FLOOD INSURANCE STUDY

MONROE COUNTY, FLORIDA
AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
ISLAMORADA, VILLAGE OF	120424
KEY COLONY BEACH, CITY OF	125121
KEY WEST, CITY OF	120168
LAYTON, CITY OF	120169
MARATHON, CITY OF	120681
MONROE COUNTY (UNINCORPORATED AREAS)	125129

REVISED:
FEBRUARY 18, 2005

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
12087CV000A

NOTICE TO
FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program 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 Countywide FIS Effective Date: October 17, 1989

Revised Countywide FIS Dates:

November 4, 1992 (Flood Insurance Rate Map only) – to incorporate Coastal Barrier Resources Areas and/or Otherwise Protected Areas

June 16, 1995 (Flood Insurance Rate Map only) – to modify Coastal Barrier Resources Areas

March 3, 1997 – to change Base Flood Elevations and Special Flood Hazard Areas, to update map format, and to modify Coastal Barrier Resources System Areas

December 22, 1998 (Flood Insurance Rate Map only) – to reflect the incorporation of the Village of Islamorada (formerly shown as part of the Unincorporated Areas of Monroe County)

December 20, 2000 (Flood Insurance Rate Map only) – to incorporate previously issued Letters of Map Revision

February 15, 2002 – to reflect the incorporation of the City of Marathon (formerly shown as part of the Unincorporated Areas of Monroe County) and to incorporate previously issued Letters of Map Revision

February 18, 2005

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FLOOD INSURANCE STUDY
MONROE COUNTY, FLORIDA, AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This countywide Flood Insurance Study (FIS) revises and updates a previous FIS/Flood Insurance Rate Map (FIRM) for the geographic area of Monroe County, Florida, including: the Village of Islamorada, the Cities of Key Colony Beach, Key West, Layton, and Marathon, and the unincorporated areas of Monroe County (hereinafter referred to collectively as Monroe County). This FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This FIS has developed flood risk data for various areas of the county that will be used to establish actuarial flood insurance rates and assist the county in its efforts to promote sound floodplain management. Minimum floodplain management requirements for participation in the National Flood Insurance Program (NFIP) are set forth in the Code of Federal Regulations at 44 CFR, 60.3

This information will also be used by Monroe County to update existing floodplain regulations as part of the Regular Phase of the NFIP, and by local and regional planners to further promote sound land use and floodplain development.

In some States or communities, floodplain management criteria or regulations may exist that are more 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.

The hydrologic and hydraulic analyses for the original October 17, 1989, countywide FIS were performed by Gee & Jenson Engineers-Architects-Planners, Inc., for the Federal Emergency Management Agency (FEMA), under Contract No. EMW-84-C-1609. This work was completed in April 1988.

The March 3, 1997, revision was performed by Dewberry & Davis for FEMA, and the work was completed in January 1995.

For the February 15, 2002, revision, the digital base mapping information was derived from U.S. Geological Survey (USGS) 1:24,000 scale Digital Line Graphs. These files were modified in and around the floodplains to match data previously compiled for the FIS for Monroe County. The coordinate system used to produce the digital FIRM was Universal Transverse Mercator, referenced to the North American Datum of 1927 and the Clarke 1866 spheroid.

For this revision, the digital base map information was derived from USGS digital orthophoto quadrangles produced at a scale of 1:12,000 from photography dated 1994 and 1999. The coordinate system used to produce the digital FIRM was Universal Transverse Mercator, referenced to the North American Datum of 1983 and the GRS 80 spheroid.

1.3 Coordination

The purpose of an initial Consultation Coordination Officer's (CCO) meeting is to discuss the scope of the FIS. A final CCO meeting is held to review the results of the study.

In April 1984, initial Consultation and Coordination Officer meetings were held with representatives of FEMA, the communities, and Gee & Jenson Engineers-Architects-Planners, Inc. Coordination with community officials and Federal, State, and regional agencies produced a variety of information pertaining to floodplain regulations, available maps and topography, flood history, and other hydrographic data. Agencies contacted for information for this FIS included: the Monroe County Chamber of Commerce; the Cities of Key Colony Beach, Layton, and Key West; the National Ocean Service - National Geodetic Information Center; the Florida Department of Transportation; the Florida Keys Aqueduct Authority; the National Ocean Service - Tidal Datum Section; the National Weather Service; and the USGS.

The results of the October 17, 1989, FIS were reviewed and accepted at final coordination meetings on January 17, 18, and 19, 1989, and were attended by representatives of Gee & Jenson Engineers-Architects-Planners, Inc., FEMA, and the communities.

For the February 15, 2002, revision, the communities were notified by FEMA in a letter dated April 4, 2001.

For this revision, Monroe County was notified by our Map Coordination Contractor in a phone conversation on July 11, 2003.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Monroe County, Florida. The area of study is shown on the Vicinity Map (Figure 1).

For the October 17, 1989, FIS, a detailed coastal flooding analysis was performed on the complete coastline of Monroe County, where the flooding sources are the Atlantic Ocean, Florida Bay, Biscayne Bay, and the Gulf of Mexico.

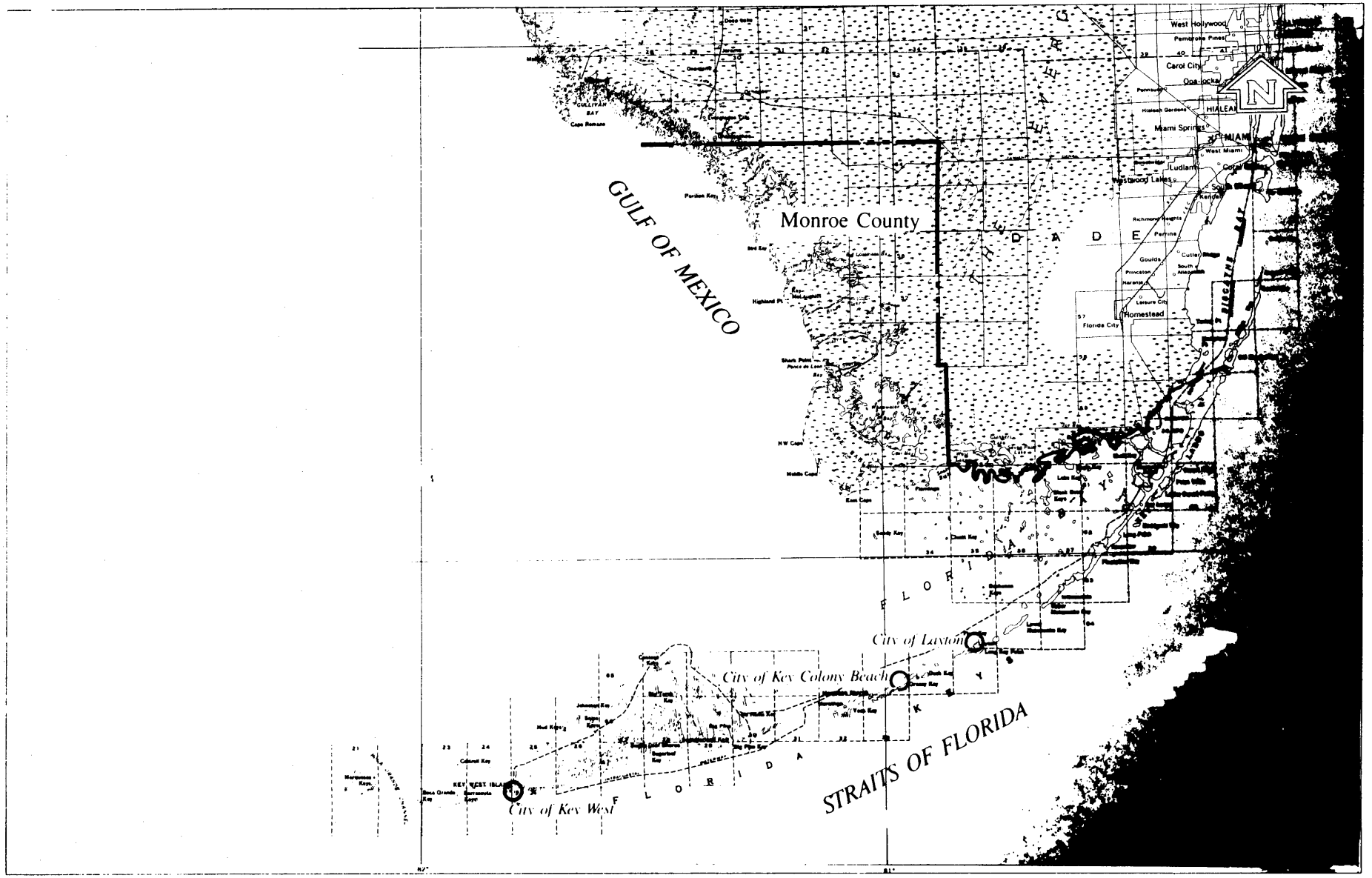

FIGURE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

APPROXIMATE SCALE

20 0 20 40 60 MILES

VICINITY MAP

For the March 3, 1997, revision, the Key Haven 11th addition subdivision was removed from the FIRM because this subdivision was never constructed. Using January 1993 aerial photography and the flooding information from the October 17, 1989, FIS, the shoreline and road information was adjusted to match existing conditions (TRW REDI Property Data, 1993; FEMA, 1989). Due to these adjustments, flood hazard zone elevation boundaries were also modified.

Further adjustments to flood hazards were made in the vicinity of Ramrod Shores 2nd addition. Specifically, this area was shown on the FIRM as a cove when in fact it had been filled prior to January 1979. Using March 1994 aerial photography and flooding information from the October 17, 1989, FIS, the shoreline and road information was adjusted to match existing conditions (TRW REDI Property Data, 1993; FEMA, 1989). Due to these adjustments, flood hazard zone elevation boundaries were also modified.

The determination in a Letter of Map Revision (LOMR), dated February 4, 1991, issued by FEMA, was incorporated in the March 3, 1997, revision. This LOMR reflects better topographic information and revised flooding analyses for the Atlantic Ocean along Cudjoe Key.

For the February 15, 2002, revision, the following communities had corporate limits changes due to annexations/deannexations: the unincorporated areas of Monroe County, the City of Marathon, and the City of Key Colony Beach.

The February 15, 2002, revision also incorporated a LOMR issued by FEMA dated November 16, 2000, that reflected the incorporation of the City of Marathon.

This revision incorporated two LOMRs issued by FEMA dated February 27, 2001, and December 31, 2002, that reflected a site-specific wave height analysis and more detailed and up-to-date topographic data.

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. The scope and methods of study were proposed to, and agreed upon by, FEMA and Monroe County, Florida.

For this revision, no new analyses were performed.

2.2 Community Description

Monroe County is the southernmost county in the State of Florida and the continental United States, and encompasses an area of 1,418 square miles. It is bordered on the north by Collier County, on the east by Dade County and the Atlantic Ocean, on the south by the Atlantic Ocean, and on the west by the Gulf of Mexico.

U.S. Route 1 (State Road 5) is the primary north-south transportation artery. Also known as the Overseas Highway, it was constructed on the abandoned bed of the Overseas Railroad and is the only highway connecting Key West with the remaining islands and the mainland. State Roads 905, 931, 940, 942, 939, 941, and A1A serve traffic for the larger islands and all connect to U.S Route 1. Another transportation route is the Intracoastal Waterway, which extends the length of the Keys.

The county seat is the City of Key West, which is approximately 158 miles southwest of the City of Miami and is the most populated area of Monroe County. Other unincorporated communities, such as Key Largo, Tavernier, Islamorada, Big Pine, and Marathon, are located near the middle and northern parts of the Keys. The estimated 1986 population of Monroe County was 72,471, compared to the reported 1980 population of 63,188, representing a 14.7-percent increase in 6 years (University of Florida, 1986; U.S. Department of Commerce, 1982).

The topography of Monroe County has two major features: the chain of coral and limestone islands that form the Florida Keys, and the low swampy land that forms the mainland portion of the county (Del Marth, 1985).

Monroe County has a mild, subtropical climate, with an average temperature of approximately 70 degrees Fahrenheit. Average annual rainfall is approximately 38 inches. Prevailing winds are from the southeast during spring and summer, and from the northeast in the fall (Del Marth, 1985).

Residential, commercial, and industrial development in Monroe County occurs mainly along the Florida Keys. The mainland remains largely undeveloped and includes the Big Cypress National Preserve and Everglades National Park.

2.3 Principal Flood Problems

Coastal areas of the county bordering the Atlantic Ocean and Gulf of Mexico are subject to storm surge flooding because of hurricanes and tropical storms. Large tidal surges, combined with wave action and the heavy rainfall that accompany these storms, have caused flooding.

There is considerable historical evidence of storms affecting the southeastern coast of the United States prior to the 1900s (American Meteorological Survey, 1963). The tracks of some of the larger storms occurring in the region are shown in Figure 2. Some of the most significant of these storms affecting the study area are as follows:

- 1919 (September 2 to 15) - The hurricane passed Key West and the Dry Tortugas on a westward course. Key West recorded winds of 95 miles per hour (mph), a central pressure of 28.81 inches, and tide levels of 6 to 7 feet above Mean Sea Level (MSL) (USACE, 1961).

NOT TO SCALE

HISTORICAL STORM TRACKS (1900-1985)

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL
AND INCORPORATED AREAS

FIGURE 2

- 1929 (September 22 to October 4) - The hurricane crossed over Key Largo on a northwesterly course. Key Largo reported winds estimated at over 100 mph, a central pressure recorded at 28 inches, and tide levels of 8 to 9 feet above MSL. In the vicinity of Key West, tide levels only reached 5 to 6 feet above MSL, and the highest winds recorded were 66 mph (USACE, 1961).

- 1935 (August 29 to September 10) - The small, extremely violent Labor Day hurricane crossed the Florida Keys on a northwesterly track. The Tavernier-Islamorada area reported winds estimated at 120 mph, and gusts estimated at 190-210 mph. Tide levels in the Florida Keys ranged from 14 feet above MSL in Key Largo to 18 feet above MSL at Lower Matecumbe Key. In the vicinity of Key West, tide levels of only 2 feet above MSL were recorded (USACE, 1961).

- 1945 (September 12 to 19) - The hurricane passed to the north of Key Largo, on a northwesterly track with tides reported in southern Biscayne Bay of 13.7 feet above MSL, winds recorded at 138 mph, and a recorded central pressure of 28.15 inches at Carrysfort Reef (USACE, 1961).

- 1948 (September 19 to 25) - The hurricane passed to the east of Key West on a northerly track and entered the mainland near the Everglades with recorded winds at Key West of 122 mph and a central pressure of 28.45 inches. Tide levels in the area of Vaca Key were 7 to 8 feet above MSL, and in the vicinity of Key West tide levels were 2.7 feet above MSL (USACE, 1961).

- 1948 (October 4 to 8) - The hurricane moved northeastward over the Florida Keys near Marathon, with estimated winds of over 100 mph and a central pressure of 28.80 recorded at Sombrero Key. Tide levels in southern Biscayne Bay were recorded at 6.2 feet above MSL and in the vicinity of Key West tide levels were 2.0 feet above MSL (USACE, 1961).

- Hurricane King, 1950 (October 15 to 19) - Hurricane King made landfall at Miami and traveled inland parallel to the coastline to the north. Recorded wind speeds at Miami were 122 mph, and central pressure was recorded at 28.25 inches. Tide levels in southern Biscayne Bay reached 3.7 feet above MSL (USACE, 1961).

- Hurricane Donna, 1960 (August 29 to September 13) - Hurricane Donna curved northwestward over the central keys near Long Key and then traveled northward toward the Gulf Coast towns of Naples and Ft. Myers. Wind speeds were recorded on Sombrero Key of 128 mph, and a central pressure of 28.44 inches was recorded. At the Everglades, a wind speed of 150 mph was estimated and a central pressure of 28.15 inches was recorded. Tide levels were reported at Upper Matecumbe Key of 13.45 feet above MSL; Plantation Key, 10.01 feet above MSL; Key Largo, 8.89

feet above MSL; 4.7 feet above MSL in the vicinity of Key West; and 9.68 feet above MSL at the Everglades (USACE, 1961).

- Hurricane Cleo, 1964 (August 20 to September 5) - Hurricane Cleo made landfall near Miami traveling in a north to northwesterly direction with estimated winds of 135 mph in Miami and a recorded central pressure of 28.57 inches in North Miami. Tide levels in Biscayne Bay were estimated to be 3.6 feet above MSL.

- Hurricane Betsy, 1965 (August 26 to September 12) - Hurricane Betsy passed over Marathon in the Florida Keys while moving westward into the Gulf of Mexico. The lowest central pressure was measured in Tavernier at 28.12 inches and wind speeds were estimated to be 120 mph. The highest tide level in Tavernier was 7.7 feet above Mean Low Water (MLW). Tide levels north of Key Largo were estimated at 9 feet above MSL. The Flamingo Ranger Station in the Everglades estimated winds to be 160 mph, recorded a central pressure of 28.4 inches, and reported tide levels of 7.4 feet above MSL.

- Hurricane Alma, 1966 (June 4 to 14) - Hurricane Alma passed 50 miles west of Key West while traveling northward into the Gulf of Mexico. The Dry Tortugas measured a central pressure of 28.65 inches with winds up to 125 mph. At Key West, winds of 60 mph were recorded and tide levels were 3.5 feet above MLW.

2.4 Flood Protection Measures

Flood protection measures are not known to exist within the study area.

3.0 ENGINEERING METHODS

For the flooding source studied in detail in the county, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this FIS. 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 county at the time of completion of this FIS. Maps and flood elevations will be amended periodically to reflect future changes.

3.1 Hydrologic Analyses

Analyses were carried out to establish the peak elevation-frequency relationships for each flooding source studied in detail affecting the county.

Inundation from the Atlantic Ocean and the Gulf of Mexico caused by passage of storms (storm surge) was determined using the joint probability method (U.S. Department of Commerce, 1970). The storm populations were described by probability distributions of five parameters that 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 statistically described based on an analysis of observed storms in the vicinity of Monroe County. Primary sources of data for this were Tropical Cyclones of the North Atlantic Ocean, 1871-1984, Some Climatological Characteristics of Hurricanes and Tropical Storms, Gulf and East Coasts of the United States, Meteorological Criteria for Standard Project Hurricane and Probable Maximum Hurricane Wind Fields, Gulf and East Coasts of the United States, and Hurricane Climatology for the Atlantic and Gulf Coasts of the United States, all published by the National Oceanic and Atmospheric Administration (NOAA) (U.S. Department of Commerce, 1985; U.S. Department of Commerce, 1975; U.S. Department of Commerce, 1986; U.S. Department of Commerce, 1986). A summary of the parameters used for the area is presented in Table 1, "Parameter Values for Surge Elevations."

For areas subject to flooding directly from the Atlantic Ocean and the Gulf of Mexico, the FEMA standard storm surge model was used to simulate the coastal surge generated by any chosen storm (that is, any combination of the five storm parameters defined previously) (FEMA, 1988). By performing such simulations for a large number of storms, each of known total probability, the frequency distribution of surge height can be established as a function of coastal location. 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 or runup. As the final step in the calculations, the astronomic tide for the region is then statistically combined with the computed storm surge to yield recurrence intervals of total water level.

Wave setup was determined to significantly contribute to the total stillwater levels along the Atlantic Ocean, Gulf of Mexico, Biscayne Bay, and Florida Bay. The amount of wave setup was calculated using the methodology outlined in the U.S. Army Corps of Engineers Shore Protection Manual (USACE, 1984).

The storm-surge elevations for the 10-, 50-, 100-, and 500-year floods have been determined for Monroe County and are shown in Table 2, "Summary of Stillwater Elevations." The analyses reported herein reflect the stillwater elevations due to tidal and wind setup effects and include the contribution of wave action effects.

CENTRAL PRESSURE DEPRESSION (MILLIBARS)	16	35	55	75	95	99
ASSIGNED PROBABILITIES[1]	0.29	0.26	0.19	0.22	0.03	0.01
STORM RADIUS TO MAXIMUM WINDS (NAUTICAL MILES)		13		22		30
PROBABILITY[1]		0.51		0.28		0.21
FORWARD SPEED (KNOTS)		10			18	
PROBABILITIES:[1]		0.83			0.17	
DIRECTION OF STORM PATH[1] (DEGREES FROM TRUE NORTH)		210			240	
PROBABILITY[1]		0.309			0.241	
FREQUENCY OF STORM OCCURRENCE (STORM/NAUTICAL MILE/YEAR)				0.00453		

TABLE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

MAINLAND PARAMETER VALUES FOR SURGE ELEVATIONS ENTERING

CENTRAL PRESSURE DEPRESSION (MILLIBARS)	16	35	55	75	95	99
ASSIGNED PROBABILITIES[1]	0.29	0.26	0.19	0.22	0.03	0.01
STORM RADIUS TO MAXIMUM WINDS (NAUTICAL MILES)		13		22		30
PROBABILITY[1]		0.51		0.28		0.21
FORWARD SPEED (KNOTS)		10			18	
PROBABILITIES:[1]		0.83			0.17	
DIRECTION OF STORM PATH[1] (DEGREES FROM TRUE NORTH)				160		
PROBABILITY[1]				0.404		
FREQUENCY OF STORM OCCURRENCE (STORM/NAUTICAL MILE/YEAR)				0.00453		

TABLE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

MAINLAND PARAMETER VALUES FOR SURGE ELEVATIONS ALONGSHORE

CENTRAL PRESSURE DEPRESSION (MILLIBARS)	22	55	79	95	101
ASSIGNED PROBABILITIES[1]	0.44	0.36	0.13	0.06	0.01
STORM RADIUS TO MAXIMUM WINDS (NAUTICAL MILES)		13		22	
PROBABILITY[1]		0.63		0.37	
FORWARD SPEED (KNOTS)		10		18	
PROBABILITIES:[1]		0.96		0.04	
DIRECTION OF STORM PATH[1] (DEGREES FROM TRUE NORTH)			83		
PROBABILITY[1]			0.125		
FREQUENCY OF STORM OCCURRENCE (STORM/NAUTICAL MILE/YEAR)			0.00453		

TABLE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

MAINLAND PARAMETER VALUES FOR SURGE ELEVATIONS EXITING

CENTRAL PRESSURE DEPRESSION (MILLIBARS)	16	35	55	75	95	99
ASSIGNED PROBABILITIES[1]	0.30	0.23	0.21	0.17	0.08	0.01
STORM RADIUS TO MAXIMUM WINDS (NAUTICAL MILES)		13		22		30
PROBABILITY[1]		0.58		0.22		0.20
FORWARD SPEED (KNOTS)		10			18	
PROBABILITIES:[1]		0.90			0.10	
DIRECTION OF STORM PATH[1] (DEGREES FROM TRUE NORTH)		160			210	
PROBABILITY[1]		0.239			0.350	
FREQUENCY OF STORM OCCURRENCE (STORM/NAUTICAL MILE/YEAR)		0.00417				

TABLE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

FLORIDA KEYS PARAMETER VALUES FOR SURGE ELEVATIONS ENTERING

CENTRAL PRESSURE DEPRESSION (MILLIBARS)	16	35	55	75	95	101
ASSIGNED PROBABILITIES[1]	0.30	0.23	0.21	0.17	0.08	0.01
STORM RADIUS TO MAXIMUM WINDS (NAUTICAL MILES)		13		22		30
PROBABILITY[1]		0.58		0.22		0.20
FORWARD SPEED (KNOTS)		10			18	
PROBABILITIES:[1]		0.90			0.10	
DIRECTION OF STORM PATH[1] (DEGREES FROM TRUE NORTH)				240		
PROBABILITY[1]				0.261		
FREQUENCY OF STORM OCCURRENCE (STORM/NAUTICAL MILE/YEAR)				0.00471		

TABLE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

FLORIDA KEYS PARAMETER VALUES FOR SURGE ELEVATIONS ALONGSHORE

CENTRAL PRESSURE DEPRESSION (MILLIBARS)	16	35	55	75	95	101
ASSIGNED PROBABILITIES[1]	0.30	0.23	0.21	0.17	0.08	0.01
STORM RADIUS TO MAXIMUM WINDS (NAUTICAL MILES)		13		22		30
PROBABILITY[1]		0.58		0.22		0.20
FORWARD SPEED (KNOTS)		10			18	
PROBABILITIES:[1]		0.96			0.04	
DIRECTION OF STORM PATH[1] (DEGREES FROM TRUE NORTH)		83				
PROBABILITY[1]		0.261				
FREQUENCY OF STORM OCCURRENCE (STORM/NAUTICAL MILE/YEAR)		0.00471				

TABLE 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

FLORIDA KEYS
PARAMETER VALUES FOR SURGE ELEVATIONS EXITING

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
GULF OF MEXICO							
1	1508, 1516	3.2	5.5	8.4[3]	7.3	VE	11-13
						AE	8-10
		3.2	5.5	6.8	7.3	VE	9-11
						AE	7- 9
ATLANTIC OCEAN							
2	1516	2.7	4.8	7.6[3]	6.4	VE	10-12
						AE	8-10
		2.7	4.8	6.0	6.4	AE	6- 8
GULF OF MEXICO							
3	1509	5.1	6.5	7.4	9.2	VE	9-11
						AE	7- 9
ATLANTIC OCEAN							
4	1509, 1517	3.0	5.5	8.5[3]	7.4	VE	11-13
						AE	9-11
		3.0	5.5	7.2	7.4	VE	9-11
						AE	7- 9
GULF OF MEXICO							
5	1528	4.7	7.6	8.4	10.4	VE	11-13
						AE	9-11

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

GULF OF MEXICO – ATLANTIC OCEAN

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
6	1528, 1536	3.4	6.3	9.4[3]	8.6	VE	12-14
						AE	9-11
		3.4	6.3	7.1	8.6	AE	7- 9
GULF OF MEXICO							
7	1275,1527	4.5	7.5	10.7[3]	9.6	VE	13-17
		4.6	7.4	8.1	9.9	VE	10-13
						AE	8-10
	1529	5.3	8.4	9.4	11.6	VE	12-15
						AE	9-11
ATLANTIC OCEAN							
8	1529, 1537, 1541	3.3	5.9	8.9[3]	7.9	VE	11-14
						AE	9-11
		3.9	7.0	7.9	9.9	VE	10-11
						AE	8- 9
GULF OF MEXICO							
9	1275, 1531	4.7	7.8	10.8[3]	9.9	VE	13-17
						AE	11-12
		5.8	9.2	10.1	12.4	VE	12-15
						AE	10-12

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN - GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
10	1531, 1533, 1534	3.6	6.1	9.2[3]	8.4	VE	11-14
						AE	9-11
		3.8	6.6	7.6	9.0	AE	8-10
GULF OF MEXICO							
11	1275, 1290	4.8	8.0	11.0[3]	9.9	VE	13-17
						AE	11-13
		5.8	9.0	9.6	11.7	VE	12-15
						AE	10-12
ATLANTIC OCEAN							
12	1551, 1552	3.4	5.9	8.8[3]	8.7	VE	11-14
						AE	9-11
		3.4	5.9	6.6	8.7	AE	7- 9
GULF OF MEXICO							
13	1280, 1290, 1291, 1293	5.2	8.4	9.1	10.5	VE	11-14
						AE	10-11
		5.5	8.9	9.7	10.8	VE	12-15
						AE	10-12

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN - GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
14	1293, 1556, 1557	3.8	6.5	9.5[3]	9.2	VE	12-15
						AE	10-12
		4.6	7.9	8.7	9.8	VE	11-13
						AE	9-11
ATLANTIC OCEAN							
15	1292, 1294	5.7	8.8	9.5[3]	11.6	VE	12-15
						AE	10-12
GULF OF MEXICO							
16	1285, 1292	5.6	8.9	9.6	10.9	VE	12-15
						AE	10-12
ATLANTIC OCEAN							
17	1292, 1294	5.5	8.4	10.5[3]	11.2	VE	13-16
		5.3	7.9	8.7	10.7	VE	11-13
						AE	10-11
GULF OF MEXICO							
18	1075, 1305, 1311	5.1	8.4	10.3	11.0	VE	12-16
						AE	9-12

[1]Rounded to Nearest Foot and may include effects of wave action
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[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
19	1311	5.2	8.2	10.2[3]	10.9	VE	12-16
						AE	10-12
GULF OF MEXICO							
20	1075, 1305, 1311	5.7	8.8	9.3	10.4	VE	12-14
						AE	10-12
		5.3	7.9	8.6	11.0	VE	11-13
							9-11
ATLANTIC OCEAN							
21	1311, 1313	5.2	8.0	10.0[3]	10.4	VE	12-15
						AE	10-12
		5.2	7.6	8.4	11.4	AE	8- 9
GULF OF MEXICO							
22	1075, 1305, 1312	6.1	8.4	9.6	11.1	VE	12-15
						AE	10-12
		3.8	6.4	7.1	8.0	VE	9-11
						AE	7- 9

[1]Rounded to Nearest Foot and may include effects of wave action
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FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
23	1312	5.2	8.0	9.0[3]	10.9	VE	11-14
						AE	9-11
GULF OF MEXICO							
24	1075, 1305, 1312	4.9	8.0	8.8	10.4	VE	11-14
						AE	9-11
		4.0	6.8	7.6	8.7	VE	10-12
						AE	8-10
		3.8	6.4	7.1	8.0	AE	7- 9
ATLANTIC OCEAN							
25	1312, 1314	3.9	6.7	9.8[3]	9.4	VE	12-15
						AE	10-12
		3.9	6.7	7.6	9.4	AE	8- 9
GULF OF MEXICO							
26	1075, 1306, 1308	5.1	8.2	8.8	10.2	VE	11-14
						AE	9-11
		4.8	7.3	8.0	9.1	VE	10-12
						AE	9-10
	1316	4.1	6.7	7.4	8.2	VE	9-11
						AE	8- 9

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TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
27	1316, 1318	3.8	6.5	9.5[3]	8.7	VE	12-15
						AE	9-11
		3.8	6.5	7.2	8.7	AE	7- 9
GULF OF MEXICO							
29	1075, 1306, 1308, 1316	5.2	8.4	9.1	10.6	VE	11-14
						AE	9-11
		4.8	7.3	8.0	9.1	VE	10-12
						AE	9-10
		4.1	6.7	7.3	9.0	VE	9-10
						AE	7- 9
ATLANTIC OCEAN							
29	1318	3.8	6.5	9.5[3]	8.7	VE	12-15
						AE	9-11
		4.1	6.7	7.2	9.0	VE	9-11
						AE	7- 9
GULF OF MEXICO							
30	1075, 1307, 1326, 1328, 1336	5.0	7.7	8.5	10.0	VE	11-13
						AE	9-11
		4.2	6.6	7.2	8.7	VE	9-11
						AE	8- 9

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[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
31	1336, 1337, 1339	3.1	5.2	8.1[3]	6.9	VE	10-12
						AE	8-10
		3.1	5.2	3.8	6.9	AE	7- 8
GULF OF MEXICO							
32	1100, 1335, 1345	3.5	5.6	6.5	8.2	VE	9-10
						AE	6- 9
		3.1	5.2	5.9	7.0	VE	8- 9
						AE	6- 8
ATLANTIC OCEAN							
33	1345	3.0	5.1	8.0[3]	6.8	VE	10-12
						AE	8-10
		3.0	5.1	5.7	6.8	AE	6- 8
ATLANTIC OCEAN							
34	1378	3.5	5.3	8.2[3]	6.9	VE	10-13
						AE	8-10
		3.5	5.3	5.9	6.9	VE	8- 9
						AE	7- 8

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[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
FLORIDA BAY							
35	1378	4.6	6.8	9.2[3]	9.0	VE	11-14
						AE	9-11
		4.6	6.8	7.7	9.0	AE	8-9
ATLANTIC OCEAN							
36	1379	3.5	5.3	8.2[3]	6.9	VE	10-13
						AE	8-10
		3.5	5.3	5.9	6.9	VE	8-9
						AE	6-8
ATLANTIC OCEAN							
37	1379	3.5	5.3	8.2[3]	6.9	VE	10-13
						AE	8-10
		3.5	5.3	5.9	6.9	VE	8-9
						AE	6-8
FLORIDA BAY							
38	1381	4.6	6.8	9.2[3]	9.0	VE	11-14
						AE	9-11
		4.6	6.8	5.9	9.0	AE	6-8

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TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

FLORIDA BAY – ATLANTIC OCEAN

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
39	1381	3.5	5.3	8.2[3]	6.9	VE	10-13
						AE	8-10
		3.5	5.3	5.9	6.9	AE	6-8
FLORIDA BAY							
40	1381	4.6	6.8	9.2[3]	9.0	VE	11-14
						AE	9-11
		4.6	6.8	6.9	9.0	VE	9-10
						AE	7-9
ATLANTIC OCEAN							
41	1382, 1384	3.6	5.4	8.3[3]	7.0	VE	10-13
						AE	8-10
		3.7	5.5	6.1	7.1	AE	6-8
FLORIDA BAY							
42	1382	4.7	7.2	9.4[3]	9.0	VE	11-15
						AE	9-11
		4.7	7.2	6.3	9.0	AE	6-8

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[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – FLORIDA BAY

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
43	1382	3.6	5.4	8.3[3]	7.0	VE	10-13
						AE	8-10
		3.7	5.5	6.1	7.1	AE	6-8
FLORIDA BAY							
44	1382	4.7	7.2	9.4[3]	9.0	VE	11-15
						AE	9-11
		4.7	7.2	6.3	9.0	AE	6-8
ATLANTIC OCEAN							
45	1401	3.7	5.5	8.4[3]	7.11	VE	10-13
						AE	8-10
		3.7	5.5	6.6	7.1	AE	7-8
FLORIDA BAY							
46	1401, 1163	4.8	7.5	9.7[3]	9.2	VE	12-15
						AE	10-12
		4.8	7.5	8.2	9.2	AE	8-10

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[3]Include effects of wave setup

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FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – FLORIDA BAY

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
47	1164	3.7	5.5	8.4[3]	7.1	VE	11-13
						AE	8-10
FLORIDA BAY							
48	1164	4.8	7.5	9.7[3]	9.2	VE	12-15
						AE	10-12
		4.8	7.5	8.2	9.2	AE	8-10
ATLANTIC OCEAN							
49	1168	3.9	5.7	8.6[3]	7.3	VE	11-13
						AE	9-11
		3.9	5.7	6.3	7.3	AE	6-8
FLORIDA BAY							
50	1166, 1168	4.4	6.7	8.8[3]	8.5	VE	11-14
						AE	9-11
		4.4	6.7	7.3	8.5	AE	7-9

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[3]Include effects of wave setup

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FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – FLORIDA BAY

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
51	1167	4.2	5.9	8.8[3]	7.5	VE	11-14
						AE	9-11
		4.2	5.9	6.5	7.5	AE	7-9
FLORIDA BAY							
52	1167	4.0	6.3	8.4[3]	8.2	VE	11-13
						AE	8-10
		4.0	6.3	7.0	8.2	AE	7-8
ATLANTIC OCEAN							
53	1183, 1191	4.2	5.9	8.8[3]	7.5	VE	11-14
						AE	9-11
		4.2	5.9	6.5	7.5	AE	7-8

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[3]Include effects of wave setup

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FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – FLORIDA BAY

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
FLORIDA BAY							
54	1179	4.0	6.3	8.4[3]	8.2	VE	11-13
						AE	8-10
		4.0	6.3	7.0	8.2	AE	7-8
ATLANTIC OCEAN							
55	1183	4.2	5.9	8.8[3]	7.5	VE	11-14
						AE	9-11
		4.2	5.9	6.5	7.5	AE	7-8
FLORIDA BAY							
56	1183	4.0	6.3	8.4[3]	8.2	VE	11-13
						AE	8-11
		4.0	6.3	7.0	8.2	AE	7-8
ATLANTIC OCEAN							
57	1201	4.3	6.1	9.0[3]	7.7	VE	11-14
						AE	9-11
		4.3	6.1	6.7	7.7	AE	7-8

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[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

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FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

FLORIDA BAY – ATLANTIC OCEAN

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
FLORIDA BAY							
58	1201	3.9	5.9	8.0[3]	7.4	VE	10-12
						AE	8-10
		3.9	5.9	6.3	7.4	AE	6-8
ATLANTIC OCEAN							
59	1201	4.3	6.1	9.0[3]	7.7	VE	11-14
						AE	9-11
		4.3	6.1	6.7	7.7	AE	7-9
FLORIDA BAY							
60	1201	3.9	5.9	8.0[3]	7.4	VE	10-12
						AE	8-10
		3.9	5.9	5.8	7.4	AE	6-7
ATLANTIC OCEAN							
61	1202	4.3	6.1	9.0[3]	7.7	VE	11-14
						AE	9-11
		4.3	6.1	6.7	7.7	AE	7-9

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FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

FLORIDA BAY – ATLANTIC OCEAN

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
FLORIDA BAY							
62	1202	3.9	5.9	8.0[3]	7.4	VE	10-12
						AE	8-10
		3.9	5.9	6.5	7.4	AE	7-8
ATLANTIC OCEAN							
63	1202	4.3	6.1	9.0[3]	7.7	VE	11-14
						AE	9-11
		4.3	6.1	6.7	7.7	AE	7-9
FLORIDA BAY							
64	1202, 0989	3.9	5.9	8.0[3]	7.4	VE	10-12
						AE	8-10
		3.9	5.9	6.5	7.4	AE	6-8
ATLANTIC OCEAN							
65	0989	4.3	6.1	9.0[3]	7.7	VE	11-14
						AE	9-11
		4.3	6.1	6.7	7.7	AE	7-9

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FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – FLORIDA BAY

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
FLORIDA BAY							
66	0987, 0989	3.9	6.0	8.1[3]	7.6	VE	10-13
						AE	8-10
		3.9	6.0	6.2	7.6	AE	6-8
ATLANTIC OCEAN							
67	0993	4.6	6.3	9.1[3]	7.9	VE	11-14
						AE	9-11
		4.6	6.3	6.9	7.9	AE	7-9
FLORIDA BAY							
68	0991, 0993, 0994	3.9	6.0	8.2[3]	7.8	VE	11-13
						AE	8-10
		3.9	6.0	6.7	7.8	VE	9-10
						AE	7-9
ATLANTIC OCEAN							
69	0992	4.6	6.3	9.1[3]	7.9	VE	11-14
						AE	9-11
FLORIDA BAY							
70	0992	4.6	6.3	7.7	7.9	VE	10-12
						AE	8-10

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FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

FLORIDA BAY – ATLANTIC OCEAN

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
71	0992, 1011	4.6	6.3	9.1[3]	7.9	VE	11-14
						AE	9-11
		4.6	6.3	6.9	7.9	AE	7-9
FLORIDA BAY							
72	0992	3.9	6.0	7.7[3]	7.8	VE	10-12
						AE	8-10
ATLANTIC OCEAN							
73	1003	4.8	6.4	9.3[3]	8.0	VE	11-14
						AE	9-11
		4.8	6.4	7.0	8.0	AE	7-9
FLORIDA BAY	1003	3.9	6.2	7.9[3]	8.1	VE	10-12
						AE	8-10
		3.9	6.2	7.1	8.1	AE	7-8

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – FLORIDA BAY

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
75	1004	4.8	6.4	9.3[3]	8.0	VE	11-14
						AE	9-11
		4.8	6.4	7.0	8.0	AE	9-11
FLORIDA BAY							
76	1004	3.9	6.2	7.9[3]	8.1	VE	10-12
						AE	8-10
		3.9	6.2	6.3	8.1	AE	6-8
ATLANTIC OCEAN							
77	1006	4.8	6.4	9.3[3]	8.0	VE	11-14
						AE	9-11
FLORIDA BAY							
78	1006	3.9	6.2	7.9[3]	8.1	VE	10-12
						AE	8-10
ATLANTIC OCEAN							
79	1006	5.0	6.6	9.4[3]	8.2	VE	11-15
						AE	9-11

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – FLORIDA BAY

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
FLORIDA BAY							
80	1006	5.0	6.6	7.2	8.2	AE	7-9
		3.9	6.2	7.9[3]	8.1	VE	10-12
						AE	8-10
ATLANTIC OCEAN							
81	0919	5.0	6.6	9.4[3]	8.2	VE	11-15
						AE	9-11
FLORIDA BAY							
82	0919	4.0	6.4	8.2[3]	8.4	VE	10-13
						AE	8-10
ATLANTIC OCEAN							
83	0938	5.0	6.6	9.4[3]	8.2	VE	12-15
						AE	9-11
		5.0	6.6	7.2	8.2	VE	10-11
						AE	7-9
FLORIDA BAY							
84	0917, 0919, 0938	4.0	6.4	8.2[3]	8.4	VE	10-13
						AE	8-10

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

FLORIDA BAY – ATLANTIC OCEAN

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
85	0928, 0937	5.2	6.7	9.6[3]	8.3	VE	12-15
						AE	10-12
		5.2	6.7	7.3	8.3	VE	10-11
						AE	7-9
FLORIDA BAY							
86	0928	4.0	6.4	8.2[3]	8.4	VE	10-13
						AE	8-10
		4.0	6.4	7.2	8.4	AE	7-9
ATLANTIC OCEAN							
87	0929	5.2	6.7	9.6[3]	8.3	VE	12-15
		5.2	6.7	7.3	8.3	VE	10-11
						AE	7-9
FLORIDA BAY							
88	0926, 0929	5.1	7.6	9.4[3]	9.4	VE	12-15
						AE	10-11

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – FLORIDA BAY

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
89	0769, 0932	5.4	6.9	9.7[3]	8.5	VE	12-15
						AE	10-12
		5.4	6.9	7.4	8.5	VE	10-11
						AE	7-10
FLORIDA BAY							
90	0765, 0768, 0769	6.0	8.4	9.6[3]	10.2	VE	12-15
						AE	10-12
		6.0	8.4	9.0[3]	10.2	VE	11-14
						AE	9-11
ATLANTIC OCEAN							
91	0790	5.4	6.9	9.7[3]	8.5	VE	12-15
						AE	10-12
		5.4	6.9	7.4	8.5	VE	10-11
						AE	7-10
ATLANTIC OCEAN							
92	0790	5.4	6.9	9.7[3]	8.5	VE	12-15
						AE	10-12
		5.4	6.9	8.2[3]	8.5	AE	8-10

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – FLORIDA BAY

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
BISCAYNE BAY							
93	0760, 0790	6.4	8.8	10.0[3]	10.8	VE	12-14
						AE	10-12
ATLANTIC OCEAN							
94	0780	5.7	7.0	9.9[3]	8.6	VE	12-15
						AE	10-12
		5.7	7.0	7.6	8.6	AE	8-10
BISCAYNE BAY							
95	0780	6.4	8.8	10.0[3]	10.8	VE	12-14
						AE	10-12
ATLANTIC OCEAN							
96	0590, 0593	5.7	7.0	9.9[3]	8.6	VE	12-15
						AE	10-12
		5.7	7.0	7.6	8.6	AE	8-10
BISCAYNE BAY							
97	0760	6.4	8.8	10.0[3]	10.8	VE	12-14
						AE	10-12

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

BISCAYNE BAY – ATLANTIC OCEAN

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
BISCAYNE BAY							
98	0760	6.0	8.4	9.6[3]	10.2	VE	12-15
						AE	10-12
		6.0	8.4	9.1	10.2	VE	11-14
						AE	9-11
ATLANTIC OCEAN							
99	0591	6.0	7.2	10.1[3]	8.8	VE	12-16
						AE	10-12
		6.0	7.2	7.8	8.8	AE	8-10
BISCAYNE BAY							
100	0591	6.4	8.9	10.2[3]	11.1	VE	12-16
						AE	10-12
		6.4	8.9	7.8	11.1	AE	8-10
ATLANTIC OCEAN							
101	0583, 0584	5.9	7.2	10.3[3]	8.8	VE	12-16
						AE	10-12
		5.9	7.2	9.0[3]	8.8	AE	9-10
BISCAYNE BAY							
102	0583	6.3	9.4	10.9[3]	12.0	VE	13-17
						AE	11-12

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

BISCAYNE BAY – ATLANTIC OCEAN

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
ATLANTIC OCEAN							
103	0584	6.3	9.4	9.3	12.0	AE	9-10
		5.9	7.2	10.1[3]	8.8	VE	12-16
						AE	10-12
		5.9	7.2	8.7	8.8	AE	9-10
BISCAYNE BAY							
104	0582, 0584	6.3	9.4	10.9[3]	12.0	VE	13-17
						AE	11-13
		6.3	9.4	9.1	12.0	AE	9-10
GULF OF MEXICO							
105	0475, 0675, 0850	5.4	8.1	10.5[3]	10.5	VE	13-16
						AE	11-13
		5.4	8.1	9.0	10.5	VE	11-14
						AE	9-11
		3.2	6.1	7.1	9.0	VE	9-11
						AE	7-9

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

ATLANTIC OCEAN – BISCAYNE BAY - GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
GULF OF MEXICO							
106	0475, 0650, 0675	7.3	10.9	14.3[3]	14.0	VE	16-22
						AE	14-15
		7.3	10.9	12.0	14.0	VE	14-17
						AE	12-14
		3.2	8.1	9.0	10.5	VE	11-14
						AE	9-11
		3.2	6.1	7.1	9.0	VE	9-11
						AE	7-9
		2.8	3.7	4.7	6.8	AE	5-7
GULF OF MEXICO							
107	0425, 0450, 0475	6.1	11.4	15.2[3]	15.9	VE	17-23
						AE	15-17
		6.1	11.4	12.9	15.9	VE	15-17
						AE	13-15
		5.7	8.6	9.8	12.4	VE	12-15
						AE	10-12
		4.6	7.0	7.9	10.0	VE	10-11
						AE	8-9
		2.9	5.0	6.2	8.4	AE	7

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
GULF OF MEXICO							
108	0350, 0375, 0400	6.1	11.2	15.6[3]	16.9	VE	18-24
						AE	16-17
		6.1	11.2	13.3	16.9	VE	15-17
						AE	13-15
GULF OF MEXICO							
108	0350, 0375, 0400	6.4	9.8	11.2	14.1	AE	11-13
		5.1	7.8	8.9	11.2	AE	9-11
		3.3	6.0	7.4	10.1	AE	7-9
		2.9	3.6	4.7	6.0	AE	5-6
GULF OF MEXICO							
109	0225, 0300, 0325, 0350	7.6	12.8	16.7[3]	17.8	VE	19-26
						AE	17-19
		7.6	12.8	14.4	17.8	VE	16-17
						AE	
		5.1	9.2	10.9	14.6	VE	13-16
						AE	11-13
		5.2	7.9	9.0	1.3	VE	11-13
						AE	9-11
		3.1	5.1	6.8	9.5	AE	7-9
		3.0	4.4	5.0	6.2	AE	6

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

GULF OF MEXICO

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
GULF OF MEXICO							
110	0100, 0125, 0200, 0250, 0275	6.7	10.1	13.7[3]	14.4	VE	16-21
						AE	14-16
		6.7	10.1	11.5[3]	14.4	VE	14-15
						AE	11-13
		3.2	8.1	9.0	10.5	VE	11-14
						AE	7-9
		4.1	6.3	7.1	9.0	VE	9-11
						AE	7-9
		3.6	5.3	6.0	7.5	AE	6
GULF OF MEXICO							
111	0150, 0050	5.1	7.7	11.0[3]	11.1	VE	13-17
						AE	11-13
		5.1	7.7	8.8	11.1	AE	9-11
						VE	9-11
		4.1	6.2	7.0	8.8	AE	7-9
ATLANTIC OCEAN							
112	1475	3.2	4.9	7.8[3]	6.9	VE	10-12
						AE	8-10
		3.2	4.9	5.5	6.9	VE	8-9
						AE	6-8

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

GULF OF MEXICO – ATLANTIC OCEAN

FLOODING SOURCE AND TRANSECT	FLOOD INSURANCE RATE MAP PANEL	STILLWATER ELEVATIONS (FEET NGVD)				ZONE	BASE FLOOD ELEVATION (FEET NGVD)[1,2]
		10% (10 YR.)	2% (50 YR.)	1% (100 YR.)	0.2% (500 YR.)		
GULF OF MEXICO							
113	1475	3.2	4.9	7.8[3]	6.9	VE	10-12
						AE	8-10
		3.2	4.9	5.5	6.9	VE	8-9
						AE	6-8

[1]Rounded to Nearest Foot and may include effects of wave action
[2]Due to map scale limitations, Base Flood Elevations (BFEs) shown on the FIRM may represent average elevations for the zones depicted
[3]Include effects of wave setup

TABLE 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

SUMMARY OF STILLWATER ELEVATIONS

GULF OF MEXICO

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source studied were carried out to provide estimates of the elevations of floods of the selected recurrence intervals. Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles or in the Floodway Data tables in the FIS report. For construction and/or floodplain management purposes, users are encouraged to use the flood elevation data presented in this FIS in conjunction with the data shown on the FIRM.

Users of the FIRM should also be aware that coastal flood elevations are provided in the Summary of Stillwater Elevations table in this report. If the elevation of the FIRM is higher than the elevation shown in this table, a wave height, wave runup, and/or wave setup component likely exists, in which case, the higher elevation should be used for construction and/or floodplain management purposes.

The FEMA storm surge model was used to simulate the hydrodynamic behavior of the surge generated by the various synthetic storms (FEMA, 1988). 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 by 5 nautical miles and 1 by 1 nautical miles, depending on the resolution required.

Underwater depths and land heights for the model grid systems were obtained from NOAA bathymetric maps at a scale of 1:25,000, and, for nearshore areas, from NOAA hydrographic surveys (U.S. Department of Commerce, 1972; U.S. Department of Commerce, 1920, et cetera). Water depths for the subgrid channels modeled were obtained from NOAA nautical charts (U.S. Department of Commerce, 1981, et cetera). Land elevations for the models were obtained from USGS topographic maps, plans and profiles for Florida Keys Aqueduct Authority Water Supply and Transmission Main, and Florida Department of Transportation plans for most of the Keys' bridges and approaches (U.S. Department of the Interior, 1974, et cetera; Florida Keys Aqueduct Authority, various; Florida Department of Transportation, Various Bridge and Approach Plans).

The methodology for analyzing the effects of wave heights associated with coastal storm surge flooding is described in a report prepared by the National Academy of Sciences (NAS) (National Academy of Sciences, 1977). 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 is 70 percent of the total wave height above the stillwater level. The second major concept is that wave height may be diminished by dissipation of energy 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 prescribed in the NAS report (National Academy of Sciences, 1977). 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.

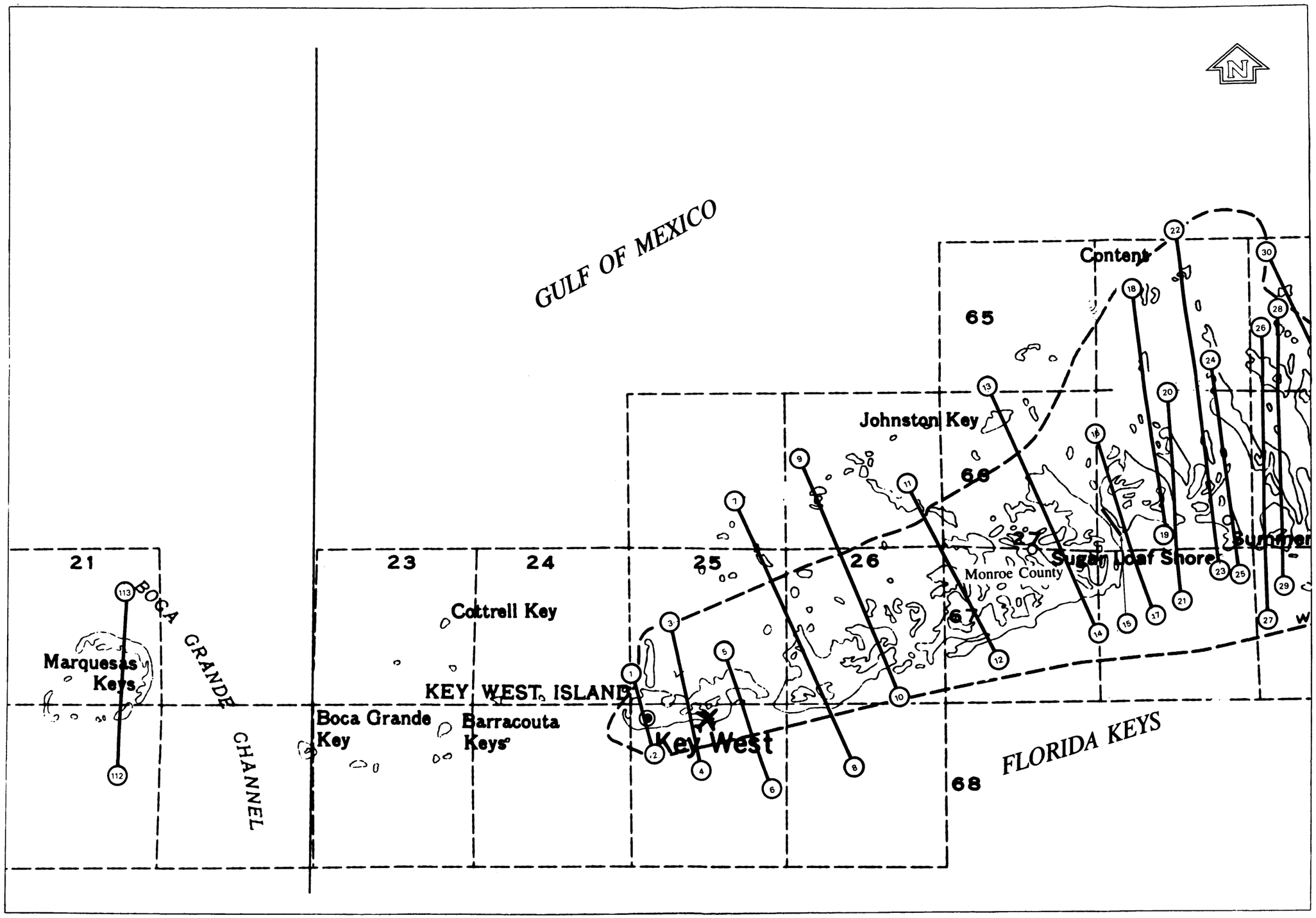
Wave heights were computed along transects (cross-section lines) that were located along the coastal areas, as illustrated in Figure 3, "Transect Location Map," and in accordance with the Users Manual for Wave Height Analysis (FEMA, 1981). The transects were located with consideration given to the physical and cultural characteristics of the land so that they would closely represent conditions in their locality. Transects were spaced close together in areas of complex topography and dense development. In areas having more uniform characteristics, they were spaced at large 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.

Each transect was taken perpendicular to the shoreline and extended inland to a point where wave action ceased. 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. The location of the 3-foot breaking wave for determining the terminus of the V zone (area with velocity wave action) was computed at each transect. Also, along the ocean coast, the V zone designation applies to all areas seaward of the heel of the primary dune system. Table 3 provides a listing of the transect locations and stillwater starting elevations, as well as initial wave crest elevations.

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
1	From the Gulf of Mexico coastline across Key West to Angela Avenue	8.4[1]	13.0
2	From the Atlantic coastline, north of Whitehead Spit across Key West to Whitehead Street	7.6[1]	11.8
3	From the Gulf of Mexico coastline across Dredgers Key and Key West to U.S. Route 1	7.4	11.4
4	From the Atlantic coastline at Smathers Beach across Key West to U.S. Route 1	8.5[1]	13.2

[1]Includes effects of wave setup

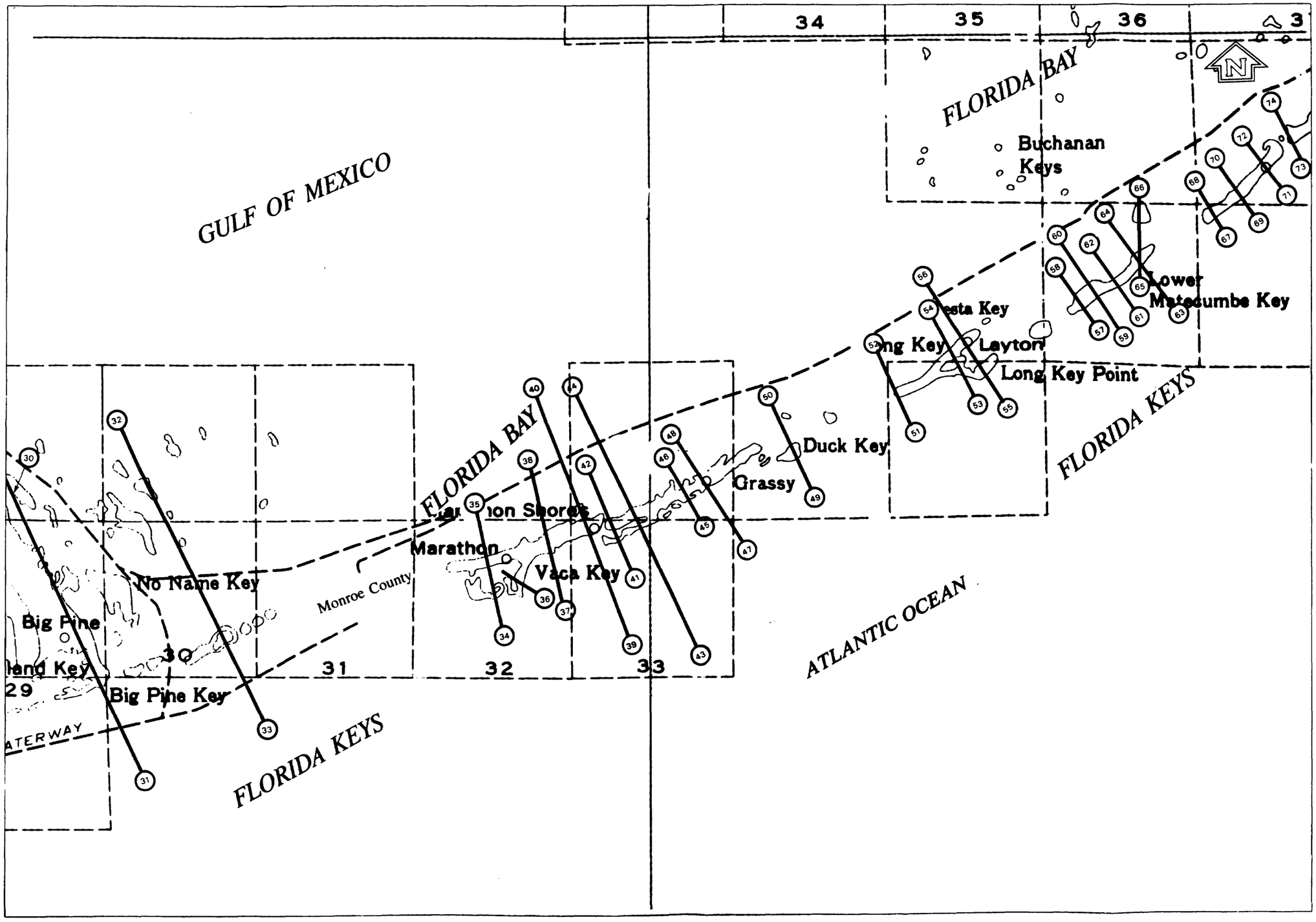


TRANSECT LOCATION MAP

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

FIGURE 3



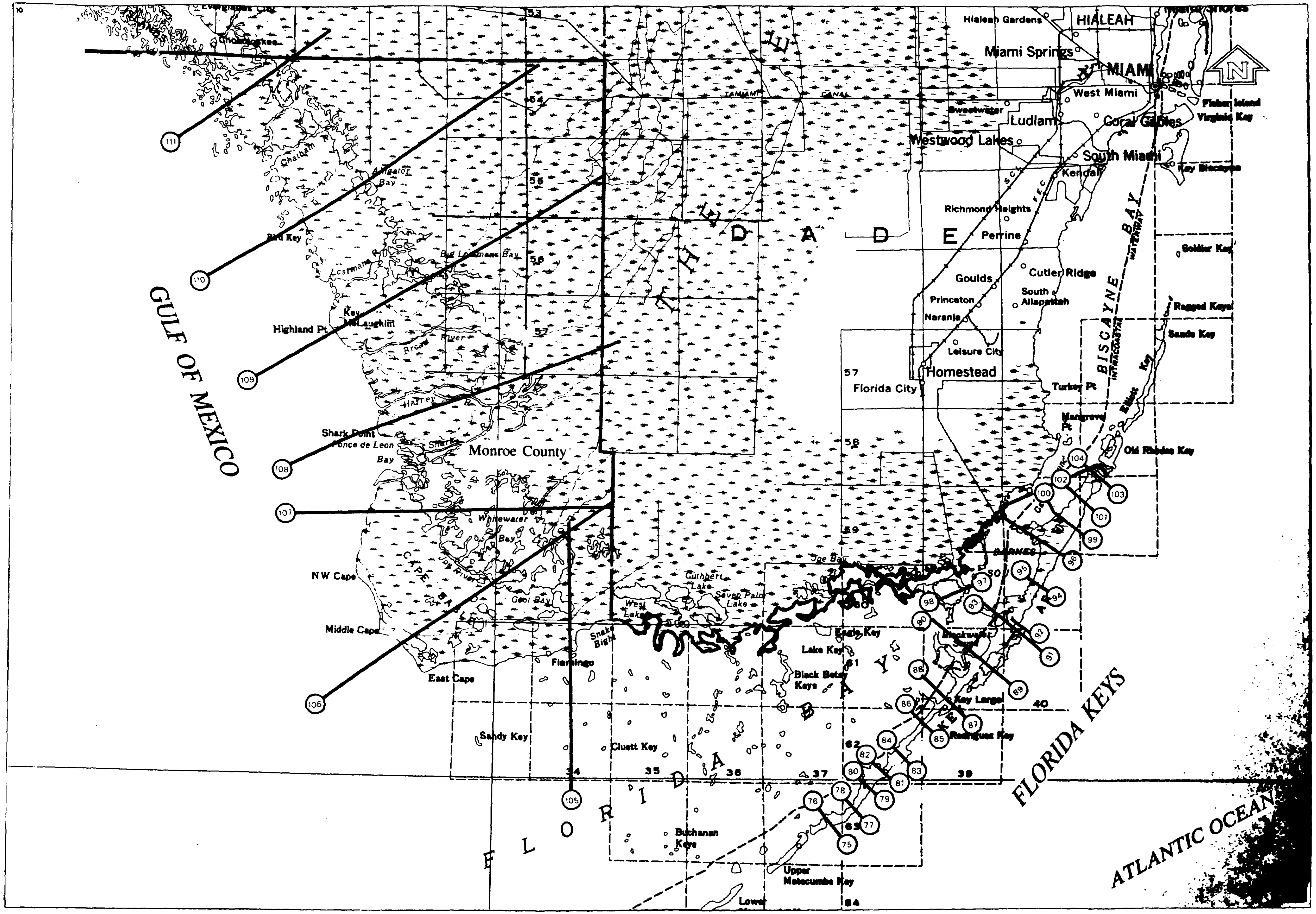
APPROXIMATE SCALE
0 4 8 12 MILES

TRANSECT LOCATION MAP

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL
AND INCORPORATED AREAS

FIGURE 3



APPROXIMATE SCALE

8 0 8 16 24 MILES

TRANSECT LOCATION MAP

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

FIGURE 3

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
5	From the Gulf of Mexico coastline, south of Raccoon Key, across Key West and Stock Island to U.S. Route 1	8.4	13.0
6	From the Atlantic coastline, north of Cow Key Channel, across Stock Island and Key West to U.S. Route 1	9.4[1]	14.4
7	From the Gulf of Mexico coastline across the East Harbor Keys, Fish Hawl Key, Boco Chica Key, and U.S. Naval Air Station Key West to U.S. Route 1	10.7[1]	16.6
8	From the Atlantic coastline across Boca Chica Key and U.S. Naval Air Station Key West to U.S. Route 1	8.9[1]	13.8
9	From the Gulf of Mexico coastline across the Mud Keys, Waltz Key Basin, and Big Coppitt Key to U.S. Route 1	10.8[1]	16.7
10	From the Atlantic coastline near Saddlehill Key, across Big Coppitt Key, Waltz Key Basin, and the Mud Keys to the Gulf of Mexico to U.S. Route 1	9.2[1]	14.2
11	From the Gulf of Mexico coastline across the Shipe Keys, the Saddle Bunch Keys, and Lower Sugar Loaf Sound to U.S. Route 1	11.0[1]	17.1

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
12	From the Atlantic coastline across the Saddle Bunch Keys, Lower Sugar Loaf Sound, to U.S. Route 1	8.8[1]	13.6
13	From the Gulf of Mexico across Johnston Key, Happy Jack Key, Sugar Loaf Key, and Upper Sugar Loaf Sound to the Atlantic Ocean	9.1	14.1
14	From the Atlantic coastline across Sugar Loaf Key to U.S. Route 1	9.5[1]	14.7
15	From the Atlantic Ocean west of Cudjoe Bay through Bow Channel to Cudjoe Key	9.5[1]	14.7
16	From the Cudjoe Basin west of the Little Swash Keys, across Cudjoe Key to U.S. Route 1	9.6	14.9
17	From the Atlantic Ocean and the Cudjoe Basin coastline east of Bow Channel, across Cudjoe Key to U.S. Route 1	10.5[1]	16.2
18	From the Gulf of Mexico coastline across the Content Keys, Little Crane Key, Raccoon Key, Kemp Channel, and Cudjoe Key to U.S. Route 1	10.3	15.9
19	From the Atlantic Ocean and Cudjoe Bay across Cudjoe Key to U.S. Route 1	10.2[1]	15.8

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
20	From the Gulf of Mexico along Content Passage across Knocken-down Key, Kemp Channel, and Cudjoe Key to U.S. Route 1	9.3	14.4
21	From the Atlantic coastline along Labat Lane across Cudjoe Key to U.S. Route 1	10.0[1]	15.4
22	From the Gulf of Mexico across Content Keys, Torch Key Mangroves, Toptree Hammock Key, and Summerland Key to U.S. Route 1	9.6	14.8
23	From the Atlantic coastline along Caribbean Drive to U.S. Route 1	9.0[1]	13.9
24	From the Gulf of Mexico across Content Keys, Water Keys, Big Torch Keys, Niles Channel, and Summerland Key to U.S. Route 1	8.8	13.6
25	From the Atlantic Ocean across Summerland Key to U.S. Route 1	9.8[1]	15.2
26	From the Gulf of Mexico across Howe Key, Pine Channel, Big Torch Key, Niles Channel, and Ramrod Key to U.S. Route 1	8.8	13.6
27	From the Atlantic Ocean across Ramrod Key to U.S. Route 1	9.5[1]	14.7
28	From the Gulf of Mexico across Cutoe Key, Howe Key, Pine Channel, Middle Torch Key, and Ramrod Key to U.S. Route 1	9.1	14.1
29	From the Atlantic Ocean across Ramrod Key to U.S. Route 1	9.5[1]	14.7

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
30	From the Gulf of Mexico coastline across Big Spanish Key, Annette Key, and Pine Key to U.S. Route 1	8.5	13.1
31	From the Atlantic coastline across Southeast Point and Big Pine Key to U.S. Route 1	8.1[1]	12.4
32	From the Gulf of Mexico coastline across Johnson Key through the Intracoastal Waterway across Bahia Honda Key to U.S. Route 1	6.5	10.0
33	From the Atlantic coastline across Bahia Honda Key to the Intracoastal Waterway	8.0[1]	12.3
34	From the Atlantic coastline across Boot Key through the intersection of 20th Street and U.S. Route 1 to the Gulf of Mexico	8.2[1]	12.6
35	From the Florida Bay coastline across Boot Key through the intersection of 20th Street and U.S. Route 1 to the Atlantic Ocean	9.2[1]	14.2
36	From the Atlantic coastline across Vaca Key to U.S. Route 1	8.2[1]	12.6
37	From the Atlantic coastline across Vaca Key along 71st Street to the Gulf of Mexico	8.2[1]	12.6
38	From the Florida Bay coastline across Vaca Key along 71st Street to the Atlantic Ocean	9.2[1]	14.2

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
39	From the Atlantic coastline across Vaca Key, through Marathon Shores, through the intersection of Peter Jay Street and 107th Street to the Gulf of Mexico	8.2[1]	12.6
40	From the Florida Bay coastline across Stirrup Key and Vaca Key, through the intersection of Peter Jay Street and 107th Street to the Atlantic Ocean	9.2[1]	14.2
41	From the Atlantic coastline across Vaca Key, through the City of Key Colony Beach, along 3rd Street to the Gulf of Mexico	8.3[1]	12.8
42	From the Florida Bay coastline across Vaca Key, along 3rd Street, through the City of Key Colony Beach to the Atlantic Ocean	9.4[1]	14.6
43	From the Atlantic coastline across Fat Deer Key to the Gulf of Mexico	8.3[1]	12.8
44	From the Florida Bay coastline across Fat Deer Key to the Atlantic Ocean	9.4[1]	14.6
45	From the Atlantic coastline across Crawl Key to the Gulf of Mexico	8.4[1]	12.9
46	From the Florida Bay coastline across Crawl Key to the Atlantic Ocean	9.7[1]	15.0

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
47	From the Atlantic coastline across Grassy Key, 205 feet west of Kyle Avenue to the Gulf of Mexico	8.4[1]	12.9
48	From the Florida Bay coastline across Grassy Key, 250 feet west of Kyle Avenue to the Atlantic Ocean	9.7[1]	15.0
49	From the Atlantic coastline across Duck Key and U.S. Route 1 to the Gulf of Mexico	8.6[1]	13.2
50	From the Florida Bay coastline across U.S. Route 1 and Duck Key to the Atlantic Ocean	8.8[1]	13.7
51	From the Atlantic coastline across the western end of Long Key to the Gulf of Mexico	8.8[1]	13.5
52	From the Florida Bay coastline across the western end of Long Key to the Atlantic Ocean	8.4[1]	13.1
53	From the Atlantic coastline across Long Key through the City of Layton to the Gulf of Mexico	8.8[1]	13.5
54	From the Florida Bay coastline across Long Key through the City of Layton to the Atlantic Ocean	8.4[1]	13.1

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
55	From the Atlantic coastline across Long Key through Long Key Bight to the Gulf of Mexico	8.8[1]	13.5
56	From the Florida Bay coastline across Long Key through Long Key Bight to the Atlantic Ocean	8.4[1]	13.1
57	From the Atlantic coastline across the west end of Lower Matecumbe Key to the Gulf of Mexico	9.0[1]	13.8
58	From the Florida Bay coastline across the west end of Lower Matecumbe Key to the Atlantic Ocean	8.0[1]	12.3
59	From the Atlantic coastline across Lower Matecumbe Key, 400 feet east of Sandy Cove Avenue, to the Gulf of Mexico	9.0[1]	13.8
60	From the Florida Bay coastline across Lower Matecumbe Key, 400 feet east of Sand Cove Avenue, to the Atlantic Ocean	8.0[1]	12.3
61	From the Atlantic coastline across Lower Matecumbe Key through Matecumbe Bight to the Gulf of Mexico	9.0[1]	13.8
62	From the Florida Bay coastline at Matecumbe Bight across Lower Matecumbe Key to the Atlantic Ocean	8.0[1]	12.3

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
63	From the Atlantic coastline across the west end of Lower Matecumbe Key to the Gulf of Mexico	9.0[1]	13.8
64	From the Florida Bay coastline across the east end of Lower Matecumbe Key to the Atlantic Ocean	8.0[1]	12.3
65	From the Atlantic coastline across the east end of Lower Matecumbe Key, Lignumvitae Channel, and Lignumvitae Key to the Gulf of Mexico	9.0[1]	14.4
66	From the Florida Bay coastline across Lignumvitae Key, Lignumvitae Channel, and the east end of Lower Matecumbe Key to the Atlantic Ocean	8.1[1]	12.5
67	From the Atlantic coastline across the west end of Upper Matecumbe Key, Shell Key Channel, and Shell Key to Florida Bay	9.1[1]	14.1
68	From the Florida Bay coastline across Shell Key, Shell Key Channel, and the west end of Upper Matecumbe Key to the Atlantic Ocean	8.2[1]	12.7
69	From the Atlantic coastline across Upper Matecumbe Key, 1,500 feet east of the intersection of The Old Road and Parker Drive, to Florida Bay	9.1[1]	14.1

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
70	From the Florida Bay coastline across Upper Matecumbe Key, 1,500 feet east of the intersection of The Old Road and Parker Drive, to the Atlantic Ocean	7.7[1]	11.9
71	From the Atlantic coastline across Upper Matecumbe Key, 300 feet from the intersection of U.S. Route 1 and De Leon Avenue, to Florida Bay	9.1[1]	14.1
72	From the Florida Bay coastline across Upper Matecumbe Key, 300 feet from the intersection of U.S. Route 1 and De Leon Avenue, to the Atlantic Ocean	7.7[1]	11.9
73	From the Atlantic coastline across Windley Key to Florida Bay	9.3[1]	14.3
74	From the Florida Bay coastline across Windley Key to the Atlantic Ocean	7.9[1]	12.2
75	From the Atlantic coastline across Plantation Key, 1,000 feet west of the intersection of U.S. Route 1 and Venetian Boulevard, to Florida Bay	9.3[1]	14.3
76	From the Florida Bay coastline across Plantation Key, 1,000 feet west of the intersection of U.S. Route 1 and Venetian Boulevard, to the Atlantic Ocean	7.9[1]	12.2

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
77	From the Atlantic coastline across Plantation Key, 200 feet east of the intersection of U.S. Route 1 and Plantation Boulevard, to Florida Bay	9.3[1]	14.3
78	From the Florida Bay coastline across Plantation Key, 200 feet east of the intersection of U.S. Route 1 and Plantation Boulevard, to the Atlantic Ocean	7.9[1]	12.2
79	From the Atlantic coastline across Plantation Key, 1,700 feet west of the intersection of U.S. Route 1 and Royal Poinciana Boulevard, to Florida Bay	9.4[1]	14.5
80	From the Florida Bay coastline across Plantation Key, 1,700 feet west of the intersection of U.S. Route 1 and Royal Poinciana Boulevard, to the Atlantic Ocean	7.9[1]	12.2
81	From the Atlantic coastline across the west end of Key Largo, through the intersection of Pointview Road and U.S. Route 1, to Florida Bay	9.4[1]	14.5
82	From the Florida Bay coastline across the west end of Key Largo, through the intersection of Pointview Road and U.S. Route 1, to the Atlantic Ocean	8.2[1]	12.7

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
83	From the Atlantic coastline across Key Largo, approximately 600 feet from the intersection of 2nd Street and Dove Lake Drive, through Dove Sound to Florida Bay	9.4[1]	14.5
84	From the Florida Bay coastline through Dove Sound across Key Largo, approximately 600 feet from the intersection of 2nd Street and Dove Lake Drive to the Atlantic Ocean	8.2[1]	12.7
85	From the Atlantic coastline across Rodriguez Key and Key Largo, approximately 0.4 mile east of the intersection of U.S. Route 1 and Peter Pan Parkway, through the Intra-coastal Waterway and Butternut Key to Florida Bay	9.6[1]	14.8
86	From the Florida Bay coastline across Butternut Key, the Intracoastal Waterway, and Key Largo, approximately 0.4 mile east of the intersection of U.S. Route 1 and Peter Pan Parkway, to the Atlantic Ocean	8.2[1]	12.7
87	From the Atlantic coastline across Key Largo, 600 feet west of the intersection of U.S. Route 1 and Atlantic Boulevard, through Shell Key to Florida Bay	9.6[1]	14.8

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
88	From the Florida Bay coastline across Shell Key and Key Largo, 600 feet west of the intersection of U.S. Route 1 and Atlantic Boulevard, to the Atlantic Ocean	9.4[1]	14.5
89	From the Atlantic coastline across El Radabob Key, Largo Sound, Key Largo, Blackwater Sound, and Boggy Key to Florida Bay	9.7[1]	15.0
90	From the Florida Bay coastline across Boggy Key, Key Largo, Largo Sound, and El Radabob Key to the Atlantic Ocean	9.6[1]	14.9
91	From the Atlantic coastline across Rattlesnake Key, Garden Cove, Key Largo, and Lake Surprise to Biscayne Bay	9.7[1]	15.0
92	From the Atlantic coastline across Key Largo, approximately 1,850 feet east of the intersection of Garden Cove and Cayman Lane, to U.S. Route 1	9.7[1]	15.0
93	From the Biscayne Bay at the Barnes Sound coastline across Lake Surprise, Key Largo, Garden Cove, and Rattlesnake Key to the Atlantic Ocean	10.0[1]	14.4
94	From the Atlantic coastline across Key Largo, approximately 2 miles east of the intersection of State Road 905 and Charlemagne Boulevard, to Biscayne Bay	9.9[1]	15.2

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
95	From the Biscayne Bay at the Barnes Sound coastline across Key Largo, approximately 2 miles east of the intersection of State Road 905 and Charlemagne Boulevard, to the Atlantic Ocean	10.0[1]	14.4
96	From the Atlantic coastline across Key Largo, intersecting the Old Dixie Highway at Barnes Point, to Barnes Point	9.9[1]	15.2
97	From the Biscayne Bay at the Barnes Sound coastline across Cross Key, at Division Point, through Little Blackwater Sound and Shell Key to Florida Bay	10.0[1]	14.4
98	From the Florida Bay coastline across Shell Key, Little Blackwater Sound, and Cross Key to Biscayne Bay	9.6[1]	14.9
99	From the Atlantic coastline across Key Largo, through the intersection of State Road 905 and Old Dixie Highway, to Biscayne Bay	10.1[1]	15.5
100	From the Biscayne Bay at the Card Sound coastline across Key Largo, through the intersection of State Road 905 and Old Dixie Highway to the Atlantic Ocean	10.2[1]	15.8

[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
101	From the Atlantic coastline across Key Largo, approximately 600 feet south of Snapper Point, through Pumpkin Key to Biscayne Bay	10.1[1]	15.5
102	From the Biscayne Bay at the Card Sound coastline across Pumpkin Key and Key Largo, approximately 600 feet south of Snapper Point, to the Atlantic Ocean	10.9[1]	16.9
103	From the Atlantic coastline across Palo Alto Key to Biscayne Bay	10.1[1]	15.5
104	From the Biscayne Bay at the Card Sound coastline across Palo Alto Key to the Atlantic Ocean	10.9[1]	16.9
105	From the Florida Bay coastline, 400 feet east of Flamingo North, to Whitewater Bay	10.5[1]	16.2
106	From the Gulf of Mexico coastline between Middle Cape and East Cape across Lake Ingraham and Whitewater Bay to the Monroe-Dade County border	14.3[1]	22.0
107	From the Gulf of Mexico coastline approximately 0.5 mile north of Northwest Cape, east through Whitewater Bay to the Monroe-Dade County border	15.2[1]	23.4

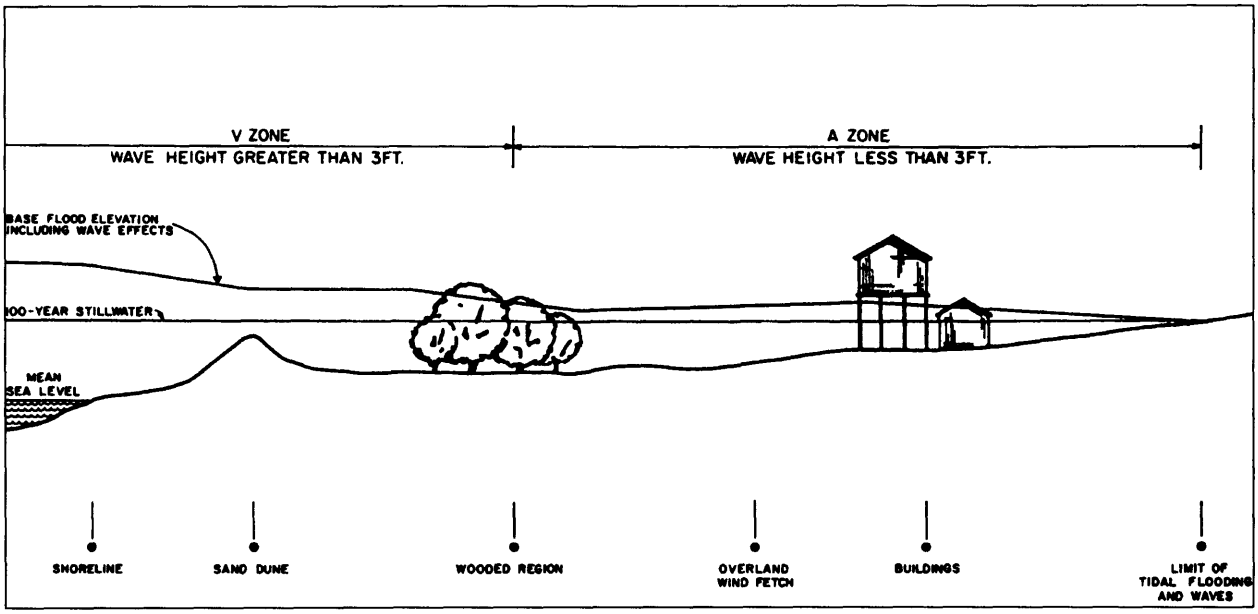
[1]Includes effects of wave setup

TABLE 3 - TRANSECT LOCATIONS, STILLWATER STARTING ELEVATIONS, AND INITIAL WAVE CREST ELEVATIONS - continued

TRANSECT	LOCATION	ELEVATION (FEET NGVD) STILLWATER	WAVE CREST
108	From the Gulf of Mexico coastline through Shark Point, across the Harney River to the Monroe-Dade County border	15.6[1]	24.1
109	From the Gulf of Mexico coastline, 400 feet south of Highland Point, across Big Lostmans Bay to the Monroe-Dade County border	16.7[1]	25.8
110	From the Gulf of Mexico coastline, 700 feet north of Alligator Point, across Alligator Bay to the Monroe-Collier County border	13.7[1]	21.2
111	From the Gulf of Mexico, coastline approximately 0.5 mile south of the Monroe-Collier County border, to Sunday Bay	11.0[1]	17.1
112	From the Atlantic coastline across Marquesas Key to the Gulf of Mexico	7.8[1]	12.0
113	From the Gulf of Mexico coastline across Marquesas Key to the Atlantic Ocean	7.8[1]	12.0

[1]Includes effects of wave setup

Figure 4 represents a sample transect that illustrates the relationship between the stillwater elevation, the wave crest elevation, the ground elevation profile, and the location of the A/V zone boundary.



TRANSECT SCHEMATIC Figure 4

After analyzing wave heights along each transect, wave elevations were interpolated between transects. Various source data were used in the interpolation, including topographic maps, aerial photographs, and engineering judgment (U.S. Department of the Interior, 1974, et cetera; U.S. Department of the Interior, 1984, et cetera). Controlling features affecting the elevations were identified and considered in relation to their positions at a particular transect and their variation between transects.

3.3 Vertical Datum

All FISs and FIRMs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. Until recently, the standard vertical datum in use for newly created or revised FISs and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD 29). With the finalization of the North American Vertical Datum of 1988 (NAVD 88), many FIS reports and FIRMs are being prepared using NAVD 88 as the referenced vertical datum.

All flood elevations shown in this FIS report and on the FIRM are referenced to NGVD 29. Structure and ground elevations in the county must, therefore, be referenced to NGVD 29. It is important to note that adjacent counties may be

referenced to NAVD 88. This may result in differences in base flood elevations across the county boundaries between the counties.

For more information on NAVD 88, see Converting the National Flood Insurance Program to the North American Vertical Datum of 1988, FEMA Publication FIA-20/June 1992, or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (Internet address http://www.ngs.noaa.gov).

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS provides 100-year floodplain data, which may include a combination of the following: 10-, 50-, 100-, and 500-year flood elevations; delineations of the 100-year and 500-year floodplains; and 100-year floodway. This information is presented on the FIRM and in many components of the FIS, including Flood Profiles, Floodway Data tables, and Summary of Stillwater Elevation tables. Users should reference the data presented in the FIS as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

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 county. For each flooding source studied in detail, the 100- and 500-year floodplain boundaries have been delineated using the flood elevations determined at each transect. Between transects, the boundaries were interpolated using topographic maps at a scale of 1:24,000 with a contour interval of 5 feet (U.S. Department of the Interior, 1974, et cetera).

The 100- and 500-year floodplain boundaries are shown on the FIRM (Exhibit 1). On this map, the 100-year floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones AE and VE) and the 500-year floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 100- and 500-year floodplain boundaries are close together, only the 100-year floodplain boundary has 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.

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.

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 Monroe County. Previously, separate FIRMs were prepared for each identified flood-prone incorporated community and the unincorporated areas of the county. Historical data relating to the maps prepared for each community, up to and including the October 17, 1989, countywide FIS, are presented in Table 4, "Community Map History."

7.0 OTHER STUDIES

FISs have been prepared for Dade and Collier Counties, Florida (FEMA, 1995; FEMA, 1998).

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Monroe County has been compiled into this FIS. Therefore, this FIS supersedes all previously printed FIS reports, Wave Height Analysis Supplements to FIS reports, FHBMs, FIRMs, and/or FBFMs for all of the incorporated and unincorporated jurisdictions within Monroe County.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Islamorada, Village of	June 20, 1970[1]	None[1]	June 20, 1970[1]	July 1, 1974[1] July 2, 1976[1] December 1, 1983[1] December 18, 1986[1] February 4, 1988[1] October 17, 1989[1]
Key Colony Beach, City of	June 20, 1970	None	June 20, 1970	July 1, 1974 October 17, 1975 January 5, 1976 November 2, 1983 October 17, 1989
Key West, City of	June 19,1970	None	September 3, 1971	July 1, 1974 October 29, 1976 November 2, 1983 October 17, 1989
Layton, City of	July 1, 1970	None	July 1, 1970	July 1, 1974 January 23, 1976 November 2, 1983 October 17, 1989
Marathon, City of	June 20, 1970[2]	None[2]	June 20, 1970[2]	July 1, 1974[2] July 2, 1976[2] December 1, 1983[2] December 18, 1986[2] February 4, 1988[2] October 17, 1989[2]
Monroe County (Unincorporated Areas)	June 20, 1970	None	June 20, 1970	July 1, 1974 July 2, 1976 December 1, 1983 December 18, 1986 February 4, 1988 October 17, 1989

[1]The Village of Islamorada was incorporated in January 1998. Prior to the December 22, 1998, countywide revision, the land area for this community was shown as part of the unincorporated areas of Monroe County; therefore, the map history dates for this community are the same as the dates for the unincorporated areas of Monroe County.

[2]The City of Marathon was incorporated in November 1999. Prior to the February 15, 2002, countywide revision, the land area for this community was shown as part of the unincorporated areas of Monroe County; therefore, the map history dates for this community are the same as the dates for the unincorporated areas of Monroe County.

TABLE 4

FEDERAL EMERGENCY MANAGEMENT AGENCY

MONROE COUNTY, FL AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this FIS can be obtained by contacting FEMA, Federal Insurance and Mitigation Division, Koger Center - Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, Georgia 30341.

9.0 BIBLIOGRAPHY AND REFERENCES

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