thereafter, fails to make the necessary changes within three months, the Secretary may, after public notice, revoke approval of the local program. In such an event, Jefferson Parish shall no longer have the authority to permit uses of local concern or otherwise carry out the functions of an approved program and will lose eligibility to receive management funds other than those funds appropriate and necessary to make the necessary changes. If and when the Secretary determines that the Jefferson Parish program has been appropriately modified to meet his recommendations pursuant to Section III of the "Rules and Procedures for the Development, Approval, Modification, and Periodic Review of Local Coastal Management Programs" as appended to the "Louisiana Coastal Resources Program Final Environmental Impact Statement" dated 1980, he may, after public notice, reinstate approval.

MANAGEMENT UNITS FOR JEFFERSON PARISH'S COASTAL ZONE MANAGEMENT PROGRAM

A. Introduction

In order to prepare a Coastal Zone Management Program to effectively manage the coastal resources of Jefferson Parish, the parish was divided into management units, whose resources are characterized by varying degrees of homogeneity. The 12 management units are as follows:

Avondale Management Unit
Bayou Aux Carpes Management Unit
Bayou La Fleur Management Unit
Bayou Perot Management Unit
Bayou Segnette Management Unit
Bay Management Unit
Dupre Cut Management Unit
East Bank Management Unit
Grand Isle Management Unit
Lake Pontchartrain Management Unit
Lower West Bank Management Unit
West Bank Management Unit

These units were adopted because the effective management of Jefferson Parish's natural coastal resources depends on the utility of the units as small management areas. The units were delineated and evaluated by the Jefferson Parish Citizens Coastal Zone Management Advisory Committee with the assistance of the Jefferson Parish Environmental and Development Control Department. They were determined to be environmentally distinct, each having a somewhat uniform development potential based on previous development and land usage, drainage patterns, soil types, subsidence potential, vegetation, and levee systems.

A map showing the relative position of the units is given in Figure II-1. A current aerial photograph showing the entire parish and designated management units is on display in the Jefferson Parish Environmental and Development Control Department in Metairie. U.S.G.S. maps showing the management units are available for public use at the Coastal Management Section Office of the Louisiana Department of Natural Resources, Baton Rouge.

Detailed definitions and compositions of the vegetative, wildlife and fisheries character of the units are given in the appendix (page A-1). A discussion of the development potential of the soils is also appended (pages A-5 and A-7). In addition, detailed habitat maps developed by the U. S. Fish and Wildlife Service (1980) for the Mississippi Deltaic Plain Ecological Characterization are available for review at the Jefferson Parish Environmental and Development Control Department, Metairie.

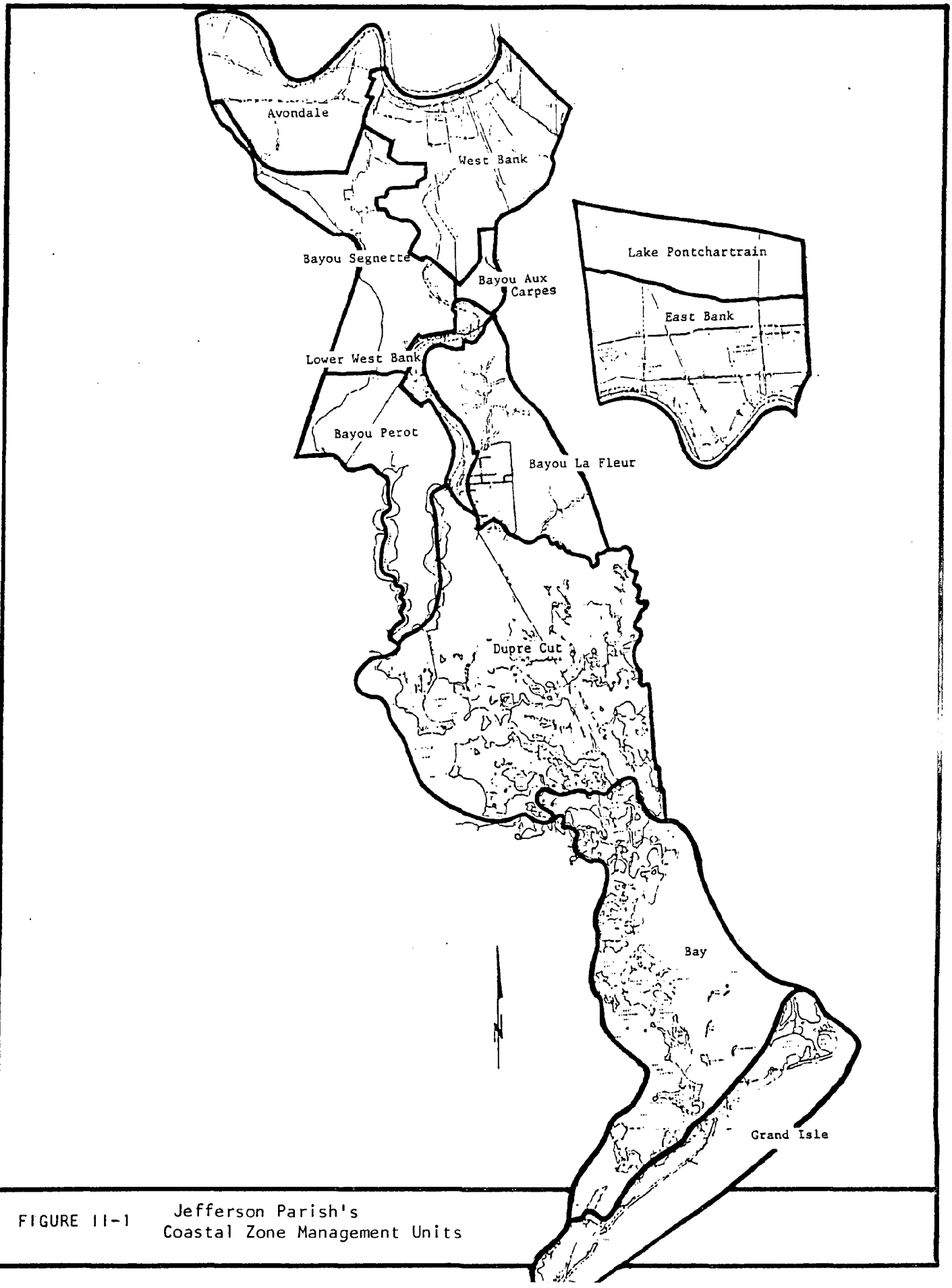


FIGURE II-1 Jefferson Parish's Coastal Zone Management Units

B. Avondale Management Unit

1. Boundary

The Avondale Management Unit is bounded on the north by the Mississippi River, the south by the Lake Cataouatche Levee, the east by the corporate limits of Westwego and the west by St. Charles Parish (Figure II-2).

2. Physical and Biological Description

The entire 31,294 acres of this management unit are leveed. Although the natural Mississippi River Levee is higher than 10 feet above mean sea level, the remaining area grades to below mean sea level in the south. Most drainage is via natural gravity flow south through drainage canals. Most of the land bordering the Cataouatche levee canals is undeveloped modified wetlands below mean sea level and serves as a ponding area for stormwater runoff. The Avondale Outfall Canal carries large volumes of runoff from the central portion of the management unit to the back Cataouatche Levee Canal, where it is pumped over the levee. The eastern end of the management unit is drained by gravity flow through Main Canal, Whiskey Bayou and Railroad Canal to a pumping station located on Bayou Segnette. The western end of the management unit is drained by gravity flow through Sauls Canal, Desuaus Canal and the U. S. Highway 90, Borrow Canal to the back Cataouatche Levee Canal, where the water is pumped over the levee. Because this management unit is entirely leveed, there is no tidal activity.

Four major vegetative associations are found within this management unit. Modified forested wetlands is the principal vegetation association. Natural levee forests exist along the natural levee of the Mississippi River. However, most of the hardwoods have been cleared and replaced with cropland, and industrial and suburban development. Cropland occurs between River Road and U. S. Highway 90 and consists of pastureland and, to a lesser extent, tilled fields.

All of the waterbodies in this management unit are characterized by fresh water. Except for the eastern boundary of the management unit, Bayou Gaudin in the south, and the Mississippi River, the only other waterbodies are maintained canals used to convey storm runoff to the Cataouatche Levee, where it is pumped over the levee.

The three large leveed areas known as Churchill Farms, Willswood Pond, and Waggaman Pond have greatly subsided. When their levees failed, they formed large, shallow freshwater impoundments. However, in recent years, these areas have been drained, and a portion of Churchill Farms is currently used as a landfill. Immediately to the west of the drained Waggaman Pond and adjacent to the St. Charles-Jefferson Parish line is an unnamed area of heavy subsidence that has impounded a large, shallow freshwater lake. This area is being used as a landfill. The modified wetlands immediately north of the Cataouatche Levee provide habitat for a

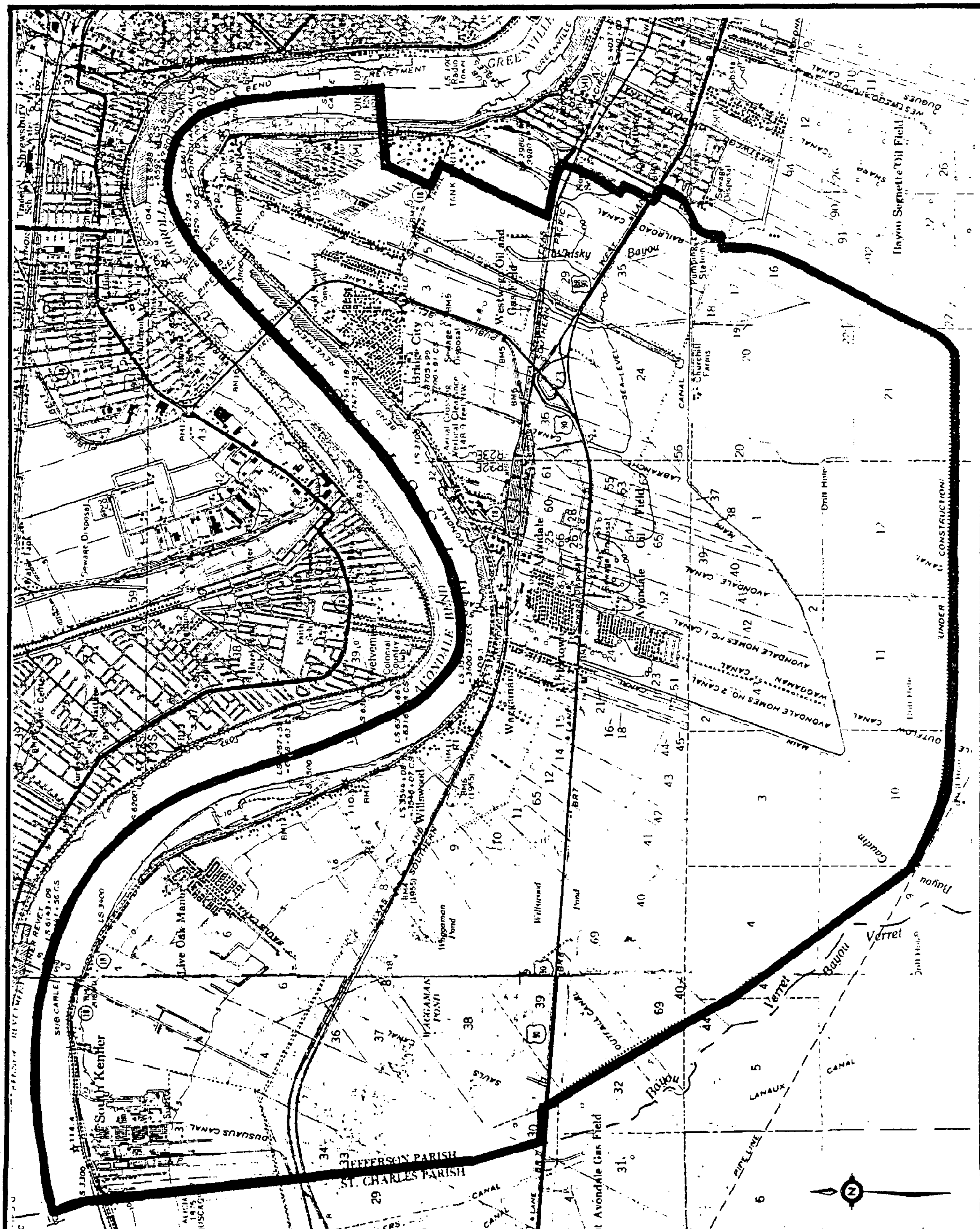


FIGURE II-2 Avondale Management Unit Scale 1:62,500

variety of aquatic and terrestrial species, which support sporting and trapping activities. A listing of those commercially and recreationally harvested species found in fields, fastlands, swamps and drainage canals is appended.

The 1978 estimated population for the Avondale Management Unit was not determined. However, the estimated population for the Avondale Management Unit combined with the West Bank Management Unit was 193,422 persons and the projected year 2000 population for those two units is 300,000 persons.

In the Avondale Management Unit, there are still over 10,000 acres of undeveloped land. Development, however, is hampered by the lack of sewerage and water capacity, poor transportation facilities and the distance from employment centers. In this unit, soil conditions present less of a problem. Soil conditions range from excellent to poor. Those soils closer to the Mississippi River have lower organic content and are better suited for construction. The organic content of the soils increases with distance to the south, away from the Mississippi River. Those soils with high organic content have higher subsidence potentials, if drained, because of their greater compactibility and water content. The 12 soils (Commerce silt loam, Commerce silty clay loam, Vacherie complex, Sharkey silty clay loam, Sharkey clay, Sharkey variant clay, Ijam variant clay, Barbary variant clay, Allemands variant muck, Barbary soils, Allemands peat and Kenner muck) characterizing this management unit and their development limitations (slight to very severe) are given on page A-7. The exact locations of the 12 soil types are given in a recent "Soil Survey of the West Bank of Jefferson Parish" (U. S. Department of Agriculture, 1978).

The Mississippi River is the major water transportation corridor for goods imported to and goods exported from the central United States. The river attracts industries in need of large amounts of water or water-based transportation. The Mississippi River is also the source of drinking water for Jefferson Parish, as well as a conduit for wastes disposal by numerous industries and communities located in Jefferson Parish and other areas. Some fish and shrimp are harvested from the river.

A network of man-made canals has been constructed in this management unit to drain storm water and treated industrial and municipal wastes to the south. Bayou Segnette and Bayou Gaudin are the natural waterways in this unit.

The major resources of this management unit are good soils, developable land, oil and gas and a limited amount of aquatic and terrestrial habitat.

The oil and gas fields in this management unit have been in production for many years. The fields are the Avondale Oil and Gas Field, the Waggaman Gas Field and the West Avondale Oil Field. Since this unit is entirely leveed, the oil and gas activities have not exaserbated any saltwater intrusion or erosion problems in the unit.

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this management unit, those sites are not identified in this report.

4. Primary Resource Users

The primary resource users in this management unit are residential, commercial and industrial interests. There are six residential communities in this unit: Live Oak Manor, Avondale, Bridge City, Waggaman, Willswood and South Kenner. Industrial users include Avondale Shipyards, one of the nation's largest. The area is also used for recreation and is traversed by several water and overland transportation corridors including River Road, Lapalco, the West Bank Expressway and the Mississippi River.

5. Major Goals for Managing the Resources

Major goals for managing this unit include, but are not limited to, planned residential, commercial and industrial development; improved sewerage treatment facilities; increased water capacity; improved protection from flooding; improved ground transportation corridors to relieve the traffic problems; and implementation of a freshwater diversion project from the Mississippi River.

6. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- Stabilizing material should be used on areas of severe erosion along the length of canals

- Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies.

C. Bayou Aux Carpes Management Unit

1. Boundary

The Bayou Aux Carpes Management Unit is bounded on the north by the Estelle Pumping Station Outfall Canal, the east by the Plaquemines-Jefferson Parish line, the south by Bayou Barataria to the junction of the Commerce-Sharkey Soil Association, which lies north of the Bayou Barataria-Bayou des Familles junction, the west by the Jean Lafitte National Historical Park and the V-shaped levee north to the Estelle Pumping Station (Figure II-3).

2. Physical and Biological Description

Except for artificial levees, the elevation of these 3,835 acres is less than five feet above mean sea level. Drainage in the area is natural; however, because the Bayou Aux Carpes area has been dammed, the principal drainage is through the Pipeline Canal into Bayou Barataria. There are also shorter oil-well-access canals that serve to drain the area. This management unit is affected by tides.

There are two major vegetative associations in this management unit. Natural-levee forests are found along Bayou Barataria and wetlands (swamp and marsh) are found throughout the rest of the unit. This area is primarily undeveloped and provides excellent habitat for a variety of terrestrial and aquatic species. Commercially and recreationally important species found in this management unit are listed in the appendix for swamps, freshwater marsh and intermediate marsh.

Bayou Aux Carpes and Bayou Barataria are the only natural water bodies in the Bayou Aux Carpes Management Unit; the other waterways are pipeline and oil-well-access canals. The area is characterized by freshwater with only occasional, minimal salinity increases following storm surges. Because the waterways are presently dammed or vegetated, they are inaccessible to boat traffic and serve primarily for drainage and wildlife habitat.

The Bayou Aux Carpes Management Unit currently lies outside the proposed hurricane protection levee and within the "prohibited service" area established by the U. S. Environmental Protection Agency and Jefferson Parish and noted by the U. S. Army Corps of Engineers. However, the area is presently under the jurisdiction of the U. S. Army Corps of Engineers' permitting system. The development of this unit for hunting, trapping, recreational and commercial fisheries, and mineral extraction is the likely future use of this area. Consequently, there are no 1978 population estimates or projected year 2000 population estimates for the Bayou Aux Carpes Management Unit.

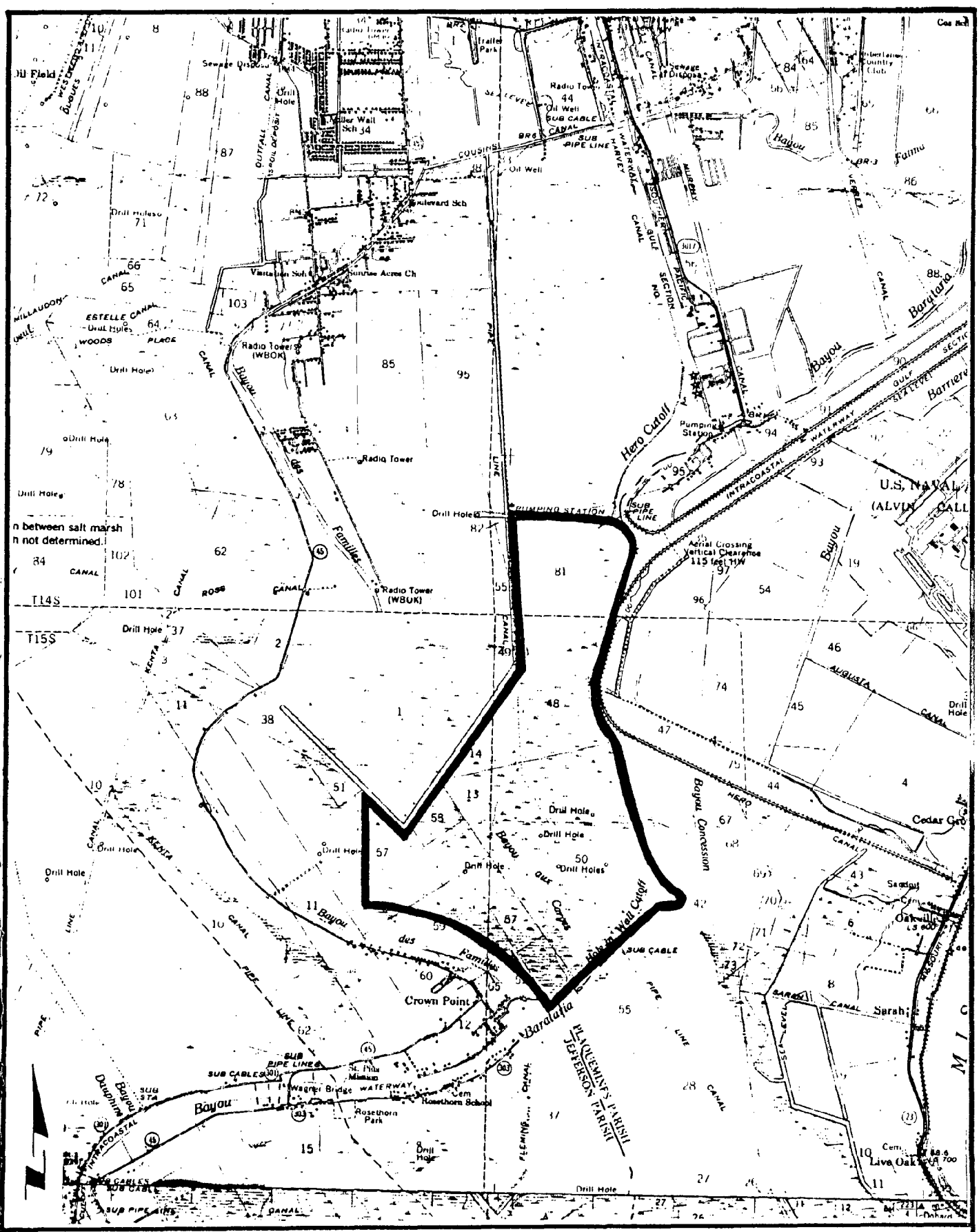


FIGURE II-3 Bayou Aux Carpes Management Unit Scale 1:62,500

In addition, the soils of the management unit place severe to very severe development limitations on uses in the unit (see appendix). The two soil types found in the unit are Allemands peat and Barbary soils. Their exact locations and a full explanation are presented in a recent "Soil Survey of the West Bank of Jefferson Parish" (U. S. Department of Agriculture, 1978).

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers maintains similar files. In order to maintain the current integrity of the archaeological and historical sites, in this management unit, those sites are not identified in this study.

4. Primary Resource Users

The primary resource users of this unit are sports fishermen and hunters. Oil and gas activities have also occurred in the unit, but on a very limited scale.

5. Major Goals for Managing the Resources

Major goals for managing this management unit include maintenance of the ecological and hydrological integrity; improved trapping, fishing and hunting; and continued oil and gas exploration with minimal adverse impacts from dredging.

6. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation.

- Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site.

- Disturbed areas should be revegetated with appropriate native species

- Existing canals and channels should be used to access new drilling sites, thereby reducing dredging

- Upon abandonment, canals should be plugged using earthen plugs and riprap or other stabilizing material

- Stabilizing material should be used on areas of severe erosion along the length of canals

- Riprap or vegetation stabilization should be used instead of bulkheading

- Any land reclamation activities in areas not presently fast lands should be discouraged due to poor soil conditions and the propensity of those areas to flood

- Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies

- The permittee should repair, as requested by the Administrator, all dams and plugs on abandoned access and pipeline canals constructed or maintained by the applicant

- All spoilbanks, dams, and backfilling specifically required under these policies should be maintained by the permittee for dredging the canal for as long as he operates in Jefferson Parish, unless it can be proven that such maintenance cannot be accomplished due to conditions beyond the permittee's control.

D. Bayou La Fleur Management Unit

1. Boundary

The eastern boundary of the Bayou La Fleur Management Unit begins where the Plaquemines-Jefferson Parish line meets Bayou Barataria. It follows that parish line south to Bayou Dupont. The southern boundary then turns northwest along Bayou Dupont and the western boundary runs to the north along the western extreme of "The Pen" to its junction with Bayou des Oies (Goose Bayou). From that point, the boundary lies north along the Commerce-Sharkey Soil Association to its junction with levees immediately to the east of Barataria. Those levees are followed to the Fleming Canal and from that point, the boundary goes directly northeast to levees south of Rosethorn Road. Those levees are followed to a second Fleming Canal, which, in turn, is followed to Bayou Barataria and the Plaquemines-Jefferson Parish line (Figure II-4). The western and northern boundaries of this management unit conform to that line adopted by the Jefferson Parish Council in Ordinance No. 13795, which created a growth-limit line south of Crown Point, and will conform to any amendments to that ordinance.

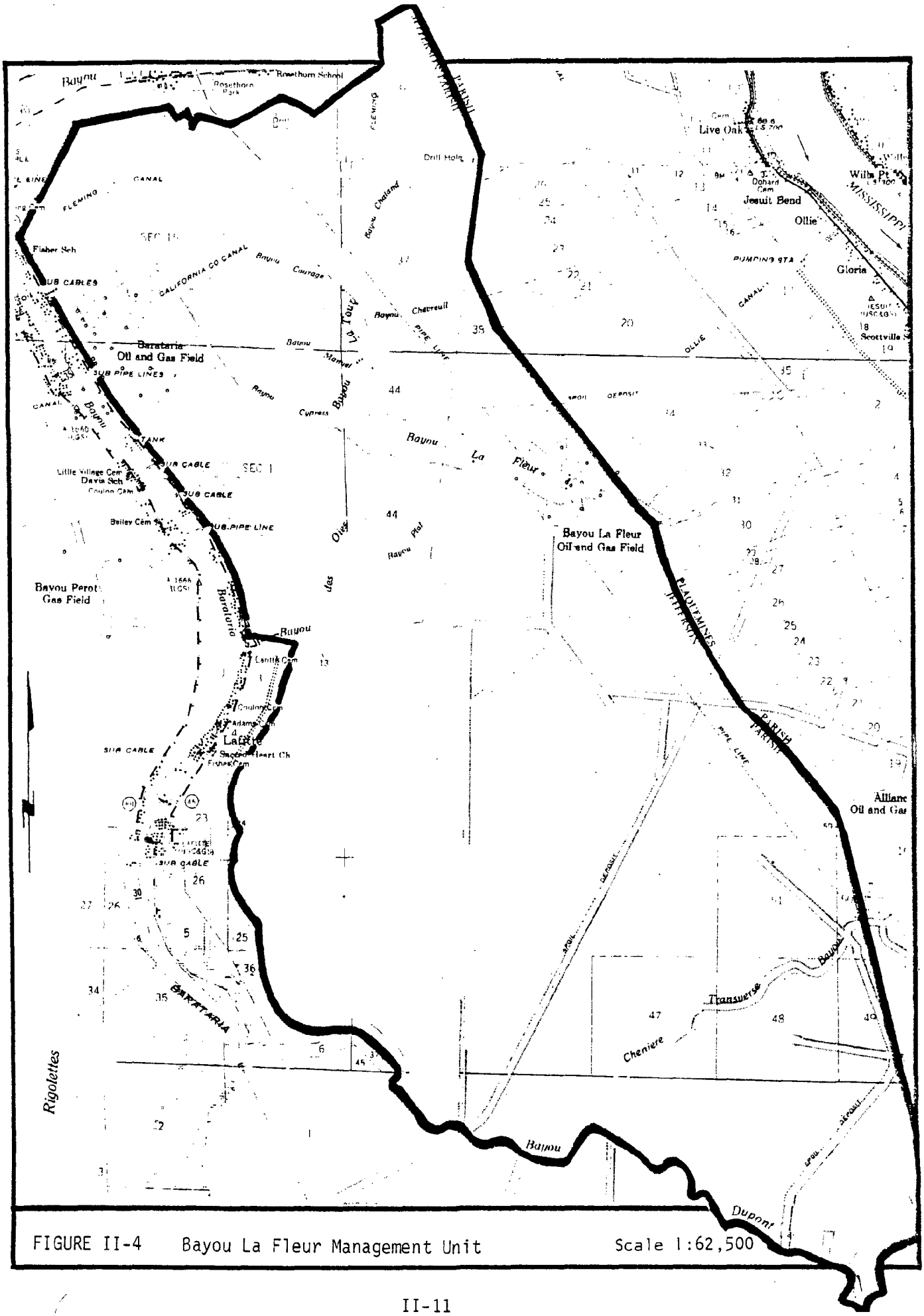


FIGURE II-4 Bayou La Fleur Management Unit Scale 1:62,500

2. Physical and Biological Description

This 26,692-acre management unit of unleveed wetlands is less than five feet above mean sea level and is frequently flooded. Natural drainage from both north and south of the unit flows into "The Pen" and then into Bayou Barataria. From the north, drainage is through a series of bayous to Goose Bayou. To the south, drainage is through Bayou Dupont. Man-made canals provide additional drainage throughout the management unit. Normally, the area is affected by tidal activity.

Four major vegetative associations are found within this management unit. Natural-levee forest is found along Cheniere Traverse Bayou. Freshwater marsh is found in two areas, one along the northern boundary of the management unit and another just to the north of and in association with the natural-levee forest. Intermediate marsh is found throughout the remainder of the management unit. Spoil banks are established with vegetation such as composites, grasses and legumes, typical of disturbed areas.

This area is principally undeveloped marsh. The northern and eastern-most portions of the Bayou La Fleur Management Unit are freshwater marsh and intermediate marsh. "The Pen" was originally a marsh that was leveed and drained for agricultural use; the area subsided and is now under water because the levees failed. There are normal tidal fluxes throughout the management unit, whose major natural waterways include Bayou Barataria, Bayou La Fleur, Goose Bayou and Bayou Dupont.

The complex network of natural bayous and man-made canals in this unit provides access to and from the Barataria Oil and Gas Field, the Bayou La Fleur Oil and Gas Field and the no longer active Lafitte Salt dome. The unit also provides valuable wildlife habitat for freshwater and brackish water species. For a listing of those commercially and recreationally harvested species in this management unit, see the appendix for those species found in swamps, freshwater marsh, intermediate marsh and brackish marsh.

In addition to the wetland character of this unit, soils also play a major role in development limitations which are very severe in this management unit. The unit is characterized by freshwater marsh, saltwater marsh and swamp soils, all of which have a very high subsidence potential. The locations and explanations of these three soil associations found in the Bayou La Fleur Management Unit are given on the General Soil Map for Jefferson Parish (U. S. Department of Agriculture, 1971) and are further explained in the appendix.

Consequently, there is no development potential nor are there any 1978 population estimates or projected year 2000 population estimates for the Bayou La Fleur Management Unit because of the soils and wetland

character of the unit, which also lies outside the proposed hurricane protection levee and falls under the jurisdiction of the U. S. Army Corps of Engineers' 404 permitting system. This unit also lies entirely within the "prohibited service" area jointly established by the U. S. Environmental Protection Agency and Jefferson Parish and noted by the U. S. Army Corps of Engineers.

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not identified in this report.

4. Primary Resource Users

The primary resource users of this unit are the oil and gas industry; hunters, trappers and commercial and sport fishermen; and a few recreational camp owners.

5. Major Goals for Managing the Resources

Major goals for managing the coastal resources in this management unit include, but are not limited to, erosion control; flood protection; marsh restoration; freshwater diversion from the Mississippi River; maintenance of the ecological and hydrological integrity; improved trapping, fishing, hunting, and shellfishing resources; and continued oil and gas exploration with minimal adverse impacts from dredging.

6. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation

- Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site

- Dredged sites should be accessed by drilling barges and other deep draft vessels during high tides

- Disturbed areas should be revegetated with appropriate native species

- Flowlines within Bayou La Fleur and the Barataria Oil and Gas Field should be laid across the marshland without dredging. At waterways these flowlines should be buried not less than three feet below the streambed or canal bottom

- Upon abandonment, canals should be plugged using earthen plugs and riprap or other stabilizing material

- Stabilizing material should be used on areas of severe erosion along the length of canals

- Directional drilling should be used when appropriate to mitigate environmental impacts

- Pipeline corridors and existing canals should be used when possible

- Riprap or vegetation stabilization should be used instead of bulkheading

- All camps should have approved sanitary facilities

- Any land reclamation activities in areas not presently fast lands should be discouraged due to poor soil conditions and the propensity of those areas to flood

- Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies

- The permittee should repair, as requested by the Administrator, all dams and plugs on abandoned access and pipeline canals constructed or maintained by the applicant

- All spoilbanks, dams, and backfilling specifically required under these policies should be maintained by the permittee for dredging the canal for as long as he operates in Jefferson Parish, unless it can be proven that such maintenance cannot be accomplished due to conditions beyond the permittee's control

- Permits for dredging in The Pen or Goose Bayou within 200 feet of shore and where circumstances allow should require the dredged materials be cast towards the shore line to reduce water depth appropri-

ately between the dredging site and the shore for the purpose of creating marsh. Where the dredging site is not close enough to a suitable shoreline, the dredged material should be spread without reducing the water depth more than six inches

- Permits for dredging in The Pen and Goose Bayou should require that all unearthed stumps, logs and other objects that could be hazardous to boat traffic be removed from the waterbody and deposited at some designated approved disposal site.

E. Bayou Perot Management Unit

1. Boundary

The eastern boundary of the Bayou Perot Management Unit begins where Bayou Rigolettes joins Bayou Perot at the Lafourche-Jefferson Parish line. The boundary follows Bayou Rigolettes north to Bayou Barataria. The eastern boundary follows the existing natural levee and the Commerce-Sharkey Soil Association boundary (U. S. Department of Agriculture, 1971). At the Pailet Canal, the boundary turns to the west and follows the levee that skirts to the west of Barataria to Bayou Villars. At Bayou Villars, the boundary turns west to the St. Charles-Jefferson Parish line and south to the Lafourche-Jefferson Parish line to where Bayou Rigolettes meets Bayou Perot (Figure II-5). That portion of the boundary skirting to the west of Bayou Barataria conforms to that line adopted by the Jefferson Parish Council in Ordinance No. 13795, which creates a growth-limit line south of Crown Point, and will conform to any amendments to that ordinance.

2. Physical and Biological Description

This management unit's 30,987 acres have an elevation of less than five feet above mean sea level. Most drainage of these unleveed wetlands is through the oil well access and pipeline canals to the Gulf Intracoastal Waterway and to Bayou Rigolettes and Bayou Perot. The area is affected by a normal tidal flux. Currently, the area is undergoing a high rate of land loss, primarily through subsidence and bank erosion.

Four major plant associations characterize this management unit. Forested wetlands are found in the northern portion along Bayou Villars. Intermediate marsh is found just below and in association with the forested wetlands. Brackish marsh is found throughout the remainder of the management unit and spoil banks are established with plants typical of disturbed areas.

Salinities in this management unit normally range from fresh in the central cypress swamps west of Barataria to four ppt at the confluence of Bayou Perot and Bayou Rigolettes (U. S. Army Corps of Engineers, 1979). There are normal tidal fluxes in the management unit. Both

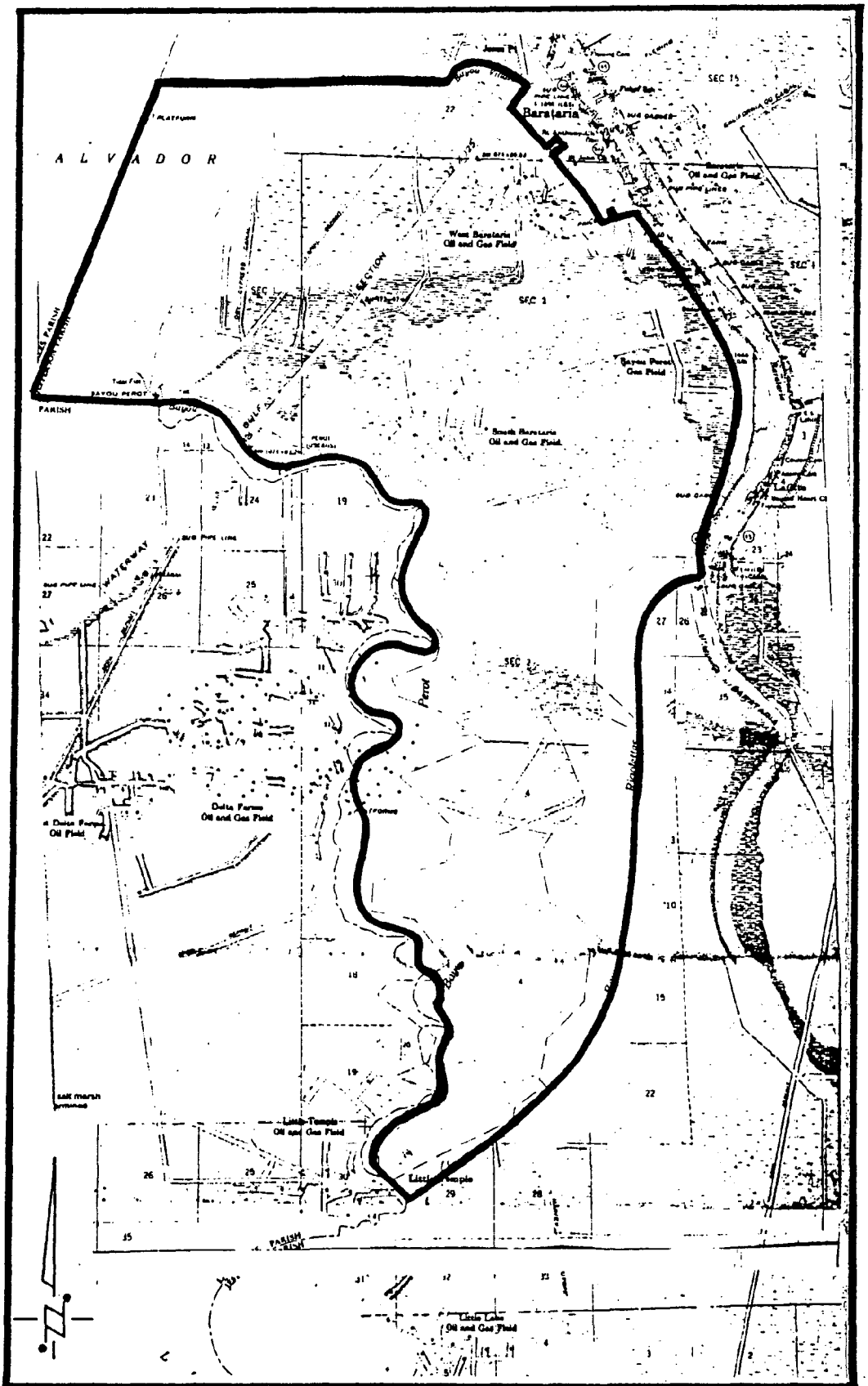


FIGURE 11-5 Bayou Perot Management Unit

Bayous Perot and Rigolettes are broad and shallow due to high erosion and subsidence rates in the area. Many canals crisscross throughout the management unit. Major water bodies include Lake Salvador, Bayou Villars, Bayou Perot, Bayou Rigolettes and the Gulf Intracoastal Waterway.

The Bayou Perot Management Unit is principally undeveloped wetlands with recreational camps sparsely located throughout. The unit provides valuable habitat for many species of wildlife which, in turn, support a variety of hunting and commercial activities. For a listing of those commercially and recreationally harvested species in this management unit, see the appendix for species found in swamps, freshwater marsh, intermediate marsh, and brackish marsh.

Because this management unit is principally wetlands, there is no development potential for this area. The only major soil association in the unit, saltwater marsh, characterizes the area as one of high subsidence potential, severe wetness, very high shrink-swell potential of mineral layers, low bearing strength, poor trafficability, an elevated salt content, and very severe development limitations (U. S. Department of Agriculture, 1971). Additional information is appended.

In addition, this unit lies entirely outside the proposed hurricane levee alignment and the prohibited service area established jointly by the U. S. Environmental Protection Agency and Jefferson Parish and noted by the U. S. Army Corps of Engineers.

The Gulf Intracoastal Waterway is a major coastal transportation route. Other important routes are Bayou Perot and Bayou Rigolettes. There is also a network of natural bayous and man-made canals that is used for access to the oil and gas fields in this management unit. Sports fishermen, hunters, trappers, and commercial fishermen also make use of these waterways as transportation routes and habitats for freshwater to brackish water species.

The oil and gas activities in this management unit are centered around the Barataria Oil Field, Bayou Perot Oil and Gas Field, Delta Farms Oil and Gas Field, South Barataria Oil and Gas Field, and West Barataria Oil and Gas Field.

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not identified in this report.

4. Primary Resource Users

The primary resource users in this management unit are trappers, crab fishermen, shrimpers, sport fishermen and hunters. Oil and gas activities also occur in this unit.

5. Major Goals for Managing the Resources

Major goals for managing the resources in this unit include controlling erosion; restoring wetlands; maintaining the ecological and hydrological integrity of the unit; improving trapping, hunting, fishing and shellfishing resources; continuing oil and gas activities with minimal dredging impacts; developing optimal recreational potential of the unit; preserving, conserving and restoring wildlife and fisheries habitat; and diverting freshwater from the Mississippi River.

In addition, commercial shell dredging is environmentally damaging and could seriously adversely affect the soft shell crab and fishing industry in Lake Salvadore; therefore, shell dredging should not be permitted.

6. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- Flow lines within Delta Farms, South Barataria, West Barataria and Bayou Perot Oil and Gas Fields should be laid across marshland without dredging. Where these flowlines cross waterways, they should be buried not less than three feet below the streambed or canal bottom

- Permits for dredging in Lake Salvador, Bayou Perot, and Bayou Rigolettes within 200 feet of shore and where circumstances allow should require that the dredged materials be cast towards the shore line to reduce water depth appropriately between the dredging site and the shore, for the purpose of creating marsh. Where the dredged site is not close enough to a suitable shoreline, the dredged material should be spread without reducing the water depth more than six inches

- Permits for dredging in Lake Salvador, Bayou Perot, and Bayou Rigolettes should require that all unearthed stumps, logs and other objects that could be hazardous to boat traffic, be removed from the waterbody and deposited at some designated, approved disposal site

- Permits for dredging across islands, cheniers or shell beaches should not be issued

- Dredged material generated by maintenance dredging of the Intracoastal Waterway between Bayou Perot and Bayou Villars should be placed continuously along the northern bank to stabilize that deteriorating bank against wake erosion

- Permit applications for dredging canals into or through the strip of brackish marsh that lies between Bayous Perot and Rigolettes should be discouraged because of the high rate of land loss attributed to erosion and subsidence. Permits for dredging which is deemed unavoidable by the Administrator should require that the dredged material be placed continuously along all banks of the dredged area and after activities have ceased at the site, the canal should be dammed, and the disturbed area should be returned to its natural elevation and revegetated

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation

- Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site.

- Dredged sites should be accessed by drilling barges and other deep draft vessels during high tide

- Turbidity screens should be used if oyster beds are endangered

- Disturbed areas should be revegetated with appropriate native species

- Commercial clam shell dredging should not be permitted in Lake Salvador

- Upon abandonment, canals should be plugged using earthen plugs and riprap or other stabilizing material

- Stabilizing material should be used on areas of severe erosion along the length of canals

- Directional drilling should be used when appropriate to mitigate environmental impacts

- Pipeline corridors and existing canals should be used when appropriate

- Riprap or vegetation stabilization should be used instead of bulkheading

- All camps should have approved sanitary facilities

- Any land reclamation activities in areas not presently fast lands should be discouraged due to poor soil conditions and the propensity of those areas to flood

- Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies

- The permittee should repair, as requested by the Administrator, all dams and plugs on abandoned access and pipeline canals constructed or maintained by the applicant

- All spoilbanks, dams, and backfilling specifically required under these policies should be maintained by the permittee for dredging the canal for as long as he operates in Jefferson Parish, unless it can be proven that such maintenance cannot be accomplished due to conditions beyond the permittee's control

F. Bayou Segnette Management Unit

1. Boundary

The northern boundary of the Bayou Segnette Management Unit begins at the junction of U. S. Highway 90 and the St. Charles-Jefferson Parish line. The boundary travels east along U. S. Highway 90 to the Lake Cataouatche Levee easterly to its junction with Bayou Segnette and the corporate limits of the City of Westwego. From this point, the line goes south following the east bank of Bayou Segnette into the Bayou Segnette Oil Field to the junction of Sharp Canal. From there, the line turns east to the southern end of the Westwego Airport Canal continuing east to the existing levee where the line turns south and then southeast following the levee. The line turns south along an intersecting levee which skirts immediately east of the end of an access canal crossing the Millaudon Canal to the angle in a levee found immediately northeast of the intersection of Nature Street and Tusa Street. The line at that point turns to follow the Bayou des Familles development levee westerly, then south and easterly to the levee's junction with Kenta Canal. The Kenta Canal is followed south-southwest to the boundary of the Jean Lafitte National Historical Park. The line follows the park boundary easterly along Louisiana Highway 45, to the "V-shaped" levee, south along the Lafitte-Larose Highway and along the park boundary as it skirts to Bayou Villars and into Lake Salvador to the St. Charles-Jefferson Parish boundary which, in turn, is followed north to U. S. Highway 90 (Figure II-6). The boundaries of this management unit conform to that line adopted by Jefferson Parish Council Resolution No. 42033.

The boundary will automatically conform to any amendment to that resolution. The boundary will be firmly established only after a levee is built. If the permit applications currently on file with the U.S. Army Corps of Engineers and the State Coastal Management Section are denied, the boundary will then conform to that shown on page IV-II, until or when a levee is built.

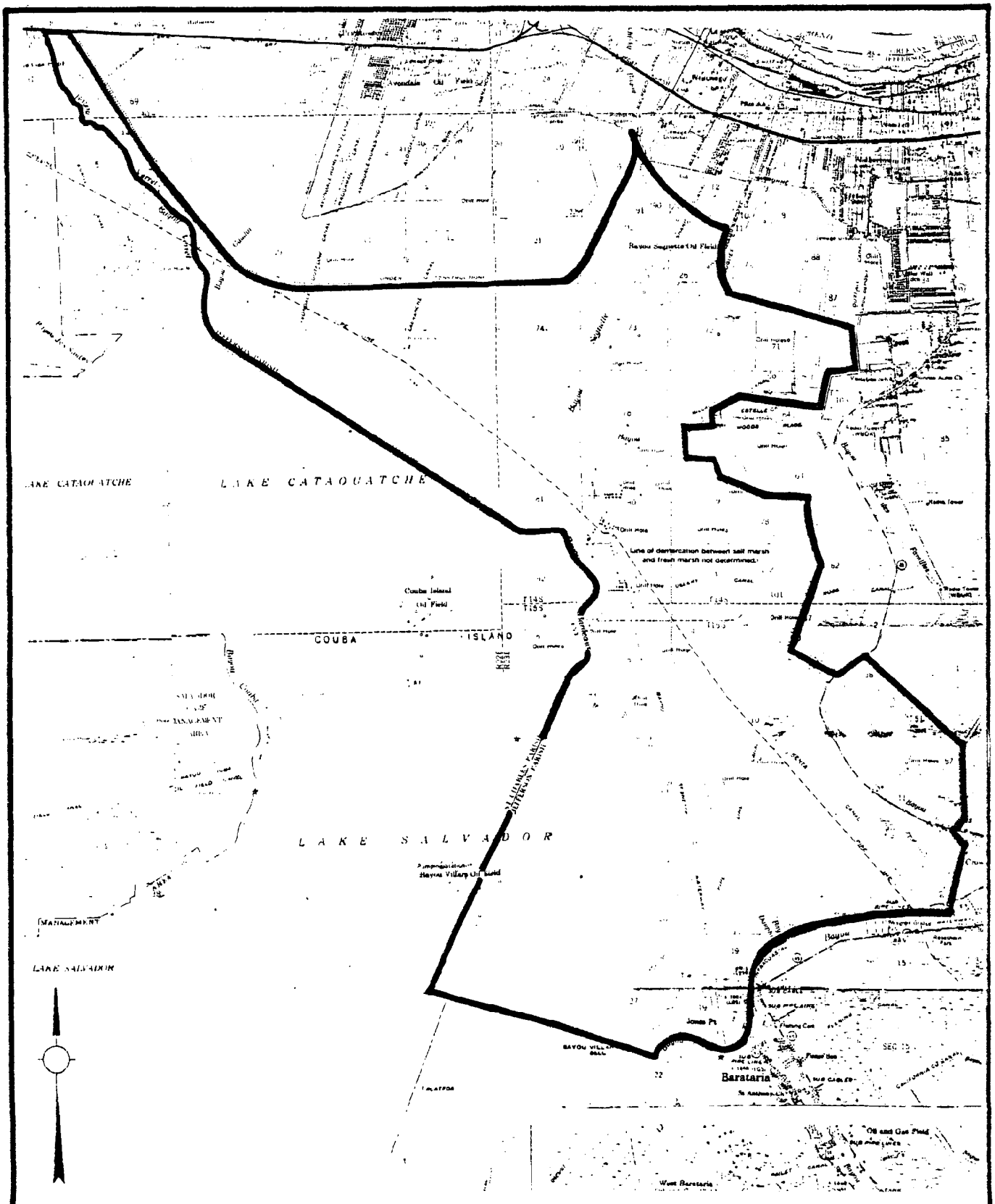


FIGURE 11-6 Bayou Segnette Management Unit

2. Physical and Biological Description

This management unit is less than three feet above mean sea level and natural gravity flow drainage occurs within 33,441 acres of wetlands. Bayou Segnette and its connection with the Millaudon Canal are the principal drainage routes to Bayou Bordeaux from the northern portion of the unit. The Bayou Segnette Waterway and the Kenta Canal control drainage in the southern portion to Bayou Villars. Tarpaper Canal appears to play a major role in the overall flow pattern between upper Kenta Canal and Bayou Segnette. Even with the drainage, the area has a potential for floods. The area is affected by normal tides.

Five major vegetative associations are found in the unit. Natural-levee forest is found along the Bayou des Familles-Bayou Barataria Waterways. Forested wetlands are found along the eastern boundary of the unit. Freshwater marsh is found within the Jean Lafitte National Historical Park and its buffer zone to the north and intermediate marsh is found along Lake Salvador. Dredged material disposal areas with their typical disturbed area flora are found scattered about this unit.

The area is principally undeveloped wetlands and forested wetlands, which support a variety of aquatic and terrestrial species. These species, in turn, support a variety of sporting and commercial activities. For a listing of those commercially and recreationally harvested species in this unit, see the appendix for species found in swamps, freshwater marsh, intermediate marsh and brackish marsh.

Salinities in the marshes and swamps of the unit range from fresh in the northern and far eastern areas to an average of 2.0 ppt in the Bayou Segnette Waterway (U. S. Army Corps of Engineers, 1979). Normal tidal fluxes exist in the unit.

Major natural waterbodies in the unit are Lake Cataouatche, Lake Salvador, Bayou Segnette and Bayou Villars, which forms the southern boundary of the unit and serves as a crossroad for water traffic from Lake Salvador, the Gulf Intracoastal Waterway, the Bayou Segnette Waterway, and Bayou Barataria.

The unit is also traversed by several major canals including the Bayou Segnette Waterway, Kenta Canal, Woods Place Canal, Millaudon and the Outer Cataouatche Levee Canal.

Lake Salvador is a shallow estuary with a salinity of 1.5 to 2.0 ppt. Lake Cataouatche is a shallow estuary where salinities are lower than those found in Lake Salvador.

The six soil types (Commerce silty clay loam, Sharkey clay, Allemands variant muck, Barbary soils, Allemands peat, and Kenner muck) in this management unit have development limitations ranging from slight to very severe depending on locality and use. Those soils closer to Bayou Barataria and Bayou des Familles have lower organic contents and are better suited for construction. The organic contents in the soils generally increase with distance to the west, away from these bayous. Those soils with higher organic content have higher subsidence potentials, if drained, because of their greater compactibility and water content. For the exact locations and full explanations of the soil types found in the Bayou Segnette Management Unit see the "Soil Survey of the West Bank of Jefferson Parish" (U. S.Department of Agriculture, 1978) and the appendix.

There is no development potential predicted for the Bayou Segnette Management Unit, other than its utilization as the site of the Jean Lafitte National Historical Park and its protection zone and a portion of the Bayou Segnette Park/Marina.

This unit lies entirely outside the proposed hurricane protection levee and entirely within the "prohibited service" area jointly established by the U. S. Environmental Protection Agency and Jefferson Parish and noted by the U. S. Army Corps of Engineers.

Recreational camps are sparsely located in the unit. Camps are more densely located along Bayou Segnette and the Bayou Segnette Waterway.

Oil and gas fields in the management unit are the Bayou Segnette Oil Field and the Crown Point Oil Field. The Barataria Salt Dome lies in this unit. There is also a high voltage electrical powerline which runs east-west immediately north of Lake Cataouatche and four crude oil pipelines and four gas pipelines which traverse the unit.

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation, and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not identified in this report.

4. Primary Resource Users

The principal resource users of this unit are trappers, crab fishermen, sports fishermen and hunters. This unit is also utilized by shell dredging and the oil and gas industry.

5. Major Goals for Managing the Resources

Major goals for managing this unit include, but are not limited to, freshwater diversion from the Mississippi River; development of the optimal recreational potential of the area; maintenance of the natural ecological and hydrological integrity of the management unit; continued mineral exploration, extraction, transportation, and development with minimal dredging impact; creation or restoration of marsh in areas of heavy land subsidence; and erosion control along watercourses. Commercial shell dredging in Lake Salvador and Lake Cataouatche is environmentally damaging and could adversely affect the soft shell crab and fishing industries. It should not be permitted. The establishment of the Jean Lafitte National Historical Park is also a goal for this unit.

6. Guidelines for Uses in the Jean Lafitte National Historical Park and Park Protection Zone

- The alteration of existing drainage patterns or natural water movement, which will have an adverse impact on the drainage integrity of the core area or the park protection zone, is not permitted.

- The introduction of any pollutant from any new source or the increased concentration of any pollutant from any source in existence prior to October, 1980, is not permitted. This includes, but is not limited to, effluent from sewerage treatment plants, industrial effluents, leachates from land fill or disposal of refuse generated by recreational, commercial or industrial activities in, or within the park protection zone or the core area.

- The direct discharge of storm run-off in concentrations exceeding those of October, 1980, into either the park protection zone or the core area of the park is not permitted.

- During the construction or operation of any development occurring within the park protection zone, no sediment or chemicals from any source will be permitted to escape into the aquatic ecosystem.

- Anti-litter ordinances will be reviewed, strengthened as appropriate and enforced by State, Jefferson Parish, and National Park Service officials throughout the core area and the park protection zone.

- Owners of the existing camps are not allowed to store refuse in the park protection zone and are responsible for hauling their own refuse from the park protection zone.

- The exploration for and development of oil and gas resources within the park are envisioned by Public Law 95-625 and subject to the guidelines.

- The removal of native plants from and the introduction of non-native plants to the park are not permitted in the park protection zone and the core area.

7. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation.

- Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site.

- Dredged sites should be accessed by drilling barges and other deep draft vessels during high tides

- Turbidity screens should be used if oyster beds are endangered

- Disturbed areas should be revegetated with appropriate native species

- Upon abandonment, canals should be plugged using earthen plugs and riprap or other stabilizing material

- Commercial clam shell dredging should not be permitted in Lake Salvador and Lake Cataouache

- Stabilizing material should be used on areas of severe erosion along the lengths of canals

- Directional drilling should be used when appropriate to mitigate environmental impacts

- Pipeline corridors and existing canals should be used when appropriate

- Riprap or vegetation stabilization should be used instead of bulkheading

- All camps should have approved sanitary facilities

- Permits for dredging across islands, cheniers or shell beaches should not be issued

- Flow lines within the Bayou Segnette Oil and Gas Field should be laid across the swamp without dredging. Where these flowlines cross waterways, they should be buried not less than three feet below the streambed or canal bottom

- Permits for dredging in Lakes Cataouache and Salvador within 200 feet of shore and where circumstances allow should require that the dredged material be cast towards the shore line to reduce water depth appropriately between the dredging site and the shore, for the purpose of creating marsh. Where the dredging site is not close enough to a suitable shoreline, the dredged material should be spread without reducing the water depth more than six inches

- Permits for dredging in Lakes Cataouache and Salvador should require that all unearthed stumps, logs and other objects that could be hazardous to boat traffic be removed from the water body and deposited at some designated approved disposal site

- Permit applications for dredging in the narrow strip of marsh that lies between Lake Salvador and the Bayou Segnette Waterway should be discouraged because of the high rate of erosion along this lake shore and to inhibit the further joining of these two waterbodies. Permits for dredging which is deemed unavoidable by the Administrator, should require that after activities cease, the disturbed area be returned to its previous elevation and revegetated

- Any land reclamation activities in areas not presently fast lands should be discouraged due to poor soil conditions and the propensity of those areas to flood

- Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies

- The permittee should repair, as requested by the Administrator, all dams and plugs on abandoned access and pipeline canals constructed or maintained by the applicant

- All spoilbanks, dams, and backfilling specifically required under these policies should be maintained by the permittee for dredging the canal for as long as he operates in Jefferson Parish, unless it can be proven that such maintenance cannot be accomplished due to conditions beyond the permittee's control

G. Bay Management Unit

1. Boundary

The southern boundary of the Bay Management Unit begins where Bayou Thunder von Tranc enters Bay St. Honore. Moving east, the southern boundary skirts north of Chenier Caminada and follows Bayou Rigaud north of Grand Isle. The line continues immediately north of West Grand Terre Island and through Grand Bank Bayou into Cat Bay to the Plaquemines-Jefferson Parish line. The eastern boundary follows the Jefferson Parish line to the mouth of Bayou St.Denis. The eastern boundary continues north with Bayou St. Denis and ends in Mud Lake. The northern boundary follows the northern shore of Mud Lake and moves west following Bayou Dosgris to its confluence with Old Grand Bayou. The western boundary follows Old Grand Bayou south to the Lafourche-Jefferson Parish line, which is followed until the Parish line enters Bayou Thunder von Tranc (Figure II-7).

2. Physical and Biological Description

This 67,802-acre area consists of numerous, unnamed marsh islands in Barataria and Caminada Bays. Elevations are less than three feet above mean sea level; consequently, the area is flood-prone and is affected by tidal fluctuations of about one foot, excluding storm tides. These islands' water tables lie just below the land's surface.

The Bay Management Unit is a vast, shallow estuary interspersed with numerous, low marsh islands and cheniers:

Beauregard Island	Milligan Point
Fifi Island	Saturday Island
Queen Bess Island	Margigan Point
Independence Island	Panama Point
Shell Island	Pelican Island
Pelican Point	Mendicant Island
Bassa Bassa Island	

There are three vegetative associations within this unit. Saline marsh is the dominant association on the numerous marsh islands. Mangrove swamps are found in the southern half of the management unit, and spoil banks, with their typical flora, are found along the numerous canals in the unit.

The land in this unit supports a variety of aquatic and terrestrial species which support a variety of sporting and commercial activities. For a listing of those commercially and recreationally harvested species in this unit, see the appendix for those species that are found in brackish marsh and saline marsh.

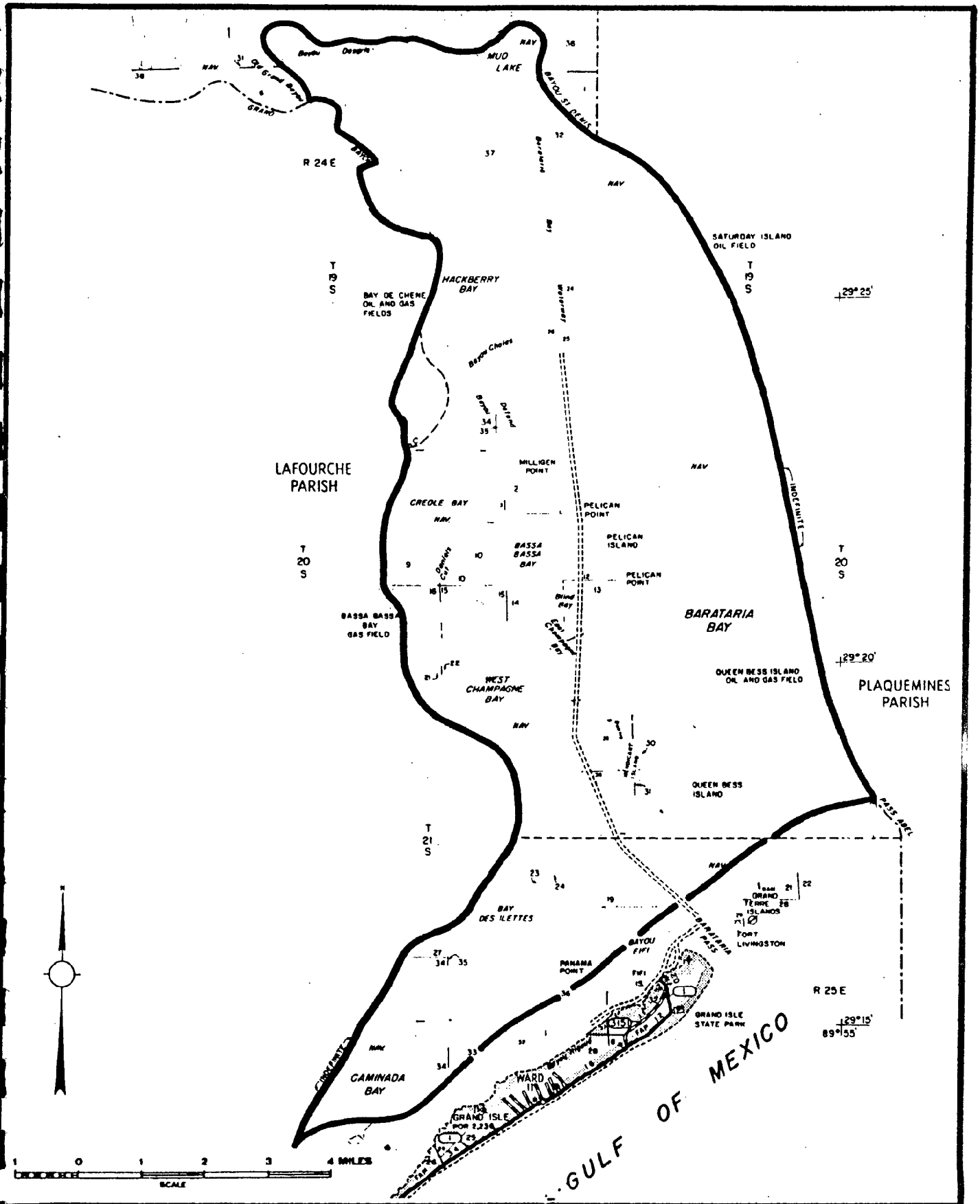


FIGURE II-7 Bay Management Unit

Average salinities in the Bay Management Unit range from 11.0 ppt at Light 37, Mile 15.01 on the Barataria Waterway to 20.7 ppt at Barataria Pass. There are numerous bays, bayous and canals throughout this unit.

Because open water constitutes a major portion of this unit, many of those water bodies are listed below:

Barataria Bay	Bayou Rigaud
Cat Bay	Bayou Beauregard
Bay des Ilettes	Grand Bank Bayou
Caminada Bay	Bayou St. Denis
Creole Bay	Bayou Dosgris
Hackberry Bay	Old Grand Bayou
West Champagne Bay	Grand Bayou
East Champagne Bay	Bayou Cholas
Bay Ronquille	Bayou Defond
Bassa Bassa Bay	Creole Pass
Blind Bay	Daniels Cut
Mud Lake	Barataria Waterway
Bayou Fifi	

The Barataria Waterway, which connects to the Gulf Intracoastal Waterway, is a major waterway in the basin. There is a network of natural bays, bayous and lakes, as well as manmade canals, that are used for access to oil and gas fields in this and other areas. Sports fishermen, hunters and commercial fishermen make use of these waterways as transportation routes. These waterbodies serve as aquatic habitats and nursery grounds for many finfish and shellfish species.

The oil and gas fields in this unit include Bayou de Chene Oil and Gas Field, Bassa Bassa Bay Gas Field, Queen Bess Island Oil and Gas Field, and Saturday Island Oil and Gas Field. The Bay de Chene Salt Dome is also located in this unit as are eleven gas pipelines and six crude oil pipelines.

Recreational camps are sparsely located throughout this unit.

There is no development potential for this unit. The entire unit is characterized by the saltwater marsh soil association which places very severe limitations on development. This association exhibits high subsidence potential, severe wetness, high shrink-swell potential of mineral levels, low bearing strength, poor trafficability and severe fire hazard.

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation, and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not identified in this report.

4. Primary Resource Users

The principal resource users of this unit are trappers, oyster fishermen, crab fishermen, clam fishermen, sports fishermen and hunters. There is also a significant amount of oil and gas activities in this unit.

5. Major Goals for Managing the Resources

Major goals for managing the coastal resources in the Bay Management Unit include, but are not limited to, erosion control; marsh restoration; maintenance of the ecological and hydrological integrity; improved resources for hunting, trapping, fishing and shellfishing; continued oil and gas exploration, with reduced dredging impacts; and freshwater diversion from the Mississippi River.

6. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation.

- Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site.

- Dredged sites should be accessed by drilling barges and other deep draft vessels during high tides

- Turbidity screens should be used if oyster beds are endangered

- Disturbed areas should be revegetated with appropriate native species

- Flowlines within Queen Bess Island, Bassa Bassa Bay, Bayou de Chene, and Saturday Island Oil and Gas Fields should be laid across the marshland without dredging. Where these flowlines cross waterways, they should be buried no less than three feet below the streambed or canal bottom

- Permits for dredging in Mud Lake, Bayou St. Denis and Bays Barataria, Caminada, Des Ilettes, Melville, Cat, Bassa Bassa Blind, East Champagne, West Champagne, St. Honore, Creole, and Ronquille within 200 feet of shore where circumstances allow, should require that the dredged materials be cast on the land or towards the shore line to reduce water depth appropriately between the dredging site and the shore, for the purpose of creating marsh. Where the dredging site is not close enough to a suitable shoreline, the dredged material should be spread without reducing the water depth more than six inches. The dredged material should never be spread on shellfish areas.

- Permits for dredging in Mud Lake, Bayou St. Denis and Bays Barataria, Caminada, Des Ilettes, Melville, Cat, Bassa Bassa Blind, East Champagne, West Champagne, St. Honore, Creole and Ronquille should require that all unearthed stumps, logs and other objects that could be hazardous to boat traffic be removed from the water body and deposited at some designated approved disposal site

- Permit applications to dredge through or clear mangrove stands should be discouraged. Where such activities are deemed unavoidable by the Administrator, the permit should require that after other activities have ceased, the area is to be restored to its original elevation and revegetated with mangrove and other appropriate species

- Permits for dredging across islands, cheniers or shell beaches should not be issued because those natural features serve to break wave action and winds, reduce wave fetch, and slow tidal flows

- Any land reclamation activities in areas not presently fast lands should be discouraged due to poor soil conditions and the propensity of those areas to flood

- Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies

- The permittee should repair, as requested by the Administrator, all dams and plugs on abandoned access and pipeline canals constructed or maintained by the applicant

- All spoilbanks, dams, and backfilling specifically required under these policies should be maintained by the permittee for dredging the canal for as long as he operates in Jefferson Parish, unless it can be proven that such maintenance cannot be accomplished due to conditions beyond the permittee's control

- Upon abandonment, canals should be plugged using earthen plugs and riprap or other stabilizing material

- Stabilizing material should be used on areas of severe erosion along the length of canals

- Directional drilling should be used when appropriate to mitigate environmental impacts

- Pipeline corridors and existing canals should be used when appropriate

- Riprap or vegetation stabilization should be used instead of bulkheading

- All camps should have approved sanitary facilities.

H. Dupre Cut Management Unit

1. Boundary

The western end of the southern boundary of the Dupre Cut Management Unit begins where Old Grand Bayou meets the Lafourche-Jefferson Parish line. The southern boundary follows Old Grand Bayou north to Bayou Dosgris. The boundary continues east following Bayou Dosgris and the north shore of Mud Lake. The boundary turns south to follow Bayou St. Denis to its mouth where it joins the Plaquemines-Jefferson Parish line, then north to Bayou Dupont. The northern boundary follows Bayou Dupont northwest to its confluence with the Barataria Waterway where it turns north to Bayou Rigolettes. The western boundary follows Bayou Rigolettes south to the Lafourche-Jefferson Parish line, which is followed to Old Grand Bayou (Figure II-8).

2. Physical and Biological Description

The majority of the 94,494 acres of this unit is less than three feet above mean sea level. Although the levee ridges may be somewhat higher, the area is flood-prone and affected by a normal tidal flux of six to eight inches. The transportation pipeline and oil-well-access canals and their dredged material banks along the canals have produced a maze that has altered drainage and flow patterns throughout the area. The major routes for tidal flow and drainage are the Barataria Waterway, Bayou St. Denis and Grand Bayou.

There are four major vegetative associations within this unit. Natural-levee forests are found along the Bayou Barataria Ridge. Intermediate marsh is found in the northern portion of the unit. Salt marsh is found in the southern portion and covers the largest area. Dredged material banks are established with flora typical of disturbed areas.

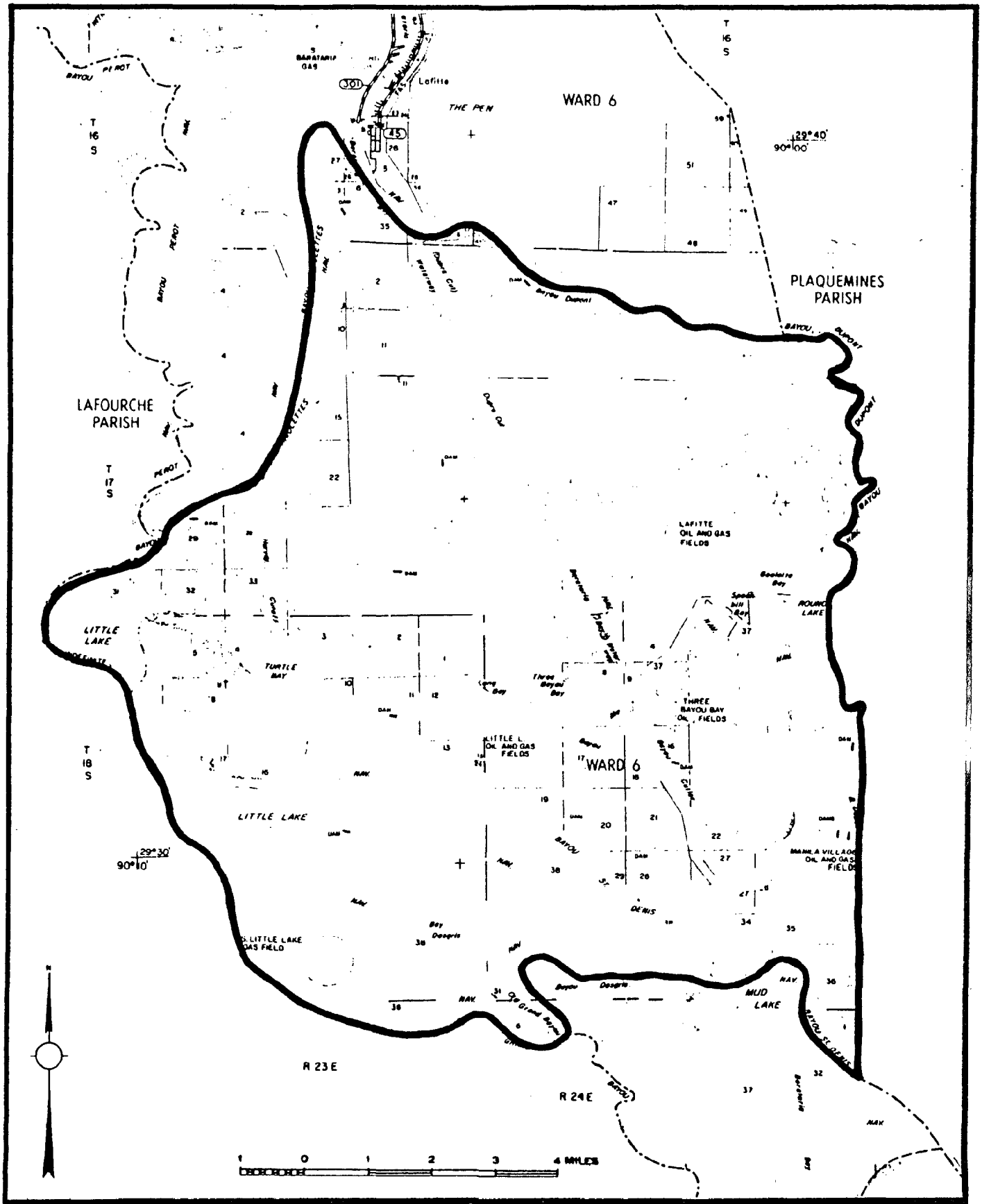


FIGURE II-8 Dupre Cut Management Unit

Average salinities in the Dupre Cut Management Unit range from 2.2 ppt at the confluence of Bayous Perot and Rigolettes to 11.08 ppt at Light 37, Mile 15.01, on the Barataria Waterway.

The Dupre Cut Management Unit is principally undeveloped wetlands with recreational camps sparsely located throughout this unit. There is also a small community of camps on Bayou Cutler between the Barataria Waterway and Spoonbill Bay.

There is basically no development potential in the Dupre Cut Management Unit because it lies outside the proposed hurricane protection levee and is extremely flood prone. The entire unit falls under the jurisdiction of the U. S. Army Corps of Engineers' 404 permitting system. The projected uses for this unit, therefore, are hunting, trapping, recreational and commercial fishing, and mineral activities. Consequently, there are no 1978 population estimates or projected year 2000 population estimates for this management unit. The Dupre Cut Management Unit is also part of the "prohibited service" area established by the U. S. Environmental Protection Agency and Jefferson Parish and noted by the U.S. Army Corps of Engineers.

Another factor limiting development in the Dupre Cut Management Unit is the soil associations. The two soil types found in this area, salt water marsh and swamp, are characteristically high in subsidence, with high shrink/swell potential. These soils pose severe limitations for any type of development. The exact locations and explanations of the soil associations are found on the "General Soil Map for Jefferson Parish" (U. S. Department of Agricultural, 1971). For additional information see the appendix (page A-5).

The major corridors for transportation in the Dupre Cut Management Unit are bayous and canals. The Barataria Waterway, the major waterway corridor in the unit, connects the Gulf Intracoastal Waterway, the Port of New Orleans, and the Gulf of Mexico. There is also a network of natural bayous, lakes and manmade canals which are used by sports fishermen, hunters and commercial fishermen as transportation routes. These waterbodies serve as aquatic habitat and nursery grounds for many finfish and shellfish species.

The most prominent water corridors are the Barataria Waterway, Bayou Dupont, Bayou Perot, Bayou Rigolettes, and Bayou St. Denis.

The major resources of this management unit are oil and gas, and aquatic and terrestial habitat for commercial and recreational species.

There are seven major oil and gas fields in this management unit. These are the Lafitte Oil and Gas Field, the Little Lake Oil and Gas-Field, the Little Temple Oil and Gas Field, the Manila Village Oil and Gas Field, the McCalls Island Oil Field, the South Little Lake Gas Field, and the Three Bayou Bay Oil and Gas Field. These fields are old and have

been in production for many years. Most have passed their peak production and are on the decline. These fields have been extensively developed. The numerous pipeline canals dredged through these fields are increasing saltwater intrusion and accelerating erosion of this area.

The undeveloped wetlands of the Dupre Cut Management Unit support a large variety of aquatic and terrestrial species and a variety of sporting and commercial activities which are dependent on those species. The main commercial hunting and fishing resources of this unit are shrimp, blue crabs, oysters and nutria. The waterbodies and marshes of this unit also serve as important aquatic habitat and nursery grounds for many finfish and shellfish which are landed both commercially and recreationally in the Gulf of Mexico. See the appendix for a more complete listing of commercial and recreational species found in this unit.

3. Archaeological and Historical Resources

The major archaeological and historical features of this unit are indian shell middens. The Louisiana Office of Culture, Recreation, and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not identified in this report.

4. Primary Resource Users

The main resource users of this unit are the oil and gas industry, crab fishermen, shrimp fishermen, sport fishermen, hunters and some oyster fishermen.

5. Major Goals for Managing the Resources

Major goals for managing the coastal resources in the Dupre Cut Management Unit include controlling erosion; restoring wetlands; diverting freshwater from the Mississippi River; maintaining the ecological and hydrological integrity of the unit; improving trapping, fishing, hunting and shellfishing resources; continuing oil and gas activities with minimal dredging impacts; and flood protection.

6. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation

- Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site

- Dredged sites should be accessed by drilling barges and other deep draft vessels during high tide

- Turbidity screens should be used if oyster beds are endangered

- Disturbed areas should be revegetated with appropriate native species

- Dredged material should be deposited in open water areas adjacent to marshes in non-vegetated areas at elevations conducive to the creation of new marsh

- Upon abandonment, canals should be plugged using earthern plugs and riprap or other stabilizing material

- Stabilization material should be used on areas of severe erosion along canal lengths

- Directional drilling should be used when appropriate to mitigate environmental impacts

- Existing pipeline corridors should be used when appropriate

- Riprap or vegetation stabilization should be used instead of bulkheading

- All camps should have approved sanitary facilities

- Dredged material from the Barataria Bay Waterway should be used to stabilize and repair the banks of that waterway, thereby retarding erosion and saltwater intrusion. If those banks are in good condition, the dredged material should be spread hydraulically into subsided areas that flank the waterway to restore those areas to marshlands or into the plugged or abandoned pipeline or access canals that are conveniently close to the areas to be dredged

- Flow lines within Lafitte, Little Lake, Manila Village, McCalls Island and Three Bayou Bay Oil and Gas Fields are to be laid across the marshland without dredging. Where these flowlines cross waterways they are to be buried not less than three feet below the stream bed or canal bottom

- Permits for dredging in Bayou Rigolettes, Little Lake, Mud Lake, Turtle Bay, Grand Bayou and Bayou St. Denis, within 200 feet of shore and where circumstances allow should require that the dredged materials be cast towards the shore line to reduce water depth appropriately between the dredging site and the shore, for the purpose of creating marsh. Where the dredging site is not close enough to a suitable shoreline, the dredged material should be spread without reducing the water depth more than six inches

- Permits for dredging in Bayou Rigolettes, Little Lake, Mud Lake, Turtle Bay, Grand Bayou and Bay St. Denis should require that all unearthed stumps, logs and other objects that could be hazardous to boat traffic be removed from the waterbody and deposited at some designated, approved site

- Permit applications for dredging into or across the narrow strip of marsh that separates Little Lake from Turtle Bay or the original Bayou Barataria ridges will be discouraged due to significant erosion and subsidence of these marshes and ridges. Permits for dredging which is deemed unavoidable by the Administrator should require that once activities have ceased or pipelines have been laid, the disturbed areas should be dammed, filled and graded to their original elevation and revegetated

- Permits for dredging across islands, cheniers, or shell beaches should not be issued

- Any land reclamation activities in areas not presently fast lands should be discouraged due to poor soil conditions and the propensity of those areas to flood

- Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies

- The permittee should repair, as requested by the Administrator, all dams and plugs on abandoned access and pipeline canals constructed or maintained by the applicant

- All spoilbanks, dams, and backfilling specifically required under these policies should be maintained by the permittee for dredging the canal for as long as he operates in Jefferson Parish, unless it can be proven that such maintenance cannot be accomplished due to conditions beyond the permittee's control

I. East Bank Management Unit

1. Boundary

The East Bank Management Unit is bounded on the north by the Lake Pontchartrain Levee, the south by the Mississippi River, the east by Orleans Parish and the west by St. Charles Parish.

2. Physical and Biological Description

The highest ridges in the East Bank Management Unit are the natural levees along the Mississippi River (10 to 11 feet) and the Metairie Ridge (six feet). The elevation decreases toward the north from the river towards Lake Pontchartrain to more than five feet below mean sea level. The 41,725 acres of this unit are completely leveed, and drainage is almost completely controlled by the use of four pumping stations positioned along the Lake Pontchartrain Levee. These stations are fed by a network of interconnecting storm drainage canals. A small portion of the unit in the southeastern corner drains naturally to the Seventeenth Street Canal, which separates Jefferson and Orleans Parishes (Figure II-9).

There are two major vegetative associations within this unit. Disturbed area vegetation and suburban lawn vegetation are dominant throughout this very developed unit. Modified forested wetlands are found in isolated areas that are rapidly being encroached upon by development. No wildlife or fisheries species are harvested in any significant quantities because of the highly developed nature of the unit.

Because the East Bank of Jefferson Parish is an area of drained wetlands, which are completely leveed, all rain water received on the East Bank must be removed by pumps via drainage canals to Lake Pontchartrain. If the pumps or levees were to fail, low lying areas of the East Bank would flood.

In this management unit is the Mississippi River, a major transportation corridor for goods imported to and exported from the central United States. The river attracts industries in need of water or water-dependent transportation. The Mississippi River is the drinking water source of Jefferson Parish, as well as a conduit for wastes disposal by numerous industries and communities in Jefferson Parish and other areas. Some fish and shrimp are harvested from the river.

Except for the Mississippi River on the southern boundary, all waterbodies in the East Bank Management Unit are manmade canals used to transport stormwater runoff and sewage treatment plant effluents to Lake Pontchartrain. There are eight north-south oriented canals and nine oriented east-west.

The East Bank Management Unit has been under heavy development for many years, and most areas for future development have been carefully delineated. Approximately 80 percent of the available land on the East Bank is currently developed. The East Bank is expected to reach full development by the year 2000, at which time, the population is estimated to be 350,000 persons. The 1978 estimated population was 291,703 persons. This unit is principally occupied by low density residential areas. The

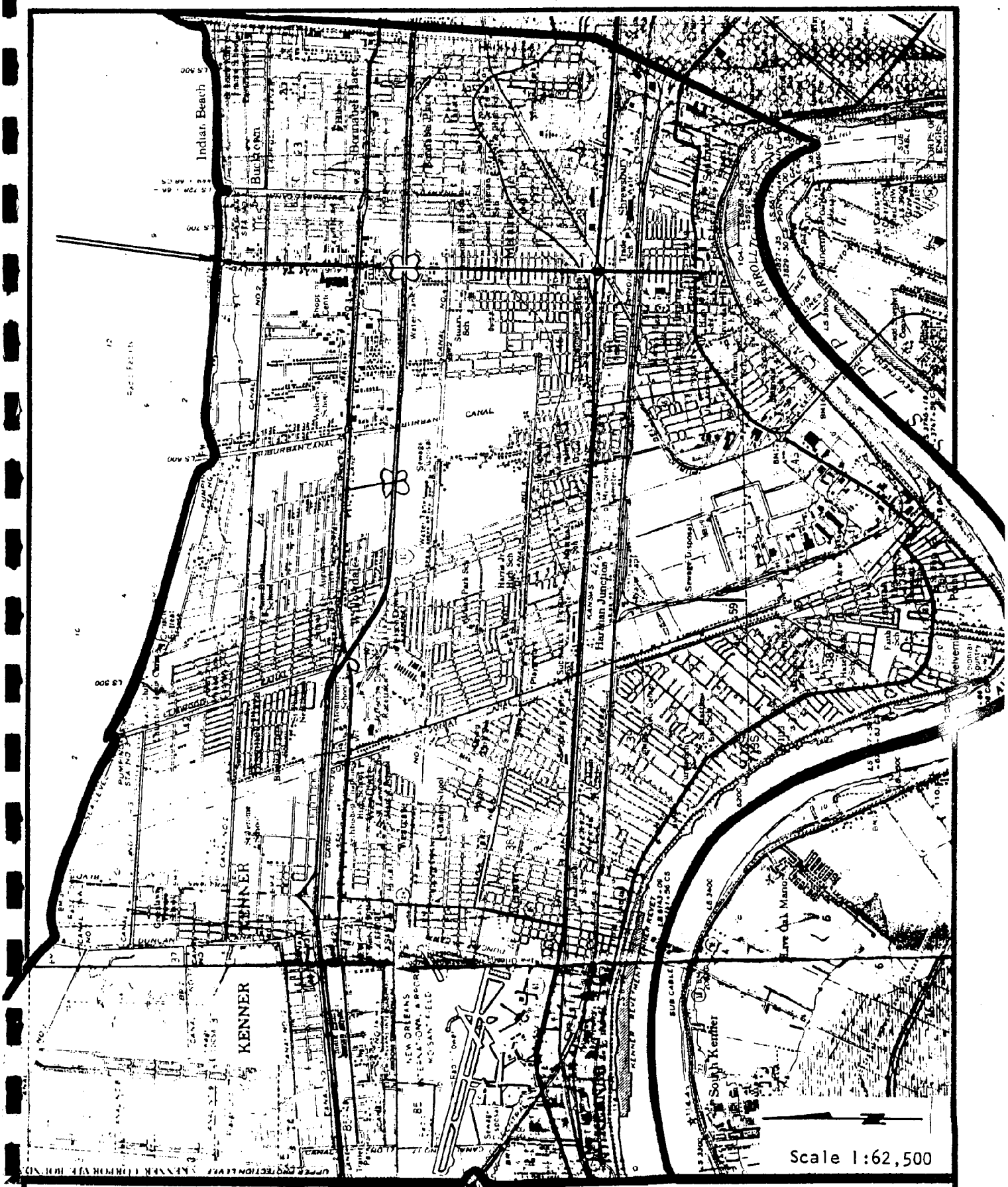


FIGURE II-9 East Bank Management Unit

incorporated areas are the cities of Kenner and Harahan. Unincorporated areas include Metairie, River Ridge and Jefferson. Future residential development will take place in the northwest portion of the unit within the limits of the City of Kenner.

Industrial development, for the most part, lies south of Airline Highway and in an area immediately north of the New Orleans International Airport in the City of Kenner. Future industrial expansion has been planned in the Elmwood Industrial Park (an area just north of an existing industrial park between South Clearview Parkway and Hickory Avenue). This unit also has two oil abd gas fields: the East Good Hope Oil Field and the Kenner Gas Field.

Commercial development is scattered throughout the unit, but it primarily lies along Veterans Memorial Boulevard, Airline Highway and Jefferson Highway. Future development will probably continue along those corridors and also in the northwest, following expanded residential development in that area.

Recreational development includes of the Linear Park which runs the entire length of the Parish along Lake Pontchartrain. Lafreniere Park, located near the center of the unit, is currently under development, and Jefferson Downs Race Track is a well-established horse racing enterprise. In addition, there are 12 playgrounds in this management unit.

Development limitations for the nine soils (Commerce silt loam; Commerce silty clay loam; Sharkey clay; Sharkey variant clay; Ijam variant clay; Allemands muck, drained; Barbary variant clay, drained; Allemands variant muck and Kenner muck) characterizing the management unit are given on page A-7. They range from slight to very severe depending on the locality and use. The exact locations and full explanations of the soil types found in this unit are presented in a recent "Soil Survey of the East Bank of Jefferson Parish" (U. S. Department of Agricultural, 1977). Those soils in the northwestern section of the unit have the most severe development limitations and, consequently, characterize the areas of the unit which are still undeveloped.

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not given in this report.

4. Primary Resource Users

Most of this management unit is used for residential, commercial and industrial uses. The area is approximately 80 percent developed.

5. Major Goals for Managing the Resources

Major goals for managing the East Bank Management Unit include, but are not limited to, continued planned developments; improved transportation corridors; improved drainage and sewage treatment facilities; pollution abatement; and the completion of various recreational areas such as the Lake Pontchartrain Linear Park and Lafreniere Park.

6. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- Stabilizing material should be used on areas of severe erosion along the length of canals

- Pipeline corridors and existing canals should be used when appropriate

- Riprap or vegetation stabilization should be used instead of bulkheading

J. Grand Isle Management Unit

1. Boundary

The southern boundary for the Grand Isle Management Unit is the mean low water mark on the southern shores of the barrier islands of Jefferson Parish. The western boundary is the Lafourche-Jefferson Parish line. The eastern boundary is the Plaquemines-Jefferson Parish line and the northern boundary begins where Bayou Thunder von Tranc enters Bay St. Honore at the Lafourche-Jefferson Parish line. The northern boundary extends immediately north of Chenier Caminada and immediately north of Grand Isle through Bayou Rigaud. The line continues immediately north of West Grand Terre Island and through Grand Bank Bayou into Cat Bay to the Plaquemines-Jefferson Parish line, excluding the marsh islands in the area (Figure II-10).

2. Physical and Biological Description

The islands included in this unit are from west to east, Chenier Caminada, Elmers Island, Grand Isle, West Grand Terre Island, Central Grand Terre Island and East Grand Terre Island. Between the islands are

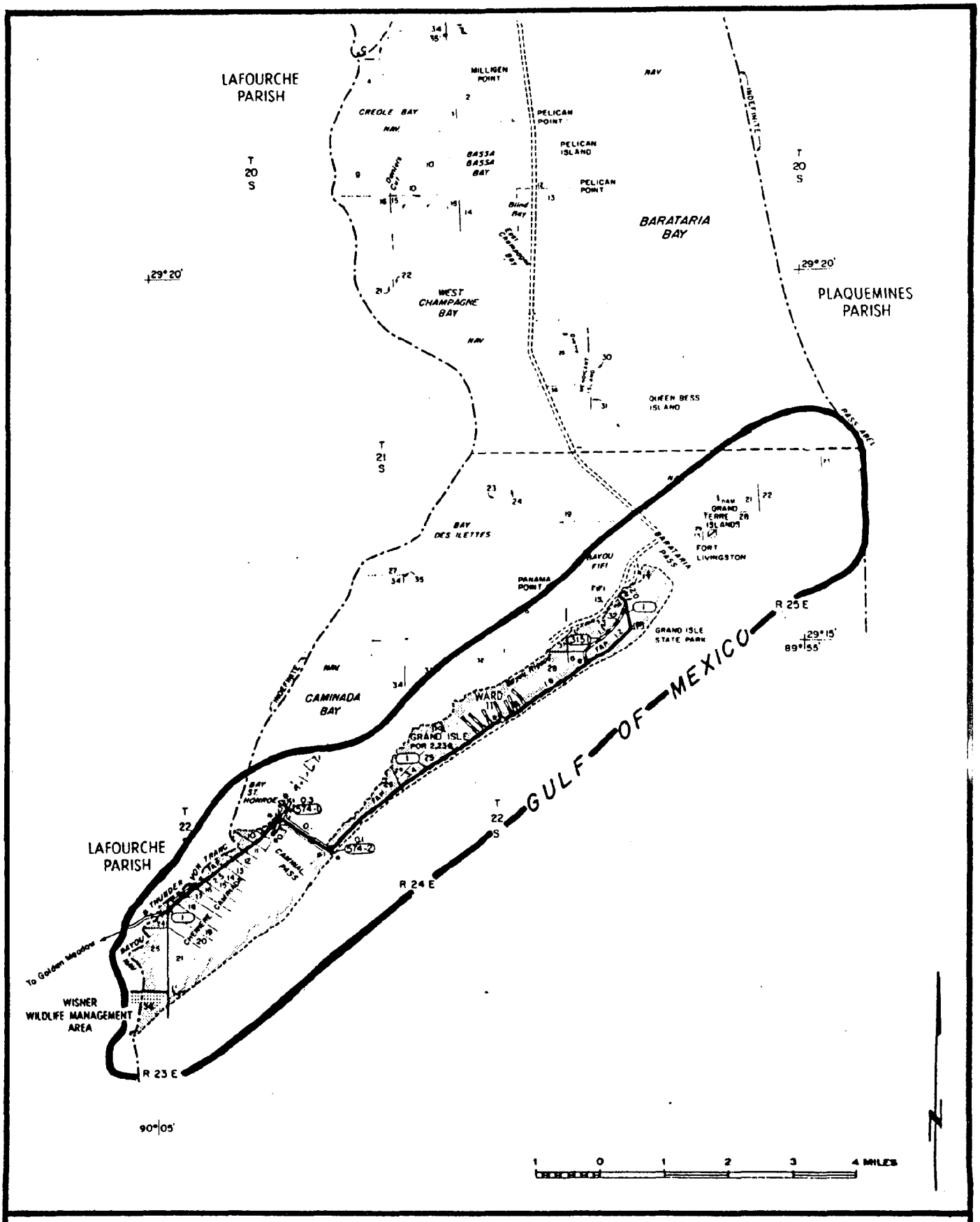


FIGURE II-10 Grand Isle Management Unit

deep tidal passes. The islands' elevations range from sea level to three feet above mean sea level. The islands have very high water tables. The waters around the islands are affected by a normal tidal flux of approximately one foot. There are 54,917 acres in this unit.

The vegetative associations found on the barrier islands (Bahr and Hebrard, 1976) of this unit include saline marsh and mangrove swamp which are found on the islands. Approaching the higher ground on the islands is a narrow zone of high marsh (transition marsh). Plants in this zone include marsh-elder, saltmarsh fimbristylis, three cornered grass, leafy three-square, wiregrass, and seaoxeye.

On the highest ground down the center of the island is a wooded area, with trees including live oak, hackberry, Hercules-club, wax myrtle, and St. Augustine grass. The wooded zone may be reduced or lacking on islands of lower elevation.

Toward the Gulf from the wooded area is a broad zone of meadow habitat. Plants encountered include beard grass, finger grass, saltmarsh fimbristylis, frogbit, fleabane, pennywort, black rush, three-cornered grass, softstem bulrush, widgeongrass, sandspur, morning glory, heterotheca, sabbatia, wiregrass, dog tooth grass, and Bermuda grass.

The dune habitat is the closest to the Gulf and supports rooted vegetation. Plants include dog tooth grass, beach morning glory, morning glory, frogbit, heterotheca, evening primrose, sandspur and sea rocket.

There are many tidal passes, bayous and bays among the barrier islands. Excluding the Gulf of Mexico, the open water areas are Barataria Pass, Caminada Pass, Pass Abel, Quatre Bayou Pass, Bay Dispute, Bay Melville, Bay Ronquille, Bay St. Honore, Caminada Bay, Cat Bay, Barataria Bay Waterway, Bayou Rigaud, Bayou Thunder von Tranc and Grand Bank Bayou.

The Barataria Waterway is a major waterway in the basin and connects the Gulf Intracoastal Waterway, the Port of New Orleans and the Gulf of Mexico. There is also a network of natural bays, bayous, tidal passes and man-made canals that are used for access between the Gulf of Mexico and the Barataria Basin. These waterbodies serve as aquatic habitats and nursery grounds for fish and shellfish. For a listing of those commercially and recreationally harvested species in this unit, see the appendix for those species that are found in brackish marsh and saline marsh. The principal resource users being supported by the species of this unit are crab fishermen, oyster fishermen, shrimpers, menhaden fishermen, sport fishermen, clam fishermen and hunters. Although the central ridges of Chenier Caminada and Grand Isle are developed, their bayside and gulf fringes remain productive wildlife habitat.

The residential area of this unit consists primarily of strip settlements of temporary and permanent residences along Louisiana Highway One, the principal transportation artery on Grand Isle and Chenier Caminada.

Grand Isle is principally known as a recreational area. The southern shore consists of sandy beaches and the eastern and western end of the island comprise the Grand Isle State Park. Many houses along and north of Louisiana Highway One are rented as recreational camps during the warmer months. The 1978 estimated population was 2,502. In the year 2000, the population is estimated to become 3,500.

The Town of Grand Isle controls development by a comprehensive zoning ordinance for Grand Isle and Chenier Caminada. Virtually all new construction in the unit must be above the 100-year base flood level. Little development is expected on the Grand Terre Islands, which are outside the limits of the Town of Grand Isle and which are inaccessible by automobile. Any further development in the unit on islands not accessible by land vehicles would depend upon improved and expanded transportation and drainage systems among the islands.

Commercial development has been principally limited to the strip community along Louisiana Highway One. A commercial fishing fleet consisting of trawlers, oyster dredges and sport charter boats use the linear port facilities along the north shore of Grand Isle and Chenier Caminada as their operations base.

Industries within the area include a shipyard for repair of shrimp and oyster fishing vessels and other work boats, an ice plant, seafood unloading facilities, and oil storage and barge loading facilities. Extensive facilities for oil field servicing and for operation of an offshore sulphur mine are located on the eastern end of Grand Isle. There are no oil or gas fields located in this unit, however, the area is traversed by two gas pipelines, four crude oil pipelines and one high voltage electrical transmission line.

Soils of the islands present limitations to further development. Although the sandy beaches have a low organic content and low subsidence potential, they also have a high salt content and are subjected to severe wave action. The remainder of the islands is characterized by saltwater marsh which exhibits high subsidence potential, severe wetness, very high shrink-swell potention of mineral layers, low bearing strength, poor trafficability, and elevated salt content, all of which present very severe limitations to development for most urban uses. For the locations and further explanations of the soil associations found in the unit, see the "General Soil Map, Jefferson Parish, Louisiana" (U. S. Department of Agriculture, 1971) and the appendix.

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the

New Orleans District, U. S. Army Corps of Engineers maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not identified in this report.

4. Primary Resource Users

The islands are primarily used for recreational and residential use and for recreational and residential support. There is a limited amount of industrial and commercial use.

5. Major Goals for Managing the Resources

Major goals for managing the Grand Isle Management Unit include, but are not limited to, marsh restoration; beach stabilization; flood control and erosion control on the islands; maintenance of the natural ecological and hydrological integrity; limited dredging and channelization; planned development in the Town of Grand Isle; improved freshwater supply; improved sewage treatment facilities; freshwater diversion from the Mississippi River and designation of the Grand Terre Islands as a Natural Preservation District.

6. Grand Terre Natural Preservation District

The Jefferson Parish Coastal Zone Advisory Committee designated the Grand Terre Islands as a natural preservation area to be developed as an estuarine conservation district. The designation prohibits all channelization and requires that all developments receive approval of the appropriate authority.

The Grand Terre Islands consist of the barrier and marsh islands located between Barataria Pass and Quatre Bayou Pass. The far western end of West Grand Terre is the location of the only developments on the islands. These developments consist of Fort Livingston, a national historic site, the Barataria Beacon and the Louisiana Department of Wildlife and Fisheries Environmental Station. West Grand Terre is also used for cattle grazing. Dredging operations have cut a number of pipeline canals through the islands.

The natural features of the islands include saline marshes, barrier island beaches, black mangrove swamps, shore-bird colonies, wading-bird rookeries, brown pelicans, commercial and natural oyster reefs, and other shellfish grounds.

7. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation

- Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site

- Dredged sites should be accessed during high tide

- Turbidity screens should be used if oyster beds are endangered

- Disturbed areas should be revegetated with appropriate native species

- Permits for dredging Bays Caminada, Barataria, Melville, Dispute, and Ronquille within 200 feet of shore and where circumstances allow should require that the dredged material be cast towards the shoreline to reduce water depth appropriately between the dredging site and the shore, for the purpose of creating marsh. Where the dredging site is not close enough to a suitable shoreline, the dredged material should be spread without reducing the water depth more than six inches.

- Permits for dredging in Bays Caminada, Barataria, Melville, Dispute, and Ronquille, should require that all unearthed stumps, logs and other objects that could be hazardous to boat traffic be removed from the waterbody and deposited at some designated, approved disposal site

- Permits for dredging new canals on barrier islands should not be issued

- Permit applications to dredge through or clear mangrove stands should be discouraged. Where such activities are deemed unavoidable by the Administrator, the permit should require that after activities have ceased, the area is to be restored to its original elevation and revegetated with mangrove and other appropriate species

- Any land reclamation activities in areas not presently fast lands will be discouraged due to poor soil conditions and the propensity of those areas to flood

- Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies

- The permittee should repair, as requested by the Administrator, all dams and plugs on abandoned access and pipeline canals constructed or maintained by the applicant

- All spoilbanks, dams, and backfilling specifically required under these policies should be maintained by the permittee for dredging the canal for as long as he operates in Jefferson Parish, unless it can be proven that such maintenance cannot be accomplished due to conditions beyond the permittee's control

- Upon abandonment, canals should be plugged using earthen plugs and riprap or other stabilizing material

- Stabilizing material should be used on areas of severe erosion along the length of canals

- Directional drilling should be used when appropriate to mitigate environmental impacts

- Pipeline corridors and existing canals should be used when appropriate

- Riprap or vegetation stabilization should be used instead of bulkheading

- All camps should have approved sanitary facilities

K. Lake Pontchartrain Management Unit

1. Boundary

This unit is bounded on the west by St. Charles Parish, on the east by Orleans Parish, on the north by St. Tammany Parish, and on the south by a line running along the crest of the Lake Pontchartrain Levee from St. Charles to Orleans Parish (Figure II-11).

2. Physical and Biological Description

This northern-most unit is principally open water. The only land that exists here is the narrow strip of lake shore north of the 11-foot crest of the levee. At the lake's edge, there is a very broad area of riprap for erosion control. Drainage occurs naturally toward the lake in the north. The area is often flooded by storms, although normal tidal variation is only six to ten inches.

Lake Pontchartrain dominates this unit, whose land area consists entirely of modified wetlands. The mouths of five outfall canals also occur in this unit: Duncan Canal, Elmwood Canal, Suburban Canal, Bonnabel Canal and the Seventeenth Street Canal. Lake Pontchartrain salinities range from 1 ppt in the west to as high as 17 ppt in the east (Cardwell et al., 1967). Tides are controlled by the Gulf of Mexico and by prevailing winds (Saucier, 1963).

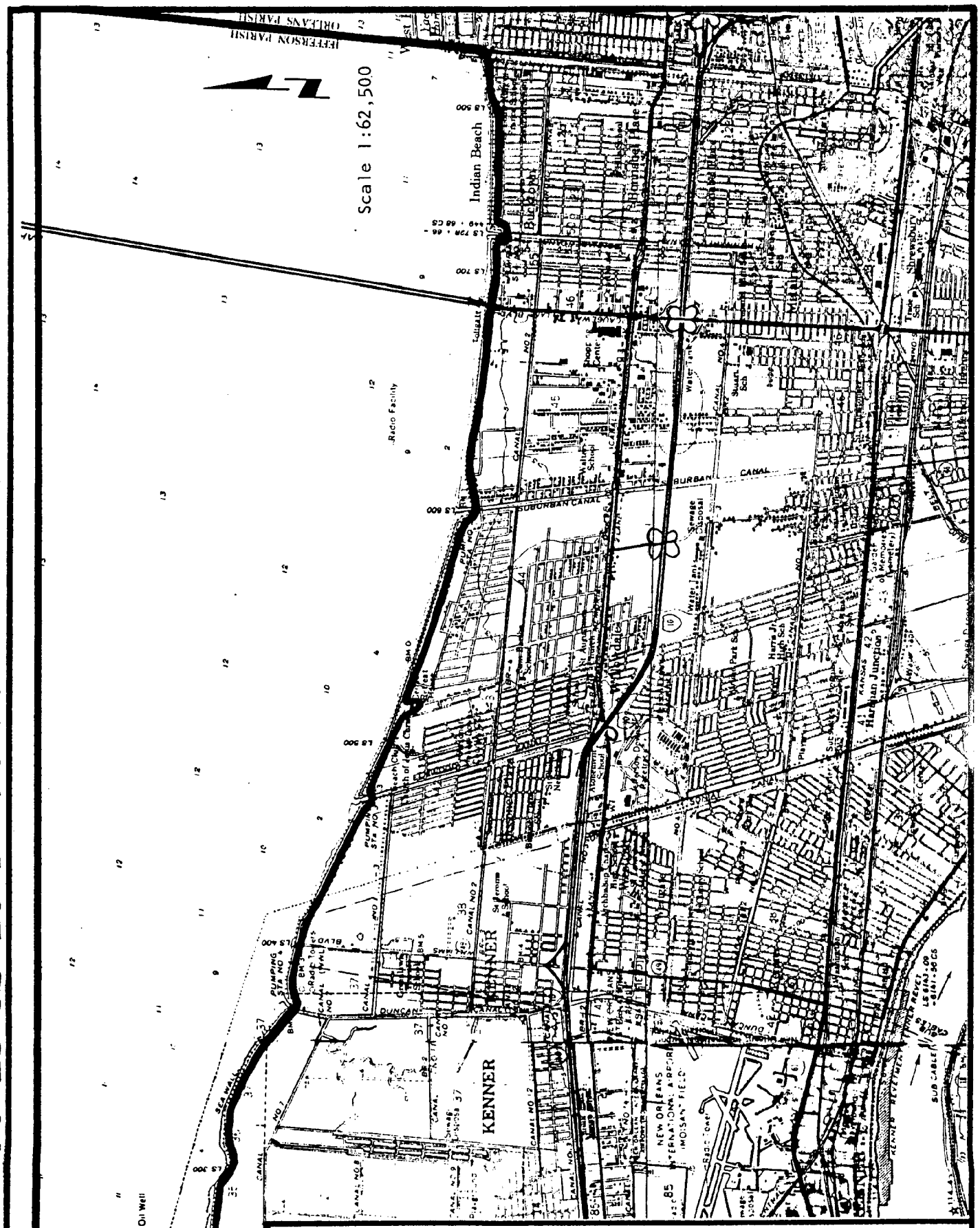


FIGURE II-11 Lake Pontchartrain Management Unit

Although Jefferson's lakeshore is completely altered from its natural state, the area still supports a variety of wildlife. The lake is a low salinity estuary (0.5-8.0 ppt) that supports a variety of aquatic life and serves as aquatic habitat and nursery grounds for many shellfish species. For a list of those commercially and recreationally harvested species in this unit, see the appendix for those species found in intermediate marsh and brackish marsh.

Lake Pontchartrain has always been a popular recreation site for the greater New Orleans area. In Jefferson Parish, there is a public boat launch at the mouth of Bonnabel Canal and at the foot of Williams Boulevard. A marina is planned for construction adjacent to Bucktown. The levee, its batture and the strip of land immediately south of the levee have been designated as the Linear Park. The U. S. Army Corps of Engineers is currently preparing an environmental impact statement supplement to evaluate the impacts of reinforcing this levee on the lakeward side to aid in hurricane protection. If this levee project is implemented, the recreational areas will be temporarily eliminated.

The Lake Pontchartrain Management Unit has, for the most part, reached its full development potential. Further development in the still underdeveloped areas of the Lake Pontchartrain Unit, which lie primarily in the area of the City of Kenner, will be restricted by poor soil conditions and the impact of a major airport, which is currently preparing to expand its facilities into St. Charles Parish by extending the east-west runway.

The two types of soils (Ijam variant clay and Kenner muck) in this unit are characterized by severe to very severe development limitations for most urban uses because they exhibit a very severe to severe shrink-swell potential, a high to very high subsidence potential, severe wetness, severe fire hazard, low bearing strength and poor trafficability. The locations and explanations of these soil types are presented in a "Soil Survey of the East Bank of Jefferson parish" (U. S. Department of Agriculture, 1977) and in the appendix.

Consequently, because of the poor soils, the only residential area in this unit is that portion of Bucktown located at the mouth of the Seventeenth Street Canal. The community consists of about 25 residential structures, some of which are vacant or abandoned.

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation, and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers, maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not identified in this report.

4. Primary Resource Users

This management unit is used primarily by shrimpers, crabbers, and sports fishermen and persons enjoying various water oriented sports. The unit is also actively used by oil and gas interests which are presently expanding in Lake Pontchartrain (East Block 41 Oil Field and Block 37 Oil and Gas Field). In addition, clam shell dredging is actively pursued in the Lake.

5. Major Goals for Managing the Resources

Major goals for managing the coastal resources in the Lake Pontchartrain Management Unit include, but are not limited to, continued water-oriented recreation such as boating, skiing and sport fishing; completion of the Lake Pontchartrain Linear Park and the Bucktown Marina; pumping station improvements; and freshwater diversion via the Bonne Carre Spillway.

6. Lake Pontchartrain Basin Special Management Area

In mid 1981, a Lake Pontchartrain Basin Ad Hoc Committee comprised of councilmen and jurymen from the parishes surrounding the Pontchartrain-Maurepas Estuarine Complex began studying the feasibility of designating the area as a special management area and compiling information relative to the existing conditions and resources of the lakes and the local, state and federal jurisdictions operating therein.

If Lake Pontchartrain is designated as a special management area and if guidelines are adopted for that purpose, they will be incorporated into the Jefferson Parish Coastal Zone Management Program by a separate ordinance of the Jefferson Parish Council.

7. Policies for Uses in this unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- Pipeline corridors should be established

- Disturbed areas should be revegetated with appropriate native species

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation

- Mitigation or compensation at an off-site location should be required for projects which adversely impact wetland areas and where adequate compensation cannot be conducted on site

- All marinas and recreational areas should have approved sanitary facilities

- Directional drilling should be used when appropriate to mitigate environmental impacts

- Riprap or vegetation stabilization should be used instead of bulkheading

- Permits for flowlines in Lake Pontchartrain should require that those flowlines be buried no less than three feet below the lake bottom

- Any land reclamation activities in areas not presently fastlands will be discouraged due to poor soil conditions and the propensity of those areas to flood

- Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies

- Permits for dredging should require that all dredged material which is not used for backfill be spread without reducing the water depth more than six inches

- Seismic surveys within five miles from the Lake Pontchartrain shoreline should not be allowed

L. Lower West Bank Management Unit

1. Boundary

Beginning at the mouth of the Fleming Canal, northeast of the Rosethorn School, the boundary of the Lower West Bank Management Unit follows the levees south of Rosethorn Road. The boundary turns southeast to the junction of a second Fleming Canal with the levees to the east of Barataria. These levees are followed south to their junction with the Commerce-Sharkey Soil Association (U. S. Department of Agriculture, 1971), which is followed southeastwardly to Bayou des Oies (Goose Bayou), skirting to the east of those buildings at Goose Bayou. Crossing the bayou, the boundary follows the levee to the east of Lafitte and skirts the western edge of The Pen to just south of a pipeline canal that enters The Pen north of Bayou Dupont. The boundary moves northwest to follow Bayou Barataria to Bayou Rigolettes. The boundary moves north along the existing levee along the western edge of the oak ridge to the west of

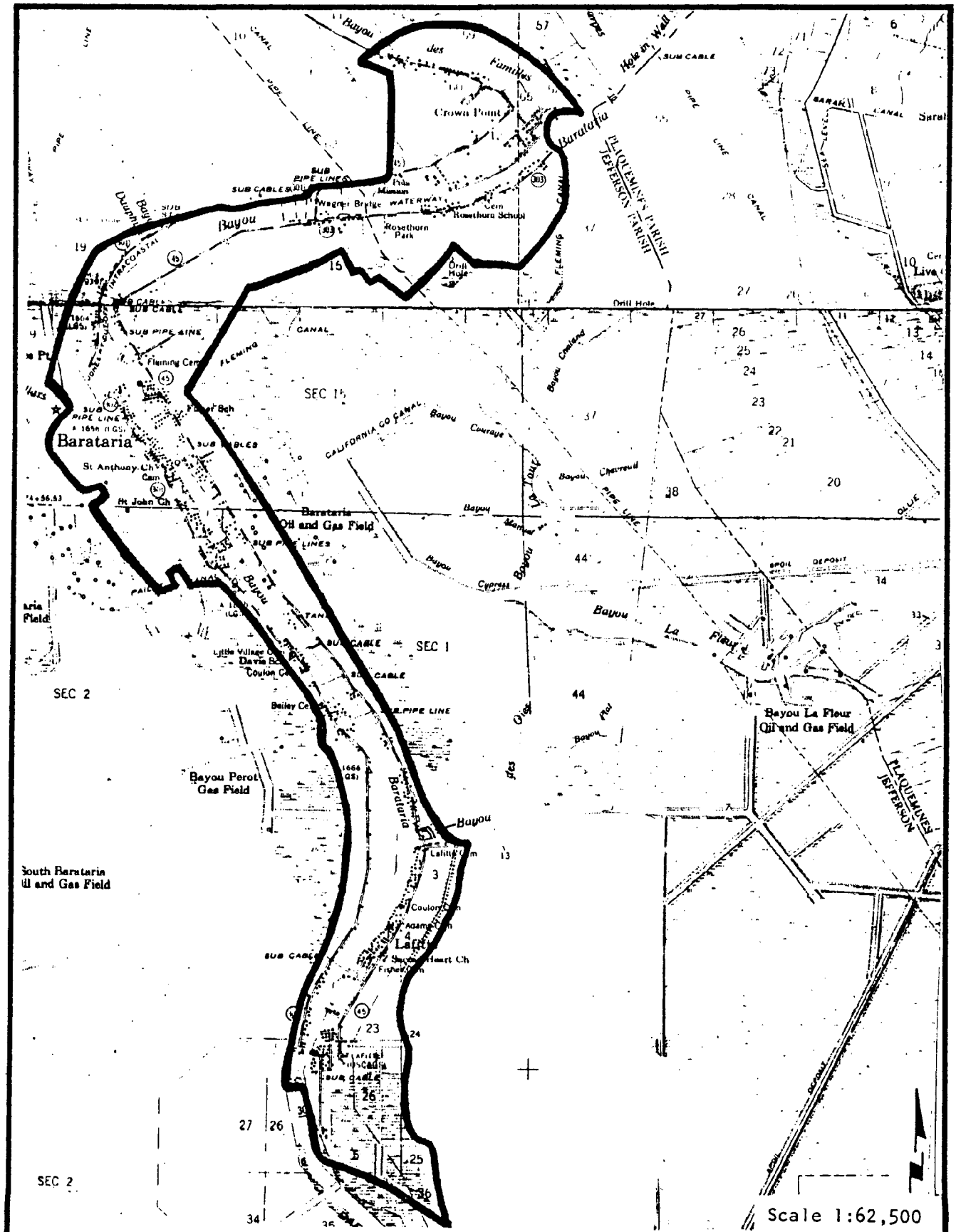


FIGURE II-12 Lower West Bank Management Unit

Bayou Barataria to Bayou Villars. Crossing Bayou Villars, the boundary follows the Jean Lafitte National Historical Park boundary north, crossing Bayou des Familles to trace east along the Commerce-Sharkey Soil Association and following Bayou Barataria southwest to the mouth of the Fleming Canal (Figure II-12). The boundaries of this unit conform to the line adopted by the Jefferson Parish Council in Ordinance No. 13795, which creates a growth-limit line south of Crown Point, and will conform to any amendments to that ordinance. The distance of this boundary from either side of Louisiana Highway 45 ranges from 30 feet from the edge of the road to approximately 2000 feet in some areas of the northern segment.

2. Physical and Biological Description

This 11,758-acre unit follows the natural levee ridges of Bayou Barataria and Bayou des Familles. This land is less than five feet above sea level, but it is higher than the surrounding areas. Drainage is by gravity flow both east and west from the ridge and south through Bayou Barataria. Bayou Barataria is affected by a tidal flux of six to eight inches.

The Lower West Bank Management Unit salinites range from seasonally fresh in Bayou des Familles to average salinites of 1.8 ppt at Bayou Villars and 4.6 ppt at Lafitte. The depths of the Barataria and Gulf Intracoastal Waterways are maintained by the U. S. Army Corps of Engineers at 12 feet below mean low gulf. Normal tidal flux ranges from four inches in Bayou des Familles to more than six inches at Lafitte. There are a number of natural bayous and pipeline and oil-well-access canals in this unit. Major waterways include Bayou Barataria, Bayou Dauphine, Bayou des Familles, Goose Bayou, Bayou Rigolettes, Bayou Villars, Pailet Canal and Fleming Canal.

Three vegetative associations are found in this unit. Natural-levee forests once dominated the area. Suburban lawns and disturbed area vegetation have expanded as the strip settlements of Barataria, Crown Point and Lafitte have expanded. Modified forested wetlands have replaced forested wetlands where areas have been leveed and drained.

This management unit consists of a narrow corridor of land south of the V-shaped levee along both sides of Bayou des Familles and Bayou Barataria. Strip settlements have developed along Louisiana Highway 45 on the east bank of Bayou Barataria and along Louisiana Highway 301. The three centers of development are at Crown Point, Barataria and Lafitte. The 1978 estimated population for the unit was 7,000. In the year 2000, the population is estimated to be 12,000 persons.

Commercial development has been limited to the strip communities described above. Facilities exist for launching, mooring, and storage of a variety of shallow draft vessels. Many commercial fishermen have taken advantage of the convenient waterways and port facilities by basing their operations in this unit. Plans include Lafitte as a site for increased shallow draft port facilities.

Industries in the area are principally fisheries and other maritime-supported industries such as shipyards, ice plants and docking facilities. There are also oil and gas producing and storage facilities. The Barataria Oil and Gas Field is the only one in the management unit.

This unit is also a major access point to the Barataria Basin for the purposes of recreational hunting and fishing. The northwestern-most boundary of this unit is common to the southeastern and southern boundaries of the core area of the Jean Lafitte National Historical Park. The Rosethorn Park is in this unit.

The Barataria Waterway is a major waterway in the basin. It connects the Gulf Intracoastal Waterway, the Port of New Orleans, and the Gulf of Mexico. This segment of the waterway also acts as the principal route of access to the rest of the Barataria Basin. Because the Lower West Bank Management Unit consists of a narrow corridor around the major transportation route, Bayou Barataria, few species are harvested in the unit.

Ground transportation routes include the Lafitte-LaRose Highway, Louisiana Highway 45, and Louisiana Highway 301. Waterways in the area include the Gulf Intracoastal Waterway (Bayou Villars and Bayou Barataria), Goose Bayou, and Bayou Rigolettes. There are two crude oil pipelines and three gas pipelines and Louisiana Power and Light Company has two 115 KV lines which traverse the unit.

Development limitations range from slight to very severe depending on use and locality. Those soils nearest to Bayous Barataria and des Familles are better suited for construction. The organic contents of the soils generally increase with distance to the east or west away from these waterways. Those soils with higher organic contents have higher subsidence potential if drained, because of their greater compatibility and water content. The exact locations and further explanations of the soil types (Commerce silt loam, Commerce silty clay loam, Sharkey silty clay loam, Sharkey clay, Sharkey variant clay, Barbary soils, and Allemands peat) in this unit are presented in a recent "Soil Survey of the West Bank of Jefferson Parish" (U. S. Department of Agriculture, 1978) and in the appendix.

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. The Cultural Resources Section of the New Orleans District, U. S. Army Corps of Engineers, maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not given in this report.

4. Primary Resource Users

Uses in this unit are primarily residential, industrial and commercial.

5. Major Goals for Managing the Resources

Major goals for managing the coastal resources in the Lower West Bank Management Unit include, but are not limited to, continued planned commercial, residential and industrial development; improved fishing support and docking facilities; improved freshwater supply and sewage treatment facilities; improved pollution abatement; improved hurricane and flood protection; and improved recreational access to surrounding wetlands.

6. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation

- Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site

- Dredged sites should be accessed by drilling barges and other deep draft vessels during high tide

- Flow lines within Barataria and West Barataria Oil and Gas Fields should be laid across the marshland without dredging. Where these flowlines cross waterways, they should be buried no less than three feet below the stream bed or canal bottom

- Upon abandonment, canals should be plugged using earthen plugs and riprap or other stabilizing material

- Stabilizing material should be used on areas of severe erosion along the length of canals

- Directional drilling should be used when appropriate to mitigate environmental impacts

- Pipeline corridors and existing canals should be used when appropriate

- Riprap or vegetation stabilization should be used instead of bulkheading

- All camps should have approved sanitary facilities

M. West Bank Management Unit

1. Boundary

The boundary of the West Bank Management Unit follows the Mississippi River from its junction with the western corporate limits of the City of Westwego to the Jefferson-Orleans Parish line. The boundary then lies to the southeast along the Jefferson-Orleans Parish line to the Jefferson-Plaquemines Parish line, and on to the Estelle pumping station canal. The boundary then lies west along the southern levee of this canal to the Pipeline Canal, where the line turns south along the V-shaped levee to the boundary of the Jean Lafitte National Historical Park. The line then follows the boundary of the Bayou Segnette Management Unit to its junction with Bayou Segnette. The line then lies north along the western boundary of the City of Westwego to the Mississippi River (Figure II-13). The boundaries of this management unit conform to the proposed and existing levee alignments and will conform to any future changes of those alignments. See page II-22 for further explanation.

2. Physical and Biological Description

The natural Mississippi River levee is more than ten feet above mean sea level. The remaining areas grade to below sea level in the south. This 40,344-acre management unit is completely leveed, and most runoff must be pumped over levees. The area east of the Harvey Canal drains to Bayou Barataria. West of the Harvey Canal, runoff is pumped into the Harvey Canal, Bayou Barataria, Bayou des Familles and Bayou Segnette. There is tidal activity in this unit via Bayou Barataria, Harvey Canal, Kenta Canal, Tar Paper Canal and Bayou Boeuf.

Four major vegetative associations occur in this unit. The natural-levee forest still exists along Bayou des Familles and Bayou Barataria. Modified wetlands are found primarily north of the Estelle Drainage Canal, the Pipeline Canal, the V-shaped levee and Bayou des Familles. Suburban lawns and disturbed area vegetation occur in the developed areas of the unit.

Projections for growth in the West Bank Management Unit include those for the Avondale Management Unit. The 1978 estimated population was 193,422 and the projected estimate for the year 2000 is 300,000.

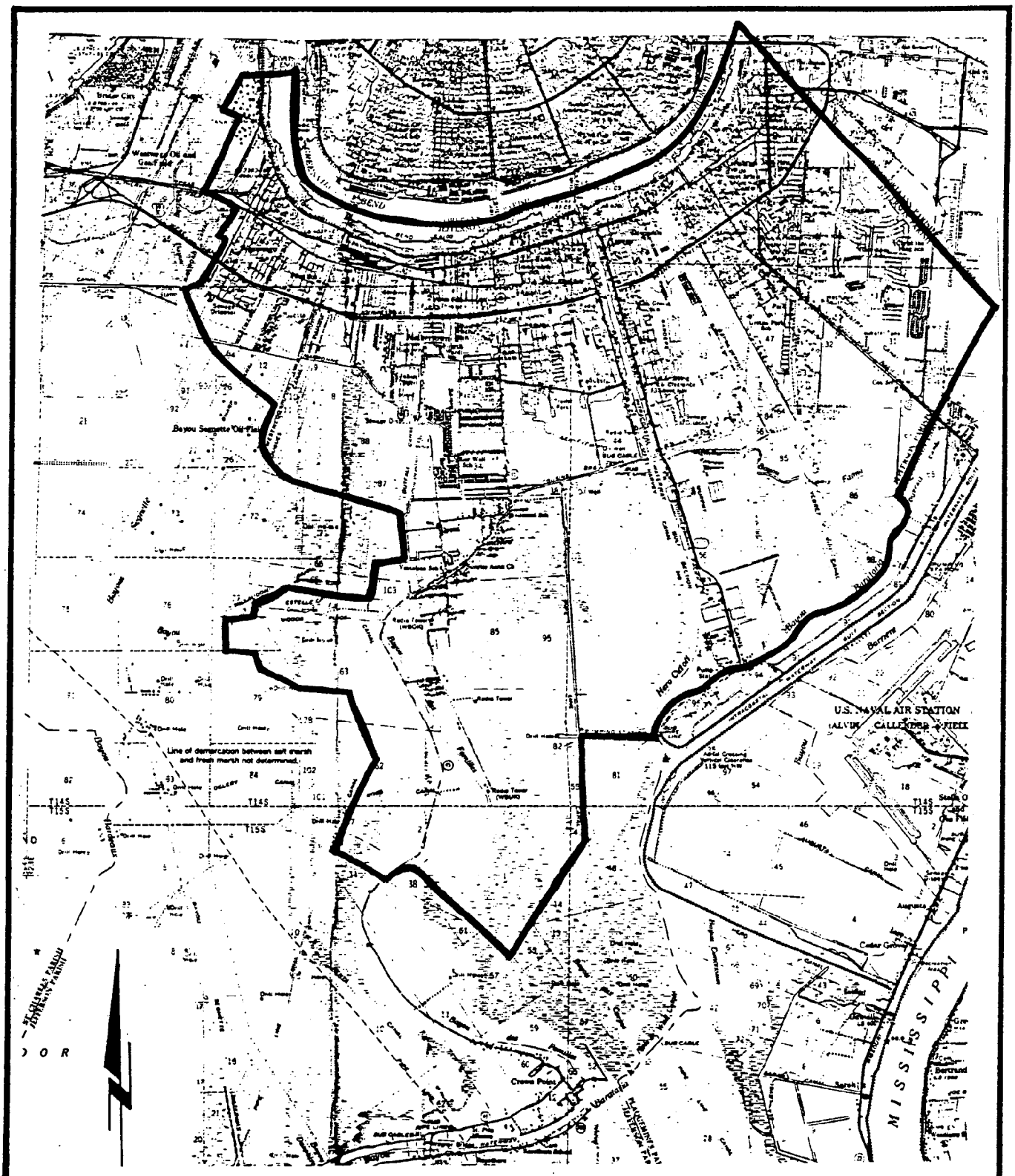


FIGURE II-13 West Bank Management Unit

Population projections indicate that by the year 2000, at an average population density of 20 persons per acre, the parish will need 15,125 additional acres of developable land to house its projected year 2000 population. There are, however, 33,000 acres of potentially developable land left on the West Bank. This includes modified and drained wetlands within existing levees and prime land on the alluvial ridges and natural levees.

Two incorporated communities, the City of Westwego and the City of Gretna, are found in this unit. Other communities include Marrero, Walkertown, Harvey, and Estelle. The northern two-thirds of this unit is still undergoing heavy development and further development is predicted especially to the south of the unit.

With the development of this unit, wildlife harvesting has declined in the area. However, in areas around Bayou Fatma, the Estelle Pump Station and the V-shaped levee, there are thick stands of naturally occurring vegetation which support a large variety of wildlife.

Other than Bayou Barataria and Bayou des Familles, all waterbodies in the West Bank Management Unit are characterized by fresh water. All of these waterways have been altered by dredging or they are man-made canals. These waterbodies include:

Bayou Barataria	Marrone Canal
Bayou des Familles	Murphy Canal
Bayou Fatma	Railroad Canal
Cousins Canal	Verret Canal
Dugue Canal	Westwego Airport Canal
Estelle Canal	Westwego Drainage Canal
Gardere Canal	Whisky Bayou

The Mississippi River is used as a major transportation corridor for goods imported to and exported from the central United States. The river also attracts industries in need of water or water dependant transportation. The Mississippi River is also the drinking water source of Jefferson Parish, as well as a conduit for wastes disposal by numerous industries and communities in Jefferson Parish and other areas. Some fish and shrimp are harvested from the river. In addition, a network of man-made canals has been constructed to drain stormwater and treated municipal and industrial wastes to the south. There are many commercial areas which are located primarily along the major transportation arteries. The Westwego General Aviation Airport is located immediately east of the Bayou Segnette head waters.

Industrial areas are found along major transportation routes listed above. Designated industrial areas include Belle Terre Industrial Park, Rathborne Industrial Park, Marrero Industrial Park, Lapalco Industrial Park and Stedman Industrial Park.

Recreational areas in the management unit include Martin Luther King, Belle Terre, Terrytown, Bunche Village and King's Grant Playgrounds. Recreational areas also include the Gretna City Park and the Plantation Country Club.

Limited lumber harvesting may occur in the southern most areas being cleared for housing developments and limited farming continues in the Bayou Fatma area.

The management unit is traversed by ten gas pipelines, nine high voltage transmission lines and has three oil and gas fields: the Crown Point Oil Field, the Marrero Gas Field, and the Walkertown Gas Field.

Soils are a definite limiting factor for development in this unit. Development limitations are given on page A-7 and range from moderate to very severe depending on locality and use. Those soils nearer to the Mississippi River and Bayou des Familles have lower organic content and are better suited for construction. The organic content of the soils generally increases with distance to the south from the Mississippi River and to the east from Bayou des Familles. Soils with high organic content have higher subsidence potentials, if drained, because of their greater compatibility and water content. The locations and further explanations of the soil types found in the West Bank Management Unit (Commerce silt loam, Commerce silty clay loam, Vacherie complex gently undulating, Sharkey silty clay loam, Sharkey clay, Sharkey variant clay, Ijam variant clay, Barbary variant clay drained, Barbary soils, Allemands muck drained and Allemands peat) are presented in a "Soil Survey of the West Bank of Jefferson Parish" (U. S. Department of Agriculture, 1978).

3. Archaeological and Historical Resources

There is a broad diversity of archaeological and historical sites in Jefferson Parish. The Louisiana Office of Culture, Recreation, and Tourism maintains the Louisiana Cultural Resources files in which these sites are recorded. Also, the Cultural Resources Planning Section of the New Orleans District, U. S. Army Corps of Engineers, maintains similar files. In order to maintain the current integrity of the archaeological and historical sites in this unit, those sites are not given in this report.

4. Primary Resource Users

Most of this management unit is used for residential, commercial and industrial uses.

5. Major Goals for Managing the Resources

Major goals for managing the coastal resources in the West Bank Management Unit include, but are not limited to, planned residential, commercial and industrial development; improved transportation corridors;

improved drainage and flood protection; improved sewage treatment facilities and pollution abatement; increased water capacity for the area; freshwater diversion from the Mississippi River; and improved recreational facilities. With the exception of that parcel known as the Bayou des Familles property, this management unit lies entirely outside the "prohibited service" area jointly established by the U. S. Environmental Protection Agency and Jefferson Parish and noted by the U. S. Army Corps of Engineers. Therefore, the appropriate local or state coastal use permit will be required for all activities proposed for lands below five feet MSL and within the "prohibited service" area, unless the activity is otherwise exempted from permitting pursuant to State or Federal law or by final decision of State or Federal courts.

6. Policies for Uses in this Unit

The following policies should be employed, unless otherwise determined by the State Administrator, to mitigate adverse environmental impacts and to achieve the Public Policy declared in Section 213.2 of Act 361, as amended in 1979 and 1980.

- The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil should be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation

- Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site

- Upon abandonment, canals should be plugged using earthen plugs and riprap or other stabilizing material

- Stabilizing material should be used on areas of severe erosion along the length of canals

- Directional drilling should be used when appropriate to mitigate environmental impacts

- Pipeline corridors and existing canals should be used when appropriate

- Riprap or vegetation stabilization should be used instead of bulkheading

- All camps should have approved sanitary facilities.

DEVELOPMENTS OF PARISH-WIDE INTEREST AND CONCERN

A. New Mississippi River Bridges

Today, there are two Mississippi River bridges in the Greater New Orleans area. These existing bridges have been the major influence on increased residential and commercial development on the Mississippi River's West Bank in Jefferson Parish and are now congested during the morning and evening rush hours. A third Mississippi River bridge is under construction in St. Charles Parish near the western Jefferson Parish line. A fourth bridge is under construction in Orleans Parish near the eastern Jefferson Parish line. These two new bridges will more than double the mass transit and individual transportation capacities of river-crossing traffic and will spur increased residential and commercial development of Jefferson Parish's West Bank. A fifth bridge is currently being planned for the area of the existing Huey P. Long Bridge. This bridge will link east Jefferson with west Jefferson Parish.

B. Waterfront Ports

1. Mississippi River Port

Jefferson Parish includes part of the deepwater port of New Orleans on the Mississippi River which is under the authority of the Board of Commissioners of the Port of New Orleans. This Board's jurisdiction includes the river and the lands bordering it to the land side toe of the levees.

The New Orleans port is among the five largest ports in the world and is the largest port in the United States. Cargo coming into the port results in $100 million a year in U. S. Customs revenues, $25 million a year in Louisiana taxes, $7 million a year in city taxes, and $700 million a year in payrolls. Over 72,000 persons are employed directly for cargo movement. Other-port related industries in the area such as supplies, shipbuilding and ship repair are also large employers. Consequently, the port is a major source of economic stability for the area.

With the development of Centroport, the New Orleans Port will be expanding into the "Tidewater Area" of Orleans Parish, and it will provide jobs and greater economic development for the entire Greater New Orleans area. The Board has also authorized $200 million of port industrial revenue bonds for the construction of the Westwego Wharf and Agricomplex in Jefferson Parish. There will also be further expansion of the port upriver into Jefferson Parish thereby stimulating economic and population growth.

2. Lafitte-Barataria Port

At present, the port facilities of the Lafitte-Barataria area consist of docking, loading and ice house facilities along the banks of Bayou Barataria and its associated canals and bayous. There are private and public mooring facilities for vessels ranging from flat boats to gulf trawlers to barges.

State Act 182, House Bill 643 of 1976, established the Greater Jefferson Port Commission, a state entity to administer navigable waterways that do not exceed 15 feet in depth at mean low gulf within the limits of Jefferson Parish. This commission has no authority over publicly or privately-owned harbor or industrial facilities constructed on or adjacent to any navigable waterway that may have existed prior to the creation of the Port Commission. The Commission may regulate commerce and traffic within its jurisdiction, as well as construct or acquire and administer public wharves, docks, sheds, warehouses, elevators, landings, basins, locks, canals, rail facilities and other structures useful to commerce in the port area. The Commission is also to provide light, water, police protection and other services for its facilities as it may deem advisable. The state legislature may confer additional powers upon the Commission.

In accordance with State Act 561, House Bill 1541, the Greater Jefferson Port Commission has prepared a planning study for determining and developing needed shallow draft port facilities. The resulting report, "Preliminary Analysis of Port Facility Needs in Grand Isle, Lafitte and Barataria, Louisiana" states that the Lafitte-Barataria area needs docking facilities for large trawlers. Facilities along Bayou Barataria in the Lafitte-Barataria area are currently being considered.

According to the interim report, "Planning of Shallow Draft Port Facilities, Jefferson Parish, Louisiana", it is estimated that approximately 100 large trawlers are presently domiciled in the area and that many others need docking facilities for which their owners are willing to pay.

Industry observers expect that the number of large trawlers will increase in the future, because the larger boats are more efficient and better able to exploit the 200-mile fishing limit.

Assuming an irregular increase of new trawlers based on variation in yearly shrimp catch and ultimate saturation of the area, and assuming 75 percent of the new trawlers delivered after 1980 will need docking, the following prediction was made.

Year	New Trawlers	Total Trawlers	Trawlers Needing Docking
1981	15	129	74
1982	10	139	82
1983	20	159	97
1984	20	179	112
1985	10	189	120

*Growth averages approximately 10 percent per year

3. Grand Isle Port

At present, the port facilities of Grand Isle consist of docking and loading facilities along the north shores of Chenier Caminada and Grand Isle.

The Greater Jefferson Port Commission (GJPC), as explained above, administers to the navigable waterways in Jefferson Parish that do not exceed 15 feet in depth at mean low gulf. In accordance with State Act 561, House Bill 1541, the GJPC prepared a planning study for determining and developing needed shallow draft port facilities. The report stated that Grand Isle needs docking facilities for transient vessels and petroleum support bases. An estimated 70 to 80 yachts also need long-term reserved docking space. As with the Lafitte-Barataria area, the number of large trawlers in the area is expected to increase.

4. Louisiana Off-Shore Oil Port

A group of major oil companies have formed the Louisiana Off-Shore Oil Port, Inc. (LOOP) which is constructing a deepwater oil terminal in the Gulf of Mexico on Grand Isle Block 59, about 19 miles south of the mouth of Bayou Lafourche. The facility will consist of a central operations platform and three mooring bouys, which will be equipped to transfer the tankers' crude oil cargo to a pipeline. The pipeline will go ashore in Lafourche Parish, where the crude oil will be stored in the Clovelly Salt Dome.

LOOP is under the regulatory authority of the U. S. Coast Guard, U. S. Department of Transportation and Louisiana's Offshore Terminal Authority and is designated as a Special Area by Act 361. The Louisiana Department of Wildlife and Fisheries has been given the task of monitoring the port area and pipeline right-of-way for one year prior to operation and to continually monitor the area after the port is in operation or until it can be shown that the port has no effect on the surrounding environment. Pollution control and oil spill clean-up equipment will be maintained at the facility. Occasional minor oil spills are expected to occur which will be adequately cleaned using the equipment on site. If a severe oil spill would be associated with the superport, it would have severe impacts on the Gulf Coast, Caminada Bay and Barataria Bay. Arrangements must be made by LOOP, Inc. for the control of major oil spills.

This petroleum port is expected to greatly increase supplies of crude oil for processing by the refineries of Jefferson Parish, as well as the rest of Louisiana. Existing refineries and support industries can be expected to expand, creating new jobs and accelerating growth in the parish.

C. Airports

1. New Orleans International Airport

Between 1950 and 1970, there was a 1,000-percent increase in enplaned passengers serviced at the New Orleans International Airport. To meet these ever increasing needs, expansion plans for the New Orleans International Airport include an extension of the east-west runway into St. Charles Parish. This extension will also allow for fully-loaded take-offs for long haul transport.

2. Westwego Airport

Because of increased activity at Westwego Airport, the Federal Aviation Administration and the Louisiana Department of Transportation and Development, Office of Aviation, determined that the facility should be improved, however, the U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency have not agreed to sanction this improvement.

D. Recreational Areas

1. Jean Lafitte National Historical Park

The 8,600-acre Jean Lafitte National Historical Park is wholly located in the southern half of the Bayou Segnette Management Unit. A 12,000-acre "park protection zone", immediately north of the park, encompasses most of the remainder of the management unit. Although the national park will obviously overshadow all future development in the unit, it does not automatically assure the future environmental integrity of this area. The facilities for the park are currently being built.

2. Bayou Segnettte Park and Marina

This park is located at the headwaters of Bayou Segnette at Lapalco Boulevard. Facilities are expected to include a golf course, riding stables, picnic areas, a pavillion, a skeet range, nature areas, tennis courts, a football field, a baseball diamond, a cultural center, and a marina.

3. Jefferson Linear Park

Jefferson Parish has developed a linear park along the Lake Pontchartrain levee. The park includes bicycle, pedestrian and bridal pathways; picnic areas; fishing piers and boat launches.

4. Bucktown Marina

This marina will be located on Lake Pontchartrain at the Metairie Relief Outfall (17th Street) Canal. Plans include a breakwater, dock and piers to moor recreational and fishing vessels, dry boat storage areas, and a fishing pier/observation area.

5. Lafreniere Park

This park consists of 155 acres located near the intersection of David Drive and West Napoleon Avenue, at the site of the Old Jefferson Downs Race Track. The park provides facilities for boating, cycling, tennis, football, baseball, picnicing and other recreational activities.

6. Grand Isle State Park

The state park consists of 140 acres on the east end of Grand Isle and additional acreage on the west end. Facilities are included for seashore recreational opportunities such as swimming, boating, fishing, picnicing, and camping.

E. Utility Expansions and Improvements

1. Waterford III Electrical Plant

Although the Waterford Plant is located in St. Charles Parish, a 500 KV and a 230 KV aerial electrical transmission line will be installed and maintained across Cousins Canal, Bayou Verret and an unnamed waterway. The levees will extend primarily through wetlands from the Waterford Substation in the Town of Taft, St. Charles Parish, to the Churchill Switching Station near the City of Westwego, Jefferson Parish.

2. Marrero-Lafitte Waterline

The Marrero-Lafitte Waterline extends south from Lapalco Boulevard in Marrero to Lafitte, decreasing in diameter from 36 inches to 12 inches. The new waterline will provide adequate water supply for existing and commercial water use and adequate water flow for fire protection.

3. Wastewater Treatment Facilities Plan

Studies to improve the wastewater treatment facilities on the east and west banks have been prepared according to U. S. Environmental Protection Agency guidelines for facilities plans and their corresponding environmental impact statements under the 201 planning process. Improved sewerage treatment facilities will provide a higher quality of effluent which will retard further degradation of the wetlands and Lake Pontchartrain.

4. Water Quality Management Plan

A 208 Water Quality Management Plan has been completed for Louisiana. Jefferson Parish lies partly within the Pontchartrain Basin and partly within the Barataria Basin. Detailed plans for both basins have also been completed.

5. Drainage Improvements and Consolidation Plan for the West Bank

Jefferson Parish has a "Comprehensive Sewerage and Drainage Ordinance (No. 13127)" which meets all U. S. Environmental Protection Agency standards regarding federally funded sewerage treatment facilities. The ordinance regulates by restricting quantity and quality of all discharges into the sewerage and drainage systems of Jefferson Parish. This ordinance is enforced by the Environmental and Development Control Department and the Department of Public Utilities.

6. U. S. Highway 90 Improvements

U. S. Highway 90 on the West Bank is currently undergoing extensive improvements. Because this east-west artery already serves as a major transportation corridor on the West Bank, improvements to it will not increase the already maximum usage of the artery.

7. Solid Waste Management Program

Extensive efforts and cooperation are being exercised towards developing and maintaining an effective and efficient Solid Waste Management Program for Jefferson Parish. Landfills currently operating in Jefferson Parish and their permit status are as follows:

- Kelvin Tract Landfill, a fully permitted public facility located north of U. S. 90 near the St. Charles-Jefferson Parish line in the Avondale Management Unit

- Jefferson Disposal Landfill, a private facility with an interim permit. It is located north of U. S. 90 and West of the Kelvin Tract Landfill in the Avondale Management Unit.

SOCIOECONOMIC CHARACTERISTICS, TRENDS AND NEEDS OF JEFFERSON PARISH

A. Population Characteristics

The population of Jefferson Parish has shown a steady increase over the last 100 years from a mere 12,166 persons in 1880 to about 454,592 persons in 1980. In the last ten years, the population of the parish has increased by 34.4 percent (U. S. Department of Commerce, 1981).

The parish has six incorporated areas: the cities of Gretna and Westwego and the Towns of Jean Lafitte and Grand Isle on the west bank; the cities of Kenner and Harahan on the east bank. All six areas have shown population increases and are expected to continue to grow in population throughout the 1980s.

The Bureau of the Census populations for the cities and towns in Jefferson Parish, as of 1980 (U. S. Department of Commerce, 1981), are as follows:

Avondale, 6,699; Barataria, 1,123; Estelle, 12,724; Grand Isle, 1,982; Gretna, 20,615; Harahan, 11,384; Harvey, 22,709; Jean Lafitte, 936; Jefferson, 15,550; Kenner, 66,382; Lafitte, 1,312; Marrero, 36548; River Ridge, 17,140; Terrytown, 23,548; Timberlane, 11,579; Waggaman, 9,004 and Westwego, 12,663.

Additional detailed population characteristics for Jefferson Parish are given in Table IV-1.

A majority of the people in Jefferson Parish live on the East Bank in Harahan, Jefferson, Kenner, Metairie and River Ridge. The parish seat, Gretna, is located on the West Bank, as are the localities of Avondale, Barataria, Bridge City, Crown Point, Estelle, Grand Isle, Harvey, Lafitte, Marrero, Terrytown, Timberlane, Waggaman, Nine Mile Point and Westwego.

Much of West Jefferson is under water and the parish, as a whole, has a land area of only 347 square miles of a total of nearly 700 square miles. Using the 1980 census figures, this represents about 1,310.1 persons per square mile of land area.

Table IV-1
Population Characteristics of Jefferson Parish

Population and Area	1950	1960	1970	1980
Total Population	103,873	208,769	338,229	454,592
Rank among 64 parishes	4	4	2	-
Land area (square miles)	409	409	369	347
Population per square mile	254.0	510.4	916.6	1,310.1

Population by Ward	1950	1960	1970	1980
Ward 1	6,455	9,900	24,732	32,013
Ward 2	3,090	4,582	8,013	16,675
Ward 3	8,292	14,540	21,044	27,075
Ward 4	26,940	38,799	51,064	73,844
Ward 5	1,161	1,700	14,297	23,890
Ward 6	3,938	4,216	4,403	4,480
Ward 7	16,209	19,488	17,347	15,550
Ward 8	27,067	55,172	87,453	72,079
Ward 9	10,721	51,399	78,339	114,258
Ward 10	-	6,891	29,293	72,735
Ward 11	-	2,082	2,244	1,993

Urban-Rural Population	Total Population	Rural Population Farm	Rural Population Nonfarm	Urban Population	% Rural	% Urban
1950						
Parish	103,873	951	10,707	92,215	11.2	88.8
State	2,683,516	567,455	644,365	1,471,696	45.2	54.8
1960						
Parish	208,769	268	12,043	196,458	5.9	94.1
State	3,257,022	233,138	963,278	2,060,606	36.7	63.3
1970*						
Parish	338,229	43	13,793	323,507	4.2	95.8
State**	3,643,180	113,757	1,118,627	2,406,150	33.9	66.1

*Nonfarm and farm totals based on sampling only; may not add to total population.
**Corrected total of +1,874 persons not broken down by urban-rural.

Source: Public Affairs Research Council of Louisiana, Inc., 1973 and U. S. Department of Commerce, 1981.

B. Economic Characteristics

Jefferson's inclusion in the port of New Orleans, the Harvey Canal Industrial Complex, an abundance of natural resources, and a great diversity in economic activity have all contributed to the income in Jefferson Parish, which is comparable to that of other areas with similar living costs. As a result, the parish not only ranked first in per capita income among Louisiana parishes in 1975, but it was also the only parish to exceed the national average per capita income of $5,902.00 for that year. In 1977, Jefferson's per capita income increased to $6,960.00. Current trends in income and employment reflect the continuing growth and growing complexity of the area's economy.

The diversity of economic activity in Jefferson Parish reflects the variety of resources in the area, a variety conducive not only to economic development, but also to economic-environmental conflict. The diverse economic activities of the region include commercial fishing and trapping, recreational hunting and fishing, manufacturing, and oil and gas production and processing, as well as the usual retailing of goods and services found in urban and suburban centers.

Throughout its history, Louisiana's pre-eminance in the fishing industry is directly attributable to Louisiana having the most extensive marsh and estuarine region in the world, including one-fourth of the total estuarine acreage in the United States. Four of the top six commercial fishing ports in the United States, in terms of total fish weight, are located along the Louisiana coast. Commercial landings in Louisiana in 1978 totaled nearly 1.68 billion pounds that year. In 1981, although the catch was lower, it also amounted to almost one-fourth of all fish caught by U. S. fishermen (Thompson, 1982).

Today, fishing continues to be a vital factor in Jefferson Parish's economy and culture. In 1977, fisheries landings for Jefferson Parish amounted to over $1.75 million (Table IV-2). In 1981, the commercial fishery landing in Jefferson Parish for the Lafitte-Barataria and Grand Isle areas alone was 21.8 million pounds valued at $28.6 million (Thompson, 1982). If, however, Jefferson Parish continues to lose wetlands vital as nursery and fishing grounds, the parish will soon begin to experience a serious decline in commercial and recreational fisheries.

Louisiana trappers enjoyed a productive season in 1976-77, taking a record of 3.25 million pelts worth over $24 million. Economically, the most important furbearers in Louisiana are nutria and muskrat. Over 1.5 million nutria pelts were taken in 1976-77 and 740,000 muskrat pelts were sold. In addition, the meat of those two animals was sold to supply pet food and fertilizer producers. The future of the fur industry, however, is now threatened by urbanization from the north and saltwater intrusion from the south. Unless various programs are implemented to mitigate the rapid destruction of freshwater habitats, the fur industry will suffer a serious decline.

Table IV-2
1977 Fisheries Landings for
Jefferson Parish

Species*	Pounds	Dollar Value**
Catfish	49,417	17,864
Croaker	108,160	16,103
Drum, Black	40,040	5,190
Drum, Red	74,770	25,688
Flounder	39,840	13,360
King Whiting	17,933	2,166
Catfish (Saltwater)	13,226	1,707
Trout, Speckled	57,982	29,390
Trout, White	12,840	1,618
Sheepshead (Saltwater)	10,989	1,074
Spanish Mackerel	1,679	724
Shrimp	19,961,230	15,901,339
Oysters (Private, Spring)	391,353	391,204
Oysters (Private, Fall)	139,863	186,797
Sawfish	9,009	450
Snapper, Red	1,299	784
Mullet	1,387	136
Crabs (Hard)	2,329,491	521,980
Crabs (Soft)	152,985	382,559
Sharks	200	12
Tripletail	454	45
Pompano	136	127
Total	23,414,233	$17,500,317

Note: *Menhaden landings were not available.

**Lafitte-Barataria landings accounted for $13 million.

Source: Computed from National Marine Fisheries Service's Raw Data Sheets.

Manufacturing has become a vital part of the parish's economy with ship building constituting a major portion of the area's manufacturing industry. This activity ranges from small fishing boats built along the Barataria Waterway to the large ocean-going vessels constructed at Avondale Shipyards.

The oil and gas industry has grown rapidly in recent years due to increased offshore activity. Recent statistics from the Louisiana Department of Employment Security show that the oil and gas industry has had an average annual 2.0 percent increase in the number of total jobs generated since 1970. Oil and gas activities have substantially increased population and employment within the parish. Between 1967 and 1974, Outer Continental Shelf employment almost quadrupled and the relative population nearly tripled.

Detailed income and employment characteristics for Jefferson Parish are given in Tables IV-3 and IV-4, respectively. Information on state severance tax collections for Jefferson Parish and assessment data are given in Table IV-5.

C. Land Use Trends

According to projected expansions of major land developments, Jefferson Parish may expect a very substantial growth through 1985. Residential growth is expected to consume the greatest portion of the estimated acreage needed. The West Bank of the parish is the most likely area for this development. There are approximately 7,000 acres of land in this vicinity. Most of this land is in the upper portion of the parish near the St. Charles boundary. The remainder is scattered throughout the southern portion of the parish. Commercial and service activities are expected to require 1,400 acres for expansion by 1985. Approximately 500 acres of development can conservatively be projected for the West Bank. On the East Bank, most of the commercial and service activities will probably locate in the recently opened area between Airline and Jefferson Highways known as the Elmwood Development. Although no specific projections have been made on industrial growth, it is likely that it would occur along the corridors on both sides of the river. Transportation, communications and utilities will consume additional acreage in order to accommodate the residential expansions.

The East Bank of Jefferson Parish is mostly developed and essentially unable to absorb large population increases. By 1985, prime developable land on the West Bank will be scarce. Consequently, all these expanding uses of the coastal zone for industrial and commercial development, water resources development, recreation, tourism, urbanization and transportation will create conflicts among the many different uses of the parish's wetlands. It is the purpose of coastal zone management to establish the guidelines to resolve these conflicts and to assure the compatibility of multiple uses in the coastal zone.

Table IV-3

Income Characteristics of Jefferson Parish

Families at Various Income Levels	1959 Number	1959 % of Total	1969 Number	1969 % of Total
All families	50,966	100.0	84,099	100.0
Under $1,000	1,575	3.1	1,951	2.3
$1,000-$1,999	2,779	5.5	1,978	2.4
$2,000-$2,999	3,539	7.0	2,515	3.0
$3,000-$3,999	4,804	9.4	2,825	3.4
$4,000-$4,999	5,620	11.0	3,332	4.0
$5,000-$5,999	6,795	13.3	4,002	4.7
$6,000-$6,999	6,082	11.9	4,661	5.5
$7,000-$9,999	11,938	23.4	19,249	22.9
$10,000 and over	7,834	15.4	43,586	51.8
Income not reported	--	--	--	-
Below poverty level *	Not Available		7,176	8.5

*The U. S. Bureau of the Census established the poverty level for all families at $3,388 annually.

Percent of Families With Incomes Under $3,000 and $10,000 and Over	Percent of Total Under $3,000 1959	Percent of Total Under $3,000 1969	Percent of Total $10,000 and Over 1959	Percent of Total $10,000 and Over 1969
Parish	15.5	7.7	15.4	51.8
Louisiana	35.6	18.9	9.9	33.6
United States	21.4	10.3	15.1	47.3

Median Income	1959 Amount	1959 Rank**	1969 Amount	1969 Rank**
Families				
Parish	$ 6,061	1	$10,235	1
Louisiana	4,272	41	7,530	43
United States	5,660		9,590	

**Parish ranked among other parishes; Louisiana ranked among the other states.

Median Earnings of Selected Occupation Groups	1959	1969
Male, total with earnings	$5,083	$8,259
Prof., mgrs., & kindred	7,052	11,041
Craftsmen, foremen & kindred	5,389	8,479
Operatives & kindred	4,314	6,990
Laborers, except farm	2,465	4,347
Female, total with earnings	$2,063	$3,658
Clerical & kindred	2,847	4,156
Operatives, including transport	1,675	3,116

Source: Public Affairs Research Council of Louisiana, Inc., 1973.

Table IV-4

Employment Characteristics for Jefferson Parish

Employed by Major Industry	1950 Number	1950 Percent	1960 Number	1960 Percent	1970 Number	1970 Percent
Total	35,528	100.0	69,322	100.0	122,345	100.0
Agriculture, forestry & fisheries	1,001	2.8	850	1.2	1,129	0.9
Mining	1,017	2.9	2,956	4.3	4,810	3.9
Construction	3,054	8.6	6,322	9.1	10,608	8.7
Manufacturing	8,765	24.7	14,587	21.0	19,323	15.8
Furniture*	732		395		325	
Primary and fabricated metal	706		1,605		2,830	
Machinery	199		666		870	
Elec. machinery	45		267		299	
Motor vehicles	27		52		0	
Transport equip.	709		1,667		4,841	
Other durables	257		1,243		1,995	
Food & kindred	1,742		2,904		2,606	
Textile mill and apparel	574		452		684	
Printing, publishing	335		671		1,033	
Chemical	565		1,367		1,546	
Other nondurable	2,841		3,298		2,294	
Railroad	1,310	3.7	1,572	2.3	1,587	1.3
Trucking service	442	1.2	1,113	1.6	1,695	1.4
Other transport.	2,187	6.2	3,438	5.0	5,667	4.6
Communications	523	1.5	1,170	1.7	2,321	1.9
Utilities & sanitary	678	1.9	1,219	1.8	2,961	2.4
Wholesale trade	1,995	5.6	3,896	5.6	9,270	7.6
Food & dairy	1,332	3.7	2,075	3.0	3,719	3.0
Eating & drinking	1,439	4.1	2,141	3.1	3,530	2.9
Other retail	3,181	8.9	7,188	10.4	6,339	5.2
Finance, ins. & real est.	1,096	3.1	3,556	5.1	4,957	4.1
Business and repair service	924	2.6	2,111	3.1	4,819	3.9
Private households	951	2.7	1,953	2.8	1,139	0.9
Other personal service	860	2.4	1,805	2.6	3,745	3.1
Entertainment	745	2.1	569	0.8	1,206	1.0
Hospitals	983	2.8	1,723	2.5	4,012	3.3
Education	829	2.3	2,810	4.0	7,528	6.2
Other prof. service	412	1.2	2,165	3.1	3,528	2.9
Public administration	1,399	3.9	3,011	4.3	5,797	4.7
Other	405	1.1	1,092	1.6	12,655	10.3

*Includes lumber and wood products.

Class of Employed Worker In Labor Force	1960 Number	1960 Percent	1970 Number	1970 Percent
Employed in agriculture:	346	100.0	787	100.0
Wage & salary workers	122	35.3	517	65.7
Government workers	0		0	
Self-employed workers	208	60.1	266	33.8
Unpaid family workers	16	4.6	4	0.5
Employed in nonagricultural industries:	68,976	100.0	121,558	100.0
Wage & salary workers	55,227	80.1	97,874	80.5
Government workers	6,909	10.0	15,828	13.0
Self-employed workers	6,582	9.5	7,454	6.1
Unpaid family workers	258	0.4	402	0.4

. . .Continued

Table IV-4 (continued)

Employment Characteristics for Jefferson Parish

Employment Status	1960		1970	
	Male	Female	Male	Female
Total pop. (all ages)	103,519	105,250	165,499	172,069
Persons 16 and over*	63,925	67,742	103,923	112,766
In labor force**	52,764	19,894	85,201	41,847
Employed	50,402	18,920	82,441	39,904
Unemployed	2,362	974	2,760	1,943
Not in labor force	11,161	47,848	17,970	70,899
In school	5,520	5,822	7,042	8,002
Inmates of institutions	135	66	336	221
65 and over	2,589	4,508	4,930	8,896
Other	2,917	37,452	5,662	53,780

*1960 census reported on persons 14 and over.
**Excludes military personnel.

Major Occupation Group	1950		1960		1970	
	Male	Female	Male	Female	Male	Female
Total	27,225	8,303	50,402	18,920	82,441	39,904
Prof., tech. & kindred	1,971	959	5,374	2,569	12,210	6,997
Farmers & farm mgrs.	179	10	114	8	135	10
Mgrs., officials & props.	3,828	488	8,204	955	11,856	1,773
Clerical & kindred	2,312	2,517	4,376	6,760	7,617	17,354
Sales workers	1,736	788	3,943	1,977	7,584	3,580
Craftsmen, foremen & kindred	5,704	80	11,044	140	19,454	534
Operatives & kindred	5,440	1,257	9,236	1,492	8,649	1,704
Private household	36	828	56	1,780	49	1,248
Service workers except private household	1,474	1,091	2,414	2,560	4,887	6,146
Farm laborers	155	18	54	16	163	39
Laborers	4,142	143	4,517	128	5,110	423
Other	248	124	1,070	535	4,727	96

Source: Public Affairs Research Council of Louisiana, Inc., 1973.

Table IV-5

State Severance Tax Collections and Assessment Data for Jefferson Parish

STATE SEVERANCE TAX COLLECTIONS WITHIN PARISH

Fiscal Year	Total Amount	Percent Oil	Percent Gas	Percent Other
1966-67	$ 4,743,409	80.2	17.0	2.8
1967-68	5,597,972	82.5	14.8	2.7
1968-69	5,677,135	82.1	15.9	2.0
1969-70	5,370,402	80.4	17.6	2.0
1970-71	5,546,160	77.4	20.0	2.6

ASSESSMENT DATA

Year	Total Assessed Value of Parish	Percent Increase Over Previous Year
1961	$155,674,331	6.1
1962	164,314,724	5.6
1963	173,815,645	5.8
1964	188,776,975	8.6
1965	212,024,960	12.3
1966	248,362,163	17.1
1967	288,651,693	16.2
1968	289,246,636	0.2
1969	296,114,657	2.4
1970	319,732,683	8.0
1971	341,126,732	6.7
Overall increase 1961-71:	$ 185,452,401	119.1

Source: Public Affairs Research Council of Louisiana, Inc., 1973.

D. Management Unit Populations and Land Use Trends

Population and land use trends for each management unit are given in Section II.

E. Projected Plans of Local, State and Federal Agencies which will affect Future Land Use in Jefferson Parish.

The projected plans of local, state and federal agencies which are likely to have the greatest impact on the future land use of Jefferson Parish include various pumping stations, levee alignments and a national park as shown in Figure IV-1.

• Prohibited Service Area. By the passage of Resolution No. 37936 dated 24 October 1979, Jefferson Parish agreed that it would not provide water service from the Marrero-Lafitte Waterline to an EPA - established "prohibited service area" (Figure IV-1) without prior approval of the U. S. Army Corps of Engineers and the U. S. Environmental Protection Agency in order to control development in adjacent wetlands.

The prohibited service area is that area west of the West Bank Hurricane Protection Levee line as proposed by the U. S. Army Corps of Engineers to Jefferson Parish by letter of 17 September 1979. The levee runs from the intersection of the West Bank Expressway and Bayou Segnette, then approximately meandering south and east, outside the Westwego Airport, easterly to and along the Millaudon Canal, westerly to the proposed Jefferson Parish Ames pump station, around the Oak Cove subdivision, then southeasterly paralleling and west of Louisiana Highway 45, to that highway's intersection with the V-levee, along the V-levee southeasterly to a point approximately 0.3 miles above the point of the V-levee, then southerly to the Gulf Intracoastal Waterway (Bayou Barataria) along the right-of-way of the Jean Lafitte National Park, all as more specifically described in the 17 September 1979 Corps proposal to Jefferson Parish.

The prohibited service area also includes that area north and east of a line beginning at the intersection of Bayou des Familles and Bayou Barataria east of Crown Point, then following Bayou des Familles north and west to the right-of-way of the new Louisiana Highway 45, then north to the V-levee, then east and north around and along the V-levee to the Estelle Pump Station, then east along a canal to Bayou Barataria.

This prohibited service area is contingent upon the final location of the proposed hurricane protection levee, the final decisions concerning the blockage of Bayou des Familles and Bayou Aux Carpes at or above their intersection with Bayou Barataria, and the installation of a pump station at Bayou Barataria. In the event that the hurricane protection levee, which is finally implemented, is different from that described herein (Figure IV-3) Jefferson Parish should renegotiate the prohibited service area with the Corps and EPA.

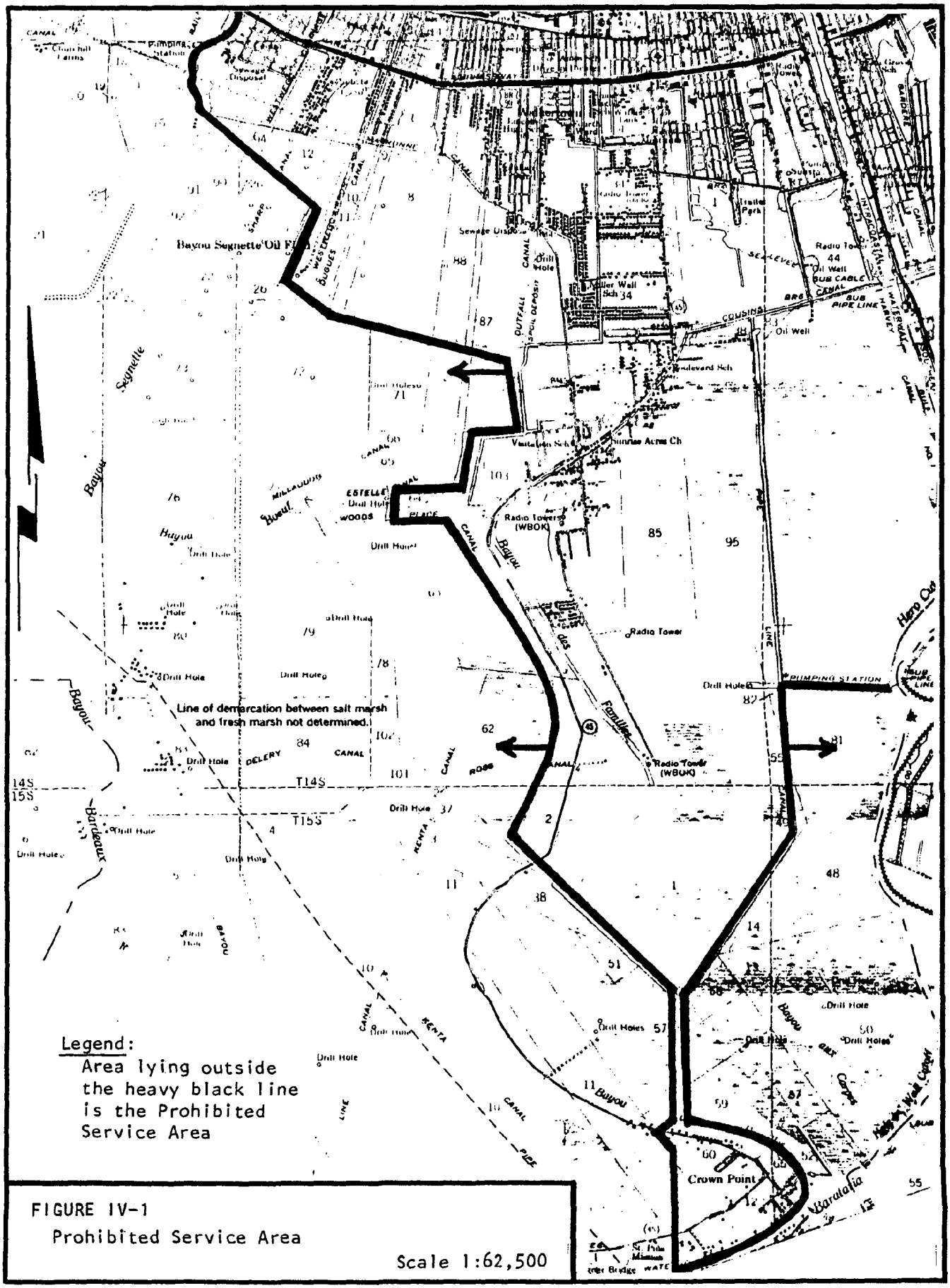


FIGURE IV-1
Prohibited Service Area

• Jean Lafitte National Historical Park. Provisions for implementing the development of this park are provided in Public Law 95-625. The park consists of an 8,600-acre "core area" and is buffered on the north by a 12,000-acre "park protection zone" (Figure IV-2).

Jefferson Parish and the National Park Service are developing "Guidelines for Development and Use of Properties in the Park Protection Zone of the Barataria Unit - Jean Lafitte National Historical Park". Once those guidelines are adopted by the Jefferson Parish Council, they will provide an important management tool for that area.

• West Bank Hurricane Protection Levee. This project was authorized by Jefferson Parish Resolution No. 39601. A Section 10 and Section 404 permit application to construct a hurricane protection levee (Figure IV-3) was filed with the U. S. Army Corps of Engineers in October, 1980. A Coastal Use Permit application was also filed with the Coastal Management Section of the Louisiana Department of Natural Resources. Several alternative alignments were proposed. In July, 1981, the intent to prepare a draft environmental impact statement (EIS) for the levee was published in the Federal Register.

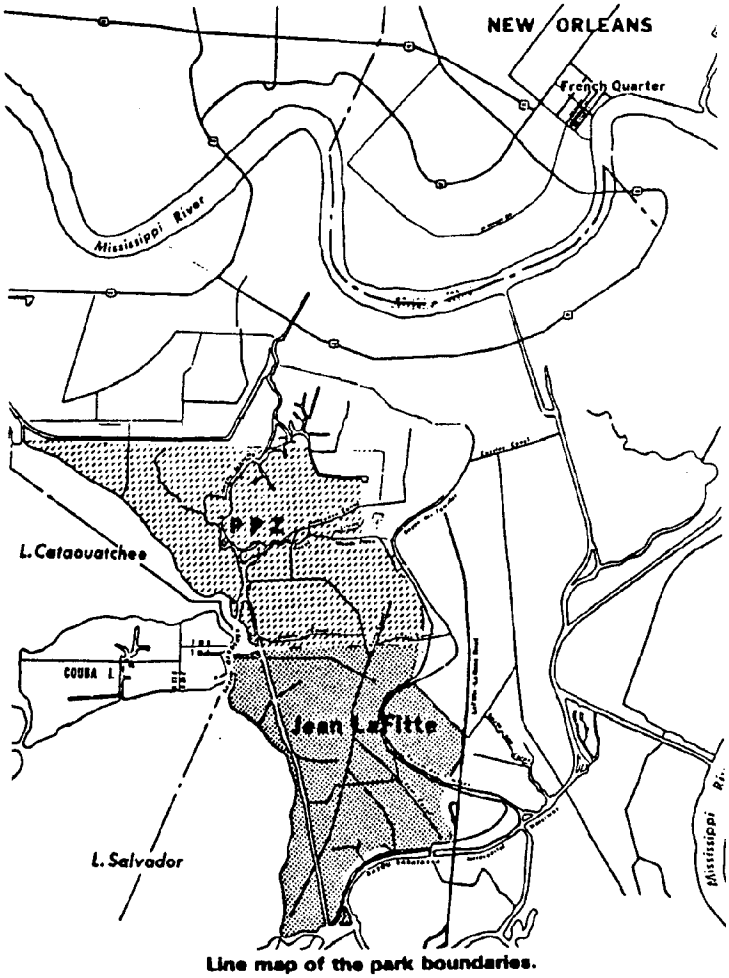
According to the EIS Scoping Document dated 13 August 1981, the Jefferson Parish Council proposed to construct a hurricane protection levee which would extend from the intersection of Bayou Segnette and the West Bank Expressway, variously south and eastward to the Ames Pumping Station which is now being relocated at the southern end of the Outfall Canal. On the other side of the Millaudon Canal, it would connect with the existing partially-completed levee surrounding the site owned by the Bayou des Familles Development Corporation. The proposed levee would follow this alignment southwest, southeast, and then southward to its intersection with the boundaries of the Jean Lafitte National Historical Park. At this point, it would follow the northeastern edge of that boundary southeastward to join with the existing V-shaped levee system at a point slightly to the east of Louisiana Highway 45. Its purpose is to provide protection from hurricane storm surges for the communities of Westwego, Marrero, and Harvey.

The proposed levee would be approximately 62,060 feet long and 60 feet wide. All materials would be dredged from a cut made within the right-of-way outside of the leveed area. The right-of-way would be cleared to allow access for levee maintenance and repair.

Control structures or floodgates would be used to allow interchange of water between the wetlands on both sides of the levee within the segment surrounding the Bayou des Familles Development site.

The levee would protect approximately 170,000 residents of the West Bank of Jefferson Parish from hurricanes. The levee system would also determine the limits of future development on the West Bank.

In 1984, the Corps offered Jefferson Parish a permit for Alternative E (modified). The Parish did not accept the permit.



PPZ = Park Protection Zone

FIGURE IV-2 Jean Lafitte National Historical Park

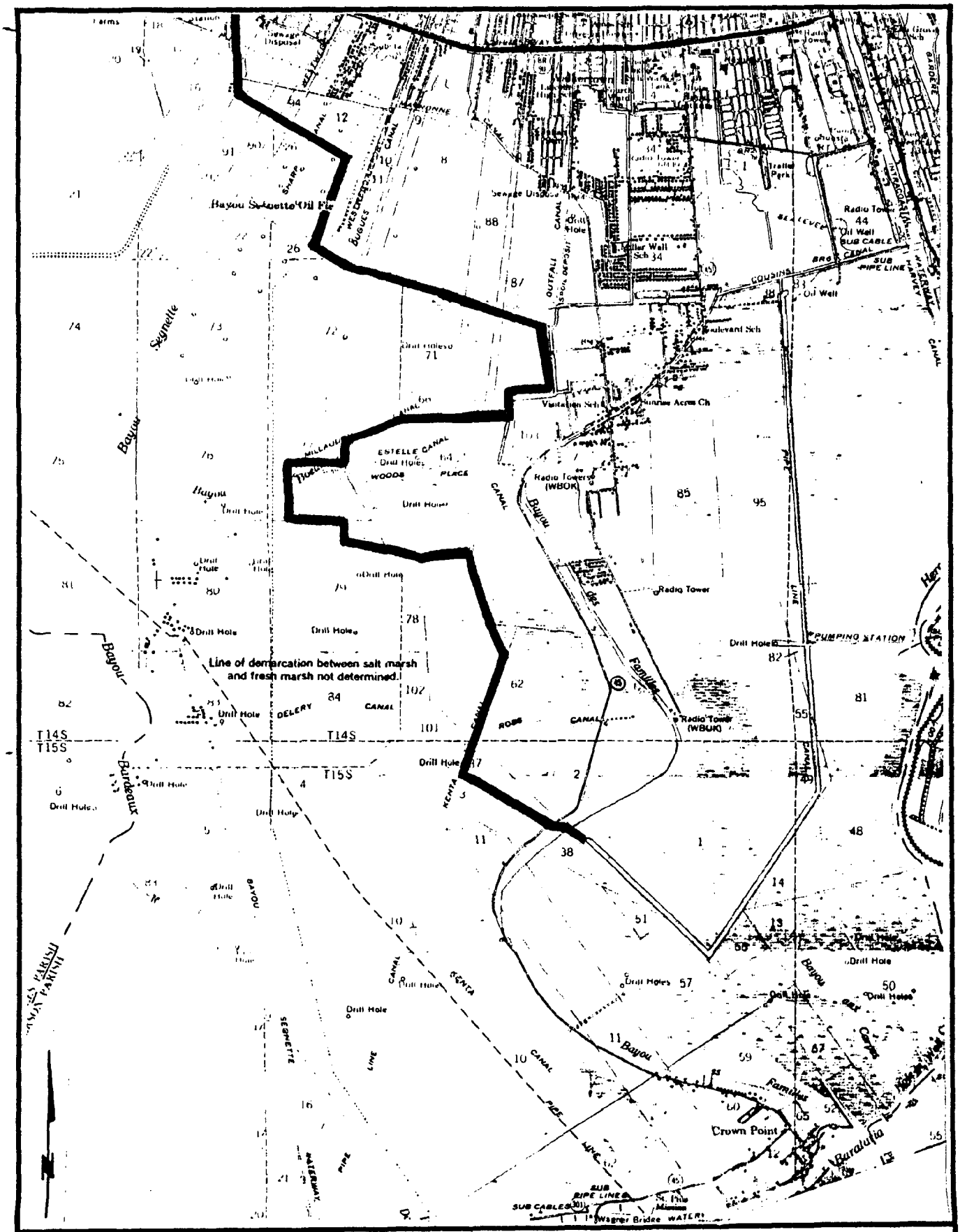


Figure IV-3 West Bank Hurricane Protection Levee

Scale 1:62,500

• Growth Limit Line. On 7 March 1979, Jefferson Parish adopted Ordinance No. 13795, which created a growth limit line south of Crown Point. This ordinance, which became effective on 19 March 1979, was adopted primarily as a mitigative measure to lessen the possible perturbations associated with the final implementation of the Marrero-Lafitte Waterline.

Outside the Growth Limit Line, only the following uses are allowed (contingent upon acquisition of all appropriate federal, state and local permits): trapping, hunting, fishing, agriculture, aquaculture, animal grazing, recreational structures and oil, gas and other mineral activities.

The Growth Limit Line begins at the intersection of the levee south of Rosethorn Park on the west side of Fleming Canal and the south side of Bayou Barataria, then follows southerly along the existing levee a distance of approximately 2,405 feet, then southwesterly along the existing levee a distance of approximately 2,695 feet, then westerly along the existing levee a distance of approximately 1,660 feet, then northwesterly along the existing levee a distance of approximately 1,850 feet, then southwesterly along the existing levee a distance of approximately 2,770 feet, then northwesterly along the existing levee a distance of approximately 4,800 feet and approximately 925 feet south of Louisiana Highway 303, then southwesterly approximately 4,430 feet and approximately 1,845 feet south of Louisiana Highway 45, then southwesterly to the junction of the Fisher School levee at the Fleming Canal 1,014 feet east of Louisiana Highway 45, then southeasterly along this levee a distance of 4,985 feet and approximately 1,100 feet east of Louisiana Highway 45, then southerly approximately 1,100 feet east of Louisiana Highway 45, a distance of approximately 735 feet, then southwesterly approximately 1,290 feet and approximately 360 feet east of Louisiana Highway 45, then southeasterly along the edge of the oak ridge, which ridge is approximately 360 feet east of Louisiana Highway 45 a distance of approximately 15,510 feet to a point just north of Goose Bayou which point is 360 feet east of Louisiana Highway 45, then easterly a distance of approximately 1,775 feet, then southerly along the existing levee which levee varies a distance of between 2,500 feet and 4,000 feet east of the east shore line of Bayou Barataria a distance of approximately 19,950 feet, then westerly and northerly along the existing levee on the east side of Barataria Bay Waterway a distance of approximately 10,895 feet to a point near the Marrero pumping station, then from a point on the west side of Barataria Bay Waterway and the north side of Bayou Rigolettes northerly along the existing levee which levee varies a distance of approximately between 300 feet and 3,300 feet west of the west shore line of Bayou Barataria, a distance of approximately 11,265 feet, then along the existing levee around the end of a pipe line canal a distance of approximately 1,850 feet, then northerly along the existing levee, which levee is a distance of approximately 2,025 feet west of the west shore line of Bayou Barataria a distance of approximately 1,850 feet, then easterly along the existing levee, a distance of approximately 550 feet,

then northerly along the existing levee, a distance of approximately 1,100 feet, then westerly along the existing levee a distance of approximately 500 feet, then northeasterly along the existing levee, which levee varies a distance of approximately between 2,215 feet and 550 feet west of the west shore line of Bayou Barataria, a distance of approximately 8,500 feet, then in a westerly direction along the existing levee a distance of approximately 1,850 feet, near the Pailet Canal pump, then along the existing levee around a branch canal on the north side of the Pailet canal a distance of approximately 2,585 feet, then northwesterly along the existing levee, which levee is approximately 3,325 feet west of the west shore line of Bayou Barataria, a distance of approximately 6,650 feet, then northwesterly along the existing levee a distance of approximately 2,770 feet, then northeasterly along the existing levee a distance of approximately 2,950 feet to the end of the boundary of the Barataria-Lafitte area.

PROBLEMS AND ISSUES AFFECTING JEFFERSON'S COASTAL RESOURCES

A. Diminishing Water Quality

Diminishing water quality is a widespread problem throughout the coastal zone. It leads to the development of nuisance algal blooms, the decline of desirable commercial and sports fishery species, and diminished recreational usefulness of water bodies. The major sources of diminished water quality are urban runoff, domestic sewerage, and agricultural runoff. Urban runoff, mixed with industrial wastes, is a significant source of pollution from our urban areas. Impermeable paved surfaces increase the surface runoff, allowing quicker, more direct introduction of wastes from streets into the surrounding wetlands. Domestic wastes are becoming an increasing problem due to inadequate treatment and population growth. Agricultural runoff results in large quantities of sediment erosion, chemical fertilizers, and animal wastes entering the lakes and estuaries.

Over the past 50 years, the population in Lake Pontchartrain's drainage basin has tripled. Consequently, many of the natural streams and drainage canals which bring freshwater into the lake also serve as conduits for domestic wastes and fertilizer residues rich in nutrients. The worst area of pollution is along the south shore adjacent to the metropolitan areas. The south shore waters are characterized by high nutrient and coliform content. Jefferson Parish once contributed approximately 32% of the total nutrient load entering Lake Pontchartrain from the greater New Orleans area (Craig and Day, 1977).

When Jefferson Parish was initially developing, wastes were treated by individual septic tanks. In an area where the water table is almost at the surface, canals dug to drain the growing suburban areas became, during dry summer months, little more than raw sewerage conduits, and, even during the cooler months, the condition of the canals was deplorable. Today, most domestic wastes in the parish are collected and treated in 21 sewerage treatment plants: 14 are on the West Bank and 7 are on the East Bank. These plants have not, however, solved the sewerage disposal problems in Jefferson Parish. Because of the subsidence problems in the Parish, some sewer lines have been broken and, thus, discharge their untreated contents into the storm drainage system. Also, because of the population growth in the parish, the sewerage treatment plants can no longer handle the volume of sewerage produced during peak flow periods, leaving the plant operators with no alternative, but to release the sewerage with minimal or no treatment into the storm drainage system.

Water Quality can be controlled, and the trend toward poorer quality is reversible. One step towards this goal is the parish's planned treatment of domestic wastes. With grants available under Section 201 of Public Law 92-500, the parish is consolidating its wastewater treatment facilities on both the East Bank and the West Bank. These new facilities will solve the capacity problems faced by the present plants. The new plants will discharge into the Mississippi River and will relieve the current waste loads going to Lake Pontchartrain and the Barataria Bay Estuary. The plan also calls for the repair of broken sewer lines, which will further improve water quality in the drainage canals.

B. Land Loss

Land loss in some parts of Jefferson Parish has been shown by Gagliano et al. (1981) to be over one-half percent per year. Land loss in Jefferson Parish and throughout the lower Barataria Basin is attributed largely to natural processes associated with a deteriorating delta mass. The problem has been further complicated by man's activities, primarily through the modification of natural drainage patterns. By 1900, artificial flood control levees were constructed along the Mississippi River and Bayou Lafourche and, in 1904, Bayou Lafourche was artificially dammed. These practices stopped virtually all riverborne sediments and freshwater from entering the Basin, where they were critically needed for maintenance. Thus, the land building processes in this area have stopped, while natural processes of land loss have been increased by man's activities.

The problem of land loss in the parish can be divided into four major categories: subsidence, saltwater intrusion, dredge and fill operations, and coastal retreat. While it is impossible to assign values to all these components, some quantification can clarify historical trends in land loss and yield some insights into probable causes.

A study was performed to determine the rates of land loss at 14 sample areas throughout the Barataria Basin (Adams et al., 1976). The study showed that man's activities have affected all areas within the basin and the sample areas were classified as lightly, moderately or heavily influenced by man. The results showed a wide range of marsh deterioration or gain rates. Variability within and among marsh types and the three time periods (1959-60, 1970, and 1973-74) was high. Annual rates by percentages for each of the test sites are presented in Table V-1.

Since there was considerable variation of land loss rates for test sites within the same vegetation zone, the highest and lowest annual values are presented below (percentages were converted to acres):

salt marsh, 1,262.4 to 959.3 acres/year lost;

brackish marsh, 3,872.0 to 1,299.2 acres/year lost;

fresh marsh, 1,376.0 to 876.8 acres/year lost;

total combined marshes, 6,510.4 to 4,135.3 acres/year lost.

TABLE V-1

Rates of Deterioration by Marsh Types within the Barataria Basin

Sample Areas	% Annual Land Loss/Gain	Acres/Annual Loss or Gain	Total Acres Loss or Gain Sample Period	Period
Saline Marsh				
Eastern Barataria (lightly/moderately)	-0.58	-53.5	-749	1960-74
Central Barataria (lightly/moderately)	-0.31	-27.9	-391	1960-74
Western Barataria lightly/moderately)	-1.72	-12.8	-218	1960-73
Central Barataria (heavily)	0.58	-34.7	-487	1960-74
Brackish Marsh				
Eastern Barataria (lightly/moderately)	-0.78	-75.32	-979	1961-74
Central Barataria (lightly/moderately)	-1.86	-128.00	-1,664	1961-74
Western Barataria (lightly/moderately)	-1.89	-77.16	-1,389	1956-74
Eastern Barataria (heavily)	-1.09	-44.40	-710	1958-74
Central Barataria (heavily)	-0.63	-60.10	-781	1961-74
Intermediate Marsh				
Eastern Barataria (lightly/moderately)	-0.56	-89.2	-1,043	1961-74
Western Barataria (lightly/moderately)	-0.57	-41.6	-499	1962-74
Central Barataria (heavily)	-0.45	-48.2	-627	1961-74
Fresh Marsh				
Western Barataria (lightly/moderately)	-1.01	-85.9	-1,031	1961-74
Central Barataria (heavily)	+0.19	+10.0	+90	1965-74

Note: These rates apply only to those years for which data were analyzed.

Source: Adams et al., 1976.

The long term land loss computations (1890-1960) presented by Gagliano and van Beek (1970) were digitized by vegetation and management unit for comparison with the short-term rates presented above. They indicated changes as follows:

salt marsh, 818 acres/year lost;
brackish marsh, 901 acres/year lost;
fresh marsh, 188 acres/year lost; and
total combined marsh, 1,907 acres/year.

These figures indicated an increasing erosion rate ranging from 150 percent to over 300 percent, depending on whether the conservative or highest figures from the short-term study are used. This increased erosion rate is expected because of the geologic processes associated with deterioration of the delta mass that forms the framework for this basin.

Although the Mississippi River plays an indirect role in the conditions existing within the Barataria Basin, the river's disassociation is the dominant factor affecting the basin's marshes. Leveeing the river contained the freshwater and stopped the natural silt build-up which historically replenished the marshes. It is now essential that the impacts of various natural processes and man's activities be understood, in order to effectively formulate management practices that will allow for the multiple use of our wetland resources while minimizing adverse impacts.

C. Land Subsidence

Subsidence is one of the most critical problems in the coastal zone. Combined with wave attack and loss of river-borne sediment supply, it constitutes the primary cause of severe land loss in the marshlands and landward retreat of the coastline. With the exception of mud lump emergence near major passes to the mouth of the Mississippi River and some possible salt-dome displacement, all natural vertical movement in the region is associated with subsidence processes. The causes of subsidence are highly complex; some of the factors that contribute to the lowering of the land surface relative to sea level follow:

- Global sea level has generally risen throughout the present geologic period. The present estimate is 0.32 feet per century.

- Down warping of the coast has been caused by sedimentary loading. The greatest down warping along Louisiana's coast has occurred beneath the present birdfoot delta of the Mississippi, where as much as 1,000 feet of sediment have accumulated.

- There are several dewatering processes that cause soil consumption including the following:

- Consolidation of underlying sediments can be caused by the weight of surface features such as natural levees, beaches, artificial levees (particularly when they are built over weak compressible foundations), buildings, land fills, and other similar structures.

- Artificial lowering of the water table through "reclamation" practices that employ diking, water control structures, and drainage of lands for agriculture and flood protection have resulted in subsidence.

- Although extraction of minerals, hydrocarbons and water from salt domes and other subterranean reservoirs is known to have resulted in subsidence, there has been little research in coastal Louisiana relating extractive processes to subsidence. It is noteworthy that the Lafitte and Perot Oil and Gas Fields, two of the largest in the Basin, are centered over one of the worst subsidence areas that forms a distinct band between the two fields. Such observations indicate that a better understanding of the relationships between extraction and subsidence in southeast Louisiana is necessary.

- Inadequate construction techniques in areas with high subsidence potential have caused severe problems locally. Homes have exploded after foundation subsidence ruptured gas lines and allowed pockets of natural gas to collect under slabs.

- Other phenomena and activities that contribute to subsidence through dewatering include extended drought periods, oxidation and hydration, wind erosion, marsh burning, and marsh buggies, which compact underlying material leaving permanent scars.

The interrelated complexity of the subsidence problem makes estimating rates of subsidence extremely difficult. In Jefferson Parish, in any given locality, all of the above subsidence processes may occur simultaneously or in various combinations. In addition, sediment texture and composition vary greatly from place to place and each type responds differently to loading. Because of the complexity and severity of the problem, subsidence potential should be considered with any management plans.

D. Saltwater Intrusion

The following account is based on Adams et al. (1976) and Van Sickle et al. (1976). The rapid intrusion of saltwater into estuaries of the Barataria Basin is one of man's greatest environmental impacts. By leveeing the Mississippi River and damming Bayou Lafourche, the Basin's two major sources of freshwater were removed, leaving precipitation as the only major source of freshwater for the area. Without these two major suppliers of freshwater, saltwater from the Gulf of Mexico began to intrude into freshwater marshes and swamps.

Another major contributor to saltwater intrusion has been the dredging of large transportation waterways such as the Gulf Intracoastal Waterway, the Barataria Bay Waterway, and numerous oil and gas-well-access and pipeline canals. These canals allow a faster, deeper penetration of the saltwater into previously freshwater habitats. Natural forces such as hurricanes, storms and tidal surges also contribute to saltwater intrusion by increasing erosion thereby widening and deepening the passes between the barrier islands.

Although the Gulf of Mexico is the main source of saltwater, high salinity brines, which are discharged in the production of gas and oil and which sometimes represent 58 to 99 percent of the well products, contribute large amounts of salt per day to our marshes.

Over the years, the advance of saltwater into freshwater areas has been demonstrated by the inland movement of oyster beds. The optimum salinity range for oyster production is 5 to 15 parts per thousand salt. In the early 1900's, only the southern half of the Barataria Bay provided this environment; salinities in the northern half of the bay were too low. By 1947, the northern half of the bay was a reliable area for finding young oysters and, by 1950, the northern bay oyster leases had become the most valuable. Crabs, shrimp and other saltwater species moved further and further inland following the advancing salinities.

The problems that occur with saltwater intrusion are complex, causing a number of environmental chain reactions. As the freshwater marshes and swamps are permeated with brackish water, plants that cannot tolerate the higher salinities die. Cypress trees are a good example of plants that have a very low salt tolerance. After freshwater plants die, there is a lag period before the establishment of brackish water plants. During this lag period, the rate of erosion increases, because there are no plant roots to hold the soil together. The erosion may become so severe that natural re-establishment by any type of plant is impossible.

The conversion from a fresh to a salt marsh can be felt not only environmentally, but economically as well. A good example is the basin's declining fur industry. Most of the fur-bearing species depend upon freshwater habitats and must leave the area as the habitat becomes brackish. Sports hunting and fishing have also been hurt by a decline in freshwater fish and waterfowl. Commercial fishing may be hurt in the future because the oyster, shrimp and blue crab populations are being pushed farther north into the urban polluted areas of the basin and because the nursery areas in the fresh and intermediate marshes are being lost due to saltwater intrusion.

Studies are underway to determine possible methods to retard saltwater intrusion. Various routes are being considered for diverting freshwater from the Mississippi into the Barataria Basin through Lake Cataouatche to supplement freshwater flows into the Basin. The plan, depending on the volume of water diverted, should increase the freshwater head into the Basin west of the Barataria Waterway and push the northern penetration of brackish water one-half to one mile further south. Oysters, shrimp and blue crabs will follow the shift south.

The increased freshwater head created by freshwater diversion projects and projects such as weirs or other structures designed to retard saltwater intrusion, should result in a reduction of the volume of tidally affected water in the Basin. This reduction should decrease the volume of water that flushes in and out the bayous, dredged canals, and barrier island passes, thereby decreasing erosion. The increase in freshwater should also return areas to their former conditions, revitalizing freshwater habitat and allowing the resurgence of freshwater species such as fur-bearing mammals and waterfowl.

E. Dredge and Fill Activities

The following account is based on Admas et al. (1976). Calculations were made of the total land loss in the Barataria Basin resulting from dredge and fill operations. These include canals, embankments, and drainage projects within the Basin. Computations were also made for the portions of Jefferson Parish outside the large urban areas. Many small canals were excluded from the calculations due to the estimation techniques used. This places the resulting figures on the conservative side.

Results of land loss for the entire Basin from canals and impoundment activity type are cited in Table V-2. The total land loss in the Basin for dredge and fill activities by 1970 amounted to about 44,800 acres. The breakdown by canal type and habitat type was calculated for Jefferson Parish and is included in Table V-3. In general, the category including agricultural impoundments is responsible for the majority of this impact.

Dredged material banks are by-products of most dredged canals and can influence the deterioration/growth rates of surrounding marsh in quite opposite ways. Dredged material banks act essentially as man-made levees and can alter natural flow patterns. The banks may be subject to localized subsidence, resulting in a loss of marsh on its periphery, forming localized levee flank depressions. On the other hand, the banks may act as stabilizing agents in an otherwise unstable marsh. These banks can serve as barriers to flow, buffers against waves and sediment traps.

In the brackish and saline marshes, construction of extensive rig access canals contributes the greatest percentage of the total dredging impact. Pipeline and navigation canals represent a considerable percentage of the total, and, although they can show relatively low values in areas compared to other categories, they do produce maximum impact. If not properly planned, pipeline and transportation canals interrupt the natural drainage system by more quickly draining freshwater from the upper basin and directly introducing salt water into freshwater habitats. These canals also cause the destruction of wetlands with the erosion of their banks. Such canals may widen as much as two to 14 percent annually, depending on their widths; the wider the canals, the greater the rate

Table V-2

Inventory of Dredge and Fill Activity by
Habitat Type for the Barataria Basin to 1970

	Habitat Type (square miles*)				
	Saline	Brackish	Fresh	Swamp	Total
Rig Access Canals	5.29	11.68	5.20	1.08	23.24
Pipeline Canals	2.52	1.71	0.63	0.20	5.07
Oil Field Navigation Canals	0.01	0.19	0.19	0.0	0.40
Navigation Canals	0.86	1.98	0.50	1.18	4.52
Transportation Embankments	0.0	0.43	0.51	0.48	1.42
Agr. Drainage Canals	0.0	0.91	0.82	0.98	2.71
Agr. Impoundments	0.0	3.55	21.39	6.07	31.01
Industrial Impoundments	0.05	0.0	0.0	0.07	0.13
Urban Drainage Canals	0.0	0.39	0.11	0.07	0.56
Agr. Commodity Trnans-portation Canals	0.0	0.03	0.0	0.02	0.04
Oil Field Embankments	0.0	0.0	0.0	0.22	0.22
Mineral Extraction Navigation Canals	0.61	0.0	0.0	0.0	0.62
Other	0.03	0.0	0.0	0.0	0.03
Total for Habitat Type	9.38	20.87	29.35	10.37	69.97

*one square mile equals 640 acres

Source: Adams et al., 1976.

Table V-3

Canal Type Inventory for Jefferson Parish
and Habitat Type (square miles*)

	Saline	Brackish	Intermediate	Fresh	Swamp	Total
Rig Access Canals	0.06	3.29	0.83	0.45	0.43	5.08
Pipeline Canals - 65 ft. width	0.08	0.19	0.09	0.60	0.05	0.48
Pipeline Canals - 130 ft. width	0.03	0.0	0.0	0.0	0.0	0.35
Oil Field Navigation Canals	0.0	0.0	0.0	0.0	0.0	0.0
Navigation Canals	0.78	0.88	0.52	0.0	1.18	3.37
Transportation Embankments	0.0	0.0	0.0	0.02	0.0	0.02
Agricultural Drainage Canals	0.0	0.0	0.0	0.23	0.0	0.23
Agricultural Impoundments	0.0	0.0	0.0	1.25	0.0	1.25
Industrial Impoundments	0.0	0.0	0.0	0.0	0.07	0.07
Urban Drainage Canals	0.0	0.01	0.07	0.10	0.06	0.26
Agricultural Commodity Transportation Canals	0.0	0.0	0.02	0.0	0.01	0.04
Oil Field Embankment	0.0	0.0	0.0	0.0	0.0	0.0
Mineral Extraction Navigation Canal	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.02	0.0	0.0	0.0	0.0	0.02
	1.00	4.38	1.55	2.14	1.82	10.90

*one square mile equals 640 acres

Source: Adams et al., 1976.

of bank erosion. Energy imparted to canal banks by boat waves leads to significant erosion. A dredged canal can serve as an artery for water flow and allow saline water to penetrate much more easily into marsh only previously penetrated via overland flow at high tides or after rainfall. The result of any dredged canal in closed marsh lands is the establishment of a new erosion and dispersion system.

F. Coastal Retreat and Inlet Changes

The following account is based on Adams et al. (1976). Coastal erosion along the front of the entire basin constitutes an additional and severe land loss problem. Historically, a balance existed between the natural processes of erosion and land building along the parish's coastline; however, with the leveeing of the Mississippi River and the resulting loss of river-borne sediments, the balance no longer exists. Without this balance, several erosional processes, both natural and manmade, take their toll.

Individual storms have caused dramatic changes in inlets, closing some completely and forming new ones by breaching existing beaches. Improper placement of pipelines parallel to the shoreline has resulted in accelerated coastal erosion in some localities. Groins placed along the coast, where littoral drift constitutes an important process, interrupts sediments destined for downdrift sections of the coast. In some cases, this can result in local building or at least retarding coastal erosion, but it will also accelerate erosion in down drift areas.

Between 1932 and 1969, there was a loss of 4,515 acres due to coastal erosion for the entire Gulf front on the Barataria Basin. The relatively low coastal retreat rate of two feet per year between 1954 and 1969 for Grand Isle is in sharp contrast to the 17 feet per year between 1954 and 1969 for the remaining coast of Jefferson Parish, east of this island.

Changes in the size of inlets along the parish coastline between 1932 and 1969 resulted in a total widening of more than one mile. This increase nearly doubled the size of the passes and resulted from increased tidal flows into the Basin which, in turn, resulted from increased volumes of tidally-affected water in the Basin. The increased volume was created by subsidence and canal dredging. Consequently, the velocities of the water flushing through the passes increased, thereby increasing the erosion of the passes.

GUIDELINES FOR IMPROVING COASTAL CONDITIONS IN JEFFERSON PARISH

A. Introduction

Jefferson Parish lies in an area rich in both renewable and non-renewable resources. The Barataria Estuary is the nursery for one of the country's most productive fisheries. The oil and gas industry continues to play an important role in the local economy, while providing energy for the nation. The utilization of all these resources has resulted in the rapid growth of Jefferson Parish and has benefited the people that live and work here. However, increased urban pressure has begun to impact the wetlands.

The wetlands of Jefferson Parish are rapidly being lost. The discharge of municipal sewerage treatment plant effluent, industrial wastes, and urban runoff into adjacent wetlands at a rate of hundreds of millions of gallons per day has begun to seriously effect their vitality. Soil and beach erosion, subsidence and saltwater intrusion account for the disappearance of additional wetlands. If pollution discharge and productive habitat loss are not soon corrected, the Barataria Estuary, one of the largest and most productive fisheries and nurseries in North America, will be seriously impacted.

The Parish's problems in the wetlands are all complexly interrelated. A program designed to curb subsidence will also help curb saltwater intrusion, erosion, and coastal retreat. Consequently, any program to correct a particular problem in the wetlands should be designed to enhance correction of other problems as well.

The final goal of Coastal Zone Management is to balance man's use of the environment with the maintenance of natural ecosystems. This goal will maintain healthy ecosystems that will support man's use of the estuaries' renewable resources. The guidelines set forth herein should be followed throughout the parish in all management units, wherever reasonable and practicable.

B. Urban Pollution

All areas contributing to reduced water quality such as urban and agricultural runoff, sewerage and domestic and industrial wastes should be investigated, and methods should be found to mitigate the problems.

- The implementation of Jefferson Parish's Comprehensive Sewerage and Drainage Ordinance (No. 13127) should continue with emphasis on compliance.

- All solid waste dumps should be closed or upgraded according to appropriate Louisiana Department of Natural Resources rules and regulations.

- The sewerage collection system should be upgraded and repaired, where necessary, to prevent this source of pollution from entering the drainage system.

- The sewerage treatment plants should be upgraded, consolidated or replaced in order to meet the future needs of our growing parish.

- Industrial wastes discharged into the storm drainage system should be reduced to meet the limits that have been set on the quantity and quality of the discharge. Pretreatment should be required for all industries whose wastes are not in compliance with Parish Ordinance No. 13127, as amended.

- Aeration systems should be introduced to improve conditions in drainage canals.

C. Saltwater Intrusion

Various methods should be studied and programs chosen and implemented to increase the volume of freshwater to our wetlands and to control saltwater intrusion into the wetlands.

- Freshwater diversion from the Mississippi River into the Barataria Basin through Lake Cataouatche should be studied as a possible solution.

- East of the Barataria Waterway, a freshwater retention plan should be developed to increase the freshwater head by using weirs and other structures that would act as barriers to saltwater intrusion and slow the drainage of freshwater from the northern end of the Basin.

- The effects of discharging into the wetlands brine wastes produced from mineral and hydrocarbon extraction should be investigated to determine their impact on the freshwater marshes and their inhabitants.

D. Land Use in High Subsidence Areas

There is an urgent need to develop land use policies, guidelines, and techniques designed to minimize man's influence upon subsidence.

- Drainage in areas with high soil subsidence potential should be carefully considered and discouraged, because such activity can accentuate the subsidence problem.

- Construction methods, designs and materials should be modified to lower the subsidence potential of an area.

- The relationship between subsidence and mineral, hydrocarbon and water extraction should be studied to determine if a significant relationship exists.

E. Barrier Islands and Tidal Passes

Alternate methods should be studied and programs chosen and implemented to protect the barrier islands from erosion and to retard the enlargement of the tidal passes.

- The hurricane protection plan developed by the U. S. Army Corps of Engineers for the residents of Grand Isle should be implemented.

- Stringent restrictions should be placed on dredging activities on all the barrier islands.

- As the volumes of tidal water that flush through the passes decrease, as a result of the programs developed to stop saltwater intrusion, the passes should be carefully reconstructed to reclaim the ends of the islands that have been eroded away.

F. Dredge and Fill Activities

All future dredge and fill operations should continue to be evaluated to determine if they can be modified in order to mitigate their environmental damage.

- The Parish Council should be notified of all proposed dredge and fill activities within the wetlands of Jefferson Parish.

- All permit applications should continue to be reviewed by the Jefferson Parish Environmental and Development Control Department.

- Wherever possible, existing canals should be used as pipeline and well access canals.

- Directional drilling should be seriously considered as an alternative to the creation of new well access canals.

- A bank stabilization program should be initiated to develop and implement methods to arrest bank erosion along the major transportation waterways.

- All islands, natural beaches, archaeological sites, and chenier ridges should be protected from dredging operations.

G. Wetland Restoration

Wetland revegetation and restoration programs are needed in many wetland areas where natural revegetation is inhibited due to rapid erosion and subsidence.

- The dredged material from dredging activities throughout the parish should be considered for use as fill to restore wetlands.

- Areas should be selected as sites for wetland restoration. These areas should include abandoned oil-well-access canals, heavily subsided areas, and freshwater marsh areas, where saltwater has killed the natural vegetation.

- The diversion of freshwater and sediment from the Mississippi River should be seriously considered as a possible solution for wetland restoration.

- All filled areas should be accompanied by revegetation.

- The flow of saltwater northward into the passes should be controlled.

H. Jean Lafitte National Historical Park

- Policies and guidelines should be developed to provide multi-use compatibility in the area of the park and to protect the area's ecology.

- Development in the 12,000-acre "park protection zone" should include only those uses which are compatible with the continued existence of the zone as a buffer for the 8,600-acre "core area" of the park.

- Oil and gas activities in the park should be modified to minimize environmental disturbances.

I. Areas of Preferred Residential Development

Wetlands, which are already leveed and modified, should be developed in accordance with an overall comprehensive plan of priorities.

The modified wetlands, which have been leveed and drained for a number of years, should be given priority for development after that land has had sufficient time to subside and settle and is suitable for development. Any program of priority should necessarily include close working relationships among the Parish, the U. S. Army Corps of Engineers, the U. S. Environmental Protection Agency, landowners and residential developers.

Residential subdivisions, which inherently have unique maintenance problems, should be carefully reviewed by the appropriate Parish departments prior to approval. These problems include subsidence, sewerage, and the discharge of wastewater from any sewerage treatment plants and drainage canals.

J. Areas of Preferred Industrial Development

Any program of preferred land development for industrial uses should include close working relationships among Jefferson Parish, the municipalities, the Coastal Management Section of the Louisiana Department of Natural Resources, the U. S. Army Corps of Engineers, the U. S. Environmental Protection Agency, landowners and developers. Further industrial development should be concentrated within similar existing industrial areas and within already modified wetlands allowing for the special requirements and locations needed by certain industries, rather than allowing the modification of existing wetlands for this purpose.

K. Erosion

Funds should be sought to study prime areas of erosion and the feasibility of using various dressing prevention techniques including riprap to alleviate the erosion problems along the major waterways.

L. Priority Issues

All the items or issues listed in this section are considered to be of major importance in the management practices recommended for the protection and enhancement of Jefferson Parish's coastal resources. However, some items or issues which present a more urgent problem or which impact a greater geographical area or a greater number of people are given higher priority. A listing of those issues follows:

- Urban pollution
- Saltwater intrusion
- Erosion of barrier islands, tidal passes and the Barataria Bay shoreline
- Expeditious implementation of all Federal programs

M. Goals for Managing the Individual Management Units

See Section II for a discussion of goals for managing the coastal resources of the individual management units.

PROCEDURES AND AUTHORITIES TO REGULATE USES OF COASTAL CONCERN IN JEFFERSON PARISH

A. Introduction

The State and Local Coastal Resources Management Act of 1978 (Act 361) established the Louisiana Coastal Zone Management Program, which allowed for a coastal use permitting system to be created at both the state and the parish levels of government. The uses within the coastal zone, which will be subject to the coastal use permitting program, shall be either uses of state concern or uses of local concern.

B. Uses of Local Concern Listed in Act 361

Uses of local concern are those uses which directly and significantly affect coastal waters and are in need of coastal management, but are not uses of state concern and which should be regulated primarily at local levels, if the local government has an approved program. Uses of local concern include, but are not limited to:

- Privately funded uses which are not uses of state concern.
- Publicly funded projects which are not uses of state concern.
- Maintenance of uses of local concern.
- Jetties or breakwaters.
- Dredge or fill projects not intersecting more than one water body.
- Bulkheads.
- Piers.
- Camps and cattlewalks.
- Maintenance dredging.
- Private water control structures of less than $15,000 in cost.
- Uses on cheniers, salt domes, or similar land forms.

Uses which will not require a local coastal use permit include:

- Uses occurring wholly on lands five feet above mean sea level, except when it is found that the particular use would have direct and significant impacts on coastal waters.

- Uses occurring within fast lands, except when it is found that the particular use would have direct and significant impacts on coastal waters.

- Agriculture, forestry and aquaculture uses on lands consistently used in the past for such uses.

- Hunting, fishing, trapping and the preservation of scenic, historic and scientific areas and wildlife preserves.

- Normal maintenance or repair of legally existing structures including emergency repairs of damage caused by accident, fire or elements.

- Uses within the special area established in Section 213.10(C) of Act 361 which have been permitted by the Offshore Terminal Authority in keeping with its environmental protection plan.

- Construction of a residence or camp.

- Construction and modification of navigational aids such as channel markers and anchor buoys.

- Construction, maintenance, repair or normal use of any dwelling, apartment complex, hotel, motel, restaurant, service station, garage, repair shop, school, hospital, church, office building, store, amusement park, sign, driveway, sidewalk, parking lot, fence, or utility pole or line, when these uses occur wholly on lands five feet or more above mean sea level or on fast lands except when it is found that the particular activity would have direct and significant impacts on coastal waters.

- Uses which do not have a direct and significant impact on coastal waters.

C. Uses of State Concern Listed in Act 361

Uses of state concern are uses which directly and significantly affect coastal waters, which are in need of coastal management, and which have impacts of greater than local significance or which significantly affect interests of regional, state or national concern. Uses of state concern include, but are not limited to:

- Any dredge or fill activity which intersects with more than one water body.

- Projects involving use of state owned lands or water bottoms.

- State publicly funded projects.

- National interest projects.

- Projects occurring in more than one parish

- All mineral activities, including exploration for and production of oil, gas, and other minerals, all dredge and fill uses associated therewith, and all other associated uses.

- All pipelines for the gathering, transportation or transmission of oil, gas and other minerals.

- Energy facility siting and development.

- Uses of local concern which may significantly affect interests of regional, state or national concern.

- Energy development activities, including any siting, construction, or operation of generating, processing and transmission facilities, pipeline facilities, and exploration for and production of oil, natural gas and geothermal energy.

- Mining activities including surface, subsurface, and underground mining, sand or gravel mining and shell dredging.

- Shoreline modification projects and harbor structures.

D. Uses of Local Concern That Can Become Uses of State Concern

1. Introduction.

Whether a use of local concern becomes a use of state concern depends upon the type of the use, the magnitude of the use and the location of the use. Primary considerations should be given to the location of the use, then to the type and magnitude of the use. If the parish determines that the use, because of the type or magnitude, will result in a significant impact of greater than local concern, then the use should become a state concern.

Jefferson Parish shall make the initial determination of whether the use is of state or local concern on all applications filed with the Parish. This determination shall be based on the criteria set forth in this Section. The determination and a brief explanation of the rationale behind the determination shall be forwarded to the Administrator of the Louisiana Coastal Resources Program within two working days of receipt of the application. The Administrator shall review the decision and rationale and concur or reverse it. If the Administrator reverses the local decision, notice shall be given to the local government. The appropriate permitting body for the use, as determined by the Administrator, shall thereafter be responsible for the permit review process. The Administrator's determination is binding unless and until reversed.

If Jefferson Parish chooses to appeal the Administrator's reversal of the initial determination, the appeal must be filed within fifteen (15) days of the notice of the reversal to the Parish. The appeal shall be heard in accordance with the appeal regulations of the Louisiana Coastal Resources Program.

Upon the filing of such an appeal, processing of the application shall be suspended pending the decision and the thirty (30) day period for issuance of the draft permit shall be interrupted. Jefferson Parish shall give notice of the appeal to the applicant immediately upon filing said appeal.

The determination shall be based on the criteria set forth in the state's guidelines. This decision, if not appealed to the courts, becomes binding on all parties.

Jefferson Parish will retain comment authority on all uses and any decision must be consistent with the state program and shall represent an appropriate balance of social, environmental and economic factors.

2. Determination of State versus Local Concern.

The following shall be uses of state or local concern, unless previously indicated otherwise in Section VII.

- Dredging or filling and discharges of dredged or fill material.

- Levee siting, construction, operation and maintenance.

- Hurricane and flood protection facilities, including the siting, construction, operation and maintenance of such facilities.

- Urban developments, including the siting, construction or operation of residential, commercial, industrial, and governmental structures and transportation facilities.

- Surface water control or consumption including marsh management projects.

- Recreational developments including siting, construction and operation of public and private recreational facilities and marinas.

- Industrial development including siting, construction, or operation of such facilities.

- Any other activities or uses that would require a permit or other form of consent or authorization from the U. S. Army Corps of Engineers, the U. S. Environmental Protection Agency or the Louisiana Department of Natural Resources.

- Uses which impact barrier islands, salt domes, cheniers and beaches.

- Drainage projects.

The following factors shall be used in making a determination of whether a use is of state or local concern.

- The specific terms of the uses as classified in Act 361.

- The relationship of a proposed use to a particular use classified in Act 361.

- If a use is not predominately classified as either state or local by the Act or the use overlaps the two classifications, it shall be of local concern unless it:

  Is being carried out with state or federal funds;

  Involves the use of or has significant impacts on state or federal lands, water bottoms or works;

  Is mineral or energy production and transportation related;

  Involves the use of, or has significant impacts, on barrier islands or beaches or any other shoreline which forms part of the baseline for Louisiana's offshore jurisdiction;

  Will result in major changes in the quantity or quality of water flow and circulation or in salinity or sediment transport regimes; and/or

  Has significant interparish or interstate impacts.

E. Uses Not Requiring Permits

Only the State Administrator, after receipt of a request and review of a completed permit application, shall determine if a coastal use permit is required for uses of state and local concern and a copy of the decision shall be sent to Jefferson Parish within two days of the date of the decision.

1. General Uses.

The following activities normally do not have direct and significant impacts on coastal waters; hence, a coastal use permit is not required, except as set forth as:

- Agricultural, forestry, and aquacultural activities on lands consistently used in the past for such activities

- Hunting, fishing, trapping, and the preservation of scenic, historic, and scientific areas and wildlife preserves

- Normal maintenance or repair of existing structures including emergency repairs of damage caused by accident, fire, or the elements

- Construction of a residence or camp

- Construction and modificiation of navigational aids such as channel markers and anchor buoys

- Uses which do not have a direct and significant impact on coastal waters.

2. Uses on Lands Five Feet or More Above Sea Level or Within Fastlands.

Uses occurring wholly on lands five feet or more above sea level or within fastlands do not normally have direct and significant impacts on coastal waters. Consequently, a coastal use permit for such uses generally need not be applied for. However, if a proposed use will result in discharges into coastal waters, or significantly change existing water flow into coastal waters, then the person proposing the use shall notify the Secretary of the Louisiana Department of Natural Resources and provide such information regarding the proposed use as may be required by the Secretary in deciding whether the use is subject to a coastal use permit.

The Secretary shall determine whether a coastal use permit is required for a particular use. A coastal use permit will be required only for those elements of the activity which have direct and significant impacts on coastal waters.

The Secretary's decision on whether a use should require a coastal use permit shall be appealable pursuant to the provisions of Act 361, as amended, and the regulations adopted pursuant thereto. Provided, however, that in the event of an appeal by the person conducting or proposing to conduct the use, the burden of proof shall be on the Secretary. In the event of an appeal by any other person, the burden of proof shall be on the appellant.

The exemption described herein shall not refer to activities occurring on cheniers, salt domes, barrier islands, beaches and similar isolated, raised land forms in the coastal zone. It does refer to natural ridges and levees.

3. Emergency Uses.

Coastal use permits are not required in advance for conducting uses necessary to correct emergency situations such as those brought about by natural or man-made causes, such as storms, floods, fires, wrecks, explosions and spills, which would result in hazard to life, loss of property, or damage to the environment, if immediate corrective action were not taken. This exemption applies only to those corrective actions, which are immediately required for the protection of lives, property or the environment necessitated by the emergency situation.

Prior to undertaking such emergency uses, or as soon as possible thereafter, the person carrying out the use shall notify the State Administrator and Jefferson Parish and give a brief description of the emergency use and the necessity for carrying it out without a coastal use permit. As soon as possible after the emergency situation arises, any person who has conducted an emergency use shall report on the emergency use to Jefferson Parish or to the State Administrator. A determination shall be made as to whether the emergency use will continue to have direct and significant impacts on coastal waters. If so, the user shall apply for an after-the-fact permit. The removal of any structure or works occasioned by the emergency use may be ordered, if the permit is denied in whole or in part.

4. Normal Maintenance and Repair.

Normal repairs and the rehabilitation, replacement or maintenance of legally existing structures shall not require a coastal use permit provided that:

- The structure or work was lawfully in existence, currently serviceable, and in active use during the year preceding the repair, replacement or maintenance;

- The repair or maintenance does not result in an encroachment into a wetland area greater than that of the previous structure or work;

- The repair or maintenance does not involve dredge or fill activities; and

- The repair or maintenance does not result in a structure or facility that is significantly different in magnitude or function from the original.

This exemption shall not apply to the repair or maintenance of any structure or facility built or maintained in violation of the coastal management program. Coastal use permits will normally authorize periodic maintenance including maintenance dredging. All maintenance activities authorized by coastal use permits shall be conducted pursuant to the conditions established for that permit. Where maintenance is performed, which is not described in an applicable coastal use permit, it shall conform to this section.

5. Construction of a Residence or Camp.

The construction of a residence or camp shall not require a coastal use permit provided that the terms refer solely to structures used for noncommercial and non-profit purposes and which are commonly referred to as "single family" and not multiple family dwellings. The terms shall refer solely to the construction of one such structure by or for the owner of the land for the owner's use and not to practices involving the building of more than one such structure as in subdividing, tract development, speculative building, or recreational community development.

The exemption shall apply only to the construction of the structure and appurtenances such as septic fields, out buildings, walkways, gazebos, small wharves, landings, boathouses, private driveways, and similar works, but not to any bulkheading or any dredging or filling activity, except for small amounts of fill necessary for the structure itself and for the installation and maintenance of septic or sewerage facilities.

6. Navigational Aids.

The construction and modification of navigational aids shall not require a coastal use permit. The term shall include channel markers, buoys, marker piles, dolphins, piling, pile clusters, etc.; provided that the exemption does not apply to associated dredge or fill uses or the construction of mooring structures, advertising signs, platforms, or similar structures associated with such facilities. All navigational aids constructed pursuant to this section shall conform to the U. S. Coast Guard Standards and requirements.

7. Agricultural, Forestry and Aquacultural Uses.

Agricultural, forestry and aquacultural uses on lands consistently used in the past for such uses shall not require a coastal use permit provided that: the use is located on lands or in waters which have been used on an ongoing basis for such purposes, consistent with normal practices, prior to the effective date of Act 361. The use must also be consistent with good management practices for the particular

agricultural, forestry or aquacultural use and it must be conducted to minimize adverse impacts on the coastal environment. The use is not intended to change, nor will it result in changing the agricultural, silvicultural, or aquacultural use for which the land has been consistently used.

Included in the exemption are normal agricultural, forestry and aquacultural uses such as plowing; seeding; grazing; cultivating; insect controlling; fence building and repairing; thinning; harvesting for the production of food, fiber and forest products; maintaining and draining of existing farm, stock or fish ponds; digging of small drainage ditches; or maintaining existing drainage ditches and farm or forest roads in accordance with good management practices.

8. Blanket Exemption.

No use shall require a coastal use permit if the use was lawfully commenced or established prior to the implementation of the coastal use permit process; or if the State Administrator determines that it does not have a direct or significant impact.

F. Jefferson Parish's Coastal Use Permitting Program

Jefferson Parish will permit only uses of local concern. Permit applications for uses of either State or local concern may be sent to the Coastal Management Division, P. O. Box 44396, Baton Rouge, LA 70804 or to the Jefferson Parish Clerk of Council, P. O. Box 9, Gretna, LA 70054. All such applications received by the State, however, must be forwarded by the State to Jefferson Parish within two working days of receipt by the State. The Parish reserves the right to appeal the State Administrator's decision (whether the application is of state or local concern) in accordance with Act 361, as amended. The parish will comment on uses of state and national concern, when those uses occur within or affect the parish. Permit applications for uses of local concern will be evaluated by knowledgeable and experienced coastal scientists of the Jefferson Parish Environmental and Development Control Department. Their recommendations to issue or deny a permit will be based on the compatibility of those uses with the guidelines set forth in Section VI and the goals, guidelines and policies herein set forth in Section II, and in the Louisiana Coastal Resources Program. In every case, the parish shall retain its authority as provided in this Section. Whenever a local use permit is required, a "one window system" will be established among all local and state permitting agencies in order to reduce duplications of effort throughout the permitting system.

1. Information Required for Local Use Permit Application.

A U. S. Army Corps of Engineers 404 permit application will be accepted in lieu of the information required below or until a state coastal zone management permit form is developed. Otherwise, all applicants must supply the following information: company name, mailing address, phone number, agent responsible for maintaining contact with the permitting body, time of year use will occur, and a detailed map indicating the location of the proposed use.

a. Dredging, Excavation and Pipeline Uses.

In the case of dredging, excavation and pipeline uses, the following information is required along with drawings where necessary:

- Existing condition of site and expected condition upon completion of the use with regard to length, width, depth and shape;
- For dredging oil well access canals and channels, describe canal depth and dredging depth from mean high tide;
- Total volume of the materials being displaced;
- Disposal site(s) of displaced material.

b. Fill, Embankment and Road Building Uses.

In the case of fill, embankment and road building uses, drawings and explanations must include the following:

- Existing condition of use site and expected condition upon completion of the project with regard to length, width, elevation, slope, etc. of project;
- Total volume of material to be displaced;
- Disposal site(s) of displaced material;
- Type and source of fill material.

c. Shoreline Modifications.

In the case of shoreline modifications, drawings and explanations must include:

- Existing condition of site with regard to shape of adjacent waterbodies and shoreline, and expected condition upon completion of the project;
- Dimensions of bulkheading;
- Volume, source, and type of fill.

d. Levees.

In the case of levees, drawings and explanations must include:

- Existing condition of site and proposed dimensions of levee (lengths, widths, elevations, slopes);
- Total volume of fill material to be used, type and source;

- Description of drainage system if drainage of back levee is intended;

- Provisions for maintenance of levee.

e. Discharges.

In the case of discharges, the applicant must meet all requirements of the Louisiana Department of Natural Resources and the Jefferson Parish Ordinance 13127, as amended, which is incorporated herein by reference as if written here in extenso and which is on file in the Clerk's Office of the Jefferson Parish Council.

In all instances, including those cases where the U. S. Army Corps of Engineers 404 Permit applications are used in lieu of the above, the applicant shall set forth methods and/or modified techniques, which will be implemented to mitigate any adverse impacts, or which will replenish or replace those resources destroyed by the project.

Additional information may be requested of an applicant upon written request of the Parish of Jefferson setting forth the reasons for the request of the aforesaid information. That information may include:

- type, nature and location of use

- elevation, soil and water conditions and flood and storm hazard characteristics of site

- techniques and materials used in construction, operation and maintenance use

- existing drainage patterns and water regimes of surrounding area including flow, circulation, quality, quantity and salinity; and impacts on them

- availability of feasible alternative sites or methods for implementing the use

- designation of the area for certain uses as part of a local program

- economic need for use and extent of impacts of use on economy of locality

- extent of resulting public and private benefits

- extent of coastal water dependency of the use

- existence of necessary infrastructure to support the use and public costs resulting from use

- extent of impacts on existing and traditional uses of the area and on future uses for which the area is suited

- proximity to and extent of impacts on important natural features such as beaches, barrier islands, tidal passes, and wildlife and aquatic habitats, and forestlands

- the extent to which regional, state and national interests are served including the national interest in resources and the siting of facilities in the coastal zone as identified in the coastal resources program

- proximity to and extent of impacts on special areas or other areas of particular concern in the state or local programs

- likelihood of and of extent resulting secondary impacts and cummulative impacts

- proximity to and extent of impacts on public lands or works, or historic, recreational or culture resources

- extent of impacts on navigation, fishing, public access, and recreational opportunities

- extent of compatibility with natural and cultural setting

- extent of long term benefits or adverse impacts.

2. Procedure for Obtaining Local Coastal Use Permit.

a. General Requirements.

Applications for coastal use permits for uses of local concern can be submitted with the appropriate fees to either the Coastal Management Division, P. O. Box 44396, Baton Rouge, LA 70804 or to the Jefferson Parish Clerk of Council, P. O. Box 9, Gretna, LA 70054. See also page VII-9. Jefferson Parish will provide application forms, instructions, examples and interpretive assistance. The application will be processed by the Jefferson Parish Environmental and Development Control Department, whose staff shall be available for consultation prior to submission of an application. Consultation is strongly recommended.

Separate applications shall be made for unrelated projects or projects involving noncontiguous parcels of property. Joint applications may be made in cases of related construction involving contiguous parcels of property.

b. Content of Application.

The application shall contain the same information required for a Section 10 or Section 404 permit from the U. S. Army Corps of Engineers and such additional information determined to be reasonably necessary for proper evaluation of an application.

c. Fee Schedule.

No fees will be charged for the issuance of coastal use permits by the State Coastal Management Section. However, a fee schedule may be established when joint permitting systems are established with other state agencies and the U. S. Army Corps of Engineers, provided that such fees shall be no more than the total of the fees established for the other permits. A fee for Jefferson Parish uses was established in a separate Ordinance (No. 15528) by the Jefferson Parish Council.

d. Processing the Application.

- When an apparently complete application for a permit is received, Jefferson Parish shall immediately assign it an identification number and advise the applicant of that number

- Application processing will begin when an application that is apparently complete is accepted by Jefferson Parish.

- Within two working days of receipt of an apparently complete application by Jefferson Parish, a copy of the application and all attachments and the Parish's decision as to whether the use is one of state or local concern shall be sent to the State.

- Public Notice, as described below, will be issued by Jefferson Parish within ten days of receipt of an apparently complete application by the Parish

- Jefferson Parish shall evaluate the proposed application pursuant to Subsection f. below, to determine the need for a public hearing

- Jefferson Parish, pursuant to Subsection h, shall either send a draft permit to the applicant for acceptance and signature or send notice of denial to the applicant within thirty (30) days of giving public notice or within fifteen (15) days after the closing of the record of a public hearing, if held, whichever is later

- Public notice of permit decisions shall be given pursuant to Subsection e

- The applicant, the Secretary of the Department of Natural Resources, any affected local government or affected federal, state, or local agency, any aggrieved person, or any other person adversely affected by a coastal use permit decision may appeal the coastal use permit decision. An appeal must be filed in writing within thirty (30) days following public notice of the final decision and shall be in accordance with Act 361, as amended.

e. Public Notice and Consideration of Public Comment.

Public notice of the receipt of all apparently complete applications for local coastal use permits shall be given by:

- Posting or causing to be posted a copy of the permit application at the location of the proposed use,

- The joint public notice of the Coastal Management Section of the Louisiana Department of Natural Resources and the U.S. Army Corps of Engineers shall serve as the Parish's public notice on permits of local concern.

A copy of the permit application will be sent to any person requesting it upon payment of a reasonable fee to cover costs of copying, handling, and mailing, except that information of a confidential or proprietary nature shall be withheld. In the event that attachments to the application are not readily reproducible, they shall be available for inspection at the parish permitting office.

Jefferson Parish shall consider comments received in response to the public notice in its subsequent actions on the permit application. Comments received will be made a part of the official file on the application. If comments received relate to matters within the special expertise of another governmental body, the parish permitting body may seek advice of that agency. If necessary, the applicant will be given the opportunity to furnish a proposed resolution or rebuttal to all objections from governmental agencies and other substantive adverse comments before a final decision is made on the application.

f. Public Hearings on Permit Application.

A public hearing may be held in connection with the consideration of an application for a new permit or when it is proposed that an existing permit be modified or revoked.

Any person may request in writing within the comment period specified in the public notice that a public hearing be held to consider material matters at issue in a permit application. Upon receipt of any such request, Jefferson Parish shall determine whether the issues raised are substantial and if there is a valid public interest to be served by holding a public hearing.

Public hearings are appropriate when there is significant public opposition to a proposed use, or if there have been requests from legislators or local authorities, or in controversial cases involving significant economic, social, or environmental issues. Jefferson Parish has the discretion to require hearings in any particular case. Failure of the parish to hold a hearing on an application may not be appealed to the Louisiana Coastal Commission.

If the determination is made to hold a public hearing, Jefferson Parish shall promptly notify the applicant, set a time and place for the hearing, and give public notice.

If a request for a public hearing has been received and the decision is made that no hearing will be held, public notice of the decision shall be given.

g. Additional Information.

If an application is found to be incomplete or inaccurate after processing has begun or if it is determined that additional information from the applicant is necessary to assess the application adequately, processing will be stopped pending receipt of the necessary changes or information from the applicant and the processing periods will be interrupted. Upon receipt of the required changes or information, the processing period will continue.

If the applicant fails to respond within thirty (30) days to any request or inquiry of Jefferson Parish, the parish may advise the applicant that his application will be considered as having been withdrawn unless and until the applicant responds within fifteen (15) days of the date of the letter.

h. Decisions on Permits.

The Jefferson Parish Coastal Zone Management Administrator shall determine whether or not the permit should be issued. Permits shall be issued only for those uses which are consistent with the guidelines, policies and goals of the state program and the parish program. Permit decisions will be made only after a full and fair consideration of all information before the permitting body, and shall represent an appropriate balancing of social, environmental and economic factors. The parish shall prepare a short and plain statement explaining the basis for its decision on all applications. This statement shall include the parish's conclusions on the conformity of the proposed use with the guidelines, policies and goals of the state program and the parish program. The statement shall be dated, signed, and included in the record.

If the final decision is to issue the permit, the parish will forward two copies of the draft permit to the applicant for his signature accepting the conditions on the permit, along with its findings on the application. The applicant will return both signed copies to the

parish for signature and dating by the issuing official. If the final decision is to deny the permit, the applicant shall be sent a copy of the statement setting forth the reason(s) for denial.

Final action on the permit application is the signature of the issuing official on the permit or the mailing of the letter notifying the applicant of the denial.

i. Conditions on Permits.

By accepting the permit and undertaking any use pursuant to said permit, the applicant agrees to:

- Carry out or perform the use in accordance with the plans and specifications approved by the parish.

- Comply with any permit conditions imposed by the parish.

- Adjust, alter, or remove any structure or other physical evidence of the permitted use if, in the opinion of the parish, implementation proves to be beyond the scope of the use as approved or is abandoned.

- Provide, if required by the parish, an acceptable surety bond in an appropriate amount to ensure adjustment, alteration, or removal should the parish determine it necessary within a given period of time.

- Hold and save the State of Louisiana, Jefferson Parish, and their officers and employees harmless from any damage to persons or property which might result from the work, activity, or structure permitted.

- Certify that any permitted construction has been completed in an acceptable and satisfactory manner and in accordance with the plans and specifications approved by the parish. The parish may, when appropriate, require such certification be given by a registered professional engineer within ten (10) days after completion.

The parish shall place such other conditions on the permit as are appropriate to ensure compliance with the state coastal management program.

3. Modification, Suspension or Revocation of Permits.

a. Modifications.

The terms and conditions of a permit may be modified to allow changes in the permitted use, in the plans and specifications for that use, in the methods by which the use is being implemented, or to

assure that the permitted use will be in conformity with the coastal management program. Changes which would significantly increase the impacts of a permitted activity shall be processed as new applications for permits, not as a modification.

A permit may be modified upon request of the permittee:

- if mutual agreement can be reached on a modification, written notice of the modification will be given to the permittee.

- if mutual agreement cannot be reached, a permittee's request for a modification shall be considered denied.

b. Suspensions.

Jefferson Parish may suspend a permit upon finding that:

- the permittee has failed or refuses to comply with the terms and conditions of the permit or any modification thereof, or

- the permittee has submitted false or incomplete information in his application or otherwise, or

- the permittee has failed or refused to comply with any lawful order or request of the parish or the state or violates any law of the State of Louisiana or ordinance of the parish.

The parish shall notify the permittee in writing that the permit has been suspended and the reasons therefor and order the permittee to cease immediately all or any portion of the activities. The notice shall also advise the permittee that he will be given, upon request made within ten (10) days of receipt of the notice, an opportunity to respond either in writing or at an administrative hearing to the reasons given for the suspension.

After consideration of the permittee's response, or, if none, within thirty (30) days after issuance of the notice, the parish shall take action to reinstate, modify or revoke the permit and shall notify the permittee of the action taken.

c. Revocation.

If, after the suspension procedure, the parish determines that revocation or modification of the permit is warranted for one or more of the reasons causing suspension, written notice of the revocation or modification shall be given to the permittee.

d. Enforcement.

If the permittee fails to comply with a cease and desist order or the suspension or revocation of a permit, the parish shall seek appropriate civil and criminal relief as provided by Act 361.

4. General Permits.

a. Introduction.

Jefferson Parish may, after compliance with the stated procedures, issue general permits for certain clearly described categories of uses requiring coastal use permits. After a general permit has been issued, individual uses falling within those categories will not require full individual permit processing unless the parish determines, on a case-by-case basis, that the public interest requires full review.

General permits may be issued only for those uses that are substantially similar in nature, that cause only minimal adverse impacts when performed separately, that will have only minimal adverse cumulative impacts and that otherwise do not impair the fulfillment of the objectives and policies of the coastal management program.

b. Reporting.

Each person desiring to commence work on a use subject to a general permit must give notice to the parish and receive written authorization prior to commencing work. Such authorization shall be issued with five (5) working days of receipt of the notice.

Such notice shall include:

- The name and address of the person conducting the use.
- Such descriptive material, maps and plans as may be required by the parish for that general permit.

5. Appeals for Determination of Whether Uses are of State or Local Concern.

Jefferson Parish's appeal of the reversal of its initial determination must be filed within fifteen (15) days of the notice to the parish. The appeal shall be heard in accordance with the regulations of the Louisiana Coastal Resources Program.

Upon the filing of such an appeal, processing of the application shall be suspended pending the decision and the processing period for issuance of the draft permit shall be interrupted. The parish shall give notice of the appeal to the applicant immediately upon filing it. The burden of proof of this appeal shall be on the State.

6. Public Hearings.

a. Scope.

This regulation is applicable to all public hearings held pursuant to Act 361, as amended. All such public hearings shall be nonadjudicatory public proceedings conducted for the purpose of acquiring information or evidence which will be considered in evaluating a proposed action and to give the public the opportunity to present their views and opinions on such action.

b. Public Notice.

Public notice shall be given at least thirty (30) days in advance of any public hearings. Notice shall be sent to all persons requesting notices of public hearings and shall be posted in all governmental bodies having an interest in the subject matter of the hearing. Such notice may be limited in area consistent with the nature of the hearing.

The notice shall contain the time, place and nature of hearing, and the location of materials available for public inspection.

c. Time and Place.

In fixing the time and place for a hearing, due regard shall be had for the convenience and necessity of the interested public.

d. Presiding Officer.

The Jefferson Parish Council shall designate a Presiding Officer, who shall establish a hearing file consisting of such material as may be relevant or pertinent to the subject matter of the hearing. The hearing file shall be available for public inspection.

e. Representation.

At the public hearing, any person may appear on his own behalf, or may be represented by counsel or by other representatives.

f. Conduct of Hearings.

Hearings shall be conducted by the Presiding Officer in an orderly but expeditious manner. Any person shall be permitted to submit oral or written statements concerning the subject matter of the appropriate decision. Written statements may be presented any time prior to the time the hearing file is closed. The Presiding Officer may afford participants an opportunity for rebuttal.

The Presiding Officer shall have discretion to establish reasonable limits upon the time allowed for statements of witnesses, for arguments of parties or their counsel or representatives, and upon the number of rebuttals. Cross-examinations of witnesses shall not be permitted.

All public hearings shall be recorded verbatim. Copies of the transcript shall be available for public inspection and purchase. All written statements, charts, tabulations, and similar data offered in evidence at the hearing shall, subject to exclusion for reasons of redundancy, be received in evidence and shall constitute a part of the hearing file.

The hearing file shall remain open for a period of ten (10) days after the close of the public hearing for submission of written comments or other materials. This time period may be extended for good cause.

In appropriate cases, joint public hearings may be held with state, federal or other local agencies, provided the procedures of those hearings are generally consistent with the requirements of this regulation.

The procedures in this Section may be waived by the Presiding Officer in appropriate cases.

g. Filing of Transcript of the Public Hearing.

The testimony and all evidence received at the public hearing shall be made part of the administrative record of the action. All matters discussed at the public hearing shall be fully considered in making the decision or recommendation.

7. Coordination With Jefferson Parish Departments, Other Parishes, and State and Federal Agencies.

The administrative means by which Jefferson Parish will coordinate its Coastal Zone Management Program with other governmental bodies have been employed for several years. In 1977, the Jefferson Parish Council created the Environmental and Development Control Department (EDCD) to serve all environmental needs of the parish. This department is staffed by persons educated and trained as environmental professionals and scientists, who work closely with all interfacing departments of the parish, as well as with other parishes and state and federal agencies involved in environmental quality management.

The EDCD evaluates all Department of the Army permit applications for coastal uses requiring permits under Section 10 of the River and Harbor Act of 1899 and Section 404 of the Clear Water Act. The recommendations of the EDCD are sent to the Parish Council only after

coordination with other appropriate parish departments such as Public Utilities (Drainage, Sewerage and Water), Planning, and Inspection and Code Enforcement; state agencies such as the Louisiana Department of Health and Human Resources (Office of Health Services and Environmental Quality), the Louisiana Department of Natural Resources (Louisiana Wildlife and Fisheries, the Division of State Lands' Coastal Management Section and the Office of Environmental Affairs' Water Pollution Control Division) and the Louisiana Department of Transportation and Development (Office of Public Works); and federal agencies such as the U. S. Army Corps of Engineers, the U. S. Fish and Wildlife Service, the U. S. Environmental Protection Agency, National Marine Fisheries Service and the National Park Service.

By working closely with all permit applicants and all agencies whose jurisdictions are affected by a proposed use, the EDCD staff is able to place a high priority on determining appropriate mitigative measures which will continue to allow the successful multiple use of the parish's coastal area. Such coordination will continue upon implementation of the parish's Coastal Zone Management program described herein.

Periodic review of the state and local programs is outlined on page I-3.

PARISH ORDINANCES WHICH WILL HELP TO ACCOMPLISH GOALS AND OBJECTIVES OF COASTAL ZONE MANAGEMENT

Jefferson Parish ordinances which will help to accomplish the goals and objectives of the parish's Coastal Zone Management Program include Ordinance No. 13127, as amended, and all parish ordinances which relate directly to this program and which are adopted subsequently to the adoption of the program described herein. Those ordinances specifically include, but are not limited to,

- An ordinance establishing local coastal use permitting fees for implementing the Coastal Zone Management Program in and for the Parish of Jefferson pursuant to the authority of LSA-R.S. 49:213 et seq., and

- An ordinance designating the Administrator and in his/her absence an Acting Administrator of the Jefferson Parish Coastal Zone Management Program.

Because of the broad expanse of wetlands in Jefferson Parish and the ever increasing and often competing multiple uses in the wetlands, the Jefferson Parish Council passed the following ordinance to more adequately meet the coastal and environmental needs of the parish.

- An ordinance (No. 13127, as amended) establishing prohibitions and limitations on discharges into the public storm drainage system and the sanitary sewerage system. Discharges into the storm drainage system, other than storm water runoff, are permitted only following treatment to render the wastewater acceptable by the levels set by the U. S. Environmental Protection Agency and the Louisiana Department of Natural Resources. In addition, wastewater discharged into the sanitary sewerage system is prohibited when it contains any material that will

  (1) Not be susceptible to or compatible with treatment by the system or interfere with or damage the system or the efficient operation thereof.

  (2) Constitute a hazard to human life, or to the stream or water course receiving the effluent of the system.

(3) Violate any pretreatment standard or effluent limitation as defined therein.

(4) Cause the system to violate any applicable NPDES permit or any applicable receiving water quality standard.

(5) Violate any of the specific prohibitions or limitations established therein.

Ordinance 13127 has been successfully administered in Jefferson Parish for several years in an effort to balance competing uses in the wetlands. The ordinance has also provided and will continue to provide a valuable vehicle for negotiating mitigative measures, which have helped to prevent or modify otherwise serious adverse environmental impacts and, at the same time, has allowed implementation of the project without costly or time prohibitive provisions.

Ordinance 13127, therefore, when applied to uses, such as discharges into the public storm drainage system and the sanitary sewer system, which are not ordinarily subject to the local coastal use permit program, would result in compliance with the goals and provisions of Act 361, the objectives of the Louisiana Coastal Resource Program and the policies of the state and local coastal use guidelines.

JEFFERSON PARISH
COASTAL ZONE MANAGEMENT PROGRAM
BASELINE DATA MAPS

- Geological Features (beaches, barrier islands, shell deposits, salt domes, oyster reefs, mineral formations, etc.)

  - Map Name: Mineral Resources (excludes oil and gas; includes sand and gravel deposits, barrier islands, sand ridges, cheniers and shell deposits).

    Date: March, 1975

    Scale: one inch equals ten miles

    Preparer: Engineer Agency for Resources Inventories, U. S. Army Engineer, Topographic Laboratories, Washington, D. C.

  - Map Name: Subsurface Faults and Salt Domes of Jefferson Parish

    Date: October, 1975

    Scale: unknown

    Preparer: VTN Louisiana, Inc., Metairie, LA

    Reference: Prepared from Halbouty, M. T. 1967. Salt Domes Gulf Region, United States and Mexico. Houston, TX.

  - Map Name: Jefferson Parish, Louisiana (depicts oil and gas fields)

    Date: January 1, 1978

    Scale: one inch equals two miles

    Preparers: Louisiana Department of Transportation and Development, Office of Highways, Traffic and Planning Section in cooperation with the U. S. Department of Transportation

  - There is no map(s) which adequately depicts the other geological features of Jefferson Parish.

- Historical and Archaeological Sites

  - Map Name: Louisiana Coastal Resources Atlas, Jefferson Parish: Historical, Cultural and Archaeological Sites

    Date: 1978

    Scale: 1:125,000

    Preparer: Burk & Associates, Inc., New Orleans, LA

- Corridors for Transportation, Industry and Urbanization

  - Map Name: Jefferson Parish, Louisiana (depicts transportation corridors)

    Date: January 1, 1978

    Scale: one inch equals two miles

    Preparers: Louisiana Department of Transportation and Development, Office of Highways, Traffic and Planning Section in cooperation with the U. S. Department of Transportation.

  - There is no map(s) which adequately depicts corridors for industry and urbanization.

- Areas Subject to Flooding, Subsidence, and Salt Water Intrusion

  - Map Name: Louisiana Coastal Resources Atlas, Jefferson Parish Flood Prone Areas.

    Date: 1978

    Scale: 1:125,000

    Preparer: Burk & Associates, Inc., New Orleans, LA

  - Map Name: Louisiana Coastal Resources Atlas, Jefferson Parish: Soil Subsidence and Land Loss Potential

    Date: 1978

Scale: 1:125,000

Preparer: Burk & Associates, Inc.,
New Orleans, LA

- Unique, Scarce, Fragile, Vulnerable or Highly Productive or Essential Habitat

  - Map Name: Mississippi Deltaic Plain Region Habitat Maps

    Date: May, 1980

    Scale: 1:24,000

    Preparer: Coastal Environments, Inc.,
    Baton Rouge, LA

  - Map Name: Fish and Shellfish

    Date: March, 1975

    Scale: one inch equals ten miles

    Preparer Engineer Agency for Resources Inventories,
    U. S. Army Engineer Topographic Laboratories,
    Washington, D. C.

  - There is no map(s) which depicts unique, scarce, fragile, vulnerable or highly productive or essential habitat.

- Ports or other Developments or Facilities Dependent on Access to Water

  - There is no map(s) which adequately depicts the ports or other developments or facilities which depend on water access in Jefferson Parish.

- Recreational Areas

  - Map Name: Louisiana Coastal Resources Atlas, Jefferson Parish: Existing and Potential Recreational Areas.

    Date: 1978

    Scale: 1:125,000

    Preparer: Burk & Associates, Inc.,
    New Orleans, LA

- Freshwater Storage Areas
  - Map Name: Ground Water Resources

    Date: March, 1975

    Scale: one inch equals ten miles

    Preparer: Engineer Agency for Resources Inventories, U. S. Army Engineer Topographic Laboratories, Washington, D. C.

- Soils
  - Map Name: Soil Survey, East Bank, Jefferson Parish, Louisiana.

    Date: September, 1977

    Scale: 1:20,000

    Preparers: U. S. Department of Agriculture Soil Conservation Service and the Louisiana Agricultural Experiment Station in cooperation with the Jefferson Parish Council.

  - Map Name: Soil Survey, West Bank, Jefferson Parish, Louisiana.

    Date: September, 1978

    Scale: 3.5 inches equals 2.0 miles

    Preparers: U. S. Department of Agriculture Soil Conservation Service and the Louisiana Agricultural Experiment Station in cooperation with the Jefferson Parish Council.

    Map Name: Soil Survey of Jefferson Parish, Louisiana.

    Date: January, 1983

    Scale: 1:20,000

    Preparers: U. S. Department of Agriculture Soil Conservation Service in cooperation with the Louisiana Agricultural Experiment Station and the Louisiana Soil and Water Conservation Committee.

COMMENTS AND RESPONSES

A. Introduction

A Public Hearing on the draft document herein bound was held on 16 August 1982 at 7:30 p.m. in the West Bank Council Chambers, Second Floor, Courthouse, Second and Derbigny Streets, Gretna. Oral comments were received that night. The public record remained open until 26 August 1982 to receive written comments. Page numbers listed in the comments refer to the draft program dated June, 1982; numbers listed in the responses refer to the final program dated September, 1982.

B. Public Hearing Attendees and Affiliations

Bilski, Mr. E. J. - Petty-Ray Geophysical Geosource, Inc.

Blanda, Mr. Lou - Administrative Assistant, Jefferson Parish President's Office

Burglass, Mr. Bruce D. - Director, Jefferson Parish Environmental and Development Control Department

Curry, Dr. Mary G. - Environmental Impact Officer for Jefferson Parish

Ehret, Mr. Frank J., Jr. - Barataria Civic Association, West Bank Conservation and Sportsman Association, and Member of Jefferson Parish's Citizens Coastal Zone Management Advisory Committee

Figures, Mr. M. A. - International Association of Geophysical Contractors

Frazer, Mr. Tom - West Bank Bureau The Times Picayune/The States-Item

Fremaux, Ms. Charlotte - League of Women Voters of Jefferson Parish

Fremaux, Mr. Emmett H. - No affiliation.

Gafford, Mr. William T. - No affiliation

Gilbert, Mr. Gerald R. - No affiliation

Green, Mr. Larry L. - Geophysical Service, Inc.

Henkhaus, Mr. D. A. - Exxon Company, USA

Holder, Mr. Samuel - Jefferson Parish Environmental and Development Control Department

Jemison, Ms. Lydia M. - Jefferson Parish Planning Department

Kass, Mr. William A., IV - Member of Jefferson Parish's Citizens Coastal Zone Management Advisory Committee

Kennedy, Mr. Sam - Delta Sierra Club

Kohl, Dr. Barry - Orleans Audubon Society

Loden, Dr. Michael S. - Jefferson Parish Environmental and Development Control Department

Lyons, Mr. R. M. - Mid-Continent Oil and Gas Association

Matthew, Mr. Millard E., Jr. - No affiliation

Mayeaux, Mr. Russell - Southland Seismic, Inc.

Mills, Mr. John T. - No affiliation

Muth, Mr. David P. - No affiliation

Neusaenger, Mr. George - National Park Service

Planche, Mr. A. J., Jr. - No affiliation

Pittman, Mr. Phil - Louisiana Department of Natural Resources, Coastal Management Section Administrator

Rives, Mr. Jim - Louisiana Department of Natural Resources, Coastal Management Section

Rosenthal, Mr. Sidney, Jr. - Fund for Animals, Inc. and Member of Jefferson Parish's Citizens Coastal Zone Management Advisory Committee

Swilley, Ms. Laura J. - U. S. Army Corps of Engineers, Regulatory Assessment Section

Uhl, Mr. John J. - Chairperson of Jefferson Parish's Citizens Coastal Zone Management Advisory Committee and Presiding Officer of Public Hearing

Vincent, Mr. Joseph I. - No affiliation

Ward, Capt. J. D. - Greater Jefferson Port Commission and Member of Jefferson Parish's Coastal Zone Management Advisory Committee

Weldon, Mr. David G. - No affiliation

C. Public Hearing Comments and Responses (Listed in order of submittal)

1. Mr. D. A. Henkhaus

- Comment (Page II-50, sixth policy): The 5-mile restriction is too severe for seismic surveys.

  Response: Comment noted.

2. Mr. Frank J. Ehret, Jr.

- Comment (Page II-26): Objected to having the western boundary include the Bayou Des Familles property because that area is wetland.

  Response: As noted on page II-56, para. M.1, the western boundary for the West Bank Management Unit conforms to the Jefferson Parish Council's Proposed Hurricane Protection Levee alignment in the vicinity of the Bayou des Familles Property. The Western boundary will be firmly established only after a levee is built.

- Comment (page II-55, para. 2): There is tidal action in the West Bank Management Unit because Bayou Boeuf and Kenta Canal are open, as well as Tar Paper Canal. All three experience tidal action.

  Response: Concur. Changes made on page II-56, para 2.

- Comment (page II-55, para. 4): The 33,000 acres referred to are non-wetland acres and do not include areas such as the CIT Tract and the Bayou des Familles property which would increase that figure by approximately 2,500 acres.

  Response: Concur.

- Comment (page II-58, para. 5): The last sentence of para. 5 is incorrect. There are areas within the West Bank Management Unit which are within the "prohibited service area".

  Response: Concur. Changes made on page II-60.

- Comment (page II-59): The policies treat all of the area in the West Bank Management Unit as developable land.

  Response: Comment noted. However, policies do not suggest that all land within the unit is developable.

- Comment: Act 361 and the references for the ordinances referenced in the program should be appended to the document.

  Response: Copies of all ordinances and resolutions are available upon request from Ms. Dolores Gonzales, Clerk of Council, P. O. Box 9, Gretna, LA 70054. Copies of Act 361 are available upon request from Secretary of State, Attention: Publications, P. O. Box 44125, Baton Rouge, LA 70804.

- Comment (page V-1): This section does not mention the adverse effects of brine discharge.

  Response: The effects of brine discharge are treated on page V-6 (para. 2) and page VI-2.

- Comment (page II-51): What are the distances of the boundaries from the highway in the Lower West Bank Management Unit.

  Response: Information given on page II-53.

- Comment: Much of the Bayou des Familles property is within the protection zone for the Jean Lafitte National Historical Park and should be in the Bayou Segnette Management Unit. To include that property in the West Bank Management Unit would be a violation of Public Law 95-625, 10 November 1978.

  Response: Comment noted. The Bayou des Familles property was included in the West Bank Management Unit because it was included in the area to be protected by the Council's proposed Hurricane Protection Levee alignment.

3. Mr. A. J. Planche, Jr.

   - Comment: The Bayou des Familles property should not be included in the West Bank Management Unit.

     Response: Comment noted.

4. Mr. Joseph I. Vincent

   - Comment (page I-1): Why is it important to ensure that state and local governments have the primary authority for managing coastal resources.

     Response: That item is a purpose listed in Act 361 and not the subject of the Public Hearing.

- Comment (page II-2): The common boundary between the Bayou Segnette Management Unit and West Bank Management Unit is not consistent with those shown on pages II-21 and II-56.

  Response: Concur. Boundary was changed on page II-2.

- Comment (page II-6): Are the archaeological sites not identified in order to protect them from vandalism?

  Response: Yes.

- Comment (page II-20): The Bayou des Familles property should be in the Bayou Segnette Management Unit along with the Jean Lafitte National Historical Park and its protection zone and other similar wetlands.

  Response: Comment noted.

- Comment: The horses presently on Grand Terre should be removed because of the damage that they do to the beach.

  Response: Comment noted.

- Comment (page II-49): What effects will the proposed Bucktown Marina have on Lake Pontchartrain?

  Response: The Bucktown Marina was the subject of an Environmental Impact Assessment prepared in March, 1979. A Department of the Army Permit to implement that project was issued by the U. S. Army Corps of Engineers on 23 May 1980.

- Comment (page II-50): Are there any unmodified wetlands in the Lower West Bank Management Unit?

  Response: There is a minimal amount of wetlands in this unit in the Barataria area north of Pailet Canal to the West, and in the southernmost tip of the unit.

- Comment (page II-56, pages IV-11 and IV-14): Alignments are not consistent with each other or with the alignment of the permit application for a Hurricane Protection Levee Alignment submitted to the Corps.

  Response: All alignments are now consistent with each other and the alignment submitted to the Corps.

- Comment (page II-58): The West Bank Management Unit is objected to because it encompasses wetland.

  Response: Comment noted.

- Comment (page II-58): The entire West Bank Management Unit does not lie outside the "prohibited service area".

  Response: Concur. Change made on page II-60.

- Comment (page III-6, para. 3): The sewerage treatment does not meet all EPA standards.

  Response: Comment noted.

- Comment (page IV-1, para. 1): The last statement "This rapid rise in the population is estimated to be over 702,700 persons" is confusing.

  Response: Comment noted. Sentence deleted.

- Comment (page IV-3, para. 3): The last sentence contradicts utilizing the currently proposed West Bank Hurricane Protection Levee alignment.

  Response: Comment noted.

- Comment (page IV-12): West Bank Hurricane Protection Levee alignment does not conform to the alignment noted in the "prohibited service area" agreement. In addition borrow canals should be within the levee system so all pumping stations could be interconnected. This would also provide for only limited access to the levee.

  Response: Comment noted.

- Comment (page IV-14): Levee alignment does not conform with application sent to Corps.

  Response: Levee alignment corrected to conform to that submitted to Corps.

- Comment (Section V): The West Bank Hurricane Levee Alignment should be listed as a problem and issue affecting Jefferson's coastal resources.

  Response: Comment noted.

- Comment (page VI-4, H): The currently proposed West Bank Hurricane Levee Alignment will interfere with the Jean Lafitte National Historical Park.

  Response: Concur.

- Comment (page VI-4, I): First sentence should read "Wetlands, which are already leveed and could be easily modified..." Suggested change underlined.

  Response: Comment noted.

- Comment (page VII-2): Fifth item should read "Normal maintenance or repair of legally existing structures..." Suggested change underlined.

  Response: The word "legally" was inserted before "existing".

- Comment (page VII-3): The wetlands of the Bayou des Familles property and the CIT Tracts should be considered uses of state concern because they have a direct effect on the Barataria Estuary.

  Response: Concur.

- Comment (page VII-6): Fastlands should be defined.

  Response: A definition of fastlands is given on page XI-3 as defined by the U. S. Department of Commerce and Louisiana Department of Natural Resources (1980).

- Comment (page VII-7, para. 1): In the event of an appeal to the Louisiana Coastal Commission by the person conducting or proposing to conduct the use, the burden of proof should be on the applicant and not on the Secretary of the Louisiana Department of Natural Resources.

  Response: Comment noted. Act 361 mandates the procedure on page VII-7, paragraph 1.

- Comment (page VII-7, para. 6): The first item under "Normal Maintenance and Repair" would exclude the Bayou des Familles property's levee and the CIT Tract.

  Response: Comment noted.

- Comment (page VII-16): The fourth item under "Condition on Permits" is a very good condition.

  Response: Concur.

- Comment (page VII-20): Are the environmental needs of the parish determined on a political or a scientific basis?

  Response: Some needs are determined scientifically, others are determined politically. Many environmental needs are determined scientifically and politically.

- Comment (page VII-21): What kinds of mitigative measures are used, especially in the Barataria Estuary.

  Response: The kinds of mitigative measures negotiated with an applicant depend on the kind of project and its location.

- Comment (page VIII-1): The Comprehensive Sewerage and Drainage Ordinance No. 13127 is good, but should be better enforced.

  Response: Comment noted

- Comment (page VIII-2): There has been no evidence of the successful administration of the Comprehensive Sewerage and Drainage Ordinance No. 13127.

  Response: Comment noted.

5. Mr. William A. Kass, IV

   - Comment: It is important that local government have a voice in regulating coastal activities because our wetlands are unlike other wetlands in other states and other parts of Louisiana.

     Response: Concur.

   - Comment: The plan/program should be implemented immediately.

     Response: Comment noted.

   - Comment (page II-30): The second policy relative to the spread of dredged material should be re-evaluated because of shellfish areas. Dredged material should be put ashore, whenever possible, especially on islands.

     Response: Concur. Changes made on page II-31.

6. Dr. Barry Kohl

   - Comment (page II-7,para. 5): The Bayou Aux Carpes Management Unit currently lies outside the proposed hurricane protection levee and within the "prohibited service area".

Response: Concur. Changes made on page II-7.

- Comment: The Orleans Audubon Society is opposed to the inclusion of the Bayou des Familles property in the West Bank Management Unit and within the proposed West Bank Hurricane Levee system. The CIT Tract should also be outside the levee system.

  Response: Comment noted.

7. Mr. Millard Matthew

   - Comment (page II-50): There should not be a five-mile limit on seismic surveys for Lake Pontchartrain, as it is an area of state concern.

     Response: Comment noted.

8. Mr. Sidney Rosenthal, Jr.

   - Comment: Bayou Aux Carpes Swamp should be within the "prohibited service area" and outside the hurricane protection system.

     Response: Concur. Changes made on page II-7.

   - Comment: All of the Jean Lafitte Park and its protection zone should be in the Bayou Segnette Management Unit.

     Response: Comment noted. The proposed hurricane levee alignment was used as the boundary between the Bayou Segnette and West Bank Management Units.

D. Comments Submitted During Comment Period - August 17-26, 1982 (Listed in order of submittal).

1. Ms. Lydia Jemison, Jefferson Parish Planning Department (written comments received 18 August 1982).

   - Comment (page IV-1, para. 1): The figure 455,600 should be changed to 454,592. The last sentence of the paragraph is unclear and should be referenced.

     Response: The figure was changed and the last sentence was deleted.

   - Comment (page IV-1, para. 3). The population figures for all towns should be updated.

     Response: All figures in paragraph 3 were updated.

- Comment (page IV-2): The total population figure should be 454,592.

  Response: The figure was corrected.

- Comment (page IV-5, para. 4): The total developable acreage on the West Bank is approximately 40,000 acres.

  Response: Comment noted.

- Comment (page IV-5, para 5): Developable land on the West Bank will not be scarce in 1985.

  Response: Comment noted.

2. Mr. Richard O. Beightol, Private Individual (written comment received 23 August 1982).

   - Comment (page II-50): The policy concerning the five-mile seismic limit on Lake Pontchartrain should be deleted.

     Response: Comment noted.

3. Mr. C. M. Miller, Teledyne Exploration (written comment received 24 August 1982).

   - Comment: The policy which states that "Seismic surveys within five miles from the Lake Pontchartrain Shoreline should not be allowed" should be eliminated.

     Response: Comment noted.

4. Mr. Charles F. Darden, International Association of Geophysical Contractors (written comment received 24 August 1982).

   - Comment: The provision which states "Seismic surveys within five miles from the Lake Pontchartrain shoreline should not be allowed" is both unreasonable and unnecessary.

     Response: Comment noted.

5. Mr. Paul Yakupzack, U. S. Fish and Wildlife Service (telephone communication, 24 August 1982).

   - Comment: The U. S. Fish and Wildlife Service has no problems with the plan and no recommended changes.

     Response: Comments noted.

6. Mr. F. G. Fowler, Petty-Ray Geophysical Division Geosource, Inc. (written comment received 25 August 1982).

- Comment: The proposed exclusion of Seismic Surgeys within five miles of the Lake Pontchartrain shoreline unfairly singles out the oil industry for restriction and is unwarranted by the facts of the oil industry's operations. As practiced in Louisiana, seismic activity has no lasting destructive impact upon the environment.

  Response: Comment noted.

7. Mr. James L. Isenogle, National Park Service (written comments received 25 August 1982).

- Comment: We strongly object to the exclusion of the Bayou des Familles property from the Bayou Segnette Management Unit because the wetlands portion of that property is an important part of the "park protection zone" (PPZ).

  Response: Comment noted. The proposed hurricane levee alignment was used to determine the boundary between the Bayou Segnette and the West Bank Management Units.

- Comment (page I-2): The report states "the parish was divided into 12 environmentally distinct Management Units, each having somewhat uniform development potential based on previous development and land use..." By any and all of those parameters, the Bayou des Familles property should be in the Bayou Segnette Management Unit. The CIT Tract, based on the same parameters, also belongs in the Bayou Segnette Management Unit.

  Response: Comment noted.

- Comment (page II-20): It is stated that the intent of the Bayou Segnette Management Unit's boundary is to encompass the park core area and PPZ, however, a significant proportion of the PPZ, as well as a section of the core area, are excluded from the Bayou Segnette Management Unit.

  Response: Comment noted.

- Comment (page II-55): There is tidal activity in the West Bank Management Unit.

  Response: Concur. Changes made on page II-56.

- Comment (page II-58): The West Bank Management Unit is not completely outside the "prohibited service area".

  Response: Concur. Changes made on page II-60.

- Comment: It is recommended that the boundary between the Bayou Segnette and West Bank Management Units be redrawn to conform with the boundaries of the core area of the Jean Lafitte National Historical Park and its Park Protection Zone and to more nearly conform to the actual wetland nonwetland interface by placing the CIT Tract and the Bayou des Familles property in the Bayou Segnette Management Unit. The changes would better satisfy the legal and ecological requirements of the Jean Lafitte National Historical Park.

  Response: Comment noted.

8. Ms. Charlotte H. Fremaux, League of Women Voters of Jefferson Parish (written comments received 25 August 1982).

   - Comment: The maps should show wetlands, soil types, waterways, etc. to agree with and represent graphically the geographical and biological features of the management units and the whole parish. Frequent reference can be made to pages IX-1 through IX-4. Maps showing the "prohibited service area" and the West Bank Hurricane Protection Levee should be coordinated.

     Response: It is not possible to provide in this document maps showing the various resources and features of the parish at a scale that would be useful for the purpose of Coastal Zone Management. Maps other than those listed in Section IX are not available. Figure IV-3 has been changed to correspond to the Council's Department of the Army permit application.

   - Comment: It is difficult to understand how present wetlands can be preserved and protected when the proposed West Bank Levee will incorporate present wetlands and when construction details do not address how further incursion (on both sides of the levee) and further desolation will be avoided.

     Response: Comment noted.

   - Comment: The "prohibited service area" includes certain wetlands under litigation which should be pointed out more clearly.

Response: The "prohibited service area" is clearly shown in Figure IV-1 on page IV-11.

- Comment: Reference is made to the EIS Scoping Document of August 13, 1981 and the proposed hurricane protection levee--clarification as to its status should be made as to whether scoping input has been used, results made public and its relation to the Jefferson Parish Council's proposal.

  Response: The EIS for the West Bank Hurricane Protection Levee is currently being prepared for the Jefferson Parish Council by Gregory C. Rigamer & Associates. Upon completion, it will be made available for public review and comment. Presently, there is no projected completion date for the draft document.

- Comment: It is also not clear how the "growth limit line" south of Crown Point will be "a mitigative measure lessening possible perturbations associated with the final implementation of the Marrero-Lafitte Waterline--an exposition of this would make these relationships understandable and make valid the goal of wetland protection.

  Response: Development should, ideally, not be allowed outside of the "growth limit line" south of Crown Point, therefore, the waterline should not encourage development in that area.

- Comment: Enforcement procedures should be explained and oversight strategies should be planned.

  Response: Comment noted. See page VII-17 of this program and Section 213.17 of Act 361, appended, "Enforcement; injunction; penalties and fines".

9. Mr. Will Forrest, Litton Western Geophysical (written comment received 26 August 1982).

   - Comment (page II-50): We feel that the five-mile restriction to seismic exploration is not in the best interest of Jefferson Parish for the following reasons:

     1. Seismic data acquisition is essential to the oil and gas effort to evaluate and locate drillable prospects.

     2. Modern seismic acquisition techniques have proved to have negligible impact to the wetland environment, particularly in shallow water operations.

   Response: Comment noted.

10. Mr. E. L. Fennell, Exxon Company, USA (written comments received 26 August 1982).

- Comment: This letter is to reemphasize our belief that there is no reasonable environmental argument to support a complete ban on all types of seismic surveys within five miles of the shoreline in Lake Pontchartrain.

  Response: Comment noted.

- Comment: We also want to point out that all of the proposed Parish policies that are clearly directed at regulation of oil and gas activities beyond the guidelines provided in the Louisiana Coastal Resources Plan should be deleted from the CZMP. These activities are "uses of state concern" to be regulated and permitted only at State level. An attempt by the Parish to regulate these uses when that authority has been reserved by the State undermines the legality of the plan. Moreover, such an attempt is unnecessary due to the parish's influence through its comments in the State's permitting process. Limiting CZMP to uses of local concern would avoid the argument that the Parish is attempting to amend the guidelines in the State plan without following the amendment procedures prescribed in S213.8B of the State and Local Coastal Resources Management Act of 1978, as amended.

  Response: Comment noted. It is a state recommendation that the parish provide the state with policies concerning issues of state concern occurring in Jefferson Parish.

11. Mr. Sam Kennedy, Sierra Club, Delta Chapter (written comments received 26 August 1982).

- Comment: We are concerned with the apparent uncertainty within the draft regarding the boundaries of the West Bank Management Unit. Figure II-13 (page II-56) illustrates the western boundary of the West Bank Management Unit as conforming to the hurricane protection levee alignment currently proposed by Jefferson Parish. Such an alignment would include within the unit wetlands which are currently subject to litigation designed to prevent their conversion into non-wetlands. Since the goals for management of the West Bank Unit (page II-58, #5) promote development-related activities within the unit, we are concerned about the implied acceptance by Jefferson Parish officials of the ultimate conversion of these wetlands to non-wetlands use.

  Response: Comment noted.

- Comment: Previous residential and commercial development on the West Bank of Jefferson Parish within the area of the West Bank Management Unit have sometimes resulted in personal gain for the developers to the long-term detriment of individual citizens and local government. We believe the Coastal Zone Management Program should recognize past inconsistencies where immediate economic gain was emphasized over long-term responsibility of government to the citizens. The western boundary of the West Bank Management Unit as defined in this document represents a failure of the drafting committee and parish officials reviewing the draft document to accept the unpleasant realities which result when wetlands are converted into residential and commercial developments. If the Coastal Zone Management Program for Jefferson Parish is to serve as a guide for future development in the parish, the draft document should reflect those realities so well understood by many of the citizens of our area.

  Response: Comment noted.

12. Mr. R. Michael Lyons, Mid-Continental Oil and Gas Association (written comments received 26 August 1982).

- Comment: We are pleased to note the recognition in the parish plan of the Louisiana Coastal Resources Management Act of 1978 (Act 361). Of particular note are those uses of state concern listed on pages VII-2 and VII-3 of the Draft Program (June, 1982). On page VII-3, the following items are listed:

  All mineral activities, including exploration for and production of oil, gas, and other minerals, all dredge and fill uses associated therewith, and all other associated uses.

  All pipelines for the gathering, transportation or transmission of oil, gas and other minerals.

  Energy facility siting and development.

  Uses of local concern which may significantly affect interests of regional, state or national concern.

  Energy development activities, including any siting, construction, or operation of generating, processing and transmission facilities, pipeline facilities, and exploration for and production of oil, natural gas and geothermal energy.

It is also noted on page VII-9, paragraph F, that "Jefferson Parish will permit only uses of local concern. The parish will comment on uses of state and national concern, when those uses occur within or affect the parish."

In light of the above, we are very concerned about several aspects of the proposed parish plan. While you acknowledge that the parish does not intend to regulate energy-related activities, the plan throughout recites guidelines or rules which, in fact, suggest such regulation. The following are examples:

Every management unit "policy for use" (page II-1 et seq.) includes statements such as:

Dredged material should be placed continuously around dredged slips to avoid saltwater intrusion and erosion.

Existing canals and channels should be used to access new drilling sites, thereby reducing dredging.

Upon abandonment, canals should be plugged using earthen plugs and riprap or other stabilizing material.

Hydrocarbons from oil and gas activities should not be discharged into wetlands or waterbodies.

Dredged sites should be accessed by drilling barges and other deep-draft vessels during high tides.

Flow lines within Bayou LaFleur and the Barataria Oil and Gas Field should be laid across the marshland without dredging. At waterways these flowlines should be buried not less than three feet below the streambed or canal bottom.

Directional drilling should be used when appropriate to mitigate environmental impacts.

Pipeline corridors and existing canals should be used when possible.

The permittee should repair, as requested by the Administrator, all dams and plugs on abandoned access and pipeline canals constructed or maintained by the applicant.

Guidelines for improving coastal conditions in Jefferson Parish (page VI-1 et seq.) include many of the above cited provisions.

The "policy for use" for Lake Pontchartrain (page II-50) provides that "seismic surveys within five miles from the Lake Pontchartrain shoreline should not be allowed".

The Local Use Permit Application (pages VII-9 and VII-10) requires: "for dredging oil well access canals and channels, describe canal depth and dredging depth from mean high tide".

Since energy-related activities are, in fact, subject only to the jurisdiction of the state coastal zone management program, we respectfully suggest that all proposed guidelines and provisions with respect to such activities contained within the proposed Jefferson plan be deleted. The parish, of course, retains the authority to comment on all proposed state CZM permits. It may, should it so choose, include in such comments the suggestions cited above. It is our firm belief, however, that the inclusion of "guidelines", "policies", and/or "rules" with respect to energy-related activities within the Jefferson Parish Plan are inappropriate and contrary to the provisions and spirit of Act 361 of 1978.

Response: Comments noted. It is a state recommendation that the parish provide the state with policies concerning issues of state concern occurring in Jefferson Parish.

13. Mr. L. P. Teague, Texaco U.S.A. (written comments received 26 August 1982).

- Comments: The concept of issuing parish guidelines applicable to all uses of State concern in each parish has major drawbacks. R. S. 49:213.9 governs local coastal management programs. It does not require, or even mention, such a policy list. The parish role intended in R.S. 49:213.11(c) (3) is to comment on applications for uses of State concern on a case by case basis. The practical effect of the list of policies will be to substitute rigid guidelines in place of a case by case analysis by the Parish.

  Response: Comment noted. It is a state recommendation that the parish provide the state with policies concerning issues of state concern occurring in the parish.

- Comments: A related problem is the possibility of inter-parish conflicts; different parishes might recommend to the State that conflicting restrictions be imposed on a multi-parish project. Uses of State concern should be subject to uniform State rules. The parish role is to vigilantly assure full compliance with the State rules. Jefferson Parish should, at a minimum, provide for automatic consultation with other parishes affected by a proposed use of State concern, before sending comments to the State.

  Response: Comment noted. Coordination is discussed on page VII-20 and VII-21. Section VII.F.7 on page VII-20 was modified to include other parishes.

- Comment (page II-35 et seq.): "Turbidity screens should be used if oyster beds are endangered."

  This guideline presupposes that turbidity screens are effective in keeping turbid waters from contacting oyster beds. It has been our experience that such screens do not work well, and we are not aware of others who may have had success with turbidity screens. We do not believe the screens are needed. Unless oysters are actually buried with silt, they generally tolerate high turbidity levels with no significant mortality.

  Response: Comment noted.

- Comment (page II-35 et seq.): "Disturbed areas should be revegetated with appropriate native species." In most situations revegetation is not necessary to assure the development of an adequate vegetative cover for either aesthetics or erosion control. Natural revegetation normally occurs quickly.

  Response: Comment noted.

- Comment (page II-13 et seq.): "Directional drilling should be used when appropriate to mitigate environmental impacts."

  When directional drilling is used in coastal and inland operations, it is employed only at the expense of longer drilling time and greater well cost. It is feasible to directionally drill some wells, though not necessarily from a predetermined point that would eliminate the necessary dredging of at least a short access canal. A number of problems associated with that technique generally make it difficult. In fact, for some shallow wells, it is entirely impossible to drill directionally and reach the objective.

Due to the complex geology associated with salt domes in South Louisiana, it is especially important that well locations be positioned to encounter reservoirs in the optimum structural position. This procedure allows for the recovery of the maximum amount of reserves with the smallest number of wells. If directional drilling from some specific surface location is required without regard to subsurface geology, target formations might not be penetrated in optimum positions. This results in either smaller recovery of reserves or drilling additional wells. In the drilling of a well, the direction that the hole assumes is affected by the dip and strike of the formations being drilled. This phenomenon of natural drift must be considered for each well, and may make directional drilling more difficult.

Other problems associated with directional wells include the increased torque and drag on the drill pipe, which may cause sticking and loss of the drill string in the hole. Such loss of drill pipe occasionally necessitates abandonment of the well without completion. Stuck pipe also makes the controlling of a well blowout more difficult. The casing may also stick above total depth, requiring drillout and setting of a liner to complete the well. It is more difficult to obtain a good cement bond between the casing and formation in a directional hole because the pipe will rest on the side of the hole rather than remain centered. This cement bond is important as it serves to prevent migration of fluids, such as salt water, between formations.

In addition to problems associated with the actual drilling operation, a directional hole presents difficulties with subsequent production and workover activities. Due to the difficulty of working inside casing in a directional hole, there is an increased possibility of losing equipment during workover operations which may result in premature abandonment of the well and consequent loss of hydrocarbons. It is also more difficult to produce directional wells because of problems with wireline and artificial lift operations. Again, a possible consequence is early abandonment and a loss in ultimate recovery of reserves.

A question that usually arises in discussions of this sort is if directional drilling is such a difficult technique, why is it that most development wells located in offshore waters are drilled directionally? The answer of course lies in terms of economics and total reserves recovered.

In the deeper offshore waters, it is not economical to develop a field using a separate platform for each well, even though the wells could be drilled as straight holes. The cost of the platforms is prohibitive. Consequently, a single multi-well platform is installed to develop a given area. A platform of this type is not constructed though, unless the presence of sufficient reserves to justify development by directional drilling is proven.

Ultimately, in offshore operations a larger percentage of reserves is generally left unrecovered than in coastal and inland operations as a result of the greater costs associated with development by directional drilling. Thus, to require directional drilling in shallow water and inland operations would result in a comparable loss of available reserves at a time when the country still faces a serious energy shortage.

Response: Comment noted.

- Comment (page II-9) "Existing canals and channels should be used to access new drilling sites; thereby reducing dredging." Those opposed to additional dredging often cite the impact from dredged oil field canals in terms of saltwater intrusion and altered circulation patterns. However, it is our belief that the prime causes of saltwater intrusion are not oil field canals, but the natural subsidence associated with deltaic environments, the leveeing of the Mississippi River to the extent that the annual spring overflow has been halted, and the creation of navigation channels from the Gulf of Mexico to inland industrial or metropolitan centers.

  Any impact on saltwater intrusion created by oil field canals would be minimal because those waterways are confined to localized areas, and do not transport water over distances great enough to significantly affect normal salinity patterns. If unusually high salinity measurements are found in an oil field, then logically the saltwater reached the area through some avenue other than the access canals of the field.

  Regarding altered circulation patterns stemming from oil field activities, again it should be pointed out that any impacts would be of a localized nature. Furthermore, we have seen no data to indicate that such changes are inherently detrimental. In fact, it is recognized that an irregular shoreline which provides a lengthy marsh-water contact line leads to greater productivity in an estuary.

Most of the dredging that Texaco proposes to conduct is in an area where a number of access canals have already been dredged to serve our operations. It is unlikely that the amount of aditional dredging needed will have any significant impact on a particular management unit.

As acknowledged earlier in this discussion, there are a number of publications which predict dire ecological consequences unless dredging is halted, even though no conclusive evidence is presented to support that opinion. For example, Gagliano makes a strong statement regarding the expected adverse consequences of wetland loss in Louisiana, yet at an earlier point in his report, he cautions that in regard "...to whether such environmental alterations are beneficial or detrimental to biological productivity of the area ...", "this study cannot answer that question." Gagliano also admits that "...the effects of canals on wetland environments are difficult to evaluate...".

A report by Turner describes a relationship between a commercial penaeid shrimp landing and marsh acreage. It is obvious that there is indeed a statistical relationship between the two variables when data from around the world are compiled. However, if not erroneous, it is a simple cause and effect relationship between marsh acreage and shrimp production. One could be equally speculative and surmise that the shrimp catch is directly proportional to the amount of riverine discharge into an estuarine system. In fact, since it is likely that most wetland acreage is in the vicinity of river mouths, Turner's own data could probably be used to demonstrate that such a positive statistical correlation exists between river discharge and shrimp landings.

The fact of the matter is that a large number of variables affect the productivity of a marine ecosystem of which marsh acreage and oil field canals are only two such factors.

Also, this provision should be revised (if not deleted) to be consistent with State Guidelines 3.12 and 10.12, which are qualified by the words "to the maximum extent practicable".

Response: Comments noted.

- Comment (page II-35): "Flowlines within Lafitte, Little Lake, Manila Village, McCalls Island and Three Bayou Bay Oil and Gas Fields are to be laid across the marshland without dredging. Where these flowlines cross waterways, they are to be buried not less than three feet below the stream bed or canal bottom."

  Oil flowlines do comply with this guideline, but gas flowlines are normally buried their entire length. This is due to both safety and operational considerations. Because of the inherent danger associated with rupturing a high-pressure gas line, it is far safer to bury these lines--even in the marsh--to minimize the risk of rupture. Burying also serves to insulate gas lines and lessen the likelihood of the line freezing--a problem common to gas flowlines, especially during winter.

  Response: Comment noted, however, there are numerous instances in which flowlines are not buried properly as stated in this comment.

- Comment (page II-35): "Permits for dredging across islands, cheniers, or shell beaches should not be issued."

  We believe the intent of this guideline is to apply to barrier islands; not all islands. It is not feasible to avoid dredging on all islands. The guideline should be changed accordingly.

  Response: Comment noted.

- Comment (page II-35 et seq.): "Hydrocarbons from oil and gas activities should not be discharged into wetlands or water bodies."

  This is not reasonable, and is contrary to State Guideline 10.6. All discharges complying with applicable discharge permit programs should be allowed.

  Response: Comment noted.

- Comment (page II-50): "Seismic surveys within five miles from the Lake Pontchartrain shoreline should not be allowed."

  There does not appear to be any justification for this guideline. We strongly object to its inclusion. Seismic operations generally have insignificant impact on the environment. This policy is contrary to State Guideline 10.1.

  Response: Comment noted.

- Comment: Local guidelines affecting daily oil and gas operations on a parish level divided by twelve separate management units is unnecessary. Oil and gas operations are presently regulated at the State level providing uniform policy for the entire coastal zone area. Many of our operations involve several parishes. Because these operations frequently cross parish lines, it is imperative that a uniform policy reflected in State rules and regulations govern coastal zone areas and the oil and gas activity within those areas. The impact of these twelve management policies will splinter the uniform application concept and open the door to conflicting parish policies involving a multi-parish project. Such conflicts are costly in both time delays and unnecessary expenditures. We, therefore, recommend the parish delete "Policies for Uses in this Unit" for each of the twelve Management Units, to the extent such policies bear on uses of State concern as set forth on page VII-2 of the Draft Program.

  Response: Comment noted. It is a state recommendation that the parish provide the state with policies concerning issues of state concern occurring in Jefferson Parish. Multi-parish coordination is provided for on page VII-20.

14. Mr. A. J. Planche, Jr., Private Individual (written comments received 26 August 1982).

- Comment (page II-7): In the Bayou Aux Carpes Management Unit (Physical and Biological Description), I believe the last sentence is incorrect, since Bayou Barataria is directly connected to the Gulf of Mexico. This area is affected greatly by the tide. Coast Guard records of that area during the construction of the Lafitte-LaRose Highway will confirm tidal findings.

  Response: Concur. The word "minimally" was deleted from page II-7, paragraph 2.

- Comment (page II-7, para. 4): The fourth paragraph on page II-7 is incorrect. It says the Waterways, as dammed or vegetated, are inaccessible to boat traffic. Bayou Aux Carpes is only dammed at its mouth at Bayou Barataria. However, Bayou Aux Carpes is directly connected to the pipe line canal, which is also directly connected to Bayou Barataria. I have fished the area by boat on numerous occasions with friends. We observed the falling tide on the mud bank when the water was flowing from the swamp into Bayou Aux Carpes.

Response: Comment noted.

- Comment: All Council ordinances mentioned in the Coastal Management Report should be included in the final draft. Copies should be sent to all interested parties.

  Response: Copies of all ordinances are available upon request from Ms. Dolores Gonzales, Clerk of Council, P. O. Box 9, Gretna, LA 70054. Copies of the final report will be sent to all interested persons.

- Comment: Relative to the Bayou LaFleur Management Unit, I would like to see in the final draft, the distance from the center line of Louisiana Highway 45 to the east, where the westerly boundary lies. The same should apply to the levee south of Rosethorn. I do not know of any levee(s) running south to Rosethorn.

  Response: The boundaries for the Bayou LaFleur Management Unit, the Bayou Perot Management Unit and the Lower West Bank Management Unit conform to the line adopted by the Jefferson Parish Council in Ordinance No. 13795, which created a growth-limit line south of Crown Point and which will conform to any amendments to that ordinance. The distance of those boundaries from either side of Louisiana Highway 45 ranges from 30 feet from the edge of the highway to approximately 2000 feet in some areas of the northern segment of the Lower West Bank Management Unit.

- Comment: The Bayou Segnette Management Unit and the West Bank Management Unit have the illegal Bayou des Familles levee as their boundary. I believe it should be changed to preserve the valuable wetlands of this area. I also object to the boundary running easterly and south of Lapalco, taking so much wetland south of Lapalco including the C.I.T. Tracts. It is also incorrect to say there is no tidal activity in the West Bank Management Unit because of its levee(s).

  Response: Comments noted. Information on tidal activity was modified on page II-56.

- Comment: For the Lower West Bank Management Unit, I would like to see the distance given in feet from the center line of Louisiana Highway 303 to the west to this unit boundary and from Louisiana Highway 45 to the east to that boundary line.

Response: The boundary line of this Management Unit relative to its exact distance in feet from Louisiana Highways 303 and 45 has never been surveyed. The approximate distance ranges from 30 to 2000 feet on either side of Louisiana Highway 45 as shown on page II-52.

- Comment: This program "could be very helpful in helping to save the Wetlands not only in Jefferson Parish but also in the State of Louisiana. However, I do not feel Jefferson Parish by hand picking a political group of people to oversee the permitting process in these management areas would ever go against the Councils recommendation of issuing permits. Therefore, political favoritism would be shown just as it is now done in zoning and other department matters."

  Response: Comment noted.

15. Mr. Joseph I. Vincent, Private Individual (written comments received 26 August 1982).

- Comment (page I-1): Why is one goal to ensure that state and local governments have the primary authority for managing coastal resources? In general, the federal government has to be given almost all of the credit for any protection presently afforded to wetlands. Jefferson Parish has done nothing to protect its wetlands, has encouraged uncontrolled destruction of same, has grossly neglected sewerage treatment and constantly bypasses raw sewerage into the Barataria estuary, and is in this very document proposing the destruction of even more wetlands, contrary to the wellbeing of the majority of the citizens of the Parish, and certainly contrary to the wellbeing of the ecosystem.

  Response: Comment noted. That state and local government have the primary authority is a purpose listed in Act 361.

- Comment (page II-2): The West Bank Unit is depicted differently here from its depiction on page II-56, in particular with regard to the Bayou des Familes levee.

  Response: Concur. The boundary was changed on pg. II-2.

- Comment (page II-6): What kind of protection is afforded archaeological sites under Parish ordinances.

Response: There are no parish ordinances which afford any kind of protection to archaeological sites.

- Comment (page II-20): The stated intent of the boundary alignment of the Bayou Segnette unit is to "encompass the Jean Lafitte National Historical Park and its 'protection zone'....." Part of the protection zone lies outside of the alignment. Why the discrepancy?

  Response: Concur. The common boundary between the Bayou Segnette and West Bank Management Units conforms to the Jefferson Parish Council's Proposed Hurricane Protection Levee alignment. The boundary will be firmly established only after a levee is built.

- Comment (page II-44): I applaude any efforts to protect Grand Terre Island. It is my belief that the first step which should be taken is the removal of all horses from the island. They do great damage to plant communities on the beach, thereby accelerating deterioration of same. Also, measures should be taken to shore up the beach around the fort, before the fort is washed into the Gulf.

  Response: Comment noted.

- Comment (page II-49): I was unaware that the Bucktown Marina was a major goal for managing our resources, and I would like to see a brief discussion in the Final EIS of how the Bucktown Marina will afford better management of those resources.

  Response: The beneficial and adverse impacts associated with the proposed Bucktown Marina are the subject of an Environmental Impact Assessment prepared in March, 1979 by VTN Louisiana, Inc. of Metairie. Based on the findings of that assessment, a Department of the Army Permit to implement that project was issued by the U. S. Army Corps of Engineers on 23 May 1980.

- Comment (page II-50): Are any unmodified wetlands included in the Lower West Bank Management Unit? If so, why? Are any modified but easily restorable wetlands included in this unit? If so, why?

  Response: The Lower West Bank Management Unit is based on the Growth-Limit Line established by the Jefferson Parish Council in Ordinance 13795. There is a minimal amount of wetlands in this unit in the Barataria area north of Pailet Canal to the west and in the southernmost tip of the unit.

- Comment (page II-55): The West Bank Management Unit is by far the most objectionable unit described for the obvious reason that it encompasses hundreds of acres of wetlands for no justifiable reason. It also refers to "minimal" tidal activity in this unit, but those of us who have seen the tide rush in and out of the CIT Tract may dispute the use of this description.

  Response: Comment noted. Additional information on tides was added on page II-56.

- Comment (page II-56): The map is different from the map on page IV-14, and different from the map on the Parish's application to the Corps of Engineers for a hurricane protection levee. No one can tell just what the Parish really intends or proposes.

  Response: All levee and boundary alignments on pages II-57, IV-11 and IV-14 are now consistent with each other and the alignment submitted to the Corps for a hurricane protection levee.

- Comment (page II-58): The West Bank Management Unit does not lie entirely outside the "prohibited service area".

  Response: Concur. Changes made on page II-60.

- Comment (page III-6, para 5): How is Ordinance 13127 enforced? What specific acts of enforcement can you cite as evidence both that the ordinance is actually enforced, and as an example of how it is enforced? The ordinance may conform to EPA standards, but our sewerage treatment does not.

  Response: Ordinance 13127 is enforced by the Compliance Section of the Jefferson Parish Environmental and Development Control Department. All major contributing industries are routinely sampled and are assessed appropriate service charges to have their discharges treated. In addition, approximately 2,000 wastewater discharges have been sampled by the parish on a random basis in order to survey the quality and quantity of wastewater discharges within the parish.

  Compliance with Ordinance 13127 is enforced first by advising the owners of the facilities of the provisions of said ordinance and the requirement that all discharges must meet the standards required therein. All facilities are then given a sufficient amount of

time within which to modify their facilities so that discharges meet the standards of the parish ordinance. Whenever sewage treatment does not conform to EPA standards, reports are prepared by the Compliance Section and forwarded to EPA under the terms of the Parish NPDES permits.

- Comment (page IV-1): Either the figures or the language usage or both are faulty in paragraph one, the last sentence.

  Response: Concur. Last sentence deleted.

- Comment (page IV-3): The final statement in paragraph 3 "If, however, Jefferson Parish continues to lose wetlands vital as nursery and fishing grounds, the parish will soon begin to experience a serious decline in commercial and recreational fisheries," is, I assume, an admission of fact by the parish. Looking then at the alignment of the West Bank Management Unit, one must also assume that the parish does not give a damm whether it experiences such a decline or not.

  Response: Comment noted.

- Comment (page IV-12): The West Bank Hurricane Protection Levee alignment does not conform to the designated "prohibited service area" alignment. Also, I strongly disagree with the plan to dredge outside the leveed area. All dredging should be done within the levee system, which would accomplish two important objectives: access could be completely controlled, no vehicles could reach the levees except through designated points and for designated reasons; and, all pumping stations within the leveed area would be directly connected by the one ring canal system, making it much easier to compensate for pumping station failures at any one place.

  Response: Comment noted.

- Comment (page IV-14): This map does not conform to the alignment submitted to the Corps.

  Response: Concur. Changes made on page IV-14.

- Comment (page V-1): The facts as presented on page V-1 also argue very effectively against the parish's West Bank Management Unit alignment.

  Response: Comment noted.

- Comment (page VI-4): The statement on development in the Jean Lafitte "park protection zone" is at odds with the proposed hurricane levee alignment. The core area of the park is 8,600 acres.

  Response: Comment noted.

- Comment (page VI-4): In Item I, the first sentence is unsupported, particularly in the case of those wetlands illegally modified or drained, and which are easily restorable.

  Response: Comment noted.

- Comment (page VII-2): The sentence beginning with the words "Normal maintenance..." should be changed to read "...repair of existing legal structures..."

  Response: Sentence changed to read "...legally existing structures..."

- Comment (page VII-3): Some uses (or abuses) of local concern which must also be construed to be of state concern are the illegal CIT tract levees, the illegal Bayou des Familles levees, the destruction of the wetlands south of Lapalco Blvd. for use as a garbage dump by the City of Westwego; and the excess sewerage discharges into the Millaudon Canal and Bayou Segnette.

  Response: Concur.

- Comment (page VII-6): What is the source of the definition of fastlands?

  Response: The definition of fastlands as given on page XI-3 was taken from the Louisiana Coastal Resources Program Final Environmental Impact Statement (U. S. Department of Commerce and Louisiana Department of Natural Resources, 1980).

- Comment (page VII-7, para. 1): Why should the burden of proof be on the Secretary? This is unreasonable. Why should the public be burdened in terms of time and money because of some individual's whim or fancy?

  Response: The provisions of paragraph one of page VII-7 are among the "Rules and Procedurres for Coastal Use Permits" adopted by the State.

- Comment (page VII-7, Item 4): If the parish is serious in stating that to be exempt from the need to obtain a coastal use permit "The structure or work was lawfully in existence, currently serviceable, and (emphasis added) in active use....", are we then also to assume that the parish will grant any permit application it receives? After all, the parish did not fight illegal levees built by Mayor Kerner in Lafitte, it did not fight the CIT levees, it did not fight the Bayou des Familles levees. What are we to actually infer then from the requirement to obtain parish permits?

  Response: Comment noted. Changes made to Item 4, page VII-7 to read "...of legally existing structures..."

- Comment (page VII-16): I very much approve of requiring all applicants to post bond in an amount sufficient to cover the costs of restoring the project site upon abandonment. Such bond should be posted prior to commence ment of any activity at the proposed site.

  Response: Concur.

- Comment (page VII-20, Item 7): How are the environmental needs of the parish to be determined - politically or scientifically?

  Response: Some environmental needs of the parish are determined scientifically, others are determined politically. Many environmental needs are determined scientifically and politically.

- Comment (page VII-21): What type of mitigation is meant? This should be a requirement for all dredge and fill activities in the Barataria Estuary.

  Response: Appropriate mitigative measures refers to all applicable means of lessening the impacts of a proposed use throughout the coastal area of Jefferson Parish.

- Comment (page VIII-1): I am unaware of any enforcement of Ordinance No. 13127. Please cite some specific cases, what action was taken, and what type of enforcement is planned for the future.

  Response: Comment noted.

- Comment (page VIII-2): By whose definition has Ordinance 13127 been successfully administered? Please cite some specific examples of how this success has been determined.

  Response: Comment noted.

16. Ms. Peggy Keney, National Marine Fisheries Service (telephone communication received 27 August 1982 indicating that written comments would be forwarded). No written comments received as of 1 September 1982.

- Comment: In an oral comment, Ms. Keney suggested that Jefferson Parish identify its Wetland Mitigation Project in the program.

  Response: A section discussing the parish "Wetland Mitigation Program" was added as K. on page VI-5.

E. Comments Submitted After Close of Comment Period.

1. Mr. John Koury, Louisiana Department of Natural Resources, Office of Environmental Affairs, Solid Waste Management Division (written comments received 1 September 1982).

- Comment (page II-3, para. 5): Referenced landfills should be identified and the permit status of each should be indicated.

  Response: A listing of the landfills currently operating in Jefferson Parish and their permit status is given on page III-6, para. 7.

- Comment (page III-5): A section on Solid Waste Management Programs should be added to include "Extensive efforts and cooperation are being exercised towards effective and efficient Solid Waste Management Programs".

  Response: Section 7 "Solid Waste Management Program" was added on page III-6.

- Comment (page VI-1, Section B): Add the following statement: "All solid waste dumps must be closed or upgraded according to appropriate Department of Natural Resources Rules and Regulations."

  Response: Statement added to Section B, page VI-1.

- Comment (page VII-11, Section e): This item should include all divisions of the Office of Environmental Affairs.

  Response: Change was made on page VII-11.

- Comment (page VII-21): The Louisiana Department of Natural Resources encompasses all Divisions, unless Office of Environmental Affairs Divisions and/or Department of Natural Resources Divisions are referred to individually.

  Response: Comment noted.

- Comment (Glossary): Add definition of "Solid Waste" to glossary.

  Response: "Solid Waste" definition was added to page XI-5 as defined by the Louisiana Solid Waste Management Division.

2. Mr. Richard J. Hoogland, National Marine Fisheries Service (written comments received 7 September 1982).

   - Comment: We believe that adoption and enactment of the proposed "Coastal Zone Management Ordinance" by the Jefferson Parish Council will enable the Parish to protect their wetlands from destruction due to man's activities. We support the overall goals, objectives and policies as delineated in Section I and believe that the size and boundaries of the Management Units (Section II) are conducive to the overall plans. We especially support the plans that would restrict development to areas within levees or on fastlands. We also recommend that the "prohibited service" area, jointly established by the U. S. Environmental Protection Agency and Jefferson Parish and noted by the U. S. Army Corps of Engineers, should be maintained.

     Response: Comment noted.

   - Comment: The Jefferson Parish Wetlands Mitigation Project, approved the the Jefferson Parish Council by Resolution Number 44972 adopted May 12, 1982, should be included in the Jefferson Parish Coastal Zone Management Program. The mitigation program should

     1. Establish wetland areas within the parish that would benefit by the construction of a plug, levee or weir to reduce erosion and retard saltwater intrusion, yet continue to allow ingress and egress by marine organisms, or

2. Designate open water areas where spoil material could be used to create elevations conducive to the establishment and growth of marsh grasses.

In the case of large projects which would damage marine fishery resources and their habitat, offsite mitigation may be necessary, in addition to the recommended policies to mitigate adverse environmental impacts which are listed in the "Policies for Uses" of each management unit. A Council approved mitigation policy, with necessary permits, would facilitate any recommended offsite mitigation.

Response: Comment noted. Information concerning the "Wetland Mitigation Program" was added on page VI-5.

- Comment: The National Marine Fisheries Service encourages Jefferson Parish to participate in a management program for the Lake Pontchartrain Basin and the establishment of "Special Areas" in wetlands to further protect unique or environmentally sensitive areas.

  Response: Comment noted. Section 6 added on page II-50.

- Comment: To be effective, the Jefferson Parish Coastal Management Program should be at least as strict as the program implemented by the Coastal Management Section of the Louisiana Department of Natural Resources.

  Response: Concur.

- Comment (Section II): Policies for uses in each of the management units, where applicable, should include:

  - The method of spoil deposition should be decided on a case-by-case basis. Although a continuous levee is often recommended to prevent saltwater intrusion, at times spoil could be placed in ponds to the elevation of adjacent marsh to create areas conducive to the establishment of marsh vegetation.

  - Mitigation or compensation at an off-site location should be required for projects which would adversely impact wetland areas and where adequate compensation cannot be conducted on site.

Response: Additional policies were added on pages II-9, II-13, II-19, II-25, II-30, II-36, II-45, II-50, II-51, II-55 and II-60.

- Comment (page IV-3, para. 3): The latest published fisheries data, for the year 1981, should have been listed and referenced (Thompson, 1982). Although the catch in 1978 was higher, the 1981 catch amounted to almost one-fourth of all fish caught by U. S. fishermen.

  Response: This plan was prepared prior to the referenced report. However, additional information was added on page IV-3.

- Comment (page V-2 and V-3): The study by Gagliano, Meyer-Arendt, and Wicker (1981) detailing the land loss in the Mississippi River deltaic plain, which includes Jefferson Parish, should be mentioned. The life expectancy of Jefferson Parish is not projected in the study, however, the rate of land loss is shown to be over one-half percent per year in some parts of Jefferson Parish.

  Response: Statement added to page V-2, para. 2.

- Comment (page V-6, para. 5): Commercial fishing may be impaired, not only because of being limited to polluted areas to the north, but also because of the loss of nursery areas in fresh and intermediate marshes.

  Response: Statement added to page V-6, para. 5.

- Comment (page VII-9): The state coastal zone management program has been in operation for nearly two years and their permit form is already developed.

  Response: Although the state's program has been in effect since October 1, 1980, the state has not developed its own form. The state accepts the same Department of the Army permit applications which are submitted to the U. S. Army Corps of Engineers for projects involving Section 404 of the Clean Water Act and Section 10 of the River and Harbor Act.

GLOSSARY

Barrier Islands. Long, narrow sand islands lying parallel to the shore and built up by the action of the waves, currents and winds.

Brackish Marsh. A marsh having a salinity of 10 to 20 ppt. The principal species of this vegetative association in the Barataria Basin are (Chabreck, 1972): Distichlis spicata (Salt grass), 28.96%; Eleocharis parvula (Dwarf Spikerush), 5.49%; Juncus romerianus (Black rush), 3.26%; Scirpus olneyi (Three-cornered grass), 9.03%; and Spartina patens (Wire grass), 45.84%.

Chenier Forests. This vegetative association is located on low isolated, natural levees that mark the sites of abandoned distributaries of the Mississippi River. It is dominated by live oak (Quercus virginiana) and palmetto (Sabel minor). These ridges also support (Palmisano, 1970): Acer drummondii (Drummond's red maple), Celtis laevigata (Hackberry), Diospyros virginiana (Persimmon), Gleditsia triacanthos (Honey-locust), Quercus nigra (Water oak), Taxodium distichum (Bald cypress), Ulmus americana (American Elm), and Zanthoxylem clava-herculis (Hercules-club).

Coastal Waters. Coastal waters are bays, lakes, inlets, estuaries, rivers, bayous, and other bodies of water within the boundaries of the coastal zone which have measurable seawater content (under normal weather conditions over a period of years).

Coastal Zone. The coastal zone includes the coastal waters and adjacent shorelands within the boundaries of the coastal zone (established in Section 213.4 of Act 361), which are strongly influenced by each other, and in proximity to the shorelines, and uses of which have a direct and significant impact on coastal waters.

Croplands. This vegetative association consists of pastures and tilled fields. It is characterized by composite, grass and legume species typical of disturbed areas.

Detritus. A non-dissolved product of disintegration or wearing away. It pertains to organic or inorganic matter.

Discharge. This term includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, or dumping.

Dune Vegetation. This vegetative association consists of the following species (Bahr and Hebrard, 1976): Cakile sp. (Sea rocket), Heterotheca sp. (Frogbit), Ipomea pes-caprae (Beach morning glory), Ipomea sp. (Morning glory), Oenothera sp. (Evening primrose), Panicum repens (Dogtooth grass), and Scirpus olneyi (Three-cornered grass).

Estuary. An estuary is a semi-enclosed coastal body of water which has a connection with the open Gulf and within which sea water is measurably diluted with fresh water derived from land drainage.

Fast Lands. See Modified Wetlands or Fastlands on page X-3.

Forested Wetlands or Swamps. This vegetative association occurs along the flanks of natural levees and at the upper ends of interdistributary basins. The principal species in this association are (Conner et al., 1975): Acer drummondii (Drummond's red maple), 19.44%; Fraxinus tomentosa (Pumpkin ash), 8.33%; Nyssa aquatica (Tupelo gum), 32.41%; and Taxodium distichum (Cypress), 33.33%.

Freshwater Marsh. A marsh having a salinity of less than 5 ppt. The principal species of this vegetative association in the Barataria Basin are (Chabreck, 1972): Alternanthera philoxeroides (Alligator-weed), 3.43%; Bacopa monnieri (Water hyssop), 1.82%; Cyperus odoratus (Sedge), 3.21%; Echinochloa walteri (Water millet), 2.15%; Eichhornia crassipes (Water hyacinth), 1.99%; Eleocharis sp. (Spikerush), 12.31%; Panicum hemitomon (Maidencane), 41.35%; Polygonum spp. (Smartweeds), 1.60%; Sagittaria falcata (Bulltongue), 17.42%; Scirpus olneyi (Three-cornered grass), 1.48%; Typha spp. (Cattails), 2.59%; and Zizaniopsis miliacea (Giant cutgrass), 1.36%.

Habitat. The environment, usually the natural environment, in which a population of plants or animals occurs.

Intermediate Marsh. A marsh having a salinity of 5 to 10 ppt. This vegetative association is a transition zone between Freshwater Marsh and Brackish Marsh. The species found here are those that can stand fluctuations between zero and 20 ppt.

Land Area. Land area refers to all land areas including marshes and swamps at mean low tide.

Mangrove Swamp. This vegetative association is dominated by black mangrove (Avicennia nitida) and is only found in the southern half of the Bay Study Unit and on the leeward sides of the barrier islands of the Grand Isle Study Unit.

Marsh. Low-lying soft, wet land, commonly covered, sometimes seasonally, entirely or partially with water; dominated by grasses or grasslike vegetation.

Modified Forested Wetlands. This term indicates that the area is at various stages of transition from forested wetlands or swamps to bottomland hardwood forests because of the forced drainage of the area. The plant associations consist of swamp forest indicator species such as Drummond's red maple, bald cypress, and button bush that remain from the area's previous history as a wetland, and black willow, water oak, hackberry, elderberry, blackberry, ragweed, and goldenrod which are indicative of the now drier nature of the area.

Modified Wetlands or Fast Lands. Lands surrounded by publicly owned, maintained, or otherwise validly existing levees or natural formations, as of 1 January 1979 or as may be lawfully constructed in the future, which levees or natural formations would normally prevent activities, not to include the pumping of water for drainage purposes, within the surrounded area from having direct and significant impacts on coastal waters.

Natural Levee. Slightly elevated areas that flank alluvial streams and form conspicuous highs on the otherwise featureless deltaic plain.

Natural Levee Forest. This vegetative association exists along the natural levees of the Mississippi River and its various existing and abandoned distributaries. The trees in this association include (Conner et al., 1975 and Palmisano, 1970):

Overstory Species	Percent
Acer drummondii (Drummond's red maple)	25.00
Acer negundo (Boxelder)	7.86
Carya ovata (Shagbark hickory	4.29
Celtis laevigata (Hackberry)	2.14
Cornus drummondii (Roughleaf dogwood)	8.57
Diospyros virginiana (Persimmon)	3.57
Fraxinus tomentosa (Pumpkin ash)	3.57
Ilex decidua (Deciduous holly)	2.86
Nyssa aquatica (Tupelo gum)	11.43
Populus heterophylla (Cottonwood)	2.86
Quercus nigra (Water oak)	2.14
Quercus shumardii (Shumard red oak)	2.14
Salix nigra (Black willow)	5.71
Taxodium distichum (Cypress)	4.29
Ulmus americana (American elm)	5.00

Understory Species

Cephalanthus occidentalis (Buttonbush)
Cynodon dactylon (Bermuda grass)
Fraxinus pennsylvanica (Green ash)
Gleditsia triacanthos (Honey-locust)
Iva frutescens (Marsh elder)
Phragmites communis (Roseau cane)
Quercus virginiana (Live oak)
Rubus sp. (Blackberry)

Navigable Waters. Navigable waters are waters of the United States, including the territorial seas. This term includes, but is not limited to:

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) Interstate waters, including wetlands;

(3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, and wetlands; the use, degradation or destruction of which could affect interstate commerce, including any such waters;

(a) Which are or could be used by interstate travelers for recreational or other purposes; and

(b) From which fish or shellfish are or could be taken and sold in interstate commerce; and

(c) Which are used or could be used for industrial purposes by industries in interstate commerce.

(4) All impoundments of waters of the United States, otherwise defined as navigable waters, under this paragraph.

(5) Tributaries of waters identified in this definition.

(6) Wetlands adjacent to waters identified in this definition, provided that treatment ponds or lagoons designed to meet the requirements of the Clean Water Act (other than cooling ponds meeting the criteria of this paragraph) are not waters of the United States.

Nursery. An area where animals congregate for giving birth or where the early life history stages develop.

Oil. Oil means any kind of oil in any form, including but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged materials.

Onshore. Onshore includes all land areas landward of the inner boundary of the territorial seas.

Parts Per Thousand (ppt). This measure of concerntration is used to indicate salinities. Seawater is 35 ppt salt or there are 35 grams of dissolved salts in every one thousand grams of water. Freshwater is less than 0.5 ppt.

Saline Marsh. A marsh having a salinity of greater than 20 ppt. This vegetative association in the Barataria Basin consists of the following species (Chabreck, 1972): Distichlis spicata (Salt grass), 10.05%; Juncus romerianus (Black rush), 14.90%; Spartina alterniflora (Oyster grass), 62.79%; and Spartina patens (Wire grass), 7.77%.

Solid Waste. Solid waste means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining and agricultural operations, and from community activities, but does not include or mean solid or dissolved material in domestic sewage or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under R. S. 30:1094, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended, or hazardous waste subject to permits under R. S. 30:1131 et seq.

Spoil Banks. Areas built by the deposition of dredged material placed along the banks of the canal being dug. In marshlands, the resulting higher elevation and firmer substrate allow the establishment of species that are not typical of the original marsh lands. A list of these species follows: Acer drummondii (Drummond's red maple), Cephalanthus occidentalis (Buttonbush), Iva frutescens (Marsh elder), Nyssa aquatica (Tupelo gum), Phragmites communis (Roseau cane), Quercus virginiana (Live oak), Rubus sp. (Blackberry), and Salix nigra (Black willow).

Swamp. A flat, wet area usually or periodically covered by standing water and supporting a growth of trees, shrubs and grasses.

Wetlands. Wetlands are those vegetated areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

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APPENDIX

Wildlife Harvest Species of Jefferson Parish

The following tables are only concerned with those wildlife species that are or have the potential for being commercially or recreationally harvested.

COMMON NAME	SCIENTIFIC NAME	Drainage Canals	Swamp	Freshwater	Intermediate Marsh	Brackish Marsh	Saline Marsh
Crustaceans							
crab, blue	Callinectes sapidus			✓	✓	✓	✓
crab, stone	Menippe mercenaria						✓
crawfish	Procambarus sp.	✓	✓	✓	✓		
shrimp, brown	Penaeus aztecus					✓	✓
shrimp, pink	Penaeus duorarum					✓	✓
shrimp, river	Macrobranchium ohione	✓	✓	✓	✓	✓	
shrimp, rock	Alpheus sp.						✓
shrimp, white	Penaeus setiferus				✓	✓	✓
Molluscs							
clam, brackish water	Rangia cuneata			✓	✓	✓	✓
clam, quahaug	Mercenaria mercenaria					✓	✓
oyster, eastern or American	Crassostrea virginica					✓	✓
Amphibians							
bullfrog, common	Rana catesbeiana	✓	✓	✓			
bullfrog, southern	Rana grylio	✓	✓	✓			
Reptiles							
alligator, American	Alligator mississippiensis	✓	✓	✓	✓	✓	
terapin, diamond-back	Malaclemys terrapin						✓
turtle, alligator snapping	Macroclemys temmincki	✓	✓	✓	✓	✓	
turtle, common snapping	Chelydra serpentina	✓	✓	✓	✓		
turtle, midland smooth softshell	Trionyx muticus	✓	✓	✓			
turtle, red-eared	Pseudemys scripta	✓	✓	✓	✓		
Fish							
bass, largemouth	Micropterus salmoides	✓	✓	✓	✓		
bass, spotted	Micropterus punctulatus	✓	✓	✓	✓		
bass, striped	Marone saxatilis						
bass, white	Marone chrysops	✓	✓	✓	✓		

COMMON NAME	SCIENTIFIC NAME	Drainage Canals	Swamp	Freshwater	Intermediate Marsh	Brackish Marsh	Saline Marsh
Fish cont.							
buffalo	Ictiobus sp.	✓	✓	✓	✓		
catfish, blue	Ictalurus furcatus	✓	✓	✓	✓		
catfish, channel	Ictalurus punctatus	✓	✓	✓	✓		
catfish, sea	Arius felis					✓	✓
catfish, spoonbill (paddlefish)	Polyodon spathula	✓	✓	✓	✓		
crappie, black	Pomoxis nigromaculatus	✓	✓	✓	✓		
crappie, white	Pomoxis annularis	✓	✓	✓	✓		
croaker, Atlantic	Micropogon undulatus				✓	✓	✓
drum, banded	Larimus fasciatus					✓	✓
drum, black	Pogonias cromis				✓	✓	✓
drum, red (redfish)	Sciaenops ocellata				✓	✓	✓
flounder, fringed	Etropus crossotus					✓	✓
flounder, southern	Paralichthys lethostigma					✓	✓
gar, alligator	Lepisosteus spatula	✓	✓	✓	✓	✓	
mackerel, Spanish	Scomberomorus maculatus					✓	✓
menhaden, gulf	Brevoortia patronus				✓	✓	✓
mullet, striped	Mugil cephalus	✓	✓	✓	✓	✓	✓
seatrout, sand (white trout)	Cynoscion arenarius				✓	✓	✓
seatrout, spotted (speckled trout)	Cynoscion nebulosus		✓	✓	✓	✓	✓
shad	Dorosoma spp.	✓	✓	✓	✓	✓	
sharks	Order Squaliformes			✓	✓	✓	✓
sheepshead	Archosargus probatocephlus				✓	✓	✓
spot	Leiostomus xanthurus				✓	✓	✓
sunfish, bluegill	Lepomis macrochirus	✓	✓	✓	✓		
sunfish, redear	Lepomis microlophus	✓	✓	✓	✓		
sunfish, warmouth (bream)	Lepomis gulosus	✓	✓	✓	✓		

COMMON NAME	SCIENTIFIC NAME	Fields	Fastlands	Swamp	Freshwater	Intermediate Marsh	Brackish Marsh	Saline Marsh
Birds								
canvasback	Aythya valisineria		✓	✓	✓	✓	✓	
coot, American	Fulica americana		✓	✓	✓	✓	✓	
dove, mourning	Zenaida macroura	✓			✓			
duck, black	Anas rubripes		✓	✓	✓	✓	✓	
duck, mottled	Anas fulvigula		✓	✓	✓	✓	✓	
duck, redhead	Aythya americana		✓	✓	✓	✓	✓	✓
duck, ring-necked	Aythya collaris		✓	✓	✓	✓	✓	
duck, ruddy	Oxyura jamaicensis		✓	✓	✓	✓	✓	
duck, wood	Aix sponsa		✓	✓	✓	✓		
gadwall	Anas strepera	✓	✓	✓	✓	✓	✓	
gallinule, common	Gallinula chloropus		✓	✓	✓	✓	✓	
goose, Canada	Branta canadensis	✓	✓	✓	✓	✓		
goose, snow	Chen caerulescens	✓	✓	✓	✓	✓		
mallard	Anas platyrhynchos	✓	✓	✓	✓	✓	✓	
merganser, hooded	Lophodytes cucullatus		✓	✓	✓	✓	✓	
merganser, red-breasted	Mergus serrator		✓	✓	✓	✓	✓	
pintail	Anas acuta	✓	✓	✓	✓	✓	✓	
quail (bobwhite)	Colinus virginianus	✓	✓					
scaup, greater	Aythya marila		✓	✓	✓	✓	✓	✓
scaup, lesser	Aythya affinis		✓	✓	✓	✓	✓	✓
shoveller, northern	Anas clypeata	✓	✓	✓	✓	✓	✓	
snipe, common	Capella gallinago	✓	✓	✓	✓	✓		
teal, blue-winged	Anas discors	✓	✓	✓	✓	✓	✓	
teal, green-winged	Anas crecca	✓	✓	✓	✓	✓	✓	
wigeon, American	Anas americana	✓	✓	✓	✓	✓	✓	
woodcock, American	Philohela minor	✓	✓	✓	✓	✓		

COMMON NAME	SCIENTIFIC NAME	Fastlands	Swamp	Freshwater	Intermediate Marsh	Brackish Marsh	Saline Marsh
Mammals							
bob cat	Lynx rufus	x	x				
deer, white-tailed	Odocoileus virginianus	x	x	x	x	x	
mink, North American	Mustela vison	x	x	x	x	x	
muskrat	Ondatra zibethicus	x	x	x	x	x	x
nutria	Myocastor coypus	x	x	x	x	x	x
opossum, Virginia	Didelphis virginiana	x	x	x	x		
otter, Nearctic River	Lutra canadensis	x	x	x	x	x	
rabbit, eastern cotton tail	Sylvilagus floridanus	x	x	x			
rabbit, swamp	Sylvilagus aguaticus	x	x	x	x	x	x
racoon, Northern	Procyon lotor	x	x	x	x	x	x
skunk, striped	Mephitis mephitis	x	x	x			
squirrel, fox	Sciurus niger	x	x				
squirrel. gray	Sciurus carolinensis	x	x				
rat, marsh rice	Oryzomys palustris	x	x	x			
Trees							
cypress, bald	Taxodium distichum	x	x				
tupelo gum	Nyssa aquatica	x	x				

Limitations Affecting Various Soil Uses in the LaFleur, Perot, Bay, Dupre Cut and Grand Isle Study Units

Uses	Freshwater Marsh[1]	Saltwater Marsh[2]	Swamp[3]	Coastal Sand Beaches[4]
Low Cost Roads	Very Severe[5]	Very Severe	Very Severe	Very Severe
Landscaping and Gardening	Very Severe	Very Severe	Very Severe	Very Severe
Picnic Areas, Camp Sites and Golf Fairways	Very Severe	Very Severe	Very Severe	Very Severe
Playgrounds	Very Severe	Very Severe	Very Severe	Very Severe
Wildlife Management	Ducks and Deer only	Ducks and Deer only	Ducks and Deer only	Shorebirds only
Cropland	Unsuitable without major reclamation	Unsuitable without major reclamation	Unsuitable without major reclamation	Unsuitable
Pastureland	Unsuitable without major reclamation	Unsuitable without major reclamation	Unsuitable without major reclamation	Unsuitable
Building Sites	Very Severe	Very Severe	Very Severe	Very Severe
Septic Tank Filter Fields	Very Severe	Very Severe	Very Severe	Very Severe
Sewage Lagoons	Very Severe	Very Severe	Very Severe	Very Severe

NOTE:

1. Development in freshwater marsh soils is very severely limited due to instability, a permanently high water table, the hazard of flooding and a very high subsidence potential if drained.

2. Development in saltwater marsh soils is very severely limited due to salt content instability, a permanently high water table, the hazard of flooding and high subsidence potential if drained.

3. Development in swamp soils is very severely limited due to the permanently high water table, the hazard of flooding and the subsidence potential if drained.

4. Development on coastal sand beaches is very severely limited due to flooding, salt content, scouring and deposition from wave and tidal action.

5. Very severe indicates that the soils have one or more property so unfavorable for rated use that overcoming the limitations would be most difficult and costly. Reclamation is the extreme which may require the soil material to be removed, replaced, or completely modified.

SOURCE: U. S. Department of Agriculture, 1971.

Limitations Affecting Various Soil Uses in the Avondale, Bayou Aux Carpes, Bayou Segnette, East Bank, Lake Pontchartrain, Lower West Bank and West Bank Study Units

Soil Name	Homes & Light Industry (with Community Sewage Systems)	Landscaping, Gardening & Lawns	Picnic Areas & Playgrounds	Streets, Roads, Sidewalks, Patios, Driveways
Allemands Muck, drained	P-Severe	P-Severe	P-Severe	P-Severe
Allemands Variant Muck	P-Severe U-Very Severe	P-Severe U-Very Severe	P-Severe U-Very Severe	P-Severe U-Very Severe
Allemands Peat	P-Severe U-Very Severe	P-Severe U-Very Severe	P-Severe U-Very Severe	P-Severe
Barbary Soils	P-Severe U-Very Severe	P-Severe U-Very Severe	P-Severe U-Very Severe	P-Severe U-Very Severe
Barbary Variant Clay, drained	P-Severe	P-Severe	P-Severe	P-Severe
Commerce Silt Loam	P-Moderate	P-Slight	P-Moderate	P-Moderate
Commerce Silty Clay Loam	P-Moderate	P-Moderate	P-Moderate	P-Moderate
Ijam Variant Clay	P-Severe	P-Severe	P-Severe	P-Severe
Kenner Muck	P-Very Severe U-Very Severe	P-Severe U-Very Severe	P-Severe U-Very Severe	P-Severe U-Very Severe
Sharkey Clay	P-Severe	P-Severe	P-Severe	P-Severe
Sharkey Variant Clay	P-Severe	P-Severe	P-Severe	P-Severe
Sharkey Silty Clay Loam	P-Severe	P-Severe	P-Severe	P-Severe
Vacherie Complex, Gently undulating	P-Moderate	P-Slight	P-Moderate	P-Moderate

Note:

P - protected by levees with pumpoff drainage

U - unprotected and subject to flooding

Slight - indicates that the soils have properties favorable for rated use. The limitations are so minor that they can be easily tolerated or overcome.

Moderate - indicates that the soils have properties moderately favorable for rated use. The limitations can be tolerated or they can be overcome with design or special maintenance.

Severe - indicates that the soils have one or more properties unfavorable for rated use. Limitations may be undesirable to tolerate or difficult and costly to overcome with design or special maintenance.

Very Severe - indicates that the soils have one or more property so unfavorable for rated use that overcoming the limitations would be most difficult and costly. Reclamation is the extreme which may require the soil material to be removed, replaced, or completely modified.

Source: U. S. Department of Agriculture, 1978.