FLOOD INSURANCE STUDY

JEFFERSON PARISH, LOUISIANA AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
GRAND ISLE, TOWN OF	225197
GRETNA, CITY OF	225198
HARAHAN, CITY OF	225200
JEAN LAFITTE, TOWN OF	220371
KENNER, CITY OF	225201
WESTWEGO, CITY OF	220094
UNINCORPORATED AREAS	225199

MARCH 23, 1995

Federal Emergency Management Agency

NOTICE TO FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program (NFIP) have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components.

Initial Parishwide FIS Effective Date: March 23, 1995

Revised Parishwide FIS Dates:

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FLOOD INSURANCE STUDY
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1.0 INTRODUCTION

1.1 Purpose of Study

This parishwide Flood Insurance Study (FIS) investigates the existence and severity of flood hazards in, or revises previous FISs/Flood Insurance Rate Maps (FIRMs) for, the geographic area of Jefferson Parish, Louisiana, including: the Cities of Gretna, Harahan, Kenner, and Westwego; the Towns of Grand Isle and Jean Lafitte; and the unincorporated areas of Jefferson Parish (hereinafter referred to collectively as Jefferson Parish). This FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This study has developed flood risk data for various areas of the community that will be used to establish actuarial flood insurance rates. This information will also be used by Jefferson Parish to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP), and by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

In some states or communities, floodplain management criteria or regulations may exist that are most restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the state (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgments

The sources of authority for this FIS are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

Information on the authority and acknowledgments for each jurisdiction shown on this parishwide FIS; as compiled from their previously printed FIS report narratives, is shown below.

Town of Grand Isle: a wave height analysis for the FIS report dated September 2, 1982, was prepared for the Federal Emergency Management Agency (FEMA) from information collected from various Federal agencies in order to include the effects of wave action from the Gulf of Mexico and Caminada Bay (Reference 1).

City of Gretna: the hydrologic and hydraulic analyses for the FIRM dated February 13, 1976, were prepared by the New Orleans District of the U.S. Army Corps of Engineers (USACE) for FEMA under Inter-Agency Agreement No. IAA-H-8-70, Project Order No. 21, and Inter-Agency Agreement No. IAA-H-8-71, Project Order No. 2. The analyses for the FIS report dated November 1, 1985, were also prepared by the New Orleans District of the USACE for FEMA, under Inter-Agency Agreement No. EMW-E-0105, Project Order No. 7. That work was completed in September 1982. A reanalysis of the pumping stations in the City of Gretna was performed by the New Orleans District of the USACE. The revised analysis was completed in 1984.

City of Harahan: the hydrologic and hydraulic analyses for the FIRM dated July 11, 1975, were prepared by the New Orleans District of the USACE for FEMA, under Inter-Agency Agreement No. IAA-H-8-70, Project Order No. 21 and Inter-Agency Agreement No. IAA-H-8-71, Project Order No. 2. The analyses for the FIRM dated July 5, 1984, were prepared by the New Orleans District of the USACE for FEMA, under Inter-Agency Agreement No. EMW-E-0105, Project Order No. 7. That work was completed in September 1982.

City of Kenner:	the hydrologic and hydraulic analyses for the FIRM dated August 22, 1975, were prepared by the New Orleans District of the USACE for FEMA, under Inter-Agency Agreement No. IAA-H-8-70, Project Order No. 21, and Inter-Agency Agreement No. IAA-H-8-71, Project Order No. 2. The analyses for the FIS report dated November 1, 1985, were prepared by the New Orleans District of the USACE for FEMA, under Inter-Agency Agreement No. EMW-E-0105, Project Order No. 7. That work was completed in September 1982. A reanalysis of the pumping stations in the city was performed by the New Orleans District of the USACE. The wave height analysis was revised by Bernard Johnson, Inc., to include the effects of muddy bottoms. The revised analyses were completed in 1984.
City of Westwego:	the hydrologic and hydraulic analyses for the FIRM dated March 11, 1977, were prepared by the New Orleans District of the USACE for FEMA, under Inter-Agency Agreement No. IAA-H-8-70, Project Order No. 21, and Inter-Agency Agreement No. IAA-H-8-71, Project Order No. 2. The analyses for the FIRM dated June 15, 1984, were prepared by the New Orleans District of the USACE for FEMA, under Inter-Agency Agreement No. EMW-E-0105, Project Order No. 7. That work was completed in September 1982.

Authority and acknowledgments for the unincorporated areas of Jefferson Parish and the Town of Jean Lafitte are not available because a FIS report was never published for those communities.

In this parishwide study, the interior drainage analyses for Ponding Areas 1-54 were prepared by the New Orleans District of the USACE for FEMA under Inter-Agency Agreement No. 88-E-2730, Project Order No. 7. This work was completed in November 1991. In addition, a wave height analysis for the Gulf of Mexico was prepared by Dewberry & Davis. This work was completed in August 1991. Base (100-year) Flood Elevations (BFEs) within Drainage District No. 9 were taken from the Jefferson Parish October 1, 1983, FIRM, except for the BFEs north of U.S. Route 90, which were taken from the City of Gretna November 1, 1985, FIRM (References 2 and 3).

1.3 Coordination

The initial Consultation Coordination Officer's (CCO) meetings were held with representatives of FEMA, the communities, and the study contractors to explain the nature and purpose of FISs, and to identify the streams to be studied by detailed methods. The final CCO meetings were held with representatives of FEMA, the communities, and the study contractors in order to review the results of the studies.

The dates of the initial and final CCO meetings held for Jefferson Parish and the incorporated communities within its boundaries are shown in the following tabulation:

Community Name	Initial CCO Date	Final CCO Date
Town of Grand Isle	*	*
City of Gretna	January 1979	*
City of Harahan	January 1979	August 2, 1983
Town of Jean Lafitte	*	*
City of Kenner	January 1979	August 2, 1983
City of Westwego	January 1979	August 1, 1983
Unincorporated Areas	*	*

* Data not available

Basic data for the study area located within levee systems were collected from various sources, including pertinent studies and reports prepared by FEMA and the USACE. The following information was utilized in the study: the one-foot contour interval maps for the west bank of Jefferson Parish prepared by URS/Forrest and Cotton, Inc., and Barnard & Thomas, Consulting Engineers, Inc. (References 4 and 5); the "as built" levee surveys dated January and March 1981 prepared by Jefferson Parish; the <u>East Bank Master Drainage Plan for Jefferson Parish</u> prepared by Burk & Associates, Consulting Engineers, Inc., (Reference 6); and a one-foot contour interval map for the east bank of Jefferson Parish prepared by the USACE in conjunction with the <u>Lake Pontchartrain and Vicinity Hurricane Protection Program Restudy</u> (Reference 7). Precipitation data were obtained from the National Weather Service for the many precipitation stations located in the Jefferson-New Orleans metropolitan area. Pumping station capacities, efficiencies, and pumping records were furnished by Jefferson Parish. Also available for use in the study were reports, which addressed future drainage improvements, prepared by contractors for Jefferson Parish.

The following Federal agencies were contacted for information relating to the wave height analyses: Defense Mapping Agency, Environmental Protection Agency, Forest Service, National Aeronautics and Space Administration, Library of Congress National Cartographic Information Center, National Ocean Survey, National

Weather Service, Soil Conservation Service, USACE, U.S. Geological Survey, and U.S. Fish and Wildlife Service. The following State agencies and private firms were contacted: Louisiana State University, Office of Tourism, Department of Transportation and Development, Department of Natural Resources Coastal Environment, Inc., Gulf Coast Aerial Mapping Company, and Jefferson Parish personnel.

For this parishwide FIS, the final CCO meeting was held on June 24, 1992.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Jefferson Parish, Louisiana. The area of study is shown on the Vicinity Map (Figure 1).

This revision was carried out in order to include flood hazard information for incorporated communities within Jefferson Parish into a parishwide FIS. FISs incorporated into this parishwide reflect improved capacity of pumps; wave height analyses include the effects of marsh grass and muddy bottoms on wave heights.

All or portions of the following sources have been studied by detailed methods: areas within the existing levee systems affected by rainfall ponding and levee overtopping, the Mississippi River, hurricane storm surges from Lake Pontchartrain and the Gulf of Mexico, and wave action from the Gulf of Mexico and Caminda Bay.

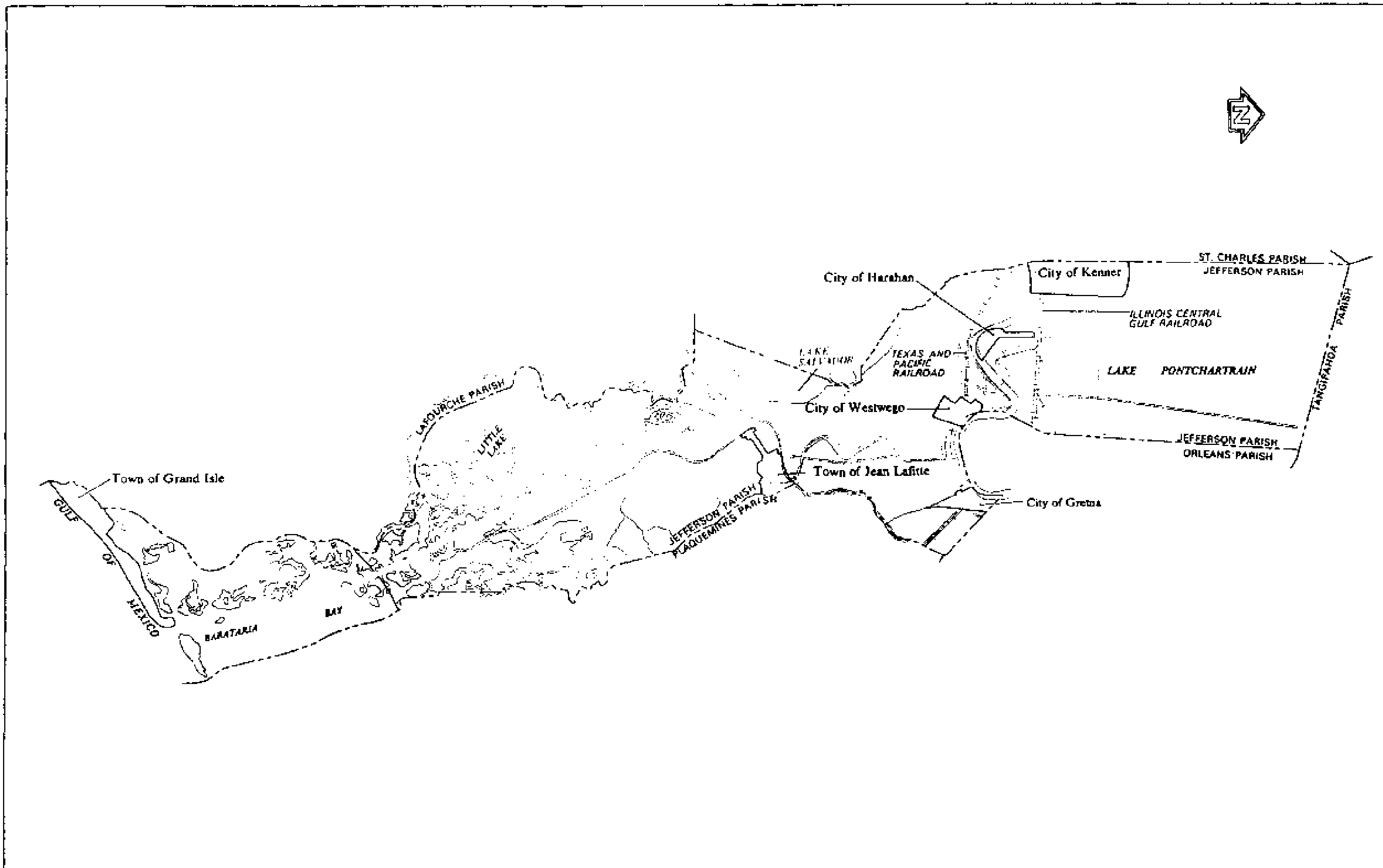
This parishwide study incorporates an interior drainage analysis that affected all ponding areas within the parish and a wave height reanalysis that affected the entire shoreline of the Gulf of Mexico. In addition, the effects of the USACE levees and the levees that are controlled by the East and West Bank Levee District were incorporated into this study.

Limits of detailed study are indicated on the FIRM (Exhibit 1). The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction.

Metairie Outfall Canal and some areas along St. Charles Parish Boundary, west of the levee, were studied by approximate methods. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods were proposed to, and agreed upon by, FEMA and Jefferson Parish.

2.2 Community Description

Jefferson Parish lies in southeastern Louisiana and is bordered by Lake Pontchartrain to the north, Orleans and Plaquemines Parishes to



FEDERAL EMERGENCY MANAGEMENT AGENCY

JEFFERSON PARISH, LA AND INCORPORATED AREAS

APPROXIMATE SCALE

10 0 10 20 30 MILES

VICINITY MAP

FIGURE 1

the east, the Gulf of Mexico to the south, and Lafourche and St. Charles Parishes to the west. The Cities of Gretna, Harahan, Kenner, and Westwego; and the Towns of Grand Isle and Jean Lafitte are located within Jefferson Parish. The total land area contained within the Jefferson Parish limits is 371.9 square miles.

Major transportation routes that traverse the study area include State Routes 18, 23, 45, and 48, the Lake Pontchartrain Causeway, U.S. Routes 61 and 90, and Interstate 10. The parish is also traversed by the Mississippi River, the Gulf Intercoastal Waterway, and the Illinois Central Gulf, Kansas City Southern, Texas and Pacific, and Southern Pacific Railroads. Air transportation in Jefferson Parish is provided by the New Orleans International Airport located in the City of Kenner.

Due to the close proximity of the City of New Orleans and the availability of developable land, the Jefferson Parish area offers good potential for commercial and residential development.

Jefferson Parish is situated in a part of the Mississippi River deltaic plain now occupied by the present course of the river. Principal physiographic features of the area are the river channel, natural levee ridges along its banks and along the banks of abandoned distributary channels, and low marshlands situated between and bordering the channels. Land elevations vary in the parish from approximately 10 feet above the National Geodetic Vertical Datum of 1929 (NGVD) near the Mississippi River to less than 0.0 NGVD in the coastal marsh area. The crest of the natural levee is the highest ground in the region. The coastal marsh area contains numerous bodies of shallow water.

Jefferson Parish is located in a subtropical latitude. The climate is characterized by mild winters and hot humid summers. During the summer, prevailing southerly winds produce conditions favorable for thundershowers. In the colder seasons, the area experiences frontal passages which produce squalls and sudden temperature drops. The mean annual temperature is approximately 70 degrees Fahrenheit (°F). The average temperatures in the summer and winter are 82°F and 56°F, respectively. The average annual rainfall is 57 inches.

The Mississippi River divides the study area into two distinctly different communities. Development on the east bank of the Mississippi River consists mainly of residential and commercial improvements. Although some industrial development is located on the east bank of the river, most of the heavy industrial concentration is found on the west bank. In recent years, the west bank area has also experienced rapid residential development. Development on the west bank ranges from small fishing villages at Lafitte and Barataria in the southernmost part of the parish to heavily urbanized areas along the Mississippi River.

2.3 Principal Flood Problems

The history of flooding within Jefferson Parish indicates that flooding may occur during any season of the year. In the cooler months, the area is subject to heavy rainfalls resulting from frontal passages; in the summer months, heavy rainfalls result from convective thundershowers. In the late summer, hurricanes accompanied by rainfall and super-elevated water-surface elevations pose the largest threat of flooding to the area.

The principal sources of flooding are rainfall ponding and levee overtopping and hurricane or tropical storm surges originating in the Gulf of Mexico from Lake Pontchartrain on the east bank and Lakes Salvador and Cataouatche on the west bank. Rainfall data are available at a nearby gage in Audubon Park in Orleans Parish for a 107-year period of record. The largest 24-hour rainfall amount occurring during this period was 14 inches on April 15 and 16, 1927. Continuous gage records of water surface are available in many nearby lakes and bays. Among these tidal gages, the longest period of record is at the West End gage in Lake Pontchartrain. During its 50-year period of operation, the highest stage of 5.37 feet occurred on September 9, 1965, during the passage of Hurricane Betsy. Other significant floods from either of these sources occurred in 1909, 1915, 1947, 1956, 1969, 1978, and April 1980.

Drainage of floodwaters in Jefferson Parish is accomplished by a system of structures and canals which outflow to pumping stations. Historically, these pumping stations have been inadequate in capacity to handle the volume of floodwaters reaching the stations and have operated at less than full capacity during floods. In addition, drainage structures through some man-made barriers, such as highway and railroad embankments, have proven inadequate during recent rainfall events.

2.4 Flood Protection Measures

The most densely populated areas of Jefferson Parish are protected from flooding by levees, drainage canals, and stormwater pumps. The City of Gretna is served by the Hero and Planters pumping stations, which are located in Jefferson Parish along Barataria. The major canal within Gretna is Verret Canal. The City of Harahan is served by Pump Station No. 3, which is located in Jefferson Parish along Elmwood Canal. The major canal in the City of Harahan is Soniat Canal. The City of Kenner is served by Pumping Station No. 4, which is located in the city along Duncan Canal, Pumping Station No. 3, and Kenner Relief Pumping Station, which is located in the Parish Line Canal approximately 3.9 miles below Lake Pontchartrain. The major canals in the City of Kenner are Duncan Canal, Canal No. 1, Canal No. 2, and Canal No. 13. The City of Westwego is served by the Westwego and Bayou Segnette pumping stations, which are located in the southwestern portion of the city along Bayou Segnette. The City of Westwego is partially protected from hurricane surges from Lake Salvador and Lake Cataouatche by parish-built levees.

Jefferson Parish is protected by the Mississippi and Tributaries Levees from flooding due to high stages in the Mississippi River. On the east bank of the parish, the Lake Pontchartrain and Vicinity Hurricane Protection Levee prevent flooding by hurricane surge from Lake Pontchartrain. The west bank area is partially protected from hurricane surge from the Gulf of Mexico by parish-built levees.

FEMA specifies that all levees must have a minimum of 3-foot freeboard against 100-year flooding to be considered a safe flood protection structure.

Levees exist in the study area that provide the parish with some degree of protection against flooding. However, it has been ascertained that some of these levees may not protect the parish from rare events such as the 100-year flood. The criteria used to evaluate protection against the 100-year flood are 1) adequate design, including freeboard, 2) structural stability, and 3) proper operation and maintenance. Levees that do not protect against the 100-year flood are not considered in the hydraulic analysis of the 100-year floodplain.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the parish, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 10-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10, 2, 1, and 0.2 percent chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long term average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood which equals or exceeds the 100-year flood (1 percent chance of annual exceedence) in any 50-year period is approximately 40 percent (4 in 10), and, for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency and peak elevation-frequency relationships for each flooding source studied in detail affecting the parish.

The hydrologic analyses that were originally performed for the communities and the unincorporated areas of Jefferson Parish were incorporated into this parishwide-format study. The same analyses were used to perform the internal drainage analysis for the 53 ponding areas.

The federally-maintained Mississippi River and Tributaries Levees, in conjunction with the Old River Structure, Morganza Spillway, and Bonnet Carre Spillway, provide protection from all anticipated flows in the Mississippi River up to and including the 500-year flow. Federal and local levees along the perimeter of Lake Pontchartrain and near Lakes Salvador and Cataouatche protect these areas of the parish from all but the most severe hurricane surges emanating from the lakes and the Gulf of Mexico.

Although rainfall records are available in Jefferson Parish, their periods of record are not long enough to allow development of particular frequencies and distributions with an adequate degree of confidence. Therefore, rainfall frequency and duration data were derived from the Rainfall Frequency Atlas of the United States for the 10-, 50-, 100-, and 500-year recurrence intervals (Reference 8). A synthetic 24-hour storm distribution was computed utilizing the rainfall frequency and duration data. No rainfall runoff monitoring is performed; therefore, rainfall runoff hydrographs were developed for individual drainage areas from the synthetic rainfall distributions and synthetic unit hydrographs.

All hydrologic data for the Mississippi River were obtained from the FISs for the unincorporated areas of Jefferson Parish, Cities of Gretna, Harahan, Kenner, and Westwego (References 2, 3, 9, 10, and 11). Stillwater elevations for the City of Westwego originating from the Gulf of Mexico and stillwater elevations and wave heights for Lake Pontchartrain for the City of Kenner were obtained from the FIS for the unincorporated areas of Jefferson Parish (Reference 2).

Stillwater elevations used for the FIS for Jefferson Parish were determined by the USACE in the report entitled Type 5, Flood Insurance Study, Louisiana Gulf Coast (Reference 12). These elevations were computed using hurricane parameters such as forward speed, directional approach to coast, radius to maximum winds, and central pressure to compute synthetic surge peaks for hurricanes with different frequencies of occurrence. In addition, analytical frequencies of experienced stages were made and compared with synthetic frequencies. The stillwater elevations developed in the Type 5 report were supplemented by additional analysis by the New Orleans District, USACE, used in the FIS for Jefferson Parish as well as in this parishwide study.

The determination of maximum wave crest elevations associated with the 10- and 100-year storm surge events was approached by the method recommended by the National Academy of Sciences (NAS) (Reference 13).

As stated previously, BFEs within Drainage District No. 9 were taken from the Jefferson Parish October 1, 1983, FIRM, except for the BFEs north of U.S. Route 90, which were taken from the City of Gretna November 1, 1985, FIRM (References 2 and 3).

The stillwater elevations for the 10-, 50-, 100-, 500-year floods have been determined for areas studied in detail and are summarized in Table 1, "Summary of Stillwater Elevations."

TABLE 1 - SUMMARY OF STILLWATER ELEVATIONS

FLOODING SOURCE AND LOCATION	ELEVATION (feet NGVD) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
WEST BANK				
Waggaman Basin				
Ponding Area No. 1				
North of Southern Pacific Railroad, St. Charles Parish to Glen Della Canal	3.9	4.6	5.0	5.6
Ponding Area No. 2				
South of Southern Pacific Railroad, north of U.S. Route 90 from St. Charles Parish to Glen Della Canal	3.0	3.5	3.7	4.2
Lake Cataouache Basin				
Ponding Area No. 3				
Levee area south of U.S. Route 90	-0.5[1]	-0.2[1]	0.9	2.6
Ponding Area 3A				
West of Main Canal	0.2	1.0	3.4	4.7
Bayou Segnette Basin				
Ponding Area No. 4				
Avondale, north of U.S. Route 90 from Glen Della Canal to Huey P. Long Bridge	3.0	3.5	3.7	4.2
Ponding Area No. 5				
Bridge City, north of Old Spanish Trail, east of Huey P. Long Bridge to Tank Farm Siding	4.6	4.8	4.9	5.0
Ponding Area No. 6				
Tank Farm Siding to Westwego, north of Southern Pacific Railroad Tracks	3.7	3.8	3.8	3.9
Ponding Area No. 7				
East of Huey P. Long				

[1]Elevations below sea level

TABLE 1 - SUMMARY OF STILLWATER ELEVATIONS - continued

FLOODING SOURCE AND LOCATION	ELEVATION (feet NGVD) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
WEST BANK (continued)				
Bayou Segnette Basin (continued)				
Ponding Area No. 7 (continued)				
Bridge to Tank Farm Siding	1.6	2.0	2.3	3.1
Ponding Area No. 8				
East of Tank Farm Siding to Westwego	2.0	2.5	2.6	3.1
Ponding Area No. 9				
South of U.S. Route 90 (Business) from U.S. Route 90 to Westwego	1.4	1.5	1.5	2.6
Ponding Area No. 10				
South Avondale and Bayou Segnette Sump Area	-1.3[1]	-1.7[1]	0.9	2.6
Ames Basin (East of Westwego to Marrero)				
Ponding Area No. 11				
North of Lapalco Boulevard	0.6	1.1	1.4	6.5
Ponding Area No. 12				
Lincolnshire	-0.6[1]	0.6	1.0	7.0
Ponding Area No. 13				
Bayou Estates and Mt. Kennedy	3.0	3.5	3.6	7.5
Ponding Area No. 14				
Marrero and Woodmere	0.4	0.6	0.8	7.0
Estelle Basin				
Ponding Area No. 15				
State Route 45 to Bayou Des Familles Ridge north	2.8	5.0	5.0	8.0
Ponding Area No. 16				
State Route 45 to Bayou Des Familles Ridge south	2.8	5.0	5.5	8.5
Ponding Area No. 17				
Bayou Des Familles Ridge to State Route 3134 north	2.1	2.3	2.6	8.0
Ponding Area No. 18				
Bayou Des Familles Ridge to State Route 3134 south	0.9	2.3	5.0	8.5
Ponding Area No. 19				
State Route 3134 to Harvey Canal	0.5	1.1	1.4	7.5

[1]Elevations below sea level

TABLE 1 - SUMMARY OF STILLWATER ELEVATIONS - continued

FLOODING SOURCE AND LOCATION	ELEVATION (feet NGVD) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
WEST BANK (continued)				
Harvey Canal to Algiers Canal				
North of the West Bank Expressway	*	*	*	*
Northeast of Belle Chasse Highway	*	*	*	*
South of West Bank Expressway and southwest of Belle Chasse Highway Ponding Areas No. 23	*	*	*	*
Harvey Canal No. 1 Area of Intracoastal Waterway, north of Bayou Barataria	3.3	4.6	5.5	7.5
MISSISSIPPI RIVER				
At Minden Street, extended	**	**	21.0	**
At Dolhonde Street, extended	**	**	18.0	**
EAST BANK				
Metairie				
Ponding Area No. 24 Kenner line east to Orleans Parish north of Interstate 10 (I-10)	-4.3[1]	-3.9[1]	-3.7[1]	-3.1[1]
Ponding Area No. 25 Causeway Boulevard to Orleans Parish north of Metairie Outfall Canal	-2.5[1]	-2.4[1]	-2.2[1]	-0.7[1]
Ponding Area No. 26 Causeway Boulevard to Orleans Parish south of Metairie Road	-1.3[1]	-1.0[1]	0.2	0.8
South of Airline Highway and North of Jefferson Highway				
Ponding Area No. 27 Kenner line to Little Farms Avenue	2.0	2.8	3.0	3.5
Ponding Area No. 28 South of Little Farms Avenue to Sauve Road	1.0	1.8	2.0	2.5

[1]Elevations below sea level
*BFEs within Drainage District No. 9 were taken from the Jefferson Parish October 1, 1983 FIRM, except for the BFEs north of U.S. Route 90, which were taken from the City of Gretna November 1, 1985, FIRM
** Data not available

TABLE 1 - SUMMARY OF STILLWATER ELEVATIONS - continued

FLOODING SOURCE AND LOCATION	ELEVATION (feet NGVD) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
EAST BANK (continued)				
South of Airline Highway and North of Jefferson Highway (continued)				
Ponding Area No. 29 South of Sauve Road to railroad track east of Hickory Avenue	0.3	1.0	1.3	2.0
Ponding Area No. 30 Elmwood Industrial Area from railroad tracks near Hickory Avenue to St. George Avenue	1.5	2.1	2.4	3.5
Ponding Area No. 31 Upper Kraak Basin from St. George Avenue to Arnoult Road	4.2	4.6	4.7	5.4
Ponding Area No. 32 Huey's Canal basin from Causeway Boulevard to Orleans Parish line	-1.3[1]	-1.0[1]	0.2	0.8
South of Jefferson Highway				
Ponding Area No. 33 Florida Street to Caroline Street	6.5	6.9	7.0	7.0
Ponding Area No. 34 Caroline Street to Mark Twain Drive	6.4	6.5	6.7	7.2
Ponding Area No. 35 Mark Twain Drive to Citrus Road	4.3	4.5	4.7	4.9
Ponding Area No. 36 Citrus Road to Coventry Court	5.4	5.8	5.9	6.3
Ponding Area No. 37 Lee Court to Normandy Avenue	7.4	7.8	7.9	8.1
Ponding Area No. 38 St. George Avenue to Riverdale Drive	9.4	9.6	9.7	10.4

[1]Elevations below sea level

TABLE 1 - SUMMARY OF STILLWATER ELEVATIONS - continued

FLOODING SOURCE AND LOCATION	ELEVATION (feet NGVD) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
EAST BANK (continued)				
South of Jefferson Highway (continued)				
Ponding Area No. 39 Riverdale Drive to Shrewsbury Road	8.5	8.8	8.8	9.1
Ponding Area No. 40 Rio Vista Avenue to Barry Avenue	3.9	3.9	4.0	4.0
Ponding Area No. 41 Barry Avenue to Public Belt Railroad	3.3	3.4	3.5	3.6
Ponding Area No. 42 Public Belt Railroad to Orleans Parish line	1.8	2.0	2.2	2.4
Ponding Area No. 43 Williams Boulevard; south of Jefferson Highway, St. Charles Parish line to Maria Street	4.9	5.3	5.5	6.0
Ponding Area No. 44 Kansas City Southern Railroad to Illinois Central Gulf Railroad, St. Charles Parish line to Illinois Central Railroad	3.5	3.8	4.0	4.3
Ponding Area No. 45 Kansas City Southern Railroad, to Illinois Central Railroad, a triangle bounded on the west by Clay Street	4.0	4.2	4.3	4.7
Ponding Area No. 46 Airline Highway to Kansas City Southern Railroad, St. Charles Parish line to Illinois Central Railroad	2.0	2.3	2.4	2.7
Ponding Area No. 47 Illinois Central Railroad to Airline Highway, a triangle bounded on the west by St. Charles Parish	0.5	0.8	0.9	1.2
Ponding Area No. 48 South of Jefferson Highway; Woodlawn Avenue to Colonial Club Drive	9.9	10.1	10.3	10.7

TABLE 1 - SUMMARY OF STILLWATER ELEVATIONS - continued

FLOODING SOURCE AND LOCATION	ELEVATION (feet NGVD) 10-YEAR	50-YEAR	100-YEAR	500-YEAR
EAST BANK (continued)				
South of Jefferson Highway (continued)				
Ponding Area No. 49				
South of Jefferson Highway, Colonial Club Drive to eastern city limits	11.4	11.6	11.7	12.2
Ponding Area No. 50				
South of Jefferson Highway; Williams Boulevard to Taylor Street	8.4	8.6	8.7	9.0
Ponding Area No. 51				
South of Jefferson Highway; Coleman Place to Decatur Street	5.9	5.9	6.1	6.2
Ponding Area No. 52				
South of Jefferson Highway; Decatur Street to Hollanday Street	6.9	7.0	7.1	7.2
Ponding Area No. 53				
South of Jefferson Highway, Hollanday Street to Williams Boulevard	7.5	7.6	7.6	7.7
Ponding Area No. 54				
Airline Highway to Kansas City Southern Railroad, Illinois Central Railroad to Williams Boulevard	2.9	3.2	3.3	3.5

3.2 Hydraulic Analyses

Hydraulic analyses, considering storm characteristics and the shoreline and bathymetric characteristics of the flooding sources studied, were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each of the shorelines.

The effective hydraulic analyses that were performed for the communities and the unincorporated areas of Jefferson Parish were incorporated into this parishwide-format study. The same analyses were used to perform the internal drainage analyses for the 54 ponding areas.

Storage elevation curves for Jefferson Parish including the Cities of Harahan and Kenner were established from one-foot contour topographic maps developed by the USACE for the study on the East Bank entitled Lake Pontchartrain and Vicinity Hurricane Protection Program Restudy on the east bank (Reference 7). For the west bank, the one-foot contour topographic maps utilized were developed by URS/Forrest-Cotton, Inc., for Jefferson Parish (including the Cities of Westwego and Gretna) in the study entitled West Bank Master Drainage District No. 1. and by Barnard & Thomas, Consulting Engineers, Inc., in the study entitled Jefferson Parish Master Drainage Plan for Drainage District No. 9 (References 4 and 5). Flood elevations for reaches 1 through 54 were established by computing peak water storage volumes resulting from rainfall runoff and hurricane surge overtopping where appropriate. Storage volumes for rainfall runoff were computed by routing flood hydrographs through drainage structures and over roadways into the individual drainage units. Flood hydrographs were routed to outfall canal pumping stations, and floodwaters were relieved by pumping. Capacities of the pumping stations credited with uninterrupted operation are shown in Table 2, "Pump Capacity Data." Storage volumes from hurricane surge overtopping were obtained by computing cumulative volumes of weir flow over levees when stages exceed levee heights, and by computing cumulative volumes of wave overtopping over levees when stages are lower than levee heights (References 14 and 15). It should be noted that not all drainage areas are affected by hurricane surge overtopping, and that hurricane surge overtopping did not occur during all flood events studied.

Federally-built levees were considered to remain intact during the 100-year flood. The stability of non-federal levees were evaluated individually based on observation of similar levees, which have been overtopped, and on engineering judgement. Proper maintenance of the levees is essential in maintaining the level of protection and flood hazards shown on the FIRM. As the levees consolidate and/or subside, the frequency and severity of surge overtopping could increase and create higher hazards in the areas protected by the levees.

The hydraulic analyses for this study were based on unobstructed flow. The flood elevations shown on the maps are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

All elevations are referenced to the NGVD of 1929. Elevation reference marks used in this study, and their descriptions, are shown on the maps.

TABLE 2 - PUMP CAPACITY DATA

Location and Drainage District	Pumping Station	Capacity (cubic feet per second) Effective	Revised
East Bank 4th Drainage District	No. 1 Bonnabel	4,265	3,200
	No. 2 Suburban	2,895*	2,170
	No. 3 Elmwood	3,600	2,700
	No. 4 Duncan	5,480	4,110
	Kenner Relief	930	700
West Bank 1st Drainage District	Ames	1,860	1,395
	Bayou Segnette	1,110	835
	Cataouatche	1,000	825
	Cousins	3,035*	2,275
	Harvey	930	700
	Estelle	1,250*	935
	Orleans Village	265	200
	Westwago	930	700
West Bank 9th Drainage District	Hero	3,800	2,850
	Planters	2,500	1,875

* Electric pumps at these sites were not credited in this table

3.3 Wave Height Analysis

In areas subject to hurricane induced storm surge, wave heights were calculated and added to the existing storm surge levels. Storm surge levels were obtained from the existing FIRMs for the Town of Grand Isle and the unincorporated areas of Jefferson Parish (References 1 and 2). Storm surge levels for these FIRMs were determined by the USACE in the report entitled Type 5, Flood Insurance Study, Louisiana Gulf Coast, and supplemented by additional analyses where applicable (Reference 12). Flood hazards and elevations on the Mississippi River were transferred from the previous FIRM for the unincorporated areas of Jefferson Parish (Reference 2). The Bureau of Land Management and Fish Wildlife Service Biological Services Program's Mississippi Deltaic Plain Region Habitat Map was used to determine the type and extent of vegetation for Jefferson Parish (Reference 16).

The methodology for analyzing the effects of wave heights associated with coastal storm surge flooding is described in an NAS report (Reference 13). This method is based on the following major concepts. First, depth-limited waves in shallow water reach a maximum breaking height that is equal to 0.78 times the stillwater depth. The wave crest elevation is 70 percent of the total wave height plus the stillwater elevation. The second major concept is that wave height may be diminished due to the presence of obstructions such as sand dunes, dikes and seawalls, buildings, and vegetation. The amount of energy dissipation is a function of the physical characteristics of the obstruction and is determined by procedures described in Reference 13. The third major concept is that wave height can be regenerated in open fetch areas due to the transfer of wind energy to the water. This added energy is related to fetch length and depth.

The NAS methodology is strictly applicable to areas with sandy bottom sediments. In Jefferson Parish, where thick mud bottom sediments are prevalent, a modification of the NAS methodology as described in a report entitled, Attenuation of Storm Waves Over Muddy Bottom Sediments, was used (Reference 17). This methodology retains the concepts of wave height dissipation due to the presence of obstructions and wave generation in open areas due to the transfer of wind energy to the water. However, the maximum breaking wave height is not considered to be a fraction of the total water depth. Rather, the maximum breaking wave height is a function of the soil strength at the mud-line and at some depth below the surface and of the friction coefficient. In Jefferson Parish, shear strength values of 150 and 200 pounds per square foot at the mud-line and 20 feet below the surface, respectively, were used in the lake. Bottom friction coefficients of 0.01, 0.07, 0.12, and 0.32 were used for open water areas, saline marshes, brackish marshes, and freshwater marshes, respectively.

Wave heights were computed along transects (cross section lines) that were located along the coastal areas, as illustrated in Figure 2, "Transect Location Map," in accordance with the Users Manual for Wave Height Analysis (Reference 18). The transects were located with consideration given to the physical and cultural characteristics of the land so that they would closely represent conditions in their locality. Transects were spaced at larger intervals. It was also necessary to locate transects in areas where unique flooding existed and in areas where computed wave heights varied significantly between adjacent transects. Table 3, "Transect Descriptions," provides a listing of the transect locations and stillwater elevations, as initial wave crest elevations.

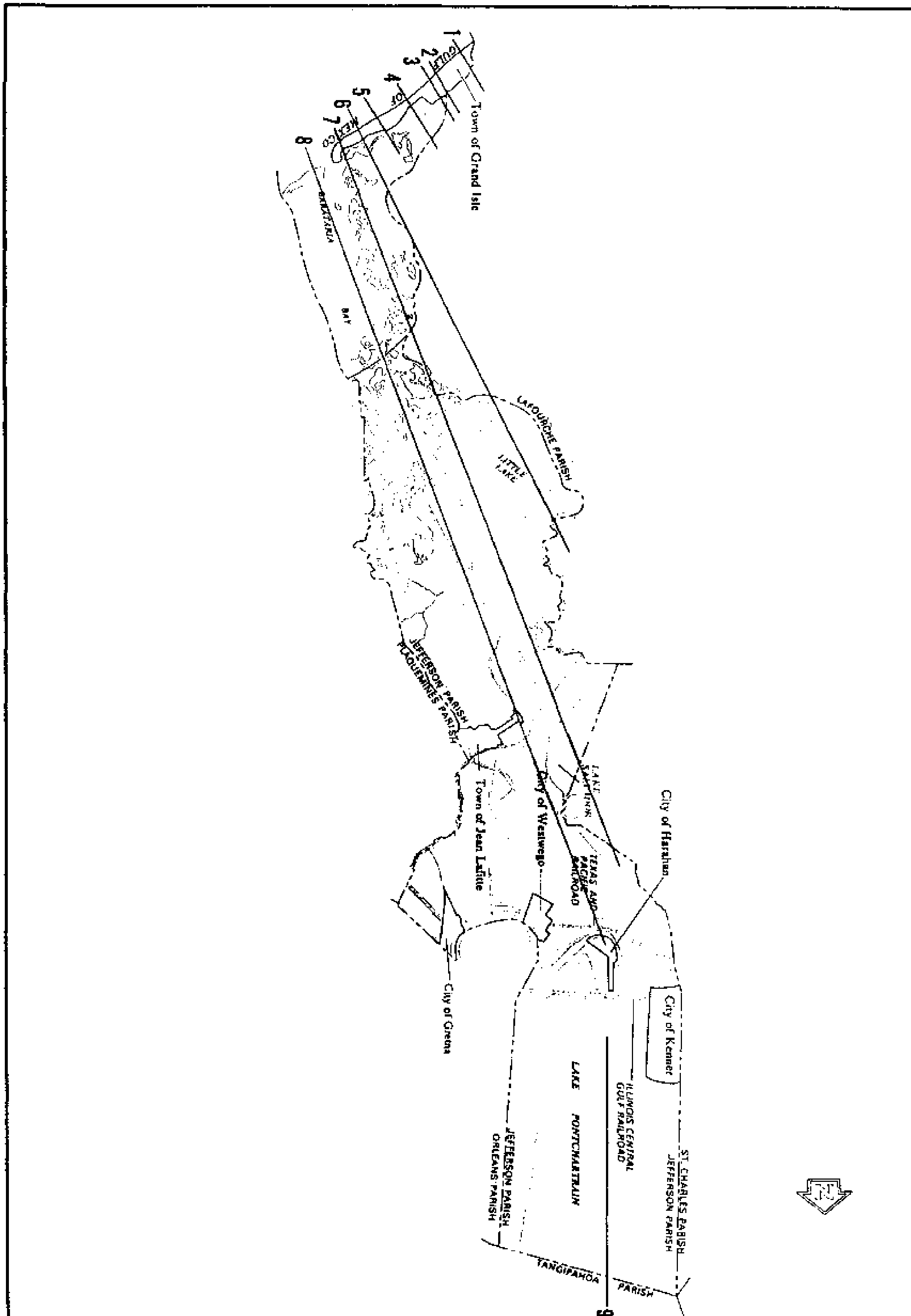


FIGURE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

JEFFERSON PARISH, LA AND INCORPORATED AREAS

TRANSECT LOCATION MAP

TABLE 3 - TRANSECT DESCRIPTIONS

Transect	Location	Elevation (feet NGVD) Stillwater 100-year	Maximum Wave Crest 100-year
No. 1	Cheniere Caminada; from Western Parish corporate limits to approximately 1.5 miles west of Caminada Pass	9.4	13
No. 2	Cheniere Caminada; from approximately 1.5 miles west of Caminada Pass to Caminada Pass	9.4	13
No. 3	Eastern end of Cheniere Caminada and western portion of Grand Isle; from Caminada Pass to Jean Lafitte road extended	9.4	13
No. 4	Grand Isle and Caminada Bay; elevation of 9.4 feet NGVD from Plum Lane extended to Cypress Lane	9.4	14
No. 5	Bay Des Illettes and Grand Isle; elevation of 9.4 feet NGVD from Plum Lane extended to Cypress Lane	9.4	14
No. 6	Little Lake to Grand Isle; from Cypress Lane extended to approximately 0.3 mile east of intersection of Lona Linda Avenue and Humble Road	9.4-11.4	16
No. 7	Lake Cataouatche to Grand Isle; from approximately 0.3 mile east of intersection of Lona Linda Avenue and Humble Road to Barataria Pass	9.41-11.3	16
No. 8	Town of Jean Lafitte to Grand Terre Islands	7.8-11.3	16
No. 9	Entire shoreline along Lake Pontchartrain within the parish	10.2	15

The transects were continued inland until the wave was dissipated or until flooding from another source with equal or greater elevation was reached. Along each transect, wave heights and elevations were computed considering the combined effects of changes in ground elevation, vegetation, and physical features. The stillwater elevations for the 100-year flood were used as the starting elevations for these computations. Wave heights were calculated to the nearest 0.1 foot, and wave elevations were determined at whole-foot increments along the transects. Areas with a wave component 3 feet or greater were designated as velocity zones. Other areas subject to wave action were designated as 100-year flood zones with base flood elevations adjusted to include wave crest elevations.

The primary dune for the analyses performed for the Town of Grand Isle was assumed to be eroded to an elevation of 5 feet above NGVD during a major hurricane. It was also assumed that the mobile homes located in the northeast section of the Island would not be sufficiently stable to effect the wave height analysis.

Figure 3 is a profile for a hypothetical transect showing the effects of energy dissipation on a wave as it moves inland. This figure shows the wave elevations being diminished by obstructions such as buildings, vegetation, and rising ground elevations and being increased by open unobstructed wind fetches. Actual wave conditions in Jefferson Parish may not necessarily include all the situations illustrated in Figure 3.

After analyzing wave heights along each transect for the parish including the Town of Grand Isle, wave elevations were interpolated between transects. Various source data were used in the interpolation, including the aerial photographs, topographic work maps, and engineering judgement. Controlling features affecting the elevations were identified and considered in relation to their positions at a particular transect and their variation between transects. The results of the calculations are accurate until local topography, vegetation or cultural development within the parish undergo any major changes. The results of this analysis are summarized in Table 4.

TABLE 4 - TRANSECT DATA

Flooding Source	Stillwater Elevation 10-Year	Stillwater Elevation 100-Year	Zone	Base Flood Elevation (Feet NGVD)*
GULF OF MEXICO	5.2	7.8-11.4	VE	9-16
			AE	8-14
LAKE PONTCHARTRAIN	5.2	10.2	VE	15

* Due to map scale limitations, base flood elevations shown on the FIRM represent average elevations for the zones depicted

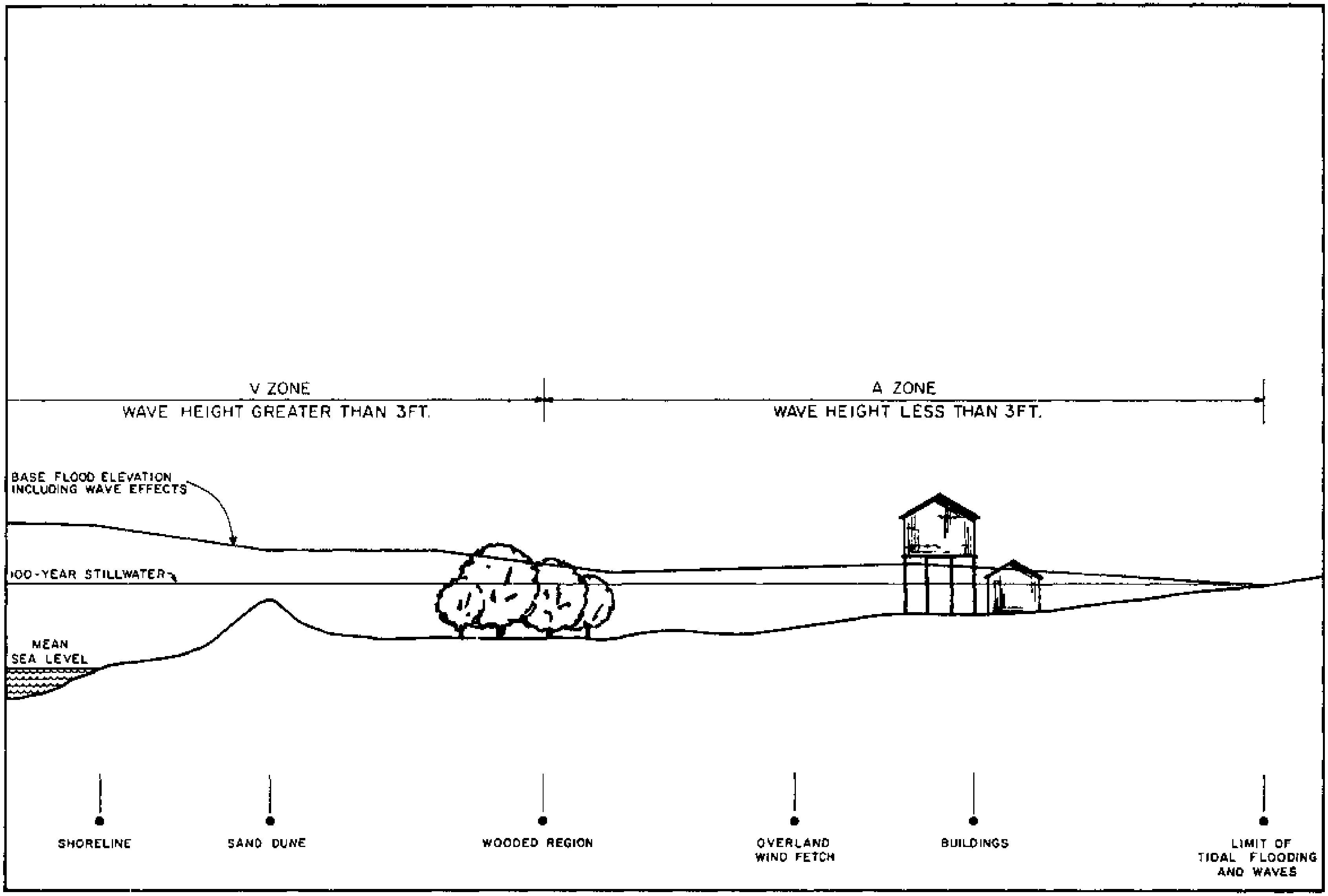


FIGURE 3
TYPICAL TRANSECT SCHEMATIC

3.4 Land Subsidence

The prevalence of land subsidence in the parish complicates the determination of the expected depth of flooding at a property. This information should always be obtained by direct comparison of the current property elevation with the official base flood elevation at the property.

A list of the elevation reference marks is shown on the maps to assist in determining property elevations and requirements for new construction. Care should be exercised in the use of elevation reference marks since the listed elevations may not reflect current officially published elevations if subsidence has occurred since they were established.

Local officials should be aware of the subsidence problem and should require the use of the more-up-to-date and accurate property elevation data in compensating for land subsidence; however, base flood elevations should not be adjusted, but obtained directly from the FIRM.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. Therefore, each FIS provides 100-year flood elevations and delineations of the 100- and 500-year floodplain boundaries and 100-year floodway to assist in developing floodplain management measures.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1 percent annual chance (100-year) flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2 percent annual chance (500-year) flood is employed to indicate additional areas of flood risk in the community. For the flooding sources studied in detail, the 100- and 500-year floodplain boundaries have been delineated using topographic maps.

Table 5, "Topographic Mapping," lists the topographic maps used to delineate the floodplain boundaries for each community's previously printed FIS as the revised floodplain mapping performed for this parishwide FIS (References 4, 5, 6, 19, 20, and 21).

TABLE 5 - TOPOGRAPHIC MAPPING

Community / Topographic Mapping Source	Scale	Contour Interval
UNINCORPORATED AREAS		
West Bank Master Drainage Study for Consolidated Drainage District No. 1 — URS/Forrest and Cotton, Inc.	1:6,000	1 foot
Jefferson Parish Master Drainage Plan for Drainage District No. 9 — Barnard & Thomas, Consulting Engineers, Inc.	1:6,000	1 foot
Lake Pontchartrain and Vicinity Hurricane Protection Program Restudy — U.S. Army Corps of Engineers, New Orleans District	1:6,000	1 foot
East Bank Master Drainage Plan for Jefferson Parish — Burk & Associates, Consulting Engineers, Inc.	1:6,000	1 foot
7.5 Minute Series Topographic Map — U.S. Geological Survey	1:24,000	5 feet
Aerial Photography, Jefferson and Lafourche Parishes — Gulf Coast Aerial Mapping Co., Inc.	1:24,000	5 feet
CITY OF GRETNA		
Jefferson Parish Master Drainage Plan for Drainage District No. 9 — Barnard & Thomas, Consulting Engineers, Inc.	1:6,000	1 foot
CITY OF HARAHAN		
Lake Pontchartrain and Vicinity Hurricane Protection Program Restudy — U.S. Army Corps of Engineers, New Orleans District	1:6,000	1 foot
CITY OF KENNER		
Lake Pontchartrain and Vicinity Hurricane Protection Program Restudy — U.S. Army Corps of Engineers, New Orleans District	1:6,000	1 foot
CITY OF WESTWEGO		
West Bank Master Drainage Study for Consolidated Drainage District No. 1 — URS/Forrest and Cotton, Inc.	1:6,000	1 foot

TABLE 5 - TOPOGRAPHIC MAPPING - continued

Community / Topographic Mapping Source	Scale	Contour Interval
TOWN OF GRAND ISLE		
7.5 Minute Series Topographic Map		
U.S. Geological Survey	1:24,000	5 feet
Aerial Photography Grand Isle		
Gulf Coast Aerial Mapping Co., Inc.	1:24,000	5 feet
TOWN OF JEAN LAFITTE		
7.5 Minute Series Topographic Map		
U.S. Geological Survey	1:24,000	5 feet

The 100- and 500-year floodplain boundaries are shown on the FIRM (Exhibit 1). On this map, the 100-year floodplain boundaries correspond to the boundaries of the areas of special flood hazard (Zones A, AE, AO, and VE), and the 500-year floodplain boundaries correspond to the boundaries of areas of moderate flood hazard. In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundaries have been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

Because the areas within the detailed study limits are not subject to flooding from flowing streams, no floodways were calculated as part of this study.

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no base flood elevations or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-depths derived from the detailed hydraulic analyses are shown within this zone. Due to the nature of the FIS dated October 1, 1983, for the unincorporated areas of Jefferson Parish, no depths are shown within this zone on this Parishwide FIRM.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No base flood elevations or depths are shown within this zone.

Zone V

Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no base flood elevations are shown within this zone.

Zone VE

Zone VE is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Whole-foot base flood elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 500-year floodplain, areas within the 500-year floodplain, and to areas of 100-year flooding where average depths are less than 1 foot, areas of 100-year flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 100-year flood by levees. No base flood elevations or depths are shown within this zone.

Zone D

Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0 and, in the 100-year floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 100- and 500-year floodplains. Floodways and the locations of selected cross sections used in the hydraulic analyses and floodway computations are shown where applicable.

The current FIRM presents flooding information for the entire geographic area of Jefferson Parish. Previously, separate Flood Hazard Boundary Maps and/or FIRMs were prepared for each identified flood-prone incorporated community and the unincorporated areas of the parish. Historical data relating to the maps prepared for each community up to and including this parishwide FIS, are presented in Table 6, "Community Map History."

7.0 OTHER STUDIES

Because its based on more up-to-date analyses, this study supersedes the previously printed FISs for the unincorporated areas of Jefferson Parish; the Cities of Gretna, Harahan, Kenner, and Westwego; and the Towns of Grand Isle and Jean Lafitte (References 2, 3, 9, 10, 11, 1, and 22).

FISs have been prepared for the unincorporated areas of St. Charles Parish, Lafourche Parish, Plaquemines Parish, and Orleans Parish (References 23, 24, 25, and 26).

8.0 LOCATION OF DATA

Information concerning the pertinent data used in preparation of this study can be obtained by contacting FEMA, the Mitigation Division, Federal Regional Center, 800 North Loop 288, Denton, Texas 76201-3698.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
GRAND ISLE, TOWN OF	October 20, 1970	None	October 20, 1970	July 1, 1974 April 18, 1975 March 2, 1983 October 1, 1983 March 23, 1995
GRETNA, CITY OF	June 18, 1971	None	June 18, 1971	July 1, 1974 February 13, 1976 November 1, 1985 March 23, 1995
HARAHAN, CITY OF	June 15, 1973	None	June 15, 1973	July 1, 1974 July 11, 1975 July 5, 1984 March 23, 1995
JEAN LAFITTE, TOWN OF	October 1, 1971	None	March 26, 1976	March 23, 1995
KENNER, CITY OF	June 26, 1971	None	June 26, 1971	July 1, 1974 August 22, 1975 November 1, 1985 March 23, 1995

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

JEFFERSON PARISH, LA AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
WESTWEGO, CITY OF	July 16, 1976	None	December 28, 1976	March 11, 1977 June 15, 1984 March 23, 1995
UNINCORPORATED AREAS	June 25, 1969 March 13, 1970	None	October 13, 1971	July 1, 1974 July 9, 1976 October 1, 1983 March 23, 1995

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY

JEFFERSON PARISH, LA AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

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