

# FLOOD INSURANCE STUDY

## FEDERAL EMERGENCY MANAGEMENT AGENCY

VOLUME 2 OF 15



### LEE COUNTY, FLORIDA AND INCORPORATED AREAS

COMMUNITY NAME	COMMUNITY NUMBER
BONITA SPRINGS, CITY OF	120680
CAPE CORAL, CITY OF	125095
ESTERO, VILLAGE OF	120260
FORT MYERS, CITY OF	125106
FORT MYERS BEACH, TOWN OF	120673
LEE COUNTY, UNINCORPORATED AREAS	125124
SANIBEL, CITY OF	120402



# FEMA

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**November 17, 2022**

FLOOD INSURANCE STUDY NUMBER  
12071CV002C

Version Number 2.4.3.5

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Transect 238	498-500 T
Transect 239	501-503 T
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**Published Separately**

Flood Insurance Rate Map (FIRM)

### **5.3.4 Wave Hazard Analyses**

Overland wave hazards were evaluated to determine the combined effects of ground elevation, vegetation, and physical features on overland wave propagation and wave runup. These analyses were performed at representative transects along all shorelines for which waves were expected to be present during the floods of the selected recurrence intervals. The results of these analyses were used to determine elevations for the 1% annual chance flood.

Transect locations were chosen with consideration given to the physical land characteristics as well as development type and density so that they would closely represent conditions in their locality. Additional consideration was given to changes in the total stillwater elevation. Transects were spaced close together in areas of complex topography and dense development or where total stillwater elevations varied. In areas having more uniform characteristics, transects were spaced at larger intervals. Transects shown in Figure 9, "Transect Location Map," are also depicted on the FIRM. Table 16 provides the location, stillwater elevations, and starting wave conditions for each transect evaluated for overland wave hazards. In this table, "starting" indicates the parameter value at the beginning of the transect.

#### **Wave Height Analysis**

Wave height analyses were performed to determine wave heights and corresponding wave crest elevations for the areas inundated by coastal flooding and subject to overland wave propagation hazards. Refer to Figure 6 for a schematic of a coastal transect evaluated for overland wave propagation hazards.

Wave heights and wave crest elevations were modeled using the methods and models listed in Table 14, "Summary of Coastal Analyses". For the 0.2-percent-annual chance event, wave profiles were created to indicate the results of the wave height analysis at each transect (FEMA 2007). Such wave profiles may show greater detail than the mapping product, due to limitations of the map scale and smoothing tolerances applied during boundary cleanup. Wave runup analysis for the 0.2-percent-annual-chance event was not performed for this study and is not included in the profiles.

#### **Wave Runup Analysis**

Wave runup analyses were performed to determine the height and extent of runup beyond the limit of stillwater inundation for the 1-percent-annual-chance event. Wave runup is defined as the maximum vertical extent of wave uprush on a beach or structure. FEMA's 2007 Guidelines and Specifications require the 2-percent wave runup level be computed for the coastal feature being evaluated (cliff, coastal bluff, dune, or structure) (FEMA, February 2007). The 2-percent runup level is the highest 2 percent of wave runup affecting the shoreline during the 1-percent-annual-chance flood event. Each transect defined within the study area was evaluated for the applicability of wave runup, and if necessary, the appropriate runup methodology was selected and applied to each transect. Runup elevations were then compared to WHAFIS results to determine the dominant process affecting BFEs and associated flood hazard levels. Based on wave runup rates, wave overtopping was computed following the FEMA 2007 Guidelines and Specifications. Wave runup elevations were modeled using the methods and models listed in Table 14.



**Table 16: Coastal Transect Parameters**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	1	9.1	11.8	3.6 3.2-3.6	5.4 4.7-5.4	6.8 5.7-6.8	8.2 6.7-8.3	11.4 9.0-11.4
Gulf of Mexico	2	9.4	11.9	3.6 3.2-3.6	5.3 4.6-5.3	6.7 5.6-6.7	8.1 6.6-8.2	11.3 8.8-11.3
Gulf of Mexico	3	9.5	12.8	3.5 3.1-3.5	5.2 4.5-5.2	6.6 5.5-6.6	8.0 6.4-8.0	11.1 8.6-11.1
Gulf of Mexico	4	9.3	12.5	3.5 3.1-3.5	5.2 4.4-5.2	6.5 5.4-6.5	7.9 6.3-7.9	11.0 8.4-11.0
Gulf of Mexico	5	9.3	13.2	3.5 3.0-3.5	5.2 4.4-5.2	6.5 5.3-6.5	7.9 6.2-7.9	11.0 8.2-11.0
Gulf of Mexico	6	9.5	13.1	3.4 3.0-3.4	5.0 4.4-5.0	6.4 5.3-6.4	7.7 6.2-7.8	10.8 8.2-10.8
Gulf of Mexico	7	9.0	13.3	3.4 3.0-3.4	5.0 4.3-5.0	6.3 5.2-6.3	7.7 6.1-7.7	10.7 8.0-10.7

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	8	8.8	13.4	3.3 3.0-3.4	4.9 4.3-5.0	6.2 5.2-6.5	7.5 6.1-7.9	10.5 8.0-11.0
Gulf of Mexico	9	8.5	13.4	3.3 2.9-3.3	4.9 4.2-5.0	6.2 5.0-6.3	7.5 5.9-7.6	10.5 7.8-10.6
Gulf of Mexico	10	7.9	13.5	3.3 2.9-3.3	4.9 4.1-4.9	6.1 5.0-6.3	7.4 5.8-7.6	10.4 7.7-10.6
Gulf of Mexico	11	6.9	13.5	3.2 2.8-3.3	4.8 4.1-4.8	6.0 4.9-6.1	7.2 5.8-7.3	10.2 7.7-10.3
Gulf of Mexico	12	6.8	12.8	2.9 2.8-2.9	4.1 4.0-4.1	5.0 4.9-5.0	5.9 5.7-5.9	8.0 7.6-8.0
Gulf of Mexico	13	4.9	11.7	3.1 2.8-3.1	4.4 4.1-4.4	5.4 4.9-5.4	6.4 5.8-6.4	8.7 .7-8.7
Gulf of Mexico	14	5.2	12.4	3.2 2.8-3.6	4.7 4.1-5.8	5.8 4.9-7.0	6.9 5.7-8.2	9.5 7.6-10.7

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	15	5.8	12.9	3.7 2.8-4.0	5.3 4.1-5.7	6.6 4.9-7.0	7.8 5.7-8.3	10.5 7.6-11.1
Gulf of Mexico	16	7.6	10.6	3.6 2.9-3.6	5.3 4.2-5.4	6.6 5.0-6.9	7.9 5.9-8.3	10.9 7.8-11.4
Gulf of Mexico	17	8.0	10.9	3.6 2.9-3.6	5.3 4.1-5.3	6.6 5.0-6.7	7.9 5.8-8.0	11.0 7.7-11.2
Gulf of Mexico	18	7.0	10.9	3.6 3.0-3.6	5.3 4.2-5.3	6.6 5.1-6.6	7.9 5.9-7.9	10.9 7.9-10.9
Gulf of Mexico	19	9.0	10.9	3.6 3.0-3.6	5.2 4.3-5.2	6.5 5.2-6.5	7.8 6.0-7.9	10.8 8.0-10.8
Gulf of Mexico	20	7.6	12.4	3.6 3.0-3.6	5.2 4.3-5.2	6.5 5.2-6.5	7.8 6.1-7.8	10.7 8.1-10.7
Gulf of Mexico	21	6.0	13.1	3.2 3.1-3.2	4.5 4.4-4.5	5.5 5.3-5.5	6.5 6.2-6.5	8.7 8.3-8.7

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	22	5.9	11.4	3.4 3.1-3.4	4.9 4.4-4.9	6.0 5.3-6.0	7.2 6.2-7.2	9.8 8.2-9.9
Gulf of Mexico	23	6.2	11.1	3.4 3.1-3.4	5.0 4.4-5.1	6.2 5.3-6.5	7.5 6.2-8.0	10.3 8.2-10.9
Gulf of Mexico	24	6.6	10.8	3.5 3.1-3.5	5.3 4.3-5.5	6.6 5.2-6.9	8.0 6.1-8.3	11.0 8.2-11.3
Gulf of Mexico	25	7.9	11.4	3.6 3.1-3.6	5.2 4.3-5.3	6.5 5.2-6.5	7.7 6.0-7.7	10.5 8.0-10.5
Gulf of Mexico	26	6.7	11.7	3.6 3.0-3.6	5.2 4.3-5.2	6.4 5.2-6.4	7.7 6.0-7.7	10.5 8.0-10.5
Gulf of Mexico	27	7.4	12.1	3.1 3.0-3.2	4.4 4.2-4.4	5.4 4.9-5.4	6.3 5.8-6.3	8.4 7.8-8.4
Gulf of Mexico	28	8.5	11.2	3.6 3.0-3.6	5.3 4.3-5.3	6.5 5.1-6.5	7.8 6.0-7.8	10.6 8.0-10.6

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	29	9.0	11.6	3.6 3.0-3.6	5.1 4.3-5.1	6.3 5.2-6.3	7.7 6.0-7.7	10.6 8.0-10.6
Gulf of Mexico	30	9.4	11.7	3.6 3.0-3.6	5.2 4.3-5.2	6.4 5.2-6.4	7.6 6.0-7.6	10.5 7.9-10.5
Gulf of Mexico	31	9.5	11.8	3.5 3.0-3.5	5.1 4.3-5.1	6.3 5.2-6.3	7.5 6.0-7.6	10.4 8.0-10.4
Gulf of Mexico	32	9.5	12.3	3.5 3.0-3.5	5.1 4.3-5.1	6.3 5.2-6.3	7.5 6.0-7.5	10.3 8.0-10.4
Gulf of Mexico	33	9.5	12.2	3.5 3.0-3.6	5.1 4.3-5.1	6.3 5.2-6.3	7.5 6.0-7.5	10.2 8.0-10.2
Gulf of Mexico	34	9.2	12.2	3.5 3.0-3.5	5.1 4.3-5.1	6.3 5.2-6.3	7.4 6.0-7.5	10.2 8.0-10.4
Gulf of Mexico	35	9.3	12.1	3.6 3.0-3.6	5.2 4.3-5.2	6.3 5.2-6.4	7.5 6.1-7.6	10.4 8.1-10.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	36	9.3	12.2	3.6 3.0-3.6	5.2 4.3-5.2	6.4 5.2-6.4	7.5 6.1-7.6	10.3 8.2-10.3
Gulf of Mexico	37	9.2	12.1	3.6 3.0-3.6	5.2 4.3-5.2	6.4 5.2-6.4	7.6 6.1-7.6	10.4 8.1-10.4
Gulf of Mexico	38	7.2	11.8	3.6 3.0-3.6	5.1 4.3-5.1	6.3 5.2-6.3	7.4 6.2-7.4	9.9 8.2-9.9
Gulf of Mexico	39	7.1	11.6	3.7 3.1-3.7	5.3 4.3-5.3	6.6 5.3-6.6	7.8 6.2-7.8	10.6 8.2-10.6
Gulf of Mexico	40	8.4	11.3	3.7 3.1-3.7	5.4 4.4-5.4	6.6 5.3-6.6	7.9 6.2-7.9	10.7 8.2-11.0
Gulf of Mexico	41	8.7	11.9	3.7 3.1-3.8	5.4 4.4-5.5	6.6 5.3-6.7	7.9 6.2-8.0	10.8 8.3-11.2
Gulf of Mexico	42	8.3	11.8	3.9 2.9-3.9	5.6 4.1-5.7	6.9 5.0-6.9	8.1 6.0-8.2	11.2 8.2-11.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	43	8.0	11.7	4.0 2.8-4.0	5.7 4.1-5.8	7.1 5.0-7.1	8.3 6.0-8.4	11.5 8.2-11.6
Gulf of Mexico	44	8.1	12.0	3.9 3.0-3.9	5.7 4.1-5.8	7.1 5.1-7.3	8.4 6.1-8.7	11.6 8.4-12.0
Gulf of Mexico	45	8.3	11.9	3.9 3.2-4.0	5.7 4.3-6.0	7.1 5.3-7.5	8.4 6.3-8.9	11.6 8.5-12.2
Gulf of Mexico	46	8.1	11.8	4.0 3.2-4.0	5.8 4.4-5.8	7.1 5.3-7.2	8.5 6.3-8.6	11.7 8.6-11.9
Gulf of Mexico	47	8.2	11.1	4.1 3.2-4.1	5.9 4.3-5.9	7.2 5.3-7.2	8.5 6.2-8.6	11.8 8.5-11.8
Gulf of Mexico	48	7.9	11.4	4.0 3.1-4.0	5.8 4.3-5.9	7.2 5.2-7.2	8.5 6.2-8.5	11.7 8.6-11.7
Gulf of Mexico	49	7.6	10.8	4.1 3.0-4.1	5.9 4.3-5.9	7.3 5.2-7.4	8.7 6.2-8.7	12.0 8.7-12.0

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	50	8.0	10.7	4.1 3.0-4.1	5.9 4.2-6.1	7.4 5.2-7.7	8.7 6.3-9.2	12.1 8.8-12.7
Gulf of Mexico	51	7.6	10.8	4.1 3.0-4.2	6.0 4.3-6.1	7.5 5.3-7.6	8.9 6.4-9.0	12.3 8.9-12.4
Gulf of Mexico	52	7.4	11.5	4.2 3.1-4.2	6.1 4.4-6.1	7.6 5.4-7.7	9.0 6.5-9.1	12.5 9.0-12.7
Gulf of Mexico	53	7.2	11.3	4.2 3.2-4.2	6.2 4.5-6.2	7.7 5.5-7.7	9.1 6.6-9.1	12.6 9.1-12.7
Gulf of Mexico	54	7.2	11.4	4.3 3.3-4.3	6.2 4.7-6.2	7.7 5.7-7.7	9.1 6.8-9.2	12.7 9.1-12.8
Gulf of Mexico	55	7.4	11.4	4.3 3.3-4.3	6.2 4.7-6.3	7.7 5.7-7.8	9.2 6.8-9.2	12.8 9.1-12.9
Gulf of Mexico	56	7.8	10.6	4.3 3.3-4.3	6.3 4.7-6.3	7.8 5.7-7.8	9.2 6.8-9.3	12.9 9.2-13



**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	57	7.7	9.8	4.4 3.4-4.4	6.4 4.7-6.5	7.9 5.8-8.0	9.4 6.8-9.5	13.2 9.2-13.3
Gulf of Mexico	58	8.0	9.3	4.4 3.4-4.4	6.4 4.8-6.6	8.0 5.8-8.2	9.5 6.8-9.7	13.3 9.2-13.5
Gulf of Mexico	59	8.0	9.4	4.4 3.4-4.4	6.5 4.8-6.6	8.1 5.8-8.2	9.6 6.8-9.8	13.5 9.3-13.6
Gulf of Mexico	60	8.2	8.4	4.5 3.3-4.5	6.6 4.8-6.7	8.3 5.9-8.3	9.8 6.9-9.9	13.7 9.3-13.8
Gulf of Mexico	61	7.9	8.1	4.5 3.4-4.5	6.7 4.8-6.8	8.3 5.9-8.5	9.9 7.0-10.1	13.8 9.4-14.0
Gulf of Mexico	62	7.7	8.0	4.5 3.8-4.6	6.7 5.1-7.0	8.4 6.3-8.7	10.0 7.5-10.3	14.0 10.4-14.2
Gulf of Mexico	63	7.4	8.1	4.6 3.8-4.7	6.8 5.6-7.0	8.5 6.9-8.7	10.1 8.2-10.2	14.1 11.1-14.1

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	64	7.2	8.4	4.6 3.9-4.7	6.8 5.7-7.0	8.5 7.1-8.7	10.1 8.4-10.3	14.1 11.4-14.2
Gulf of Mexico	65	6.1	9.3	4.5 4.0-4.6	6.7 5.8-6.8	8.4 7.2-8.5	9.9 8.5-10.0	13.8 11.6-13.8
Gulf of Mexico	66	5.8	9.8	4.3 4.0-4.3	6.4 5.8-6.4	8.0 7.2-8.0	9.5 8.5-9.5	13.2 11.6-13.2
San Carlos Bay	67	4.7	3.5	4.0 4.0-4.3	5.8 5.8-6.4	7.2 7.2-8.0	8.6 8.6-9.5	11.7 11.7-13.1
San Carlos Bay	68	3.9	3.2	4.0 4.0-4.7	5.8 5.8-7.0	7.2 7.2-8.7	8.5 8.5-10.2	11.6 11.6-14.0
San Carlos Bay	69	3.5	2.7	4.0 4.0-4.7	5.8 5.8-6.8	7.2 7.2-8.4	8.5 8.5-9.8	11.5 11.5-13.0
San Carlos Bay	70	2.7	2.7	4.0 4.0-4.6	5.7 5.7-6.9	7.1 7.1-8.7	8.4 8.4-10.3	11.3 1.3-14.2

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
San Carlos Bay	71	2.7	3.0	3.9 3.8-4.0	5.6 5.4-6.3	6.9 6.7-7.7	8.1 8.0-9.2	11.0 11.0-13.0
San Carlos Bay	72	3.3	3.3	3.6 3.4-3.6	5.1 4.9-5.1	6.3 6.1-6.3	7.4 7.3-7.5	10.1 10.1-10.4
San Carlos Bay	73	3.3	3.0	3.6 3.4-3.6	5.1 4.9-5.1	6.1 6.1-6.2	7.2 7.2-7.4	9.8 9.8-10.1
San Carlos Bay	74	2.8	3.2	3.6 3.4-3.6	5.1 4.9-5.1	6.1 5.9-6.1	7.2 7.0-7.2	9.8 9.6-9.8
San Carlos Bay	75	3.5	3.4	3.5 3.4-3.6	5.0 4.9-5.0	6.1 5.9-6.1	7.2 7.0-7.2	9.7 9.5-9.8
San Carlos Bay	76	4.0	3.6	3.4 3.4-3.5	4.9 4.9-4.9	5.9 5.9-6.0	7.0 7.0-7.0	9.5 9.5-9.5
San Carlos Bay	77	3.4	3.6	3.4 3.3-3.9	4.8 4.8-5.9	5.8 5.8-7.4	6.9 6.9-9.0	9.2 9.2-12.9

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
San Carlos Bay	78	3.5	3.4	3.3 3.3-4.5	4.7 4.7-6.6	5.8 5.8-8.3	6.8 6.8-9.8	9.2 9.2-13.7
San Carlos Bay	79	2.3	2.6	3.4 3.0-3.4	4.7 4.3-4.7	5.7 5.3-5.7	6.8 6.4-6.8	9.1 9.0-9.1
San Carlos Bay	80	2.6	3.1	3.3 3.1-4.2	4.7 4.4-6.1	5.7 5.3-7.6	6.7 6.5-9.1	9.0 9.0-12.6
Pine Island Sound	81	3.1	3.3	3.2 3.2-3.9	4.6 4.3-5.9	5.5 5.3-7.3	6.5 6.3-8.7	8.7 8.5-12.1
Pine Island Sound	82	2.9	3.0	3.1 3.1-3.5	4.4 4.3-4.7	5.3 5.3-5.5	6.3 6.2-6.6	8.4 8.4-9.4
Pine Island Sound	83	2.2	2.6	3.1 3.0-3.3	4.4 4.3-5.2	5.3 5.2-6.3	6.2 6.1-7.7	8.2 8.2-10.4
Pine Island Sound	84	2.5	2.6	3.0 3.0-3.1	4.3 4.3-4.4	5.2 5.2-5.3	6.1 6.0-7.6	8.0 8.0-10.5

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Pine Island Sound	85	2.7	2.7	3.0 3.0-3.4	4.3 4.3-4.5	5.2 5.2-5.3	6.0 6.0-7.5	8.0 8.0-10.3
Pine Island Sound	86	3.1	2.8	3.0 3.0-3.0	4.3 4.3-4.8	5.2 5.2-6.1	6.0 6.0-7.2	8.0 8.0-10.2
Pine Island Sound	87	3.1	9.6	3.1 3.1-3.7	4.4 4.4-5.3	5.3 5.3-6.5	6.1 6.1-7.8	8.2 8.2-10.6
Pine Island Sound	88	4.0	11.9	3.1 3.1-3.1	4.4 4.4-4.5	5.4 5.3-5.4	6.3 6.2-6.3	8.4 8.3-8.4
Pine Island Sound	89	2.3	3.5	3.0 3.0-3.6	4.3 4.3-5.2	5.2 5.2-6.5	6.0 6.0-7.8	8.0 8.0-10.8
Pine Island Sound	90	3.5	3.5	3.0 2.9-3.0	4.4 4.2-4.4	5.3 5.1-5.3	6.3 6.0-6.3	8.4 8.0-8.4
Pine Island Sound	91	3.5	3.4	2.9 2.9-2.9	4.2 4.2-4.3	5.1 5.1-5.2	6.0 6.0-6.1	8.1 8.1-8.1

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Pine Island Sound	92	2.7	3.4	2.9 2.9-3.0	4.1 4.1-4.3	5.0 5.0-5.2	5.9 5.9-6.1	7.9 7.9-8.2
Charlotte Harbor	93	3.2	2.9	2.8 2.8-3.2	4.1 4.1-4.7	4.9 4.9-5.8	5.8 5.8-6.9	7.7 7.7-9.5
Charlotte Harbor	94	4.7	3.8	2.8 2.8-2.8	4.1 4.1-4.8	4.9 4.9-6.0	5.8 5.8-7.3	7.6 7.6-10.1
Charlotte Harbor	95	3.9	4.0	3.0 3.0-3.0	4.3 4.3-5.0	5.2 5.2-6.2	6.1 6.1-7.7	8.0 8.0-10.7
Charlotte Harbor	96	4.0	3.9	3.1 3.1-3.1	4.4 4.4-4.5	5.4 5.4-5.5	6.3 6.3-6.5	8.4 8.4-8.5
Gasparilla Sound	97	2.9	2.7	3.1 3.1-3.5	4.5 4.5-5.1	5.4 5.4-6.5	6.4 6.3-7.9	8.5 8.5-11.0
Gasparilla Sound	98	3.5	3.2	3.2 3.2-3.3	4.6 4.6-5.3	5.7 5.7-6.8	6.7 6.7-8.2	8.9 8.9-11.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Charlotte Harbor	99	4.1	5.0	3.4 3.4-3.5	5.1 5.1-5.3	6.4 6.4-6.6	7.7 7.7-8.0	10.4 10.4-11.0
Charlotte Harbor	100	4.0	5.1	3.3 3.3-3.4	5.1 5.1-5.2	6.4 6.4-6.5	7.6 7.6-7.9	10.3 10.3-10.9
Charlotte Harbor	101	4.0	5.0	3.3 3.3-3.4	5.0 5.0-5.2	6.3 6.3-6.6	7.5 7.5-8.0	10.2 10.2-10.9
Charlotte Harbor	102	4.0	5.0	3.3 3.3-3.4	5.0 5.0-5.2	6.3 6.3-6.6	7.5 7.5-8.0	10.1 10.1-10.9
Charlotte Harbor	103	3.9	4.9	3.2 3.2-3.3	5.0 4.8-5.1	6.2 6.2-6.5	7.4 7.4-7.9	10.1 10.1-10.6
Charlotte Harbor	104	4.0	4.9	3.2 3.0-3.3	4.9 4.6-5.2	6.2 6.0-6.3	7.4 7.2-7.6	10.0 9.7-10.4
Charlotte Harbor	105	3.9	4.9	3.2 2.9-3.3	4.9 4.6-5.1	6.1 6.0-6.3	7.3 7.0-7.5	9.9 9.7-10.3

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Charlotte Harbor	106	3.8	4.8	3.2 2.9-3.2	4.8 4.6-5.0	6.0 5.9-6.1	7.2 7.0-7.4	9.8 9.7-10.3
Charlotte Harbor	107	3.8	4.6	3.2 2.9-3.2	4.8 4.6-4.9	6.0 5.9-6.0	7.2 7.0-7.4	9.7 9.6-10.3
Matlacha Pass	108	3.7	4.5	3.1 2.8-3.2	4.8 4.5-4.8	6.0 5.8-6.0	7.2 7.1-7.3	9.6 9.6-10.2
Matlacha Pass	109	3.8	4.4	3.1 2.8-3.2	4.8 4.5-4.8	6.0 5.8-6.0	7.1 7.1-7.3	9.6 9.6-10.2
Matlacha Pass	110	3.8	4.3	3.1 2.8-3.1	4.8 4.5-5.4	6.0 5.8-6.1	7.1 7.0-7.3	9.6 9.6-10.2
Matlacha Pass	111	3.7	4.2	3.1 2.8-3.1	4.7 4.5-4.7	5.9 5.7-5.9	7.1 7.0-7.3	9.5 9.5-10.1
Matlacha Pass	112	3.4	3.8	3.1 2.8-3.1	4.7 4.4-5.2	5.9 5.7-6.1	7.0 6.9-7.3	9.4 9.4-10.2



**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	113	3.3	3.7	3.1 2.7-3.1	4.7 4.4-5.3	5.8 5.6-6.1	7.0 6.9-7.3	9.4 9.4-10.2
Matlacha Pass	114	3.3	3.5	3.1 2.8-3.1	4.7 4.4-5.4	5.8 5.6-6.0	7.0 6.8-7.3	9.3 9.3-10.2
Matlacha Pass	115	3.1	3.4	3.1 2.8-3.1	4.7 4.4-5.4	5.9 5.6-6.0	7.0 6.9-7.2	9.3 9.3-10.1
Matlacha Pass	116	3.0	3.2	3.1 2.8-3.2	4.7 4.4-4.7	5.8 5.6-5.9	6.9 6.8-7.0	9.2 9.2-9.6
Matlacha Pass	117	3.0	3.2	3.1 2.8-3.2	4.7 4.4-4.8	5.8 5.6-5.9	7.0 6.8-7.1	9.3 9.3-9.7
Matlacha Pass	118	3.1	3.1	3.2 2.9-3.2	4.7 4.5-4.8	5.9 5.6-5.9	7.0 6.9-7.2	9.3 9.3-10.1
Matlacha Pass	119	2.8	3.1	3.2 2.9-3.2	4.7 4.5-5.0	5.9 5.6-5.9	7.0 6.9-7.2	9.3 9.3-10.1

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	120	2.9	3.0	3.2 2.9-3.2	4.8 4.5-5.2	5.9 5.7-6.0	7.0 6.9-7.2	9.3 9.3-10.0
Matlacha Pass	121	2.2	2.8	3.2 3.0-3.4	4.8 4.6-4.9	5.9 5.7-6.0	6.9 6.8-7.0	9.2 9.1-9.3
Matlacha Pass	122	2.5	3.0	3.2 3.0-3.2	4.7 4.5-4.7	5.8 5.6-5.8	6.9 6.7-6.9	9.2 9.0-9.2
Matlacha Pass	123	2.7	2.9	3.1 2.9-3.3	4.6 4.4-4.9	5.7 5.6-6.0	6.8 6.7-7.0	9.1 9.0-9.1
Matlacha Pass	124	2.5	2.7	3.1 3.0-3.1	4.6 4.4-4.6	5.7 5.5-5.7	6.8 6.6-6.8	9.0 8.8-9.0
Matlacha Pass	125	2.0	2.4	3.1 3.1-3.1	4.6 4.6-4.6	5.7 5.7-5.7	6.7 6.7-8.1	8.9 8.9-11.2
Matlacha Pass	126	2.3	2.5	3.1 3.1-3.1	4.6 4.5-4.6	5.7 5.6-5.7	6.7 6.7-6.7	8.9 8.9-11.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	127	2.1	2.5	3.1 3.0-3.1	4.6 4.5-4.6	5.7 5.6-5.7	6.7 6.6-6.7	8.9 8.8-11.3
Matlacha Pass	128	2.5	2.9	3.1 3.0-3.1	4.6 4.5-4.6	5.7 5.5-5.7	6.7 6.6-6.7	9.0 8.8-9.0
Matlacha Pass	129	2.4	2.8	3.1 3.0-3.1	4.6 4.5-4.6	5.7 5.5-5.7	6.7 6.6-6.7	9.0 8.8-9.0
Matlacha Pass	130	2.2	2.7	3.1 3.0-3.1	4.6 4.5-4.6	5.6 5.6-5.6	6.7 6.6-6.7	8.9 8.8-8.9
Matlacha Pass	131	2.0	2.5	3.0 3.0-3.0	4.5 4.5-4.5	5.6 5.6-5.6	6.7 6.6-6.7	8.9 8.8-9.8
Matlacha Pass	132	2.1	2.5	3.0 3.0-3.0	4.5 4.5-4.5	5.6 5.6-5.6	6.7 6.6-6.7	8.9 8.8-9.8
Matlacha Pass	133	2.5	2.9	3.0 2.9-3.0	4.5 4.4-4.5	5.6 5.4-5.6	6.7 6.4-6.8	8.9 8.6-9.5

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	134	2.6	2.9	3.0 2.9-3.0	4.5 4.4-4.5	5.6 5.4-5.6	6.6 6.4-6.6	8.9 8.7-8.9
Charlotte Harbor	135	2.6	3.2	3.0 2.9-3.0	4.5 4.4-4.5	5.5 5.4-5.5	6.6 6.5-6.7	8.8 8.7-9.5
Charlotte Harbor	136	3.3	3.6	3.0 2.9-3.0	4.4 4.3-4.4	5.5 5.3-5.9	6.5 6.4-7.5	8.7 8.6-10.0
Charlotte Harbor	137	3.5	3.8	2.9 2.9-3.0	4.4 4.3-4.4	5.4 5.3-6.0	6.5 6.3-7.3	8.6 8.4-9.8
Charlotte Harbor	138	3.3	3.7	2.9 2.9-2.9	4.3 4.3-4.6	5.4 5.3-5.8	6.4 6.3-6.9	8.5 8.4-9.2
Charlotte Harbor	139	3.4	4.0	2.9 2.9-3.0	4.3 4.3-4.5	5.3 5.3-5.6	6.3 6.3-6.7	8.4 8.4-8.9
Charlotte Harbor	140	4.0	4.0	2.8 2.8-2.9	4.2 4.2-4.4	5.2 5.2-5.5	6.2 6.2-6.6	8.3 8.3-8.8

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Charlotte Harbor	141	3.8	3.9	2.8 2.8-3.0	4.2 4.2-4.4	5.2 5.2-5.5	6.1 6.1-6.5	8.2 8.2-8.7
Charlotte Harbor	142	3.4	3.9	2.8 2.8-3.0	4.2 4.2-4.6	5.1 5.1-5.7	6.1 6.1-6.8	8.1 8.1-9.2
Charlotte Harbor	143	3.4	3.7	2.8 2.8-3.1	4.2 4.2-4.6	5.2 5.2-5.6	6.1 6.1-6.6	8.1 8.1-8.9
Charlotte Harbor	144	3.8	3.7	2.9 2.9-3.1	4.2 4.2-4.5	5.2 5.2-5.6	6.1 6.1-6.6	8.2 8.2-8.8
Little Bokeelia Bay	145	3.2	3.7	3.0 3.0-3.1	4.5 4.5-4.6	5.5 5.5-5.8	6.5 6.5-7.0	8.7 8.7-9.3
Pine Island Sound	146	3.9	3.7	3.0 3.0-3.2	4.3 4.3-4.7	5.3 5.3-5.9	6.3 6.3-7.2	8.4 8.4-9.7
Pine Island Sound	147	3.6	3.5	3.2 3.1-3.3	4.7 4.6-4.8	5.8 5.8-6.0	6.9 6.9-7.3	9.3 9.3-9.8

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Pine Island Sound	148	3.6	3.6	3.2 3.2-3.3	4.8 4.6-4.8	5.9 5.9-6.0	7.0 7.0-7.2	9.4 9.4-9.7
Pine Island Sound	149	3.8	3.5	3.3 3.2-3.4	4.8 4.8-4.9	5.9 5.9-6.1	7.0 7.0-7.4	9.4 9.4-9.9
Pine Island Sound	150	3.8	3.5	3.4 3.4-3.4	5.0 4.8-5.1	6.2 6.0-6.3	7.4 7.3-7.5	9.8 9.8-9.9
Pine Island Sound	151	3.8	3.5	3.4 3.4-3.5	5.1 5.1-5.2	6.3 6.1-6.5	7.5 7.5-7.7	10.0 9.8-10.3
Pine Island Sound	152	3.9	3.5	3.5 3.5-3.6	5.1 5.1-5.3	6.4 6.4-6.7	7.6 7.6-8.2	10.1 10.1-11.1
Pine Island Sound	153	3.8	3.5	3.5 3.5-3.6	5.2 5.2-5.4	6.4 6.4-6.7	7.7 7.7-8.3	10.2 10.2-11.4
Pine Island Sound	154	3.7	3.5	3.6 3.6-3.6	5.3 5.3-5.4	6.5 6.5-6.7	7.8 7.8-8.1	10.4 10.4-11.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Pine Island Sound	155	3.5	3.4	3.6 3.6-3.7	5.2 5.2-5.4	6.4 5.6-6.9	7.7 6.7-8.3	10.2 8.9-11.0
Pine Island Sound	156	3.6	3.6	3.5 3.1-3.7	5.2 4.5-5.5	6.4 5.6-6.9	7.6 6.6-8.2	10.2 8.8-10.8
Pine Island Sound	157	3.9	3.7	3.5 3.0-3.7	5.1 4.5-5.5	6.3 5.6-6.8	7.6 6.6-8.1	10.1 8.8-10.7
Pine Island Sound	158	3.8	3.7	3.5 2.8-3.7	5.1 4.3-5.4	6.3 5.4-6.8	7.5 6.5-8.0	10.1 8.8-10.6
Pine Island Sound	159	3.8	3.8	3.6 2.8-3.6	5.2 .3-5.4	6.4 5.4-6.7	7.6 6.5-8.0	10.2 8.8-10.6
Pine Island Sound	160	3.8	3.9	3.5 3.0-3.6	5.1 4.7-5.3	6.3 5.7-6.6	7.5 6.8-7.9	10.1 9.0-10.5
Pine Island Sound	161	3.7	4.0	3.5 3.2-3.6	5.1 4.6-5.2	6.2 5.7-6.5	7.4 6.8-7.8	10.0 9.0-10.3

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Pine Island Sound	162	4.4	4.3	3.4 3.3-3.6	4.9 4.7-5.2	6.0 5.7-6.5	7.2 6.8-7.7	9.7 9.1-10.3
Pine Island Sound	163	3.8	4.2	3.5 3.4-3.6	5.0 4.9-5.3	6.2 5.9-6.5	7.4 6.9-7.9	9.9 9.2-10.4
Pine Island Sound	164	3.9	4.3	3.4 3.4-3.7	4.9 4.9-5.2	6.1 6.1-6.4	7.2 7.2-7.9	9.7 9.5-10.4
Pine Island Sound	165	3.7	4.0	3.4 3.4-3.5	4.9 4.9-5.4	6.0 6.0-6.6	7.2 7.2-8.0	9.7 9.7-10.5
Pine Island Sound	166	3.8	4.2	3.3 3.3-3.8	4.8 4.8-5.4	5.9 5.9-6.5	7.0 7.0-7.9	9.5 9.5-10.5
Pine Island Sound	167	3.5	3.9	3.4 3.4-3.4	4.9 4.9-5.1	6.0 6.0-6.3	7.1 7.1-7.9	9.7 9.7-10.7
Pine Island Sound	168	3.7	4.1	3.3 3.2-3.4	4.8 4.8-4.9	5.9 5.9-6.5	7.0 7.0-7.6	9.5 9.5-10.5



**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Pine Island Sound	169	3.7	4.0	3.3 3.2-3.4	4.8 4.8-4.9	5.9 5.9-6.5	7.0 7.0-7.6	9.4 9.4-10.4
Pine Island Sound	170	3.5	4.1	3.3 3.2-3.4	4.7 4.7-5.5	5.8 5.8-6.6	6.9 6.9-7.7	9.3 9.3-10.4
Pine Island Sound	171	3.6	4.0	3.3 3.2-3.9	4.8 4.8-5.4	5.9 5.9-6.5	7.0 7.0-7.9	9.5 9.5-10.4
Pine Island Sound	172	3.6	4.1	3.3 3.2-3.9	4.7 4.7-5.4	5.8 5.8-6.5	6.9 6.9-7.8	9.3 9.3-10.3
Pine Island Sound	173	3.6	3.8	3.3 3.3-3.4	4.8 4.8-5.4	5.8 5.8-6.6	6.9 6.9-7.8	9.4 9.4-10.2
Pine Island Sound	174	3.4	3.6	3.3 3.3-3.8	4.8 4.8-5.4	5.9 5.9-6.6	7.0 7.0-7.8	9.4 9.4-10.2
Pine Island Sound	175	4.1	3.6	3.2 3.1-3.8	4.5 4.5-5.3	5.5 5.4-6.5	6.4 6.4-7.6	8.6 8.6-9.9

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Pine Island Sound	176	3.4	3.6	3.3 3.2-3.7	4.7 4.6-5.2	5.8 5.7-6.3	6.9 6.8-7.4	9.4 9.4-9.8
Pine Island Sound	177	3.5	3.7	3.3 3.3-3.6	4.7 4.7-5.1	5.7 5.7-6.2	6.7 6.7-7.3	9.1 9.1-9.7
Pine Island Sound	178	3.4	3.6	3.2 3.2-3.5	4.6 4.6-5.0	5.6 5.6-6.0	6.6 6.6-7.1	8.9 8.9-9.4
Pine Island Sound	179	3.8	3.5	3.3 3.3-3.3	4.7 4.6-4.7	5.6 5.6-5.7	6.6 6.6-6.7	8.9 8.9-9.0
San Carlos Bay	180	4.4	3.9	3.4 3.4-3.5	4.8 4.8-4.9	5.9 5.9-5.9	6.9 6.9-7.0	9.3 9.3-9.4
San Carlos Bay	181	4.4	4.0	3.5 3.5-3.6	4.9 4.9-5.0	6.0 5.9-6.1	7.1 7.0-7.2	9.5 9.5-9.6
San Carlos Bay	182	4.7	4.1	3.5 3.5-3.6	5.0 5.0-5.1	6.1 6.0-6.2	7.2 7.1-7.3	9.7 9.6-9.7

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
San Carlos Bay	183	4.7	4.1	3.6 3.6-3.6	5.1 5.1-5.2	6.1 6.1-6.3	7.2 7.2-7.3	9.8 9.7-9.9
San Carlos Bay	184	4.5	4.1	3.6 3.6-3.7	5.1 5.1-5.2	6.2 6.2-6.3	7.3 7.3-7.4	9.9 9.7-9.9
San Carlos Bay	185	4.3	4.1	3.6 3.6-3.7	5.1 5.1-5.3	6.3 6.3-6.4	7.4 7.3-7.4	10.0 9.8-10.0
San Carlos Bay	186	4.1	4.0	3.7 3.6-3.7	5.2 5.1-5.2	6.3 6.2-6.3	7.4 7.3-7.4	10.1 9.8-10.1
Matlacha Pass	187	3.4	3.4	3.7 3.6-3.7	5.2 5.2-5.2	6.3 6.3-6.4	7.3 7.3-7.5	9.8 9.8-9.9
Matlacha Pass	188	2.8	2.8	3.7 3.6-3.7	5.2 5.1-5.2	6.3 6.2-6.3	7.4 7.2-7.4	9.8 9.7-9.8
Matlacha Pass	189	2.6	3.0	3.7 3.3-3.7	5.2 4.7-5.3	6.3 5.8-6.3	7.4 6.9-7.4	9.9 9.5-9.9

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	190	2.5	2.9	3.8 3.2-3.8	5.3 4.6-5.3	6.4 5.8-6.4	7.5 7.0-7.5	9.9 9.5-9.9
Matlacha Pass	191	3.1	3.4	3.8 3.8-3.8	5.3 4.9-5.4	6.4 6.4-6.7	7.5 7.5-7.8	10.0 9.9-10.2
Matlacha Pass	192	3.3	3.6	3.8 3.8-3.9	5.4 5.4-5.4	6.5 6.5-6.5	7.6 7.6-7.6	10.1 10.0-10.1
Matlacha Pass	193	2.7	3.3	3.9 3.8-3.9	5.4 5.4-5.4	6.5 6.5-6.5	7.6 7.6-7.8	10.0 10.0-10.3
Matlacha Pass	194	2.8	3.4	3.9 3.8-3.9	5.4 5.3-5.4	6.5 6.4-6.5	7.6 7.5-7.6	10.0 10.0-10.0
Matlacha Pass	195	2.8	3.2	3.9 3.9-3.9	5.4 5.4-5.4	6.5 6.2-6.6	7.6 7.4-7.9	10.0 10.0-10.4
Matlacha Pass	196	3.3	3.3	3.9 3.8-3.9	5.5 5.4-5.5	6.6 6.4-6.6	7.6 7.5-7.7	10.1 10.0-10.2

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	197	3.4	3.4	3.9 3.8-4.0	5.4 5.4-5.5	6.5 6.5-6.6	7.6 7.6-7.6	10.0 10.0-10.4
Matlacha Pass	198	2.7	2.9	3.9 3.9-3.9	5.5 5.4-5.5	6.6 6.5-6.6	7.6 7.6-7.6	10.0 10.0-10.7
Matlacha Pass	199	2.7	2.9	4.0 3.9-4.0	5.5 5.4-5.5	6.6 6.4-6.6	7.7 7.5-7.9	10.0 9.8-10.4
Matlacha Pass	200	3.2	3.1	4.0 3.5-4.0	5.6 4.9-5.6	6.7 6.0-6.7	7.7 7.0-7.7	10.1 9.2-10.1
Matlacha Pass	201	2.7	3.1	3.9 3.3-3.9	5.5 4.6-5.5	6.6 5.7-6.6	7.6 6.8-7.8	9.9 9.1-10.3
Matlacha Pass	202	2.5	3.0	3.9 3.3-3.9	5.5 4.7-5.5	6.5 5.8-6.5	7.6 6.8-7.6	9.8 9.1-9.8
Matlacha Pass	203	2.8	3.1	3.9 3.3-3.9	5.5 4.6-5.5	6.5 5.7-6.5	7.6 6.8-7.6	9.9 9.1-9.9

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	204	2.6	3.0	3.9 3.1-3.9	5.4 4.6-5.4	6.5 5.7-6.6	7.6 6.7-7.9	9.8 9.0-10.4
Matlacha Pass	205	2.8	3.1	3.9 3.0-3.9	5.4 4.7-5.4	6.5 5.7-6.6	7.6 6.8-8.0	9.8 9.0-10.5
Matlacha Pass	206	2.5	2.9	3.9 2.9-3.9	5.5 4.7-5.5	6.5 5.8-6.6	7.5 6.8-8.0	9.7 9.0-10.5
Matlacha Pass	207	3.1	3.2	3.9 2.9-3.9	5.5 4.5-5.5	6.5 5.5-6.5	7.6 6.6-7.6	9.8 8.8-9.8
Matlacha Pass	208	3.1	3.1	3.9 3.2-3.9	5.5 4.7-5.5	6.6 5.8-6.6	7.6 6.8-7.6	9.8 9.1-9.8
Matlacha Pass	209	3.6	3.3	3.9 2.9-3.9	5.5 4.6-5.5	6.6 5.7-6.7	7.7 6.9-7.7	9.9 9.3-9.9
Matlacha Pass	210	3.6	3.4	3.9 2.9-4.0	5.5 4.3-5.6	6.7 5.5-6.7	7.7 6.7-7.8	10.0 9.3-10.1

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	211	3.5	3.4	3.9 3.3-3.9	5.5 4.4-5.6	6.6 5.6-6.7	7.7 6.7-7.7	9.9 9.4-10.0
Matlacha Pass	212	3.5	3.4	3.9 3.2-4.1	5.5 4.6-5.6	6.7 5.8-6.7	7.7 6.9-7.9	10.1 9.3-10.8
Matlacha Pass	213	3.2	3.3	3.9 2.9-4.0	5.5 4.4-5.6	6.7 5.7-6.7	7.7 7.0-7.8	10.0 9.3-10.8
Matlacha Pass	214	3.0	3.3	3.9 2.9-3.9	5.5 4.5-5.5	6.6 5.7-6.6	7.7 7.0-7.8	9.9 9.7-10.6
Matlacha Pass	215	3.1	3.4	3.9 3.0-4.0	5.5 4.5-5.6	6.7 5.8-6.7	7.7 7.1-7.8	10.1 9.8-10.7
Matlacha Pass	216	3.3	3.5	3.9 3.0-4.0	5.5 4.5-5.6	6.7 5.7-6.7	7.7 7.1-7.8	10.1 9.8-10.5
Matlacha Pass	217	3.2	3.5	3.9 3.0-3.9	5.5 4.5-5.5	6.7 5.7-6.7	7.7 7.0-7.7	10.1 9.8-10.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	218	3.1	3.3	3.9 3.0-3.9	5.5 4.6-5.5	6.6 5.8-6.6	7.7 7.1-7.7	10.0 9.9-10.2
Matlacha Pass	219	2.7	3.0	3.9 3.0-3.9	5.5 4.7-5.5	6.6 6.0-6.6	7.7 7.2-7.7	10.0 9.9-10.2
Matlacha Pass	220	3.8	3.7	3.9 3.0-3.9	5.5 4.6-5.5	6.6 5.8-6.6	7.6 7.1-7.7	10.0 9.9-10.0
Matlacha Pass	221	3.4	3.6	3.9 3.0-3.9	5.5 4.7-5.5	6.6 6.0-6.6	7.7 7.3-7.7	10.2 10.0-10.2
Matlacha Pass	222	3.4	3.6	3.9 3.1-3.9	5.5 4.8-5.5	6.6 6.0-6.6	7.7 7.3-7.8	10.2 10.0-10.2
Matlacha Pass	223	3.9	3.9	3.9 3.1-4.0	5.5 4.8-5.5	6.6 6.1-6.7	7.7 7.4-7.8	10.2 10.1-10.3
Matlacha Pass	224	4.2	4.0	3.9 3.1-4.0	5.5 4.8-5.6	6.7 6.1-6.8	7.8 7.4-8.0	10.4 10.1-10.6



**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Matlacha Pass	225	4.2	3.8	3.9 3.2-3.9	5.5 5.0-5.6	6.7 6.2-6.8	7.8 7.5-7.9	10.5 10.2-10.6
Matlacha Pass	226	4.3	3.8	3.8 3.2-3.9	5.4 5.0-5.6	6.6 6.3-6.7	7.7 7.6-7.9	10.4 10.3-10.6
Matlacha Pass	227	3.8	3.7	3.8 3.2-3.9	5.5 5.0-5.6	6.6 6.3-6.8	7.8 7.6-7.9	10.5 10.3-10.7
Caloosahatchee River	228	4.2	3.7	3.9 3.1-3.9	5.5 4.8-5.6	6.7 6.0-6.8	7.9 7.3-8.0	10.7 10.0-10.7
Caloosahatchee River	229	4.4	3.8	3.8 3.0-3.9	5.5 4.6-5.6	6.8 5.8-6.8	8.0 7.1-8.0	10.8 10.1-10.8
Caloosahatchee River	230	4.5	3.7	3.8 3.1-3.8	5.4 4.8-5.5	6.6 5.9-6.7	7.8 7.3-7.8	10.5 10.2-10.5
Caloosahatchee River	231	4.3	3.8	3.8 3.2-3.8	5.4 5.0-5.4	6.6 6.4-6.6	7.8 7.6-7.8	10.5 10.3-10.5

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	232	4.0	3.7	3.7 3.5-3.8	5.4 5.2-5.5	6.6 6.3-6.7	7.7 7.5-7.8	10.4 10.1-10.5
Caloosahatchee River	233	3.6	3.3	3.6 3.3-3.9	5.2 4.9-5.6	6.3 6.1-6.8	7.4 7.4-8.0	9.9 9.9-10.7
Caloosahatchee River	234	3.3	3.0	3.6 3.4-3.8	5.2 5.1-5.5	6.3 6.3-6.7	7.4 7.4-7.8	9.9 9.9-10.6
Caloosahatchee River	235	3.4	3.2	3.6 3.6-3.7	5.2 5.2-5.5	6.3 6.3-6.7	7.4 7.4-7.8	9.9 9.9-10.5
Caloosahatchee River	236	3.0	3.1	3.6 3.6-3.8	5.2 5.2-5.5	6.4 6.3-6.7	7.5 7.5-7.8	10.0 10.0-10.3
Caloosahatchee River	237	3.2	3.2	3.7 3.6-3.7	5.3 5.3-5.4	6.4 5.8-6.5	7.6 7.2-7.6	10.1 10.0-10.6
Caloosahatchee River	238	3.3	3.3	3.7 3.7-3.7	5.3 5.3-5.4	6.5 6.4-6.6	7.6 7.6-7.7	10.2 10.1-10.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	239	3.4	3.3	3.7 3.7-3.8	5.3 5.3-5.4	6.5 6.4-6.6	7.6 7.5-7.8	10.2 10.0-10.4
Caloosahatchee River	240	3.6	3.4	3.7 3.7-3.7	5.4 5.3-5.4	6.5 6.4-6.6	7.7 7.5-7.7	10.3 10.0-10.3
Caloosahatchee River	241	3.5	3.4	3.7 3.6-3.7	5.3 5.2-5.3	6.4 6.3-6.5	7.6 7.4-7.6	10.1 9.8-10.1
Caloosahatchee River	242	2.8	3.7	3.7 3.6-3.7	5.2 5.2-5.3	6.4 6.4-6.5	7.4 7.4-7.6	9.9 9.9-10.2
Caloosahatchee River	243	2.9	3.1	3.7 3.7-3.8	5.3 5.3-5.4	6.4 6.4-6.6	7.5 7.5-7.7	10.0 10.0-10.3
Caloosahatchee River	244	2.9	3.1	3.7 3.7-3.7	5.3 5.3-5.3	6.5 6.4-6.5	7.6 7.5-7.6	10.1 10.0-10.1
Caloosahatchee River	245	2.9	3.3	3.7 3.7-3.8	5.4 5.4-5.4	6.5 6.5-6.6	7.6 7.6-7.7	10.1 10.1-10.2

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	246	2.9	3.1	3.8 3.2-3.8	5.4 4.9-5.5	6.5 6.1-6.7	7.7 7.4-7.8	10.2 10.1-10.6
Caloosahatchee River	247	2.9	3.1	3.8 3.7-3.9	5.5 5.4-5.5	6.6 6.6-6.7	7.7 7.7-7.9	10.3 10.2-10.5
Caloosahatchee River	248	2.9	3.1	3.8 3.6-3.9	5.5 5.2-5.5	6.6 6.4-6.7	7.8 7.6-7.8	10.4 10.2-10.5
Caloosahatchee River	249	2.9	3.1	3.9 3.9-3.9	5.5 5.5-5.6	6.7 6.7-6.7	7.8 7.8-7.8	10.5 10.3-10.5
Caloosahatchee River	250	2.9	3.2	3.9 3.3-3.9	5.6 5.0-5.6	6.7 6.2-6.8	7.9 7.5-7.9	10.5 10.3-10.6
Caloosahatchee River	251	2.9	3.3	3.9 3.9-4.1	5.6 5.6-5.8	6.8 6.7-6.9	7.9 7.9-8.1	10.6 10.6-10.8
Caloosahatchee River	252	2.9	3.3	4.0 4.0-4.0	5.7 5.7-5.7	6.8 6.8-6.9	8.0 8.0-8.0	10.7 10.7-10.8

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	253	2.9	3.4	4.0 3.6-4.0	5.7 5.2-5.7	6.9 6.4-6.9	8.1 7.6-8.1	10.8 10.4-10.8
Caloosahatchee River	254	2.9	3.4	4.0 3.9-4.0	5.8 5.6-5.8	6.9 6.8-7.0	8.1 7.8-8.1	10.9 10.4-10.9
Caloosahatchee River	255	2.9	3.3	4.1 3.7-4.1	5.8 5.1-5.8	7.0 6.4-7.0	8.2 7.6-8.2	10.9 10.5-10.9
Caloosahatchee River	256	2.9	3.3	4.1 4.0-4.1	5.8 5.4-5.8	7.0 6.4-7.0	8.2 7.7-8.2	11.0 10.6-11.0
Caloosahatchee River	257	2.9	3.3	4.1 3.0-4.1	5.9 5.3-5.9	7.1 6.0-7.1	8.2 7.2-8.3	11.1 10.0-11.1
Caloosahatchee River	258	3.0	3.4	4.1 3.0-4.2	5.9 5.4-6.0	7.1 6.1-7.2	8.3 7.2-8.3	11.2 10.0-11.3
Caloosahatchee River	259	3.1	3.5	4.2 3.0-4.2	6.0 5.2-6.0	7.2 6.3-7.2	8.4 7.2-8.4	11.3 10.2-11.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	260	3.2	3.5	4.2 3.1-4.2	6.0 5.5-6.1	7.2 6.7-7.3	8.4 7.2-8.5	11.4 10.3-11.5
Caloosahatchee River	261	3.2	3.5	4.3 4.2-4.3	6.1 5.9-6.1	7.3 7.1-7.3	8.5 8.1-8.5	11.5 11.1-11.5
Caloosahatchee River	262	3.2	3.5	4.3 4.2-4.3	6.1 5.8-6.1	7.3 7.1-7.3	8.5 8.3-8.6	11.5 10.8-11.6
Caloosahatchee River	263	3.3	3.5	4.3 4.3-4.3	6.1 5.9-6.1	7.4 7.2-7.4	8.6 8.4-8.6	11.6 11.4-11.7
Caloosahatchee River	264	3.2	3.6	4.3 4.3-4.3	6.2 6.0-6.2	7.4 7.2-7.5	8.7 8.4-8.7	11.7 11.6-11.8
Caloosahatchee River	265	3.4	3.6	4.3 4.3-4.3	6.2 6.1-6.2	7.5 7.3-7.5	8.7 8.4-8.7	11.8 11.3-11.8
Caloosahatchee River	266	3.8	3.7	4.4 4.2-4.4	6.3 6.1-6.3	7.5 7.4-7.6	8.8 8.7-8.9	11.9 11.9-12.1

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	267	3.9	3.8	4.4 4.4-4.4	6.3 6.3-6.4	7.6 7.6-7.7	8.8 8.8-8.9	12.0 12.0-12.3
Caloosahatchee River	268	4.0	3.9	4.4 4.4-4.4	6.4 6.4-6.4	7.6 7.6-7.7	8.9 8.9-9.1	12.1 12.1-12.4
Caloosahatchee River	269	3.8	3.8	4.5 4.5-4.5	6.4 6.4-6.5	7.7 7.7-7.8	9.0 8.9-9.1	12.2 10.3-12.4
Caloosahatchee River	270	4.2	3.9	4.5 4.5-4.5	6.4 6.4-6.5	7.8 7.8-7.8	9.1 9.1-9.2	12.3 12.2-12.5
Caloosahatchee River	271	4.2	4.0	4.5 4.5-4.5	6.5 6.5-6.6	7.8 7.8-7.9	9.1 9.1-9.2	12.5 12.5-12.6
Caloosahatchee River	272	4.2	4.0	4.6 4.5-4.6	6.6 6.6-6.6	7.9 7.9-8.0	9.2 9.2-9.3	12.6 12.6-12.9
Caloosahatchee River	273	4.1	3.9	4.6 4.6-4.6	6.6 6.6-6.7	7.9 7.9-8.0	9.2 9.2-9.4	12.6 12.6-13.0

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	274	3.9	3.8	4.6 4.3-4.6	6.6 6.5-6.7	8.0 7.8-8.1	9.3 9.0-9.4	12.7 12.6-13.0
Caloosahatchee River	275	2.9	3.1	4.6 4.6-4.6	6.7 6.7-6.7	8.1 8.0-8.1	9.4 9.4-9.5	12.8 12.7-13.1
Caloosahatchee River	276	2.8	2.8	4.6 4.5-4.7	6.7 6.6-6.7	8.0 7.9-8.1	9.4 9.2-9.5	12.8 12.5-13.0
Caloosahatchee River	277	4.1	3.9	4.6 4.6-4.6	6.6 6.6-6.7	7.9 7.9-8.1	9.3 9.2-9.5	12.7 12.4-12.8
Caloosahatchee River	278	4.0	3.9	4.6 4.6-4.6	6.6 6.6-6.7	8.0 8.0-8.0	9.4 9.4-9.4	12.7 12.7-12.8
Caloosahatchee River	279	3.8	3.9	4.6 4.6-4.6	6.6 6.6-6.6	8.0 7.9-8.0	9.3 9.3-9.3	12.6 12.3-12.7
Caloosahatchee River	280	3.9	3.8	4.5 4.5-4.5	6.5 6.5-6.5	7.9 7.9-7.9	9.2 9.2-9.2	12.5 12.2-12.6



**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	281	4.1	3.8	4.5 4.5-4.5	6.5 6.2-6.5	7.8 7.6-7.8	9.1 8.8-9.2	12.4 12.2-12.5
Caloosahatchee River	282	4.0	3.8	4.5 4.2-4.5	6.4 6.2-6.5	7.8 7.6-7.8	9.1 8.8-9.1	12.3 12.2-12.5
Caloosahatchee River	283	3.8	3.7	4.4 4.2-4.4	6.4 6.2-6.4	7.7 7.6-7.7	9.0 8.8-9.1	12.2 12.1-12.3
Caloosahatchee River	284	3.7	3.5	4.4 4.2-4.4	6.3 6.2-6.3	7.7 7.6-7.7	8.9 8.8-9.0	12.1 12.0-12.2
Caloosahatchee River	285	3.5	3.4	4.4 4.2-4.4	6.3 6.1-6.3	7.6 7.5-7.7	8.9 8.8-9.0	12.0 12.0-12.2
Caloosahatchee River	286	3.5	3.5	4.3 4.2-4.3	6.2 6.2-6.3	7.5 7.5-7.5	8.8 8.8-8.8	11.9 11.9-12.0
Caloosahatchee River	287	3.4	3.5	4.3 4.3-4.3	6.2 6.2-6.2	7.5 7.5-7.5	8.7 8.7-8.8	11.8 11.8-11.9

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	288	3.5	3.5	4.3 4.3-4.3	6.1 6.1-6.2	7.4 7.4-7.4	8.7 8.7-8.7	11.7 11.7-11.7
Caloosahatchee River	289	3.5	3.4	4.3 4.3-4.3	6.1 6.1-6.1	7.4 7.4-7.4	8.6 8.6-8.7	11.6 11.6-11.7
Caloosahatchee River	290	3.4	3.4	4.2 4.2-4.2	6.1 6.1-6.1	7.3 7.3-7.3	8.5 8.5-8.6	11.5 11.5-11.6
Caloosahatchee River	291	3.5	3.4	4.2 4.2-4.9	6.0 5.9-6.0	7.3 7.3-7.3	8.5 8.5-8.5	11.4 11.4-11.5
Caloosahatchee River	292	3.5	3.4	4.2 4.2-4.9	6.0 5.8-6.0	7.2 7.2-7.4	8.4 8.4-8.5	11.3 11.3-11.5
Caloosahatchee River	293	3.4	3.5	4.1 4.1-4.9	5.9 5.8-6.0	7.1 7.1-7.4	8.3 8.3-8.4	11.2 11.2-11.4
Caloosahatchee River	294	3.4	3.5	4.1 4.1-4.9	5.9 5.7-5.9	7.1 7.1-7.5	8.3 8.3-8.5	11.2 11.2-11.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	295	3.4	3.5	4.1 4.1-4.9	5.8 5.7-5.9	7.0 7.0-7.5	8.2 8.2-8.6	11.1 11.1-11.3
Caloosahatchee River	296	3.7	3.4	4.0 4.0-4.9	5.8 5.7-5.8	7.0 7.0-7.6	8.2 8.2-8.7	11.0 11.0-11.3
Caloosahatchee River	297	3.8	3.4	4.0 4.0-4.9	5.7 5.7-5.8	7.0 7.0-7.7	8.1 8.1-8.8	10.9 10.9-11.3
Caloosahatchee River	298	3.5	3.3	4.0 4.0-4.8	5.7 5.7-5.7	6.9 6.9-7.8	8.1 8.1-8.9	10.8 10.8-11.2
Caloosahatchee River	299	3.5	3.2	3.9 3.9-4.8	5.6 5.6-5.7	6.8 6.8-7.9	8.0 8.0-9.0	10.7 10.7-11.2
Caloosahatchee River	300	3.4	3.2	3.9 3.9-4.8	5.6 5.6-7.0	6.8 6.8-8.1	8.0 8.0-9.4	10.7 10.7-13.6
Caloosahatchee River	301	3.3	3.2	3.8 3.7-4.6	5.5 5.5-6.5	6.7 6.7-8.2	7.9 7.8-9.3	10.5 10.5-12.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	302	3.2	3.3	3.8 3.8-3.8	5.5 5.4-5.7	6.6 6.5-6.7	7.8 7.8-8.0	10.4 10.4-11.1
Caloosahatchee River	303	3.3	3.2	3.8 3.7-3.8	5.4 5.3-5.4	6.6 6.5-6.6	7.7 7.7-7.8	10.3 10.3-10.8
Caloosahatchee River	304	3.4	3.2	3.8 3.7-3.8	5.4 5.3-5.5	6.5 6.5-6.7	7.7 7.7-8.1	10.2 10.2-11.0
Caloosahatchee River	305	3.1	3.1	3.7 3.7-3.8	5.4 5.4-6.2	6.5 6.5-8.1	7.7 7.7-8.9	10.2 10.2-12.0
Caloosahatchee River	306	3.0	3.0	3.7 3.7-3.7	5.3 5.3-5.6	6.5 6.5-6.6	7.6 7.6-7.9	10.2 10.2-11.0
Caloosahatchee River	307	2.9	3.0	3.7 3.6-3.7	5.3 5.3-5.3	6.5 6.4-6.5	7.6 7.6-7.7	10.2 10.2-10.8
Caloosahatchee River	308	2.8	3.0	3.7 3.6-3.7	5.3 5.2-5.3	6.4 6.4-6.4	7.6 7.6-7.7	10.1 10.1-10.9

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	309	3.1	3.4	3.7 3.6-3.7	5.3 5.2-5.8	6.5 6.4-7.5	7.6 7.5-8.7	10.2 10.2-12.2
Caloosahatchee River	310	3.2	3.3	3.7 3.7-3.7	5.3 5.3-6.0	6.4 6.4-7.4	7.6 7.3-9.3	10.1 10.1-12.5
Caloosahatchee River	311	3.1	3.3	3.6 3.6-3.6	5.2 5.2-6.2	6.4 6.4-7.8	7.5 7.5-9.6	10.0 10.0-13.2
Caloosahatchee River	312	3.2	3.3	3.6 3.6-3.6	5.2 5.2-5.2	6.4 6.4-7.7	7.5 7.5-9.6	10.0 10.0-12.9
Caloosahatchee River	313	3.1	3.1	3.6 3.6-3.6	5.2 5.2-5.3	6.4 6.4-7.9	7.5 7.5-9.9	10.0 10.0-13.3
Caloosahatchee River	314	3.0	3.0	3.6 3.6-3.6	5.2 5.2-6.5	6.3 6.3-8.3	7.4 7.4-10.2	10.0 10.0-13.7
Caloosahatchee River	315	2.8	2.9	3.6 3.6-3.6	5.2 5.2-5.9	6.3 6.3-7.4	7.4 7.4-8.9	9.9 9.9-12.5

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Caloosahatchee River	316	2.8	2.9	3.6 3.6-3.6	5.1 5.1-5.2	6.3 6.3-6.7	7.4 7.4-8.4	9.9 9.9-12.0
Caloosahatchee River	317	2.8	2.8	3.6 3.5-3.9	5.1 5.1-5.7	6.2 6.2-7.1	7.3 7.3-8.4	9.8 9.8-11.7
Caloosahatchee River	318	2.6	2.7	3.6 3.6-3.7	5.1 5.1-5.4	6.2 6.2-6.6	7.3 7.3-7.7	9.8 9.8-10.4
Caloosahatchee River	319	2.8	2.7	3.6 3.6-3.7	5.1 5.1-5.3	6.2 6.2-6.5	7.3 7.3-7.7	9.8 9.7-10.3
Caloosahatchee River	320	3.6	3.8	3.7 3.7-3.7	5.3 5.3-5.4	6.4 6.4-6.5	7.6 7.6-7.7	10.1 10.1-10.3
San Carlos Bay	321	4.3	3.8	3.7 3.6-3.7	5.3 5.1-5.4	6.5 6.2-6.5	7.7 7.3-7.7	10.3 9.8-10.3
San Carlos Bay	322	4.4	3.7	3.7 3.6-3.8	5.4 5.1-5.5	6.6 6.2-6.7	7.7 7.3-7.9	10.4 9.8-10.5

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
San Carlos Bay	323	3.9	3.5	3.9 3.5-3.9	5.6 5.1-5.6	6.9 6.2-6.9	8.2 7.3-8.2	11.1 9.8-11.1
San Carlos Bay	324	3.8	3.3	3.8 3.7-3.9	5.6 5.2-5.7	6.9 6.7-7.1	8.2 8.2-8.6	11.1 11.1-12.0
San Carlos Bay	325	3.4	3.0	3.8 3.8-4.8	5.5 5.5-7.3	6.8 6.8-9.2	8.1 8.1-10.8	11.1 11.1-14.5
San Carlos Bay	326	4.5	3.7	3.8 3.7-3.8	5.4 5.4-5.5	6.6 6.6-6.7	7.8 7.8-8.0	10.6 10.6-10.8
San Carlos Bay	327	4.8	4.1	3.7 3.7-3.8	5.3 5.3-5.5	6.5 6.5-6.8	7.7 7.7-8.0	10.4 10.4-10.9
San Carlos Bay	328	5.5	4.7	4.6 3.7-4.7	6.7 5.4-6.7	8.6 6.7-8.6	10.3 7.9-10.3	14.2 10.8-14.3
San Carlos Bay	329	5.6	5.1	4.7 3.7-4.8	7.1 5.5-7.1	9.0 6.7-9.0	10.7 7.9-10.7	14.8 10.7-14.8

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
San Carlos Bay	330	5.9	5.2	4.8 3.8-4.8	7.2 5.3-7.3	9.1 6.6-9.2	10.9 8.1-10.9	15.1 11.5-15.1
San Carlos Bay	331	5.7	5.2	4.8 3.8-4.9	7.3 5.4-7.4	9.3 7.0-9.3	11.1 8.7-11.2	15.4 12.3-15.4
San Carlos Bay	332	5.9	5.2	4.8 3.8-4.8	7.2 6.5-7.3	9.3 8.2-9.3	11.2 9.6-11.2	15.5 13.4-15.5
San Carlos Bay	333	6.1	4.7	4.8 3.8-4.8	7.2 6.4-7.2	9.2 7.6-9.3	11.1 9.8-11.1	15.5 12.8-15.5
San Carlos Bay	334	5.4	3.8	4.7 3.6-4.7	7.1 6.0-7.1	9.1 7.5-9.1	10.9 8.7-10.9	15.1 12.3-15.1
San Carlos Bay	335	5.1	3.7	4.6 4.3-4.6	6.9 6.4-7.0	8.8 8.2-8.8	10.6 9.9-10.6	14.8 14.0-14.8
San Carlos Bay	336	4.3	3.3	4.5 4.4-4.5	6.8 6.6-6.8	8.7 8.3-8.7	10.5 10.0-10.5	14.7 14.3-14.7



**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
San Carlos Bay	337	4.1	3.8	4.5 4.5-4.6	6.8 6.8-6.9	8.7 8.7-8.8	10.4 10.4-10.6	14.6 14.6-14.7
San Carlos Bay	338	6.9	6.7	4.6 4.5-4.6	6.9 6.8-7.0	8.8 8.6-8.9	10.6 10.2-10.7	14.8 14.4-14.8
Gulf of Mexico	339	6.8	6.7	4.6 4.5-4.7	7.0 6.7-7.0	8.9 8.6-9.0	10.7 10.3-10.8	14.9 14.5-15
Gulf of Mexico	340	7.0	6.8	4.7 4.4-4.7	7.1 6.6-7.1	9.0 8.4-9.1	10.8 10.1-10.9	15.1 14.3-15.1
Gulf of Mexico	341	7.0	6.8	4.7 4.3-4.8	7.1 6.3-7.2	9.1 8.1-9.2	11.0 9.9-11.0	15.3 14.1-15.3
Gulf of Mexico	342	7.6	6.9	4.8 3.6-4.8	7.2 5.9-7.3	9.2 6.5-9.3	11.1 7.9-11.1	15.4 11.1-15.4
Gulf of Mexico	343	7.8	6.9	4.8 3.7-4.8	7.2 6.2-7.3	9.2 6.5-9.3	11.1 9.1-11.2	15.4 12.2-15.4

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	344	7.8	6.8	4.7 4.2-4.8	7.2 6.3-7.2	9.2 8.1-9.3	11.1 9.4-11.2	15.4 12.4-15.4
Gulf of Mexico	345	7.7	6.9	4.7 4.3-4.7	7.1 6.3-7.2	9.2 7.9-9.2	11.1 9.6-11.1	15.4 13.9-15.4
Gulf of Mexico	346	7.9	7.2	4.7 4.3-4.7	7.1 6.3-7.1	9.1 7.9-9.2	11.0 9.5-11.0	15.3 13.8-15.3
Gulf of Mexico	347	7.8	7.3	4.7 4.3-4.8	7.1 6.3-7.2	9.1 7.9-9.2	11 9.6-11.1	15.3 13.9-15.3
Gulf of Mexico	348	7.7	8.5	4.7 4.4-4.9	7 6.4-7.3	9.0 8.0-9.3	11 9.6-11.1	15.2 13.9-15.3
Gulf of Mexico	349	7.4	8.8	4.7 4.4-4.9	7.1 6.3-7.3	9.0 7.9-9.3	10.9 9.6-11.1	15.1 13.8-15.2
Gulf of Mexico	350	7.1	9.1	4.7 4.4-4.9	7.1 6.3-7.2	9.0 7.9-9.2	10.8 9.5-11.0	15.0 13.8-15.1

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	351	6.9	8.9	4.7 4.3-4.8	7.0 6.3-7.3	9.0 7.9-9.3	10.9 9.6-11.2	15.0 13.8-15.3
Gulf of Mexico	352	6.4	9.8	4.8 4.3-5.0	7.1 6.3-7.4	9.1 7.8-9.3	11.0 9.5-11.2	15.2 13.8-15.2
Gulf of Mexico	353	6.2	9.2	4.5 4.3-4.7	6.8 6.3-7.0	8.7 7.9-8.8	10.5 9.5-10.6	14.7 13.8-14.7
Estero Bay	354	3.9	3.0	4.4 4.4-4.4	6.3 6.3-6.4	7.9 7.9-7.9	9.6 9.5-9.6	13.9 13.8-13.9
Estero Bay	355	3.3	2.9	4.4 4.4-4.9	6.4 6.3-7.4	8.0 7.9-9.3	9.7 9.6-11.1	14.0 13.8-15.3
Estero Bay	356	4.4	3.5	4.5 3.6-4.5	6.6 5.2-6.6	8.2 6.4-8.3	10.0 7.7-10.1	14.4 10.9-14.5
Estero Bay	357	4.5	3.7	4.6 4.2-4.6	6.7 6.4-6.7	8.3 7.9-8.4	10.1 9.6-10.2	14.6 13.3-14.7

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Estero Bay	358	4.3	3.9	4.7 4.4-4.7	6.8 6.5-6.9	8.6 8.1-8.6	10.4 9.7-10.4	15.0 13.3-15
Estero Bay	359	4.3	4.0	4.7 4.5-4.7	6.9 6.6-6.9	8.6 8.2-8.6	10.5 9.4-10.5	15.0 12.3-15
Estero Bay	360	4.5	4.0	4.8 4.7-4.8	7.0 6.5-7.0	8.8 8.2-8.8	10.6 10.2-10.6	15.3 13.9-15.3
Estero Bay	361	4.5	3.9	4.8 4.6-4.8	7.0 6.9-7.1	8.8 8.5-8.8	10.6 10.4-10.6	15.3 14.5-15.3
Estero Bay	362	4.3	3.9	4.7 4.7-4.8	6.9 6.9-7.0	8.7 8.6-8.9	10.6 10.4-10.7	15.2 14.7-15.3
Estero Bay	363	4.5	3.9	4.7 4.7-4.7	6.8 6.8-7.0	8.5 8.5-8.9	10.3 10.3-10.8	14.9 14.7-15.2
Estero Bay	364	4.0	3.9	4.7 4.6-4.8	6.8 6.8-7.1	8.6 8.6-8.9	10.4 10.4-10.8	15.0 14.8-15.2

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Estero Bay	365	4.6	3.9	4.6 4.6-4.7	6.7 6.7-6.9	8.4 8.4-8.7	10.2 10.2-10.8	14.8 14.7-15.2
Estero Bay	366	4.8	3.9	4.6 4.5-4.6	6.6 6.6-6.9	8.3 8.3-8.6	10.0 10.0-10.8	14.5 14.5-15.1
Estero Bay	367	4.6	3.8	4.6 4.6-4.6	6.6 6.6-6.7	8.3 8.3-8.4	10.1 10.1-10.3	14.7 14.4-15.1
Estero Bay	368	4.6	3.8	4.5 4.5-4.6	6.5 6.5-6.6	8.2 8.2-8.3	9.9 9.9-10.2	14.4 14.0-14.9
Estero Bay	369	4.7	3.8	4.5 4.5-4.5	6.5 6.5-6.6	8.1 8.1-8.3	9.8 9.8-10.1	14.3 13.7-14.7
Estero Bay	370	4.4	3.6	4.5 4.5-4.5	6.4 6.4-6.5	8.0 8.0-8.2	9.7 9.6-10.1	14.1 13.1-14.5
Estero Bay	371	4.2	3.5	4.4 4.4-4.5	6.4 6.4-6.5	7.9 7.9-8.2	9.7 9.2-10.0	14.0 13.1-14.1

**Table 16: Coastal Transect Parameters (continued)**

Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Estero Bay	372	3.8	3.3	4.4 4.1-4.5	6.4 5.8-6.4	7.9 7.3-7.9	9.6 9.2-9.6	13.8 12.6-13.9
Estero Bay	373	3.3	3.0	4.3 4.3-4.4	6.2 6.1-6.5	7.7 7.6-8.4	9.3 9.2-10.3	13.5 13.3-14.3
Estero Bay	374	3.9	3.2	4.4 4.4-4.9	6.3 6.3-7.1	7.8 7.8-8.9	9.5 9.5-10.7	13.8 13.8-14.8
Estero Bay	375	3.8	3.3	4.4 4.4-4.7	6.4 6.4-7.0	8.0 8.0-9.0	9.8 9.7-10.7	14.2 14.1-14.8
Gulf of Mexico	376	7.5	8.7	4.7 4.3-4.8	6.9 6.3-7.0	8.8 7.8-8.8	10.5 9.5-10.6	14.5 13.8-14.5
Gulf of Mexico	377	8.9	8.6	4.6 4.3-4.6	6.7 6.3-6.8	8.6 7.8-8.7	10.4 9.4-10.5	14.4 13.7-14.5
Gulf of Mexico	378	6.5	8.7	4.7 4.4-4.7	6.9 6.4-6.9	8.9 8.0-8.9	10.7 9.7-10.7	14.8 14.0-14.8

**Table 16: Coastal Transect Parameters (continued)**

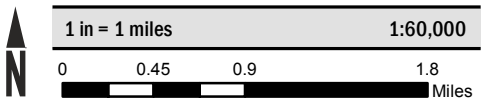
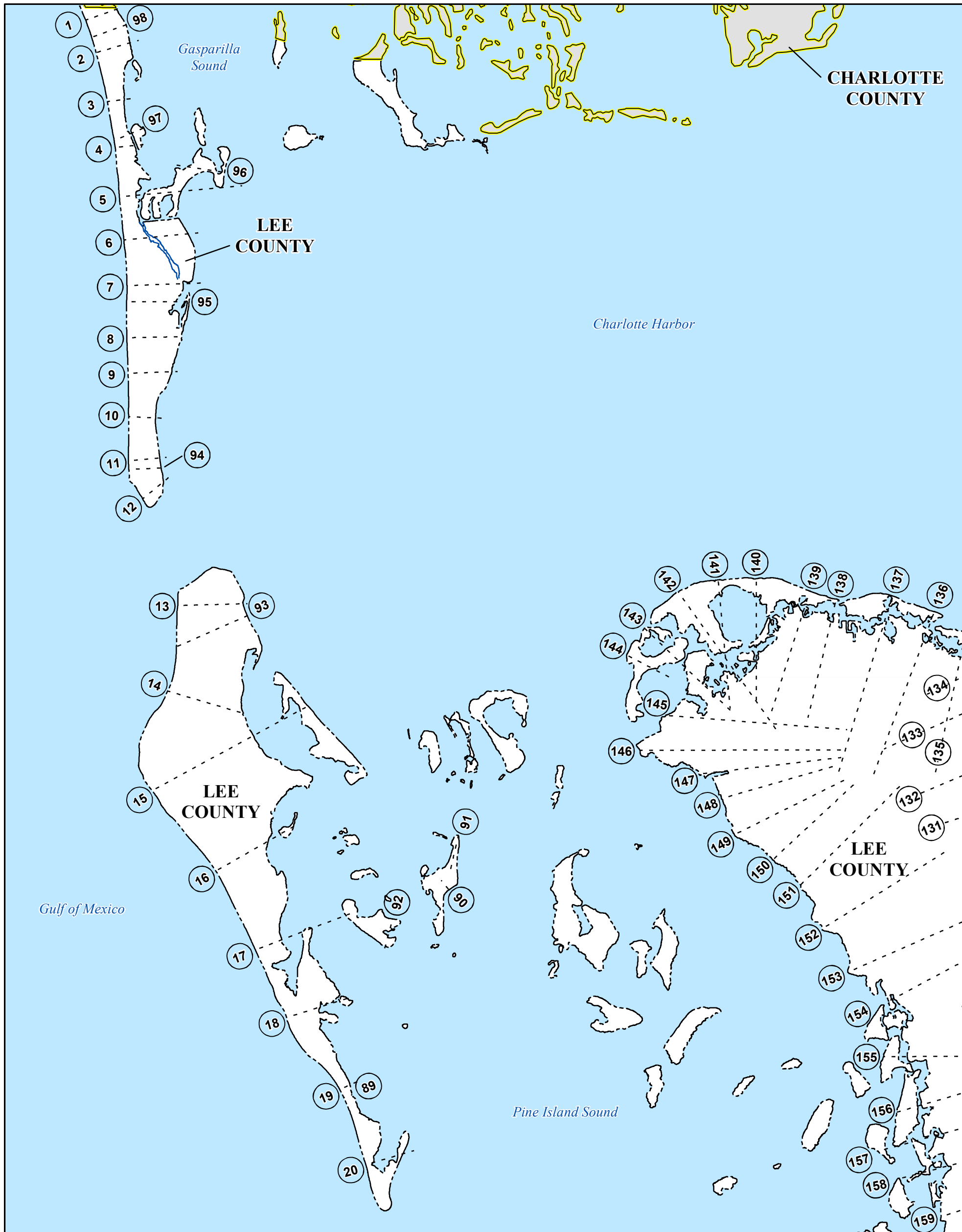
Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height H <sub>s</sub> (ft)	Peak Wave Period T <sub>p</sub> (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	379	7.7	9.0	4.7 4.4-4.7	7.0 6.4-7.0	8.9 7.9-8.9	10.7 9.6-10.7	14.8 14.0-14.8
Gulf of Mexico	380	8.9	8.3	4.6 4.3-4.6	6.8 6.1-6.8	8.6 7.6-8.7	10.4 9.2-10.6	14.4 13.5-14.6
Gulf of Mexico	381	8.8	8.4	4.6 4.3-4.6	6.8 6.1-6.8	8.6 7.6-8.6	10.4 9.2-10.4	14.4 13.4-14.4
Gulf of Mexico	382	9.1	8.5	4.4 4.3-4.4	6.5 6.1-6.5	8.5 7.6-8.5	10.4 9.2-10.4	14.3 13.3-14.4
Gulf of Mexico	383	8.9	8.9	4.4 4.2-4.4	6.4 5.9-6.4	8.4 7.3-8.4	10.3 9.1-10.3	14.3 12.5-14.3
Gulf of Mexico	384	9.0	9.2	4.5 4.2-4.5	6.6 6.0-6.6	8.5 7.4-8.5	10.3 9.0-10.3	14.3 12.7-14.3
Gulf of Mexico	385	9.2	9.1	4.5 4.2-4.4	6.7 6.0-6.3	8.5 7.5-7.8	10.3 9.1-9.4	14.3 12.7-13.8

**Table 16: Coastal Transect Parameters (continued)**

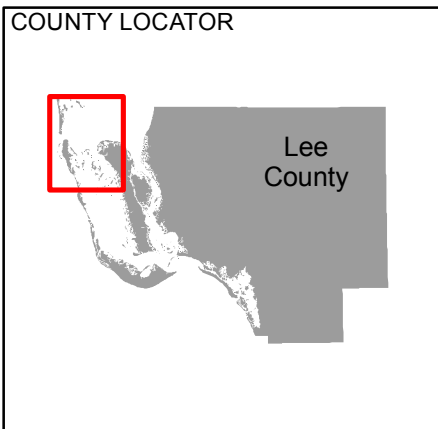
Flood Source	Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
		Significant Wave Height $H_s$ (ft)	Peak Wave Period $T_p$ (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Gulf of Mexico	386	9.3	9.1	4.5 4.2-4.3	6.6 6.0-6.2	8.4 7.7-7.7	10.2 9.2-9.4	14.2 12.6-13.8
Gulf of Mexico	387	9.2	9.2	4.4 4.2-4.2	6.6 6.0-6.0	8.3 7.7-7.7	10.1 9.3-9.4	14.1 12.5-13.9
Gulf of Mexico	388	9.3	9.3	4.4 4.1-4.4	6.6 6.0-6.6	8.3 7.4-8.3	10.0 9.2-10.0	14.0 12.5-13.3
Gulf of Mexico	389	9.1	9.4	4.5 4.1-4.5	6.6 5.9-6.6	8.3 7.3-8.3	10.1 9.0-10.1	14.2 12.5-12.5



Figure 9: Transect Location Map



Map Projection:  
State Plane Florida West (FIPS Zone 0902) Coordinate System,  
North American Datum 1983.



**NATIONAL FLOOD INSURANCE PROGRAM**

Figure 9. Transect Locator Map

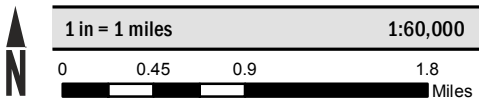
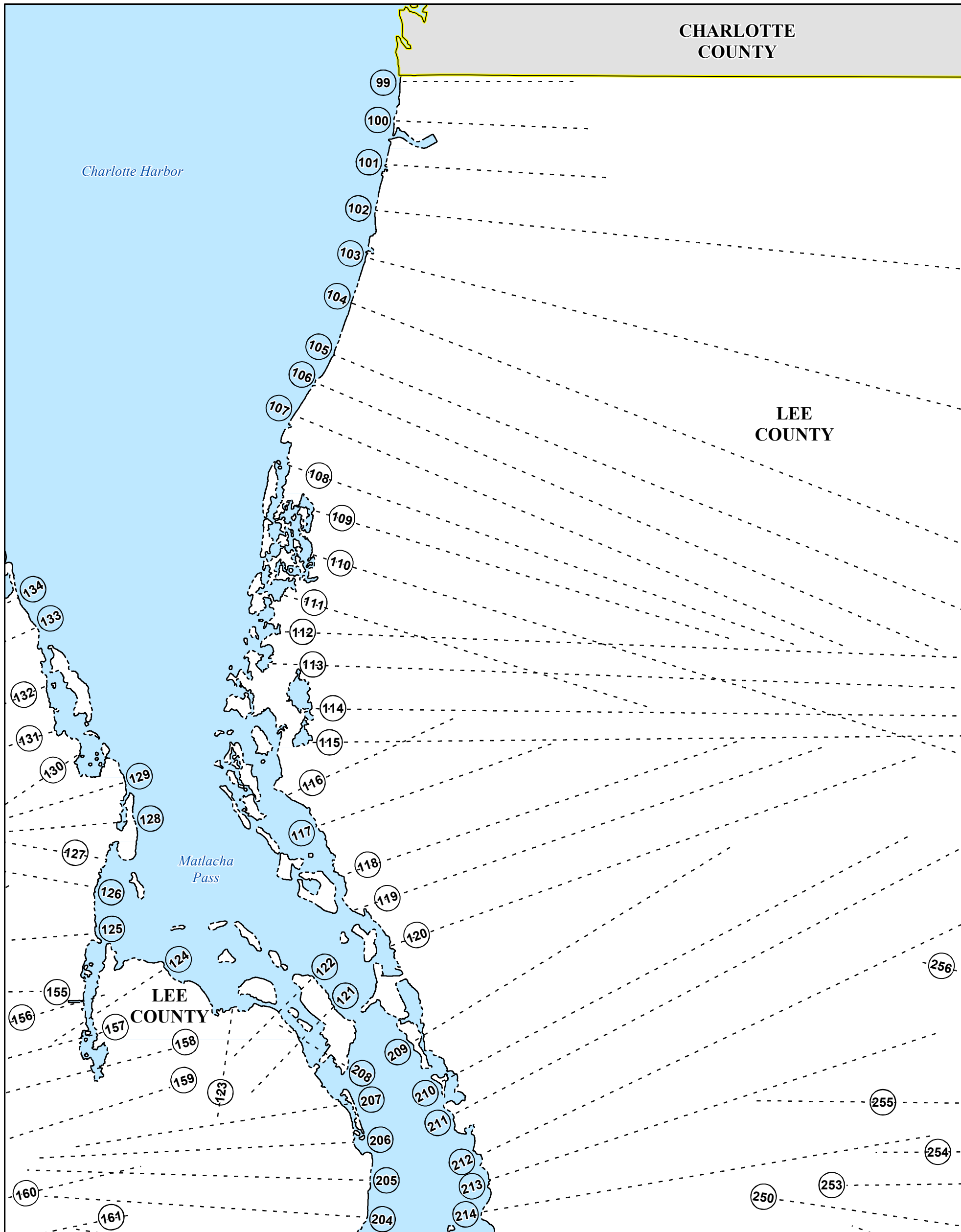
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0017, 0019, 0038, 0182, 0184, 0192, 0203, 0210, 0211, 0213,  
0215, 0220, 0351, 0352, 0360

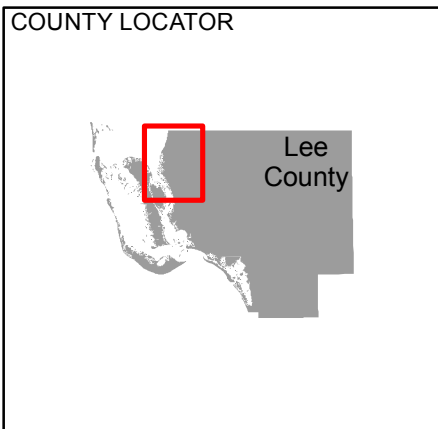


FEMA

Figure 9: Transect Location Map (continued)



Map Projection:  
State Plane Florida West (FIPS Zone 0902) Coordinate System,  
North American Datum 1983.



**NATIONAL FLOOD INSURANCE PROGRAM**

Figure 9. Transect Locator Map

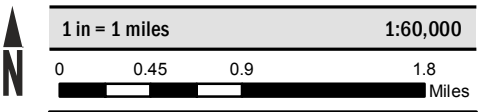
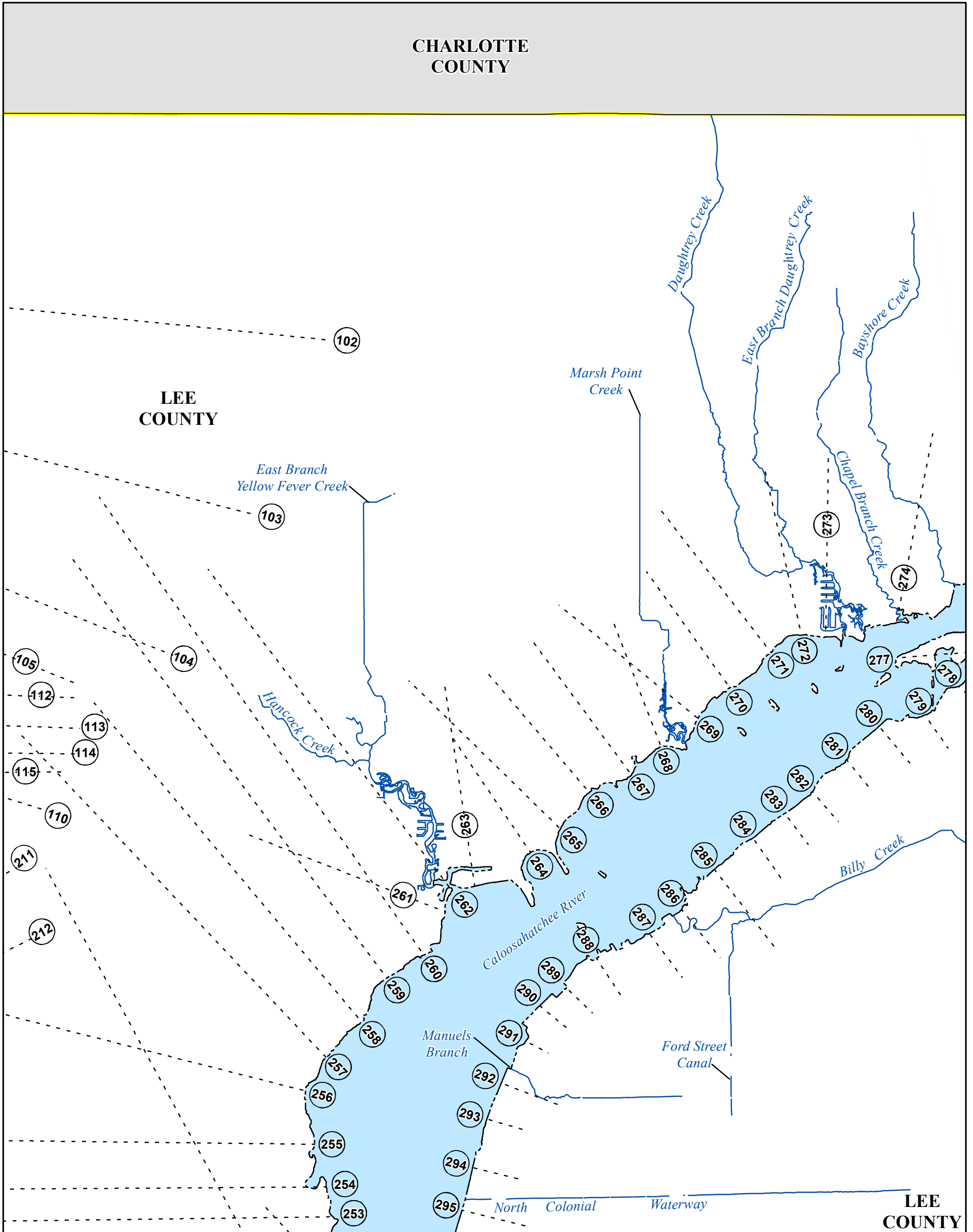
**PANELS WITH TRANSECTS**

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0243, 0244, 0251, 0253, 0261, 0263, 0380, 0381, 0382, 0401

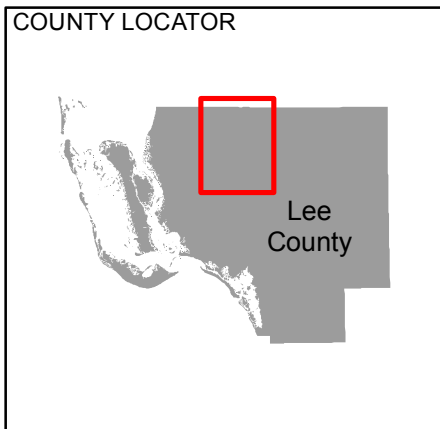


FEMA

Figure 9: Transect Location Map (continued)



Map Projection:  
State Plane Florida West (FIPS Zone 0902) Coordinate System,  
North American Datum 1983.



**NATIONAL FLOOD INSURANCE PROGRAM**

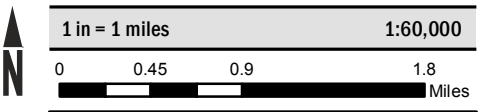
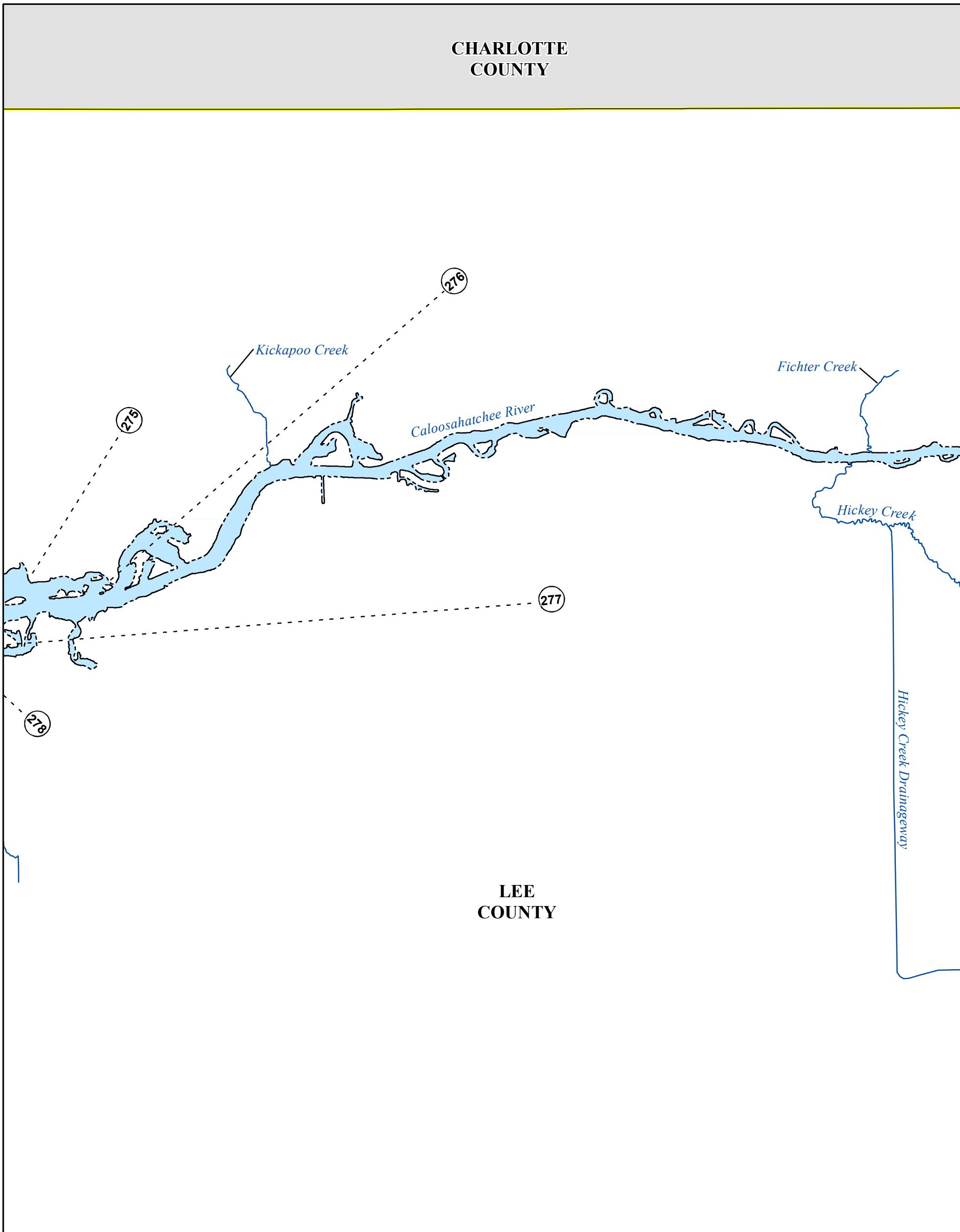
Figure 9. Transect Locator Map

**PANELS WITH TRANSECTS**

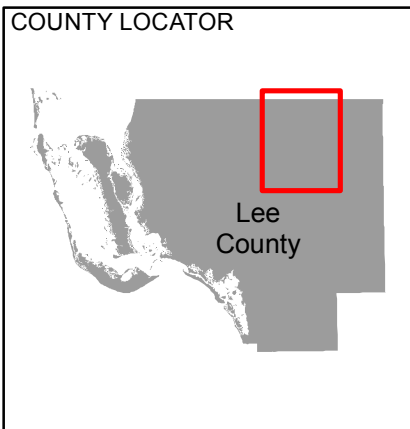
- 0252, 0254, 0258, 0259, 0260, 0262, 0264, 0266, 0267, 0268,  
0269, 0276, 0277, 0278, 0279, 0281, 0283, 0286, 0287, 0288,  
0289, 0291, 0295, 0402, 0406, 0407, 0426, 0427, 0431



Figure 9: Transect Location Map (continued)



Map Projection:  
State Plane Florida West (FIPS Zone 0902) Coordinate System,  
North American Datum 1983.



**NATIONAL FLOOD INSURANCE PROGRAM**

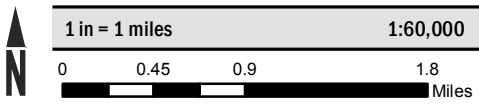
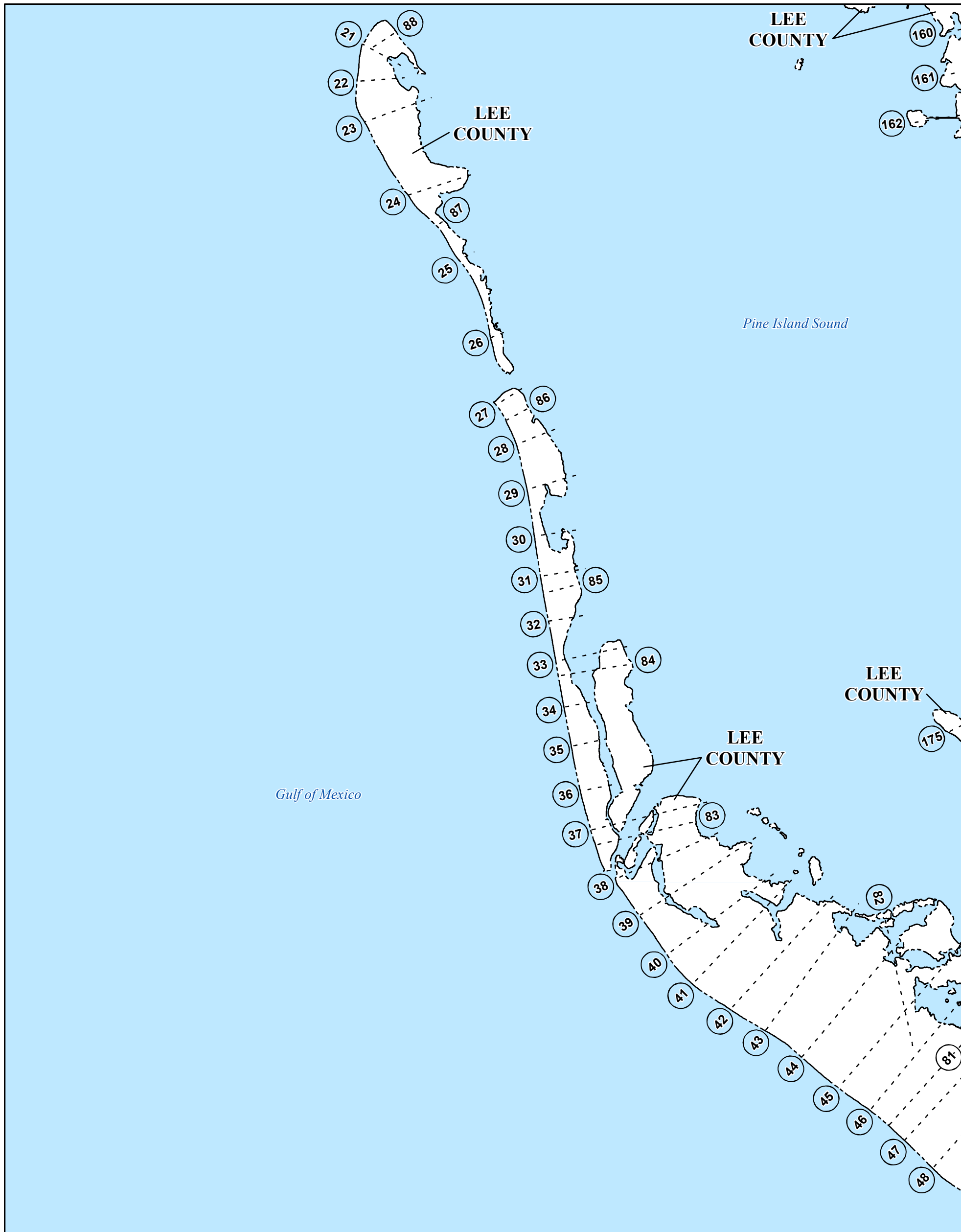
Figure 9. Transect Locator Map

PANELS WITH TRANSECTS  
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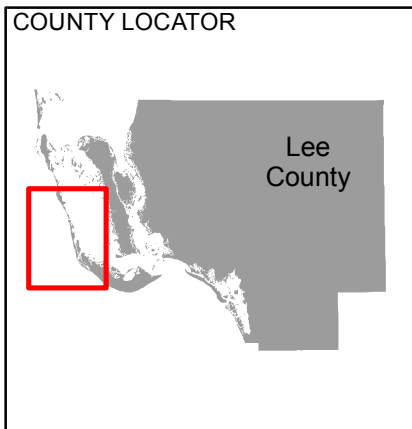


FEMA

Figure 9: Transect Location Map (continued)



Map Projection:  
State Plane Florida West (FIPS Zone 0902) Coordinate System,  
North American Datum 1983.



**NATIONAL FLOOD INSURANCE PROGRAM**  
Figure 9. Transect Locator Map

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**PANELS WITH TRANSECTS**  
0351, 0352, 0353, 0354, 0360, 0362, 0364, 0370, 0502, 0506,  
0507, 0508, 0509, 0517


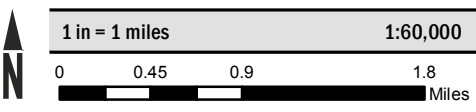
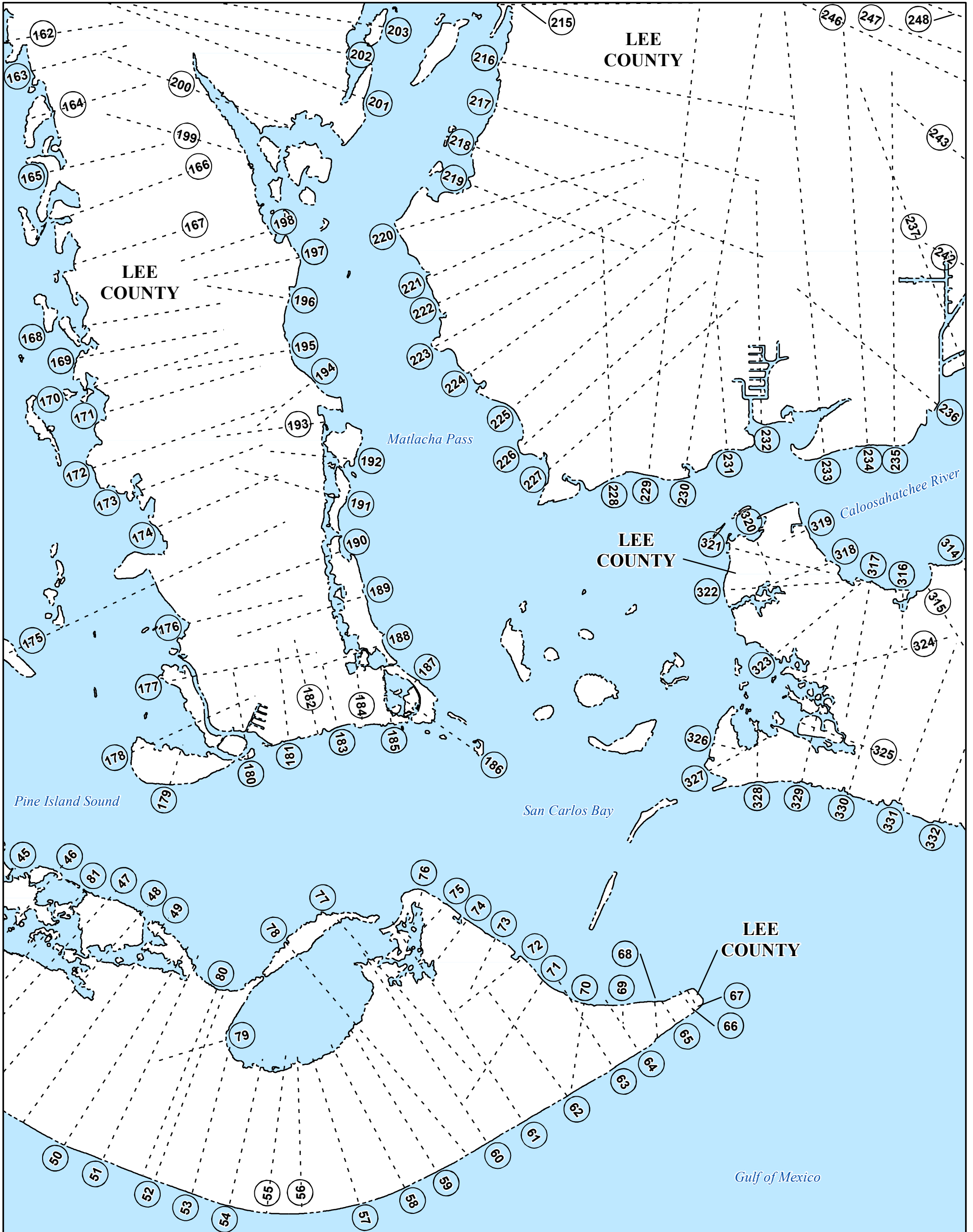
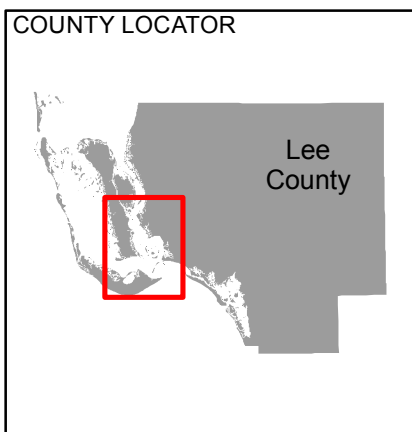


Figure 9: Transect Location Map (continued)



Map Projection:  
State Plane Florida West (FIPS Zone 0902) Coordinate System,  
North American Datum 1983.



**NATIONAL FLOOD INSURANCE PROGRAM**  
Figure 9. Transect Locator Map

**PANELS WITH TRANSECTS**  
0360, 0370, 0380, 0381, 0382, 0383, 0384, 0390, 0392, 0395,  
0401, 0403, 0411, 0507, 0509, 0530, 0531, 0532, 0533, 0534,  
0536, 0537, 0541, 0551


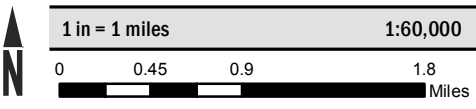
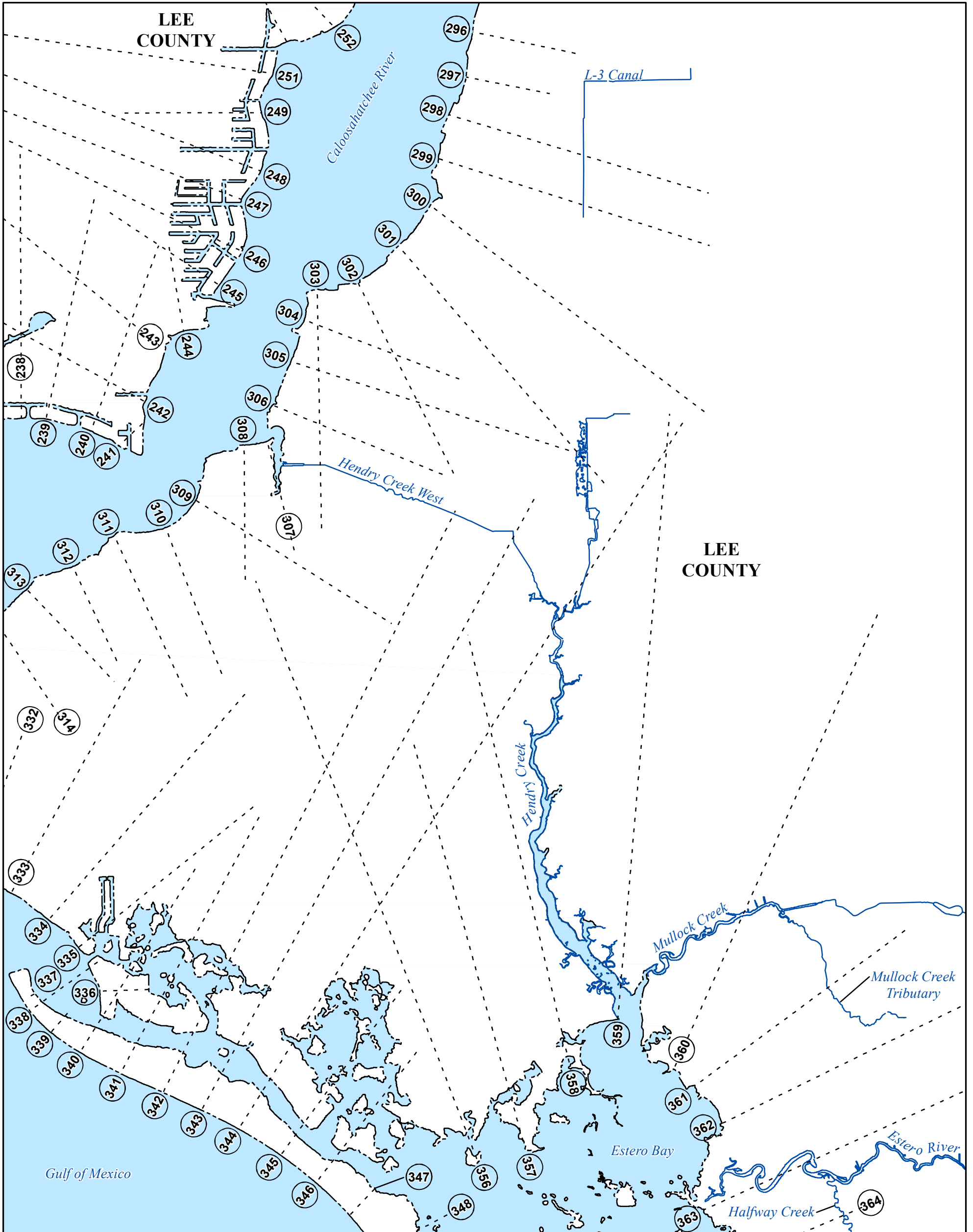
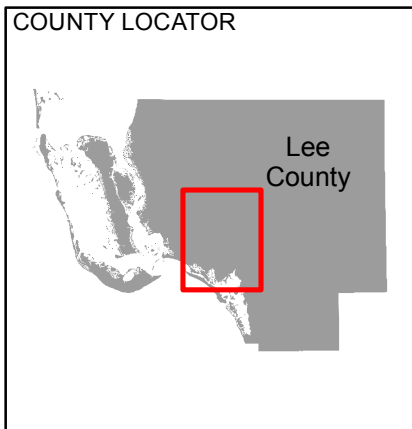


Figure 9: Transect Location Map (continued)



Map Projection:  
State Plane Florida West (FIPS Zone 0902) Coordinate System,  
North American Datum 1983.



**NATIONAL FLOOD INSURANCE PROGRAM**

Figure 9. Transect Locator Map

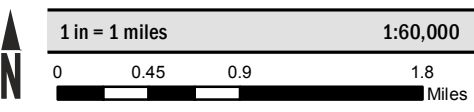
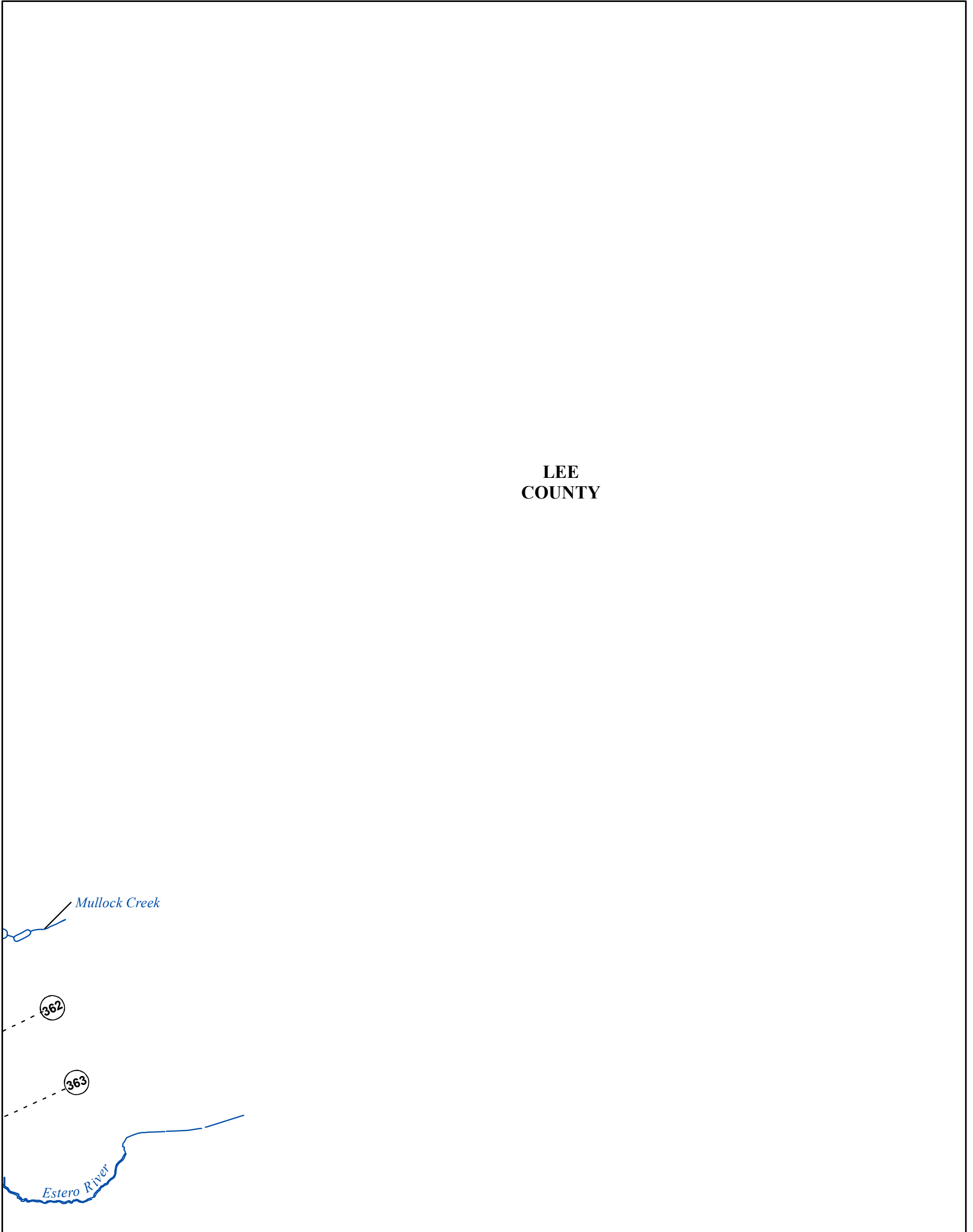
**PANELS WITH TRANSECTS**

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0413, 0414, 0416, 0417, 0418, 0419, 0428, 0436, 0438, 0439,  
0551, 0552, 0554, 0556, 0557, 0558, 0559, 0566, 0567, 0576,  
0577, 0578, 0579, 0586, 0587

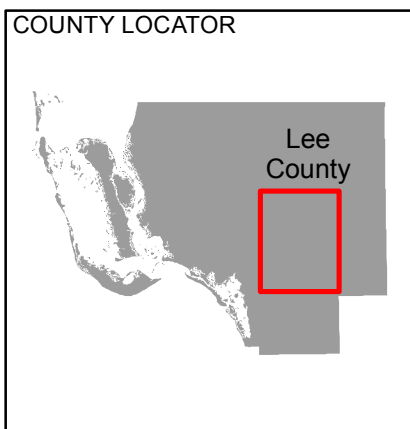


FEMA

Figure 9: Transect Location Map (continued)



Map Projection:  
State Plane Florida West (FIPS Zone 0902) Coordinate System,  
North American Datum 1983.



**NATIONAL FLOOD INSURANCE PROGRAM**

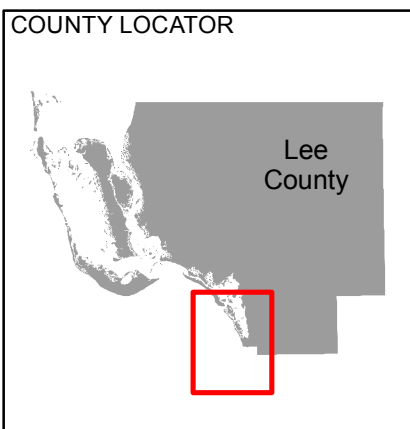
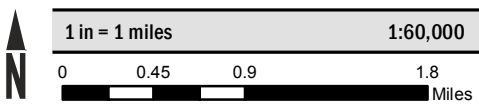
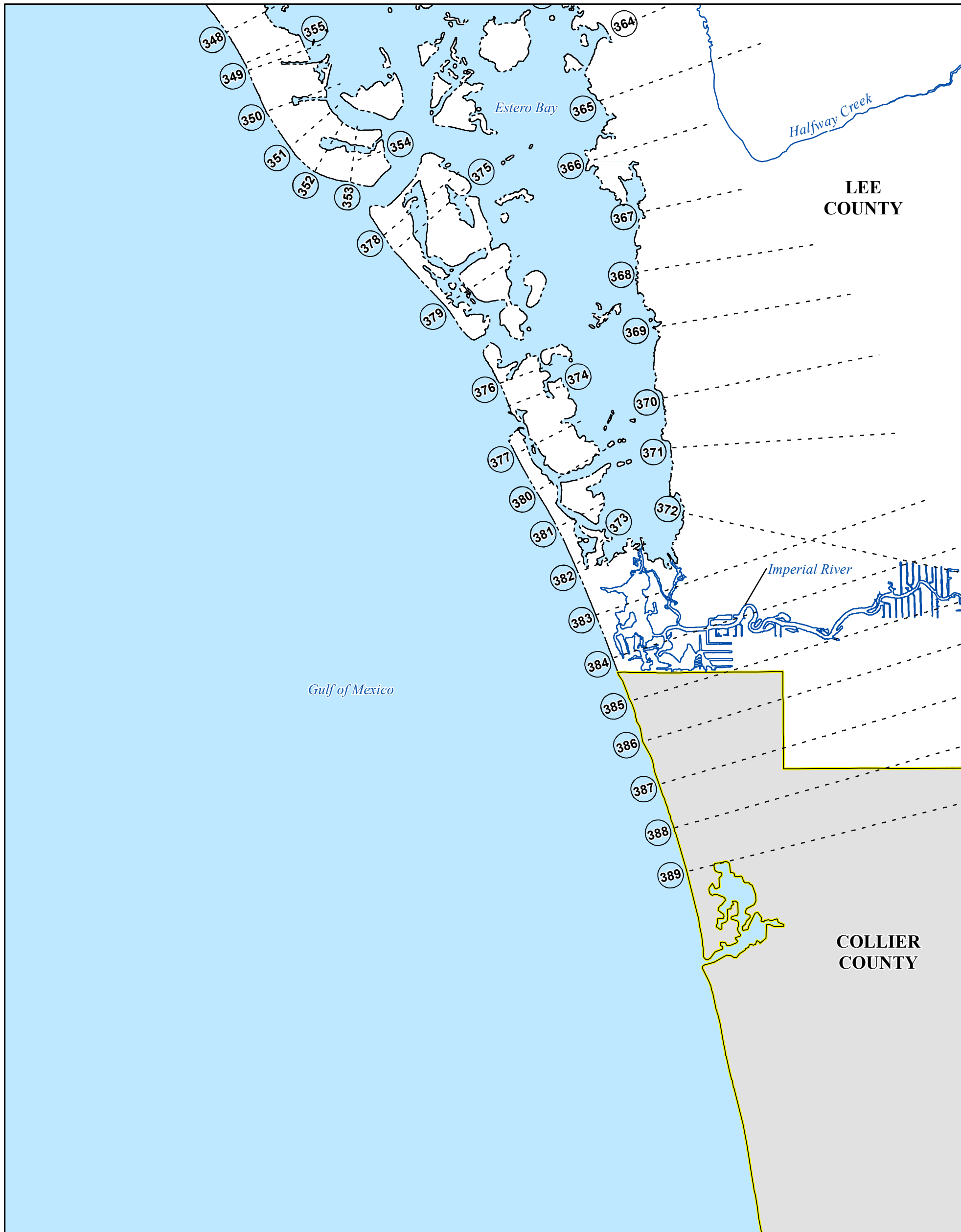
Figure 9. Transect Locator Map

PANELS WITH TRANSECTS  
0579, 0583






Figure 9: Transect Location Map (continued)



**NATIONAL FLOOD INSURANCE PROGRAM**  
 Figure 9. Transect Locator Map

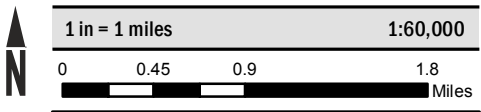
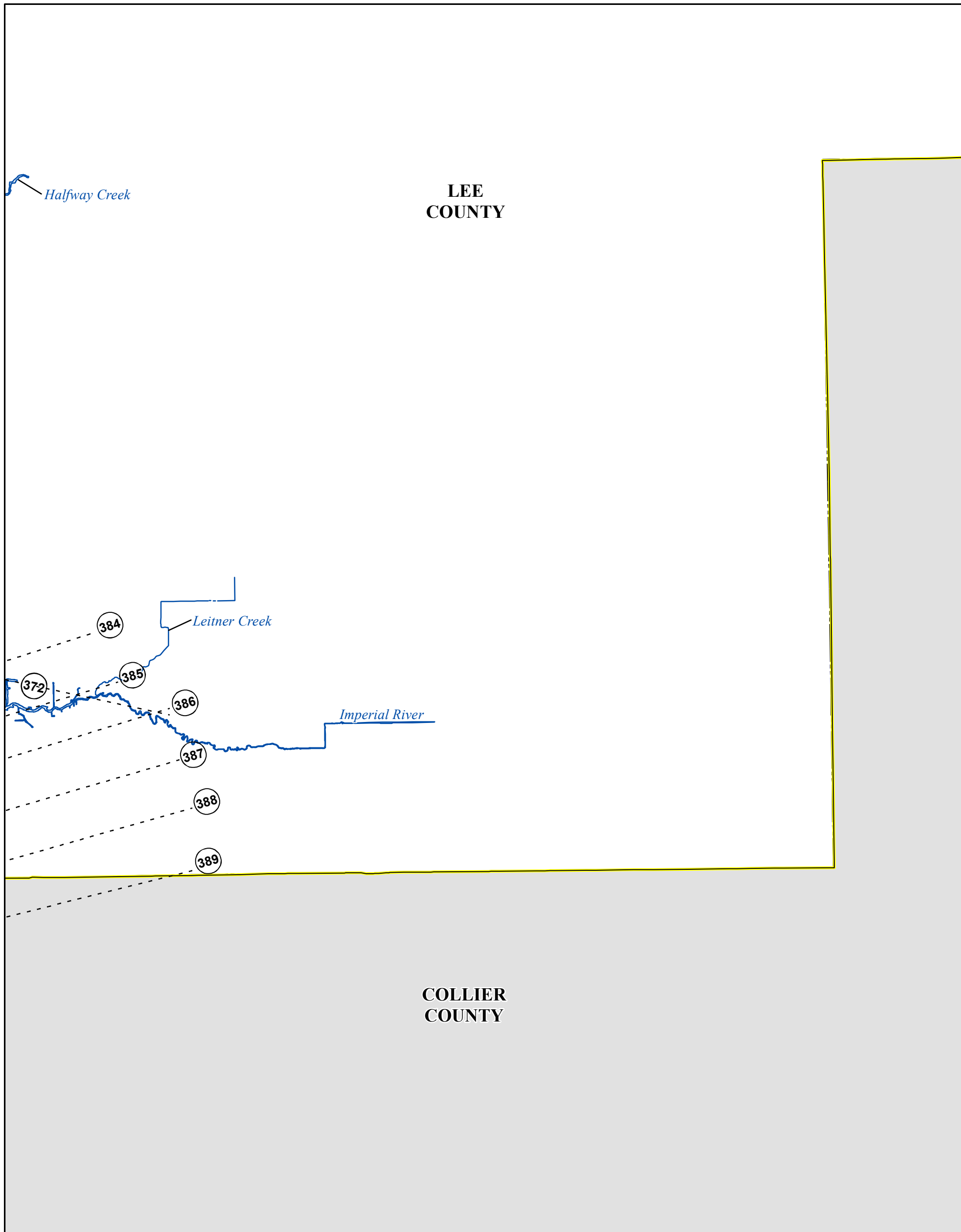
PANELS WITH TRANSECTS  
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 0653, 0654, 0656, 0658



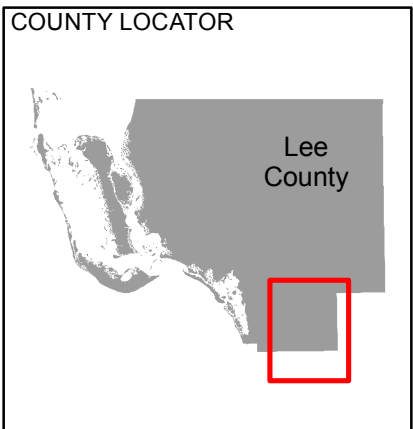
FEMA

Map Projection:  
 State Plane Florida West (FIPS Zone 0902) Coordinate System,  
 North American Datum 1983.

Figure 9: Transect Location Map (continued)




Map Projection:  
 State Plane Florida West (FIPS Zone 0902) Coordinate System,  
 North American Datum 1983.



**NATIONAL FLOOD INSURANCE PROGRAM**  
 Figure 9. Transect Locator Map

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PANELS WITH TRANSECTS  
 0656, 0657, 0658, 0659



FEMA

#### 5.4 Alluvial Fan Analyses

This section is not applicable to this Flood Risk Project.

**Table 17: Summary of Alluvial Fan Analyses**  
**[Not Applicable to this Flood Risk Project]**

**Table 18: Results of Alluvial Fan Analyses**  
**[Not Applicable to this Flood Risk Project]**

### SECTION 6.0 – MAPPING METHODS

#### 6.1 Vertical and Horizontal Control

All FIS Reports 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 used for newly created or revised FIS Reports and FIRMs was the National Geodetic Vertical Datum of 1929 (NGVD29). With the completion of the North American Vertical Datum of 1988 (NAVD88), many FIS Reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS Report and on the FIRMs are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between NGVD29 and NAVD88 or other datum conversion, visit the National Geodetic Survey website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov).

Temporary vertical monuments are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, they may be found in the archived project documentation associated with the FIS Report and the FIRMs for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks in the area, please visit the NGS website at [www.ngs.noaa.gov](http://www.ngs.noaa.gov).

A countywide conversion factor of -1.18 feet was calculated for the previous Lee County FIS (FEMA 2018).

**Table 19: Countywide Vertical Datum Conversion**  
**[Not Applicable to this Flood Risk Project]**

**Table 20: Stream-Based Vertical Datum Conversion  
[Not Applicable to this Flood Risk Project]**

**6.2 Base Map**

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA’s FIRM Database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features. For example, the information contained in the Floodway Data table and Flood Profiles can be linked to the cross sections that are shown on the FIRMs. Additional information about the FIRM Database and its contents can be found in FEMA’s *Guidelines and Standards for Flood Risk Analysis and Mapping*, [www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping](http://www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping).

Base map information shown on the FIRM was derived from the sources described in Table 21.

**Table 21: Base Map Sources**

Data Type	Data Provider	Data Date	Data Scale	Data Description
Digital Orthophoto	Florida Department of Transportation, Survey and Mapping Office	2017	0.5 foot GSD	Charlotte County orthoimagery
Digital Orthophoto	Florida Department of Transportation, Survey and Mapping Office	2018	0.5 foot GSD	Collier County orthoimagery
Digital Orthophoto	Lee County	2018	0.33 foot GSD	Color orthoimagery for Lee County
Political boundaries	Lee County	2018	*	Municipal and county boundaries
Public Land Survey System (PLSS)	Lee County	2018	*	Public Land Survey System
Surface Water Features	Lee County	2008	1:1,200	Water lines in Lee County
Surface Water Features	Lee County	2018	*	Water bodies in Lee County
Transportation Features	Lee County	2018	*	Roads in Lee County

**Table 21: Base Map Sources (continued)**

Data Type	Data Provider	Data Date	Data Scale	Data Description
Transportation Features	U.S. Department of Transportation	2017	1: 24,000	Railroads in Lee County

\*Data not available

### **6.3 Floodplain and Floodway Delineation**

The FIRM shows tints, screens, and symbols to indicate floodplains and floodways as well as the locations of selected cross sections used in the hydraulic analyses and floodway computations.

For riverine flooding sources, the mapped floodplain boundaries shown on the FIRM have been delineated using the flood elevations determined at each cross section; between cross sections, the boundaries were interpolated using the topographic elevation data described in Table 22. For each coastal flooding source studied as part of this FIS Report, the mapped floodplain boundaries on the FIRM have been delineated using the flood and wave elevations determined at each transect; between transects, boundaries were delineated using land use and land cover data, the topographic elevation data described in Table 22, and knowledge of coastal flood processes. In ponding areas, flood elevations were determined at each junction of the model; between junctions, boundaries were interpolated using the topographic elevation data described in Table 22.

In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance 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.

The floodway widths presented in this FIS Report and on the FIRM were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. Table 2 indicates the flooding sources for which floodways have been determined. The results of the floodway computations for those flooding sources have been tabulated for selected cross sections and are shown in Table 23, "Floodway Data."

**Table 22: Summary of Topographic Elevation Data used in Mapping**

Community	Flooding Source	Source for Topographic Elevation Data			
		Description	Vertical Accuracy	Horizontal Accuracy	Citation
Bonita Springs, City of; Fort Myers Beach, Town of; Lee County, Unincorporated Areas; Sanibel, City of	Gulf of Mexico	Light Detection and Ranging data (LiDAR)	9.5cm RMSE <sub>z</sub>	1 meter at 95% confidence level	USACE 2015
Bonita Springs, City of; Cape Coral, City of; Estero, Village of; Fort Myers, City of; Lee County, Unincorporated Areas; Sanibel, City of	All within HUCs 03090204, 03090205, and 03100103	Light Detection and Ranging data (LiDAR)	0.43 ft RMSE <sub>z</sub>	3.8 foot at 95% confidence level	FDEM 2007

BFEs shown at cross sections on the FIRM represent the 1% annual chance water surface elevations shown on the Flood Profiles and in the Floodway Data tables in the FIS Report. Rounded whole-foot elevations may be shown on the FIRM in coastal areas, areas of ponding, and other areas with static base flood elevations.