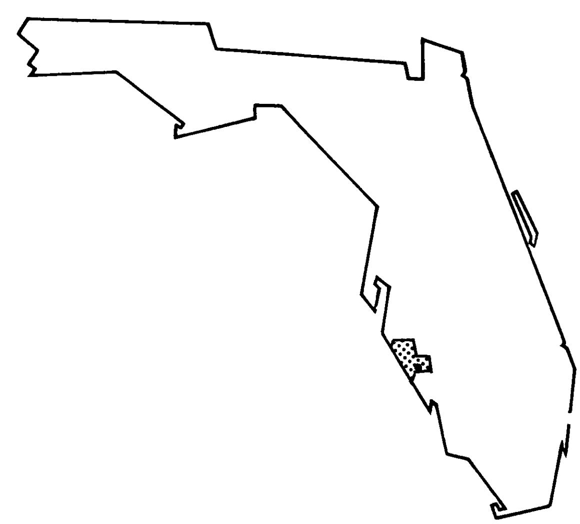
FLOOD INSURANCE STUDY

CITY OF NORTH PORT, FLORIDA
SARASOTA COUNTY



MARCH 2, 1981

federal emergency management agency
federal insurance administration

COMMUNITY NUMBER -120279

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1.0 INTRODUCTION

1.1 Purpose of Study

The purpose of this Flood Insurance Study is to investigate the existence and severity of flood hazards in the City of North Port, Sarasota County, Florida, and to aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. Initial use of this information will be to convert North Port to the regular program of flood insurance by the Federal Insurance Administration. Further use of the information will be made by local and regional planners in their efforts to promote sound land use and flood plain development.

1.2 Coordination

The following persons or agencies were contacted in an attempt to explore all possible sources of data:

1. Florida Department of Natural Resources
2. Florida State Department of Community Affairs
3. Florida State Department of Transportation
4. National Oceanic and Atmospheric Administration
5. North Port Water Management District
6. Sarasota County Department of Transportation
7. Southwest Florida Regional Planning Council
8. Southwest Florida Water Management District
9. U.S. Army Corps of Engineers, Jacksonville District
10. U.S. Geological Survey
11. Venice Area Chamber of Commerce
12. Gee and Jensen, Consulting Engineers, Inc.
13. General Development Corporation

The State Coordinator was involved with this survey through the Atlanta Regional Office of the Federal Insurance Administration.

The results of this study were reviewed at a final community coordination meeting held on June 8, 1979. Attending the meeting were representatives of the Federal Insurance Administration, the study contractor, and the city. No problems were raised at the meeting.

1.3 Authority and Acknowledgments

The source of authority for this Flood Insurance Study is the National Flood Insurance Act of 1968, as amended.

The hydrologic and hydraulic analyses for this study were performed by Tetra Tech, Inc., for the Federal Insurance Administration, under Contract No. H-4059. This work, which was completed in March 1978, covered all significant flooding sources affecting the City of North Port.

2.0 AREA STUDIED

2.1 Scope of Study

This Flood Insurance Study covers the incorporated area of the City of North Port, Sarasota County, Florida. The area of study is shown on the Vicinity Map (Figure 1).

Owing to its developed state, the entire community has been studied in detail. The analysis included the effects of hurricane surge in the tidal areas of the city. The major flooding sources studied in detail were the Myakka River, Big Slough Canal, Myakkahatchee Creek, and the Gulf of Mexico.

Those areas studied by detailed methods were chosen with consideration given to all proposed construction and forecasted development through 1983.

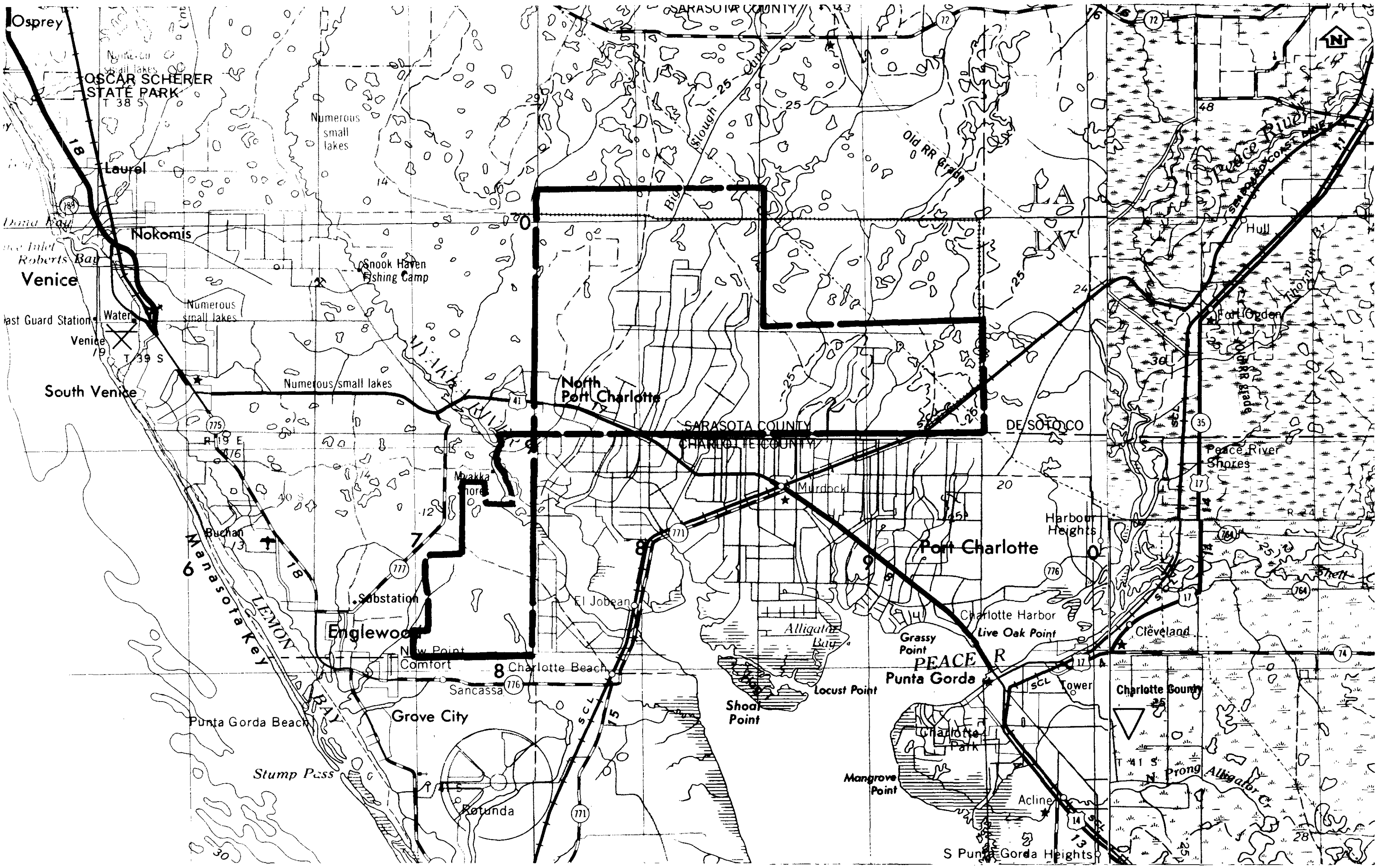
2.2 Community Description

The City of North Port is located in southern Sarasota County, in southwest Florida. Occupying an area of approximately 68 square miles, North Port is located approximately 160 miles northwest of Miami Beach, approximately 230 miles southwest of Jacksonville, and approximately 265 miles southwest of Tallahassee.

The City of North Port is bounded by Sarasota County to the west and north, De Sota County to the east, and Charlotte County to the south.

The 1973 U.S. census recorded the city's population at 3560 (Reference 1). The 1978 estimated population was figured at approximately 6800, which represents a growth of 91 percent over the 1973 level (Reference 2).

The study area is located in the subtropical climatic zone, which is characterized by mild, dry winters and warm, wet summers. The wet season extends from June through September and coincides with the hurricane season. During this 4 month period, the study area received nearly two-thirds of its annual precipitation. In nearby Fort Myers, located approximately 30 miles southeast of the study area, the annual precipitation is approximately 55 inches, while the annual temperature is approximately 74°F.



FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF NORTH PORT, FL
(SARASOTA CO.)

APPROXIMATE SCALE

4 0 4 8 12 MILES

VICINITY MAP

FIGURE 1

The Myakka River divides the study area into two regions. The larger portion, with an area of approximately 55 square miles, is located to the north and east of Myakka River. Under the jurisdiction of the North Port Water Management District, this region is bounded on the north by agricultural areas of the Big Slough Basin, on the east by the De Soto County line, on the south by the Charlotte County line, and on the west by the Deer Prairie Creek watershed. The remaining sector, located to the south and west of Myakka River, is bounded on the east and the south by the Charlotte County line and on the west by unincorporated lands within Sarasota County.

Physiographically, the study area lies within the Coastal lowlands. This region is characterized by level or nearly level terrain with very gradual changes in elevation. In addition, numerous small depressions and sloughs are scattered throughout the study area. These shallow wet areas range in depths from 1 to 3 feet. The lands within the North Port Water Management District slope gradually downward toward Myakkahatchee Creek. The elevation in this district ranges from 10 to 30 feet.

The county slopes very gradually southward toward the Gulf of Mexico. This lack of steepness results in rather poor drainage. The major stream within the county is the Myakka River. Along with its major tributaries, Cowpen Slough, Deer Prairie Creek, Big Slough Canal and Myakkahatchee Creek, the Myakka River drains approximately 75 percent of the area within the county. Above Myakka Lake, drainage is extremely poor due to the enormous population of water hyacinths in the channel. Below the lake, drainage is more effective. Natural drainage of the flood plain of the Myakka River is rather slow. Ditches have been constructed in order to facilitate the removal of excess water. In addition to the Myakka River system, several small creeks in the coastal portion of the county area drain several miles inland. Tidewaters extend several miles inland into these coastal streams and into the Myakka River.

The subtropical climate allows for the growth of many varieties of vegetation. Although much of the county was originally heavily forested with pine, most of these trees have been cut for timber. Wooded and treeless areas are intermingled in all parts of the study area.

2.3 Principal Flood Problems

Flooding in the coastal regions of the study area results primarily from hurricanes and tropical storms. Not all storms which pass close enough to the study area produce extremely high tides. Similarly, storms which produce extreme conditions in one area may not necessarily produce critical conditions in other parts of the study area.

The Myakka River is a broad estuary, and, under certain conditions, tides generated at its mouth in Charlotte Harbor can intrude far upriver, causing tidal flooding. Rainfall, which usually accompanies hurricanes, can aggravate the tidal flood situation, particularly in areas where the secondary drainage system is poorly developed. Because of the flatness of the terrain, most inland areas are characterized by shallow flooding during heavy rainfalls.

Storms passing Florida in the vicinity of North Port have produced severe tidal floods as well as damage. A brief description of several significant hurricanes (References 3, 4, and 5) provides historic information to which coastal flood hazards and the projected flood depths can be compared.

The tropical storm of October 24, 1921, originated in the western Caribbean Sea and entered Florida north of Tarpon Springs. Flooding conditions were prolonged due to the slow forward movement of the storm. A combination of high tides (above 7 feet) with wave action resulted in heavy damage in Sarasota County. Total monetary loss at Sarasota was estimated at $200,000.

The hurricane of September 19, 1926, was one of the most destructive storms of the 20th century. Originating in the Atlantic Ocean near the Cape Verde Islands, it approached the coast of Florida on September 17. In the Sarasota area, flood damage was estimated at $1 million. In addition, wave action resulted in considerable erosion along the coast in Sarasota County.

Hurricane Donna (September 10, 1960), one of the great storms of this century, resulted in tidal heights of approximately 3 feet above normal in Sarasota County. Precipitation from the storm averaged from 5 to 7 inches in the county, but a heavy prestorm rainfall of approximately 10 inches saturated the ground. Consequently, considerable flooding resulted from this hurricane.

The storm of October 18, 1968, originated in the Caribbean Sea and entered the Florida Straits on October 18. Tides up to 5 feet above normal produced considerable damage in Sarasota County. In addition, the storm resulted in beach erosion and the lowering of beach profiles throughout Sarasota County.

On June 18, 1972, Hurricane Agnes originated on the northeast tip of the Yucatan Peninsula and traveled westward. Although the center of this storm passed approximately 150 miles west of the Florida peninsula, it produced high tides of 3 feet above normal and precipitation of 5 inches in Sarasota County. The high tides caused damage to many homes, seawalls, revetments, and roads along the Sarasota County coastline. In addition, wave action produced considerable erosion throughout Sarasota County.

2.4 Flood Protection Measures

No extensive community flood protection projects exist in the study area. Flood proofing of structures is done on an individual basis and includes such measures as elevating dwellings, conservation of mangroves and dunes, and construction of seawalls.

3.0 ENGINEERING METHODS

For the flooding sources studied in detail in the community, 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 equalled 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 flood plain management and for flood insurance premium 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 equalled 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 occurrence) 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 here 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 relationships for floods of the selected recurrence intervals for each stream studied in detail in the community.

The coastal surge in the Myakka River from Charlotte Harbor was adopted from the adjoining Flood Insurance Study for Charlotte County (Reference 6). This surge effect controls flooding on the Myakka River within North Port.

The determination of coastal inundation from the Gulf of Mexico caused by passage of hurricane surge was approached by the joint probability method (Reference 7). The storm populations were described by probability distributions of five parameters which influence surge heights. These were central-pressure depression (which measures the intensity of the storm), radius-to-maximum winds, forward speed of the storm, shoreline crossing point, and crossing angle.

These characteristics were described statistically based upon an analysis of observed storms in the vicinity of Sarasota County. Primary sources of data for this analysis were the National Climatic Center (Reference 8); Cry (Reference 9); Ho, Schwerdt, and Goodyear (Reference 10); the National Hurricane Research Project (Reference 11); and the Monthly Weather Review (Reference 12). Digitized storm information for all storms from 1886 to 1977 was used to correlate statistics (Reference 13). A summary of the parameters used for the Sarasota County area is presented in Table 1.

For areas subject to flooding directly from the Gulf of Mexico, the Federal Insurance Administration's standard coastal surge model (Reference 14) was used to simulate the coastal surge generated by any chosen storm (that is, any combination of the five storm parameters defined previously). By performing such simulations for a large number of storms, each of known total probability, the frequency distribution of surge height as a function of coastal location can be established. These distributions incorporate the large-scale surge behavior, but do not include an analysis of the added effects associated with much finer scale wave phenomena, such as wave height, setup, and runup. As the final step in the calculations, the astronomic tide for the region is statistically combined with the computed storm surge to yield recurrence intervals of total water elevation (Reference 14).

This model utilizes a grid pattern approximating the geographical features of the study area and the adjoining areas. Surges were computed utilizing grids of 5 nautical miles, 1 nautical mile, and 2000 feet, depending on the resolution required.

Elevations for floods of the selected recurrence intervals on the Gulf of Mexico are shown in Table 2.

Table 2. Summary of Elevations

Flooding Source and Location	Elevation (Feet) 10-Year	50-Year	100-Year	500-Year
Gulf of Mexico At Manasota Key, Approximately 3.97 Miles West of North Port Corporate Limits	6.2	8.8	11.0	13.2

The City of North Port is undergoing rapid development. The construction of roads, freeways, canals, and other civil works greatly affect the rate, volume, and timing of runoff. The Big Slough Basin is the major drainage basin affecting the City of North Port.

Central Pressure (in Hg)	27.39	27.68	27.97	28.26	28.55	28.84	29.12	29.4	29.7
Assigned Probability									
Exiting	.04	.05	.08	.09	.14	.12	.15	.14	.19
Landfalling	.04	.04	.07	.09	.12	.10	.16	.17	.21
Storm Radius (nm)		15						30	
Assigned Probability		.55						.45	
Forward Speed (Knots)		8			14			20	
Assigned Probability									
Exiting		.58			.38			.04	
Landfalling		.39			.41			.20	
Direction (degree) From North	-114		-69		-24		21		66
Assigned Probability	.29		.27		.21		.19		.04
Spatial Occurrence Rate Storms/nm. yr.	3.26×10^{-3}								

TABLE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF NORTH PORT, FL
(SARASOTA CO.)

PARAMETER VALUES FOR SURGE ELEVATION

SARASOTA COUNTY

Flood frequency statistics for riverine flooding sources were derived from rainfall-runoff methods.

Precipitation-time-intensity patterns were generated for selected recurrence intervals from analysis of precipitation data obtained from the National Climatic Center (References 15 and 16). The precipitation-time-intensity patterns were then used as input into a two-dimensional numerical model which is based upon kinematic wave approximations (Reference 14).

Peak discharge-drainage area relationships for the Big Slough Canal and Myakkahatchee Creek are shown in Table 3.

Table 3. Summary of Discharges

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Big Slough Canal At Junction With Snover Waterway	165	2,956	5,386	6,766	10,479
Myakkahatchee Creek At Junction With Cocoplum Waterway	197	4,096	5,745	6,599	9,197

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of streams in the community were carried out to provide estimates of the elevations of floods of the selected recurrence intervals along each stream studied in the community.

The flood elevations for the Myakka River region were taken from the adjacent Flood Insurance Rate Maps for Charlotte County (Reference 6).

Water-surface profiles for riverine flooding sources were developed using the U.S. Army Corps of Engineers HEC-2 computer program (Reference 17). Profiles were determined for the 10-, 50-, 100-, and 500-year floods.

Cross sections used in the hydraulic analyses for the Big Slough Creek Canal and Myakkahatchee Creek were field surveyed.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway is computed (Section 4.2), selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibit 2).

Flood profiles were drawn showing computed water-surface elevations to an accuracy of 0.5 foot for floods of the selected recurrence intervals (Exhibit 1).

Roughness coefficients (Manning's "n") used in the HEC-2 computer model were obtained by calibration procedures utilizing observed rainfall and runoff. Typical values of Manning's "n" were 0.140 for overland flow and ranged from 0.038 to 0.050 for channel flow. Rainfall excess was determined using the U.S. Soil Conservation Service method.

Starting water-surface elevations for the HEC-2 analyses were obtained from the high tide levels on Charlotte Harbor, located south of the study are in Charlotte County.

Shallow flooding depths were determined using a two-dimensional kinematic wave analysis and field reconnaissance. Topographic maps at a scale of 1:24,000, with a contour interval of 5 feet (Reference 19), were also used.

All elevations are referenced to the National Geodetic Vertical Datum of 1929 (NGVD). Elevation reference marks used in the study are shown on the maps.

4.0 FLOOD PLAIN MANAGEMENT APPLICATIONS

A prime purpose of the National Flood Insurance Program is to encourage State and local governments to adopt sound flood plain management programs. Each Flood Insurance Study, therefore, includes a flood boundary map designed to assist communities in developing sound flood plain management measures.

4.1 Flood Boundaries

In order to provide a national standard without regional discrimination, the 100-year flood has been adopted by the Federal Insurance Administration as the base flood for purposes of flood plain management measures. The 500-year flood is employed to indicate additional areas of flood risk in the community. For each stream studied in detail, the boundaries of the 100- and 500-year floods have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using a city boundary map at a scale of 1:7200 (Reference 18);

topographic maps at a scale of 1:24,000, with a contour interval of 5 feet (Reference 19); and using aerial photographs at scales of 1:10,800 and 1:21,600 (References 20 and 21, respectively).

For the areas affected by the shallow flooding and tidal surge, flood boundaries were determined using topographic maps at a scale of 1:24,000, with a contour interval of 5 feet (Reference 19), and aerial photographs at scales of 1:10,800 and 1:21,600 (References 21 and 22, respectively).

In cases where the 100- and 500-year flood boundaries are close together, only the 100-year flood boundary has been shown.

Flood boundaries for the 100- and 500-year floods are shown on the Flood Boundary and Floodway Map (Exhibit 2).

Small areas within the flood boundaries may lie above the flood elevations and, therefore, not be subject to flooding; owing to limitations of the map scale, such areas are not shown.

4.2 Floodways

Encroachment on flood plains, such as artificial fill, reduces the flood-carrying capacity and increases flood heights, thus increasing flood hazards in areas beyond the encroachment itself. One aspect of flood plain management involves balancing the economic gain from flood plain development against the resulting increase in flood hazard. For purposes of the National Flood Insurance Program, the concept of a floodway is used as a tool to assist local communities in this aspect of flood plain management. Under this concept, the area of the 100-year flood is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent flood plain areas, that must be kept free of encroachment in order that the 100-year flood be carried without substantial increases in flood heights. As minimum standards, the Federal Insurance Administration limits such increases in flood heights to 1.0 foot, provided that hazardous velocities are not produced.

The floodway for riverine areas in this study was computed on the basis of equal-conveyance reduction from each side of the flood plain, with the river bank being the maximum encroachment allowable.

The results of these computations are tabulated at selected cross sections for each stream segment for which a floodway is computed (Table 4).

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE
Big Slough Canal and Myakkahatchee Creek								
A	14,400	188	1,240	5.3	8.0	6.4[2]	7.4[2]	1.0
B	16,610	568	2,176	3.0	12.0	12.0	12.1	0.1
C	18,600	421	2,814	2.3	13.6	13.6	14.0	0.4
D	21,309	728	3,164	2.1	15.1	15.1	15.9	0.8
E	24,600	414	2,841	2.3	16.8	16.8	17.6	0.8
F	26,620	388	1,821	3.6	18.1	18.1	18.9	0.8

[1]Feet Above Confluence With Myakka River [2]Elevation Computed Without Consideration of Backwater From Myakka River (Controlled by Charlotte Harbor)

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF NORTH PORT, FL
(SARASOTA CO.)

FLOODWAY DATA

BIG SLOUGH CANAL AND MYAKKAHATCHEE CREEK

TABLE 4

A floodway generally is not applicable in areas where the dominant source of flooding is from coastal waters. A floodway was not determined for Myakkahatchee Creek upstream of cross section F because flooding in the area is shallow and unconfined.

As shown on the Flood Boundary and Floodway Map (Exhibit 2), the floodway boundaries were determined at cross sections; between cross sections, the boundaries were interpolated. In cases where the floodway and 100-year flood boundaries are close together, only the floodway boundary has been shown.

The area between the floodway and the boundary of the 100-year flood is termed the floodway fringe. The floodway fringe thus encompasses the portion of the flood plain that could be completely obstructed without increasing the water-surface elevation of the 100-year flood more than 1.0 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to flood plain development are shown in Figure 2.

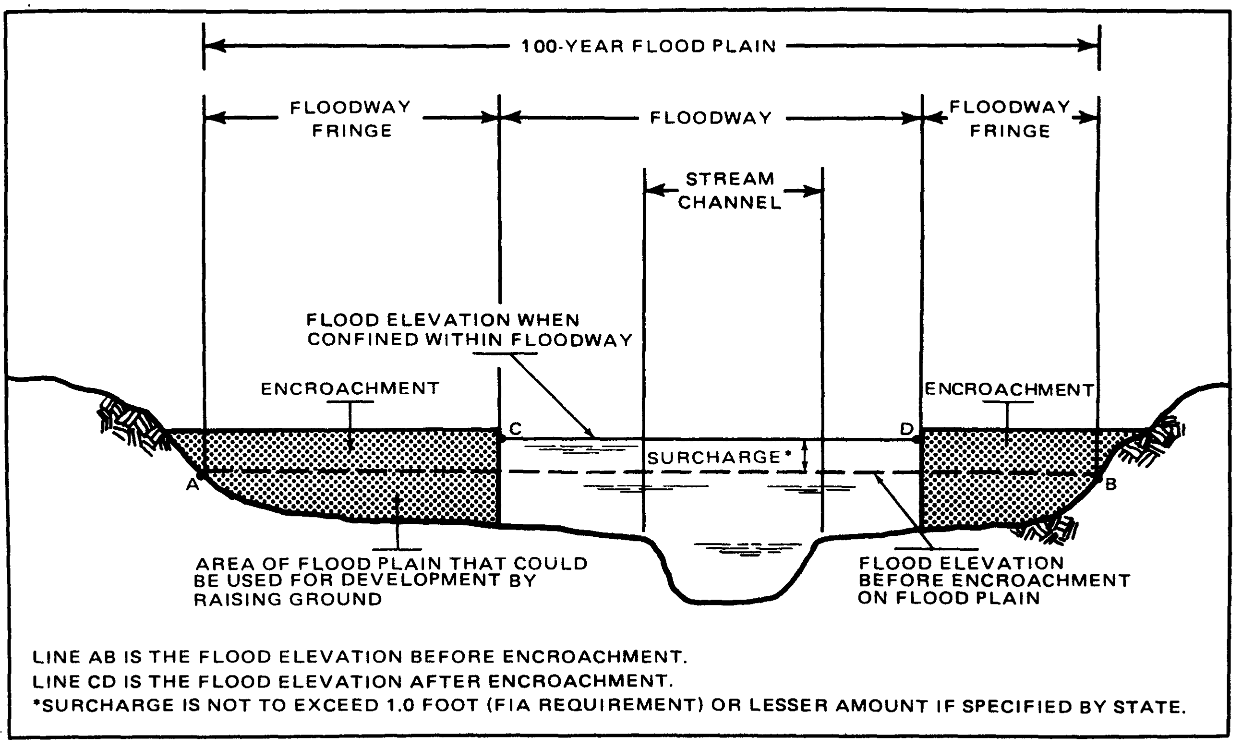


Figure 2. Floodway Schematic

5.0 INSURANCE APPLICATION

In order to establish actuarial insurance rates, the Federal Insurance Administration has developed a process to transform the data from the engineering study into flood insurance criteria. This process includes the determination of reaches, Flood Hazard Factors, and flood insurance zone designations for each flooding source studied in detail affecting the City of North Port.

5.1 Reach Determinations

Reaches are defined as lengths of watercourses or waterbodies having relatively the same flood hazard, based on the average weighted difference in water-surface elevations between the 10- and 100-year floods. This difference does not have a variation greater than that indicated in the following table for more than 20 percent of the reach:

Average Difference Between 10- and 100-year Floods	Variation
Less than 2 feet	0.5 foot
2 to 7 feet	1.0 foot
7.1 to 12 feet	2.0 feet
More than 12 feet	3.0 feet

The locations of the reaches determined for the riverine flooding sources of the City of North Port are shown on the Flood Profiles (Exhibit 1) and summarized in Table 5.

5.2 Flood Hazard Factors

The Flood Hazard Factor (FHF) is the Federal Insurance Administration device used to correlate flood information with insurance rate tables. Correlations between property damage from floods and their FHF are used to set actuarial insurance premium rate tables based on FHFs from 005 to 200.

The FHF for a reach is the average weighted difference between the 10- and 100-year flood water-surface elevations expressed to the nearest one-half foot, and shown as a three-digit code. For example, if the difference between water-surface elevations of the 10- and 100-year floods is 0.7 foot, the FHF is 005; if the difference is 1.4 feet, the FHF is 015; if the difference is 5.0 feet, the FHF is 050. When the difference between the 10- and 100-year water-surface elevations is greater than 10.0 feet, accuracy for the FHF is to the nearest foot.

FLOODING SOURCE	PANEL[1]	ELEVATION DIFFERENCE[2] BETWEEN 1% (100-YEAR) FLOOD AND			FLOOD HAZARD FACTOR	ZONE	BASE FLOOD ELEVATION[3] (FEET NGVD)
		10% (10-YEAR)	2% (50-YEAR)	0.2% (500-YEAR)			
Big Slough Canal and Myakkahatchee Creek							
Reach 1	0010	-2.0	-0.8	1.4	020	A4	Varies - See Map
Reach 2	0010	-1.5	-0.4	1.0	015	A3	Varies - See Map
Shallow Flooding	0005,0010	N/A	N/A	N/A	N/A	A0	Depth 1
Charlotte Harbor							
Reach 1	0010,0025	-4.0	-1.5	1.5	040	A8	8
Gulf of Mexico							
Reach 1	0025	-4.3	-0.3	1.7	045	A9	10
Reach 2	0025	-4.8	-0.8	2.1	050	A10	11
Reach 3	0025	-5.0	-1.2	2.3	050	A10	12

[1] Flood Insurance Rate Map Panel [2] Weighted Average [3] Rounded to Nearest Foot

TABLE 5

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF NORTH PORT, FL
(SARASOTA CO.)

FLOOD INSURANCE ZONE DATA

BIG SLOUGH CANAL AND MYAKKAHATCHEE CREEK-SHALLOW FLOODING-CHARLOTTE HARBOR-GULF OF MEXICO

5.3 Flood Insurance Zones

After the determination of reaches and their respective Flood Hazard Factors, the entire incorporated area of the City of North Port was divided into zones, each having a specific flood potential or hazard. Each zone was assigned one of the following flood insurance zone designations:

Zone A0:	Special Flood Hazard Areas inundated by types of 100-year shallow flooding where depths are between 1.0 and 3.0 feet; depths are shown, but no Flood Hazard Factors are determined.
Zones A3, A4, A8, A9, and A10:	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown, and zones subdivided according to Flood Hazard Factors.
Zone B:	Areas between the Special Flood Hazard Areas and the limits of the 500-year flood, including areas of the 500-year flood plain that are protected from the 100-year flood by dike, levee, or other water control structure; also areas subject to certain types of 100-year shallow flooding where depths are less than 1.0 foot; and areas subject to 100-year flooding from sources with drainage areas less than 1 square mile. Zone B is not subdivided.
Zone C:	Areas of minimal flooding.

The flood elevation differences, Flood Hazard Factors, flood insurance zones, and base flood elevations for each flooding source studied in detail in the community are summarized in Table 5.

5.4 Flood Insurance Rate Map Description

The Flood Insurance Rate Map for the City of North Port is, for insurance purposes, the principal result of the Flood Insurance Study. This map (published separately) contains the official delineation of flood insurance zones and base flood elevation lines. Base flood elevation lines show the locations of the expected whole-foot water-surface elevations of the base (100-year) flood. This map is developed in accordance with the latest flood insurance map preparation guidelines published by the Federal Insurance Administration.

6.0 OTHER STUDIES

No previous Flood Insurance Studies have been published for North Port. However, a Flood Insurance Rate Map has been published for Charlotte County (Reference 6). The values of that report are in agreement at the boundary with the study area.

This study is in agreement with the Flood Hazard Boundary Map for the City of North Port published by the Federal Insurance Administration (Reference 22).

This study is authoritative for the purposes of the National Flood Insurance Program; data presented herein either supersede or are compatible with all previous determinations.

7.0 LOCATION OF DATA

Survey, hydrologic, hydraulic, and other pertinent data used in this study can be obtained by contacting the Insurance and Mitigation Division, Federal Emergency Management Agency, 1375 Peachtree Street, NE., Atlanta, Georgia 30309.

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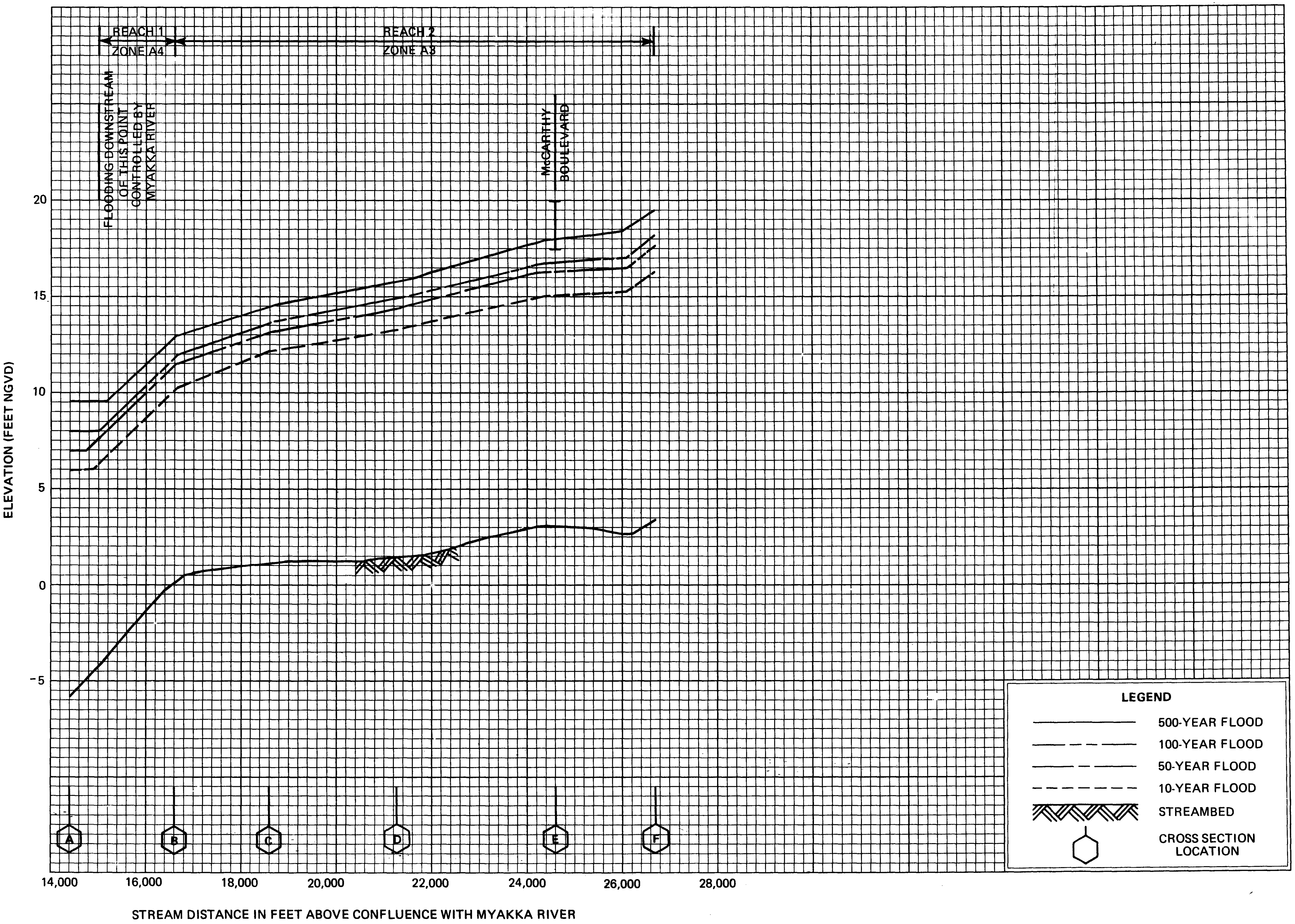
22. U.S. Department of Housing and Urban Development, Federal Insurance Administration, Flood Hazard Boundary Map, Scale 1:12,000, City of North Port, Florida, June 10, 1977



FLOOD PROFILES

BIG SLOUGH CANAL AND MYAKKAHATCHEE CREEK

FEDERAL EMERGENCY MANAGEMENT AGENCY
Federal Insurance Administration

CITY OF NORTH PORT, FL
(SARASOTA CO.)