

COASTAL MANAGEMENT SUPPLEMENTAL [CM]

area is defined by the Florida statutes as “the area below the elevation of the Category 1 storm surge line as established by a Sea, Lake, and Overland Surges from Hurricanes (SLOSH) computerized storm surge model.”³ The CHHA is the area with the highest risk from a combination of high-velocity wind and coastal storm surge flooding.

The SLOSH model is a computer model that predicts tidal surge heights and flooding that result from hypothetical hurricanes that vary in pressure, size, forward speed, direction, and winds. The SLOSH model was last updated in ~~2016~~ 2020. Since the previous SLOSH update in ~~2008~~ 2016, the CHHA has grown by nearly ~~21,000~~ 7,700 acres in Pinellas County. The CHHA now covers about ~~25~~ 30 percent (%) of the land area in the County.

The CHHA increased because the modeling technology improved. The 2016 model had more refined and accurate input data and ran nearly eight (8) times for as many scenarios as the 2008 model. As modeling technology continues to improve, even more areas may be included in the CHHA; particularly because the SLOSH model is based on current conditions and does not attempt to factor in the future effects of climate change.

Development in the CHHA is limited by both Florida Statutes, Forward Pinellas’s Countywide Plan, and the Pinellas County Comprehensive Plan. These areas are not only found along major coastlines, but also further inland near lakes, rivers, and creeks where storm surge can be pushed during a hurricane. To account for future conditions, the Pinellas County Comprehensive Plan expands land development restrictions beyond the CHHA to the Coastal Storm Area (CSA) (See Figure 1), which includes the CHHA and:

- All land connected to the mainland of Pinellas County by bridges or causeways;
- Isolated areas projected to be inundated by storm surge from a Category Two hurricane or above by the SLOSH, the most recent surge models that are surrounded by the CHHA, or by CHHA and a body of water; and
- All land located in “V” “VE” or “V1-30” velocity zones ~~and Coastal A Zones~~ designated by the federal emergency management agency (FEMA) flood insurance rate maps.

The location of new or expanded hospitals, nursing homes, and assisted living facilities, or site improvements that would increase the bed capacity of these facilities are prohibited within the CSA. The Future Land Use Element and Land Development Code restrict all (re)development in the CSA and directs residential population concentration out of the CSA.

County funded public infrastructure expenditures that could subsidize (re)development in the CSA are restricted to:

- Maintenance, repair, or replacement of existing facilities (including bridges and causeways to barrier islands);
- Hardening existing infrastructure to avoid, mitigate, or reduce the potential for future damages from hazards, such as storm surge and sea level rise;
- Restoration or enhancement of natural resources or public access;
- Address an existing deficiency identified in this plan;
- New or retrofit of existing stormwater management facilities for water quality enhancement of stormwater runoff; or
- Fund a public facility of overriding public interest to ensure public health, safety, and welfare.

Most of the CHHA in Pinellas County is already developed with resort, housing, and commercial facilities. Many structures built prior to current federal, state, and local regulations designed to reduce risk from hurricane hazards still exist. These structures are more susceptible to damage or destruction by major storms and other tropical weather as well as king tides, which have increased in frequency and inundation area in recent years as of 2021.

3. FS 163.3178(2)6.(h)

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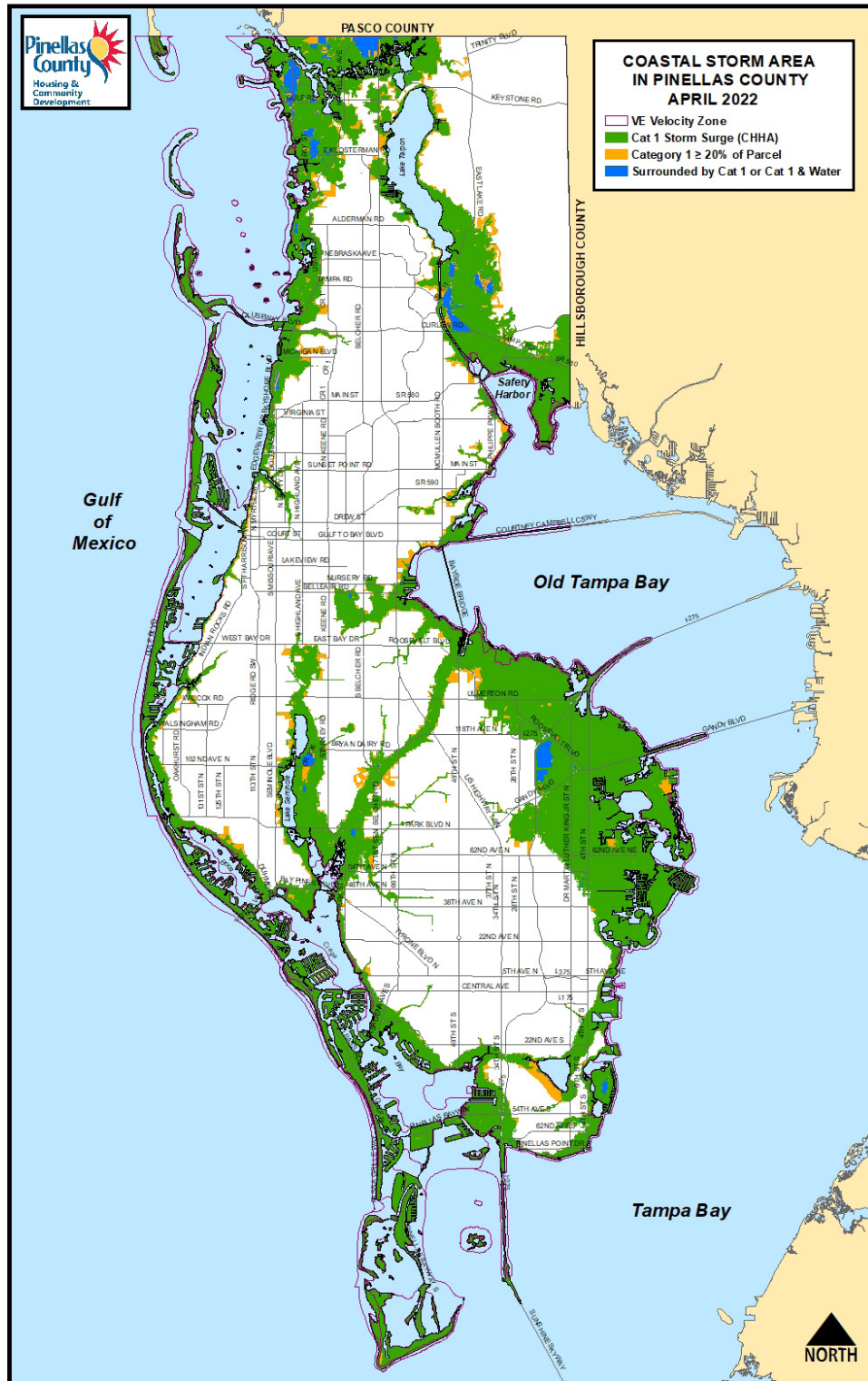


Figure 1: Coastal Storm Area and Coastal High Hazard Area

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The vulnerability analysis facility-level adaptation assessments. The scenario-based approach will include a detailed benefit-cost analysis of each alternative under each climate scenario to develop recommendations for adaptation options.

The findings of the Pinellas County Vulnerability Assessment will be incorporated by reference into the Comprehensive Plan once adopted.

CHAPTER 3 NATURAL DISASTER PLANNING

The inventory and analysis of evacuation and shelter populations is based upon the Tampa Bay Region Evacuation Study 2017, prepared by the Tampa Bay Regional Planning Council (TBRPC). This study used the SLOSH numerical storm surge prediction model to analyze the expected hazards from potential hurricanes affecting the Tampa Bay region. The SLOSH model considered hypothetical hurricanes covering the entire range of the Saffir/Simpson Damage Potential Scale, from Category 1 (least intense) to Category 5 (most intense). Using the results of the SLOSH model, five levels of vulnerability to storm surge were identified for different intensities and types of approaching hurricanes. The results of this storm surge hazard analysis allow for the storm tide limits to be graphically identified based on the maximum storm surge for Categories hurricanes rated categories one through five (1-5). These five vulnerability levels are used to identify Pinellas County's five evacuation levels (A through E) in which each evacuation level includes a successively larger land area that must be totally evacuated from overland storm surge as well as all mobile home residents throughout the County (Table 2 and Figure 2). For hurricanes, these evacuation levels correspond to a hurricane's intensity on the Saffir/Simpson Scale.

TABLE 2: VULNERABLE POPULATION IN PINELLAS COUNTY⁷

Type of Home	Evacuation Zone A	Evacuation Zone B	Evacuation Zone C	Evacuation Zone D	Evacuation Zone E
Site-Built Homes	191,509	60,186	74,910	96,645	37,877
Mobile/ Manufactured Homes	14,611	4,172	3,984	6,542	1,696
Total	206,120	64,359	78,894	103,168	39,573

TABLE 2: VULNERABLE POPULATION IN PINELLAS COUNTY⁷

	Mobile Homes	Evacuation Zone A	Evacuation Zone B	Evacuation Zone C	Evacuation Zone D	Evacuation Zone E	Total County Population
Total	76,383	195,659	79,948	90,269	123,635	56,018	959,103

Number of Persons Requiring Evacuation:

The number of persons requiring evacuation within Pinellas County (Table 3) is based upon scenarios and assumptions provided by the Tampa Bay Regional Council (TBRPC) and population figures, and includes the population-at-risk, estimated seasonal population and an additional shadow evacuation; i.e., the number of persons not-at-risk that would still evacuate.

⁷ Florida Statewide Regional Evacuation Program, Florida Division of Emergency Management, Tampa Bay Regional Planning Council – Tampa Bay Region, 2017-2020

Pinellas County Evacuation Zones and Shelters

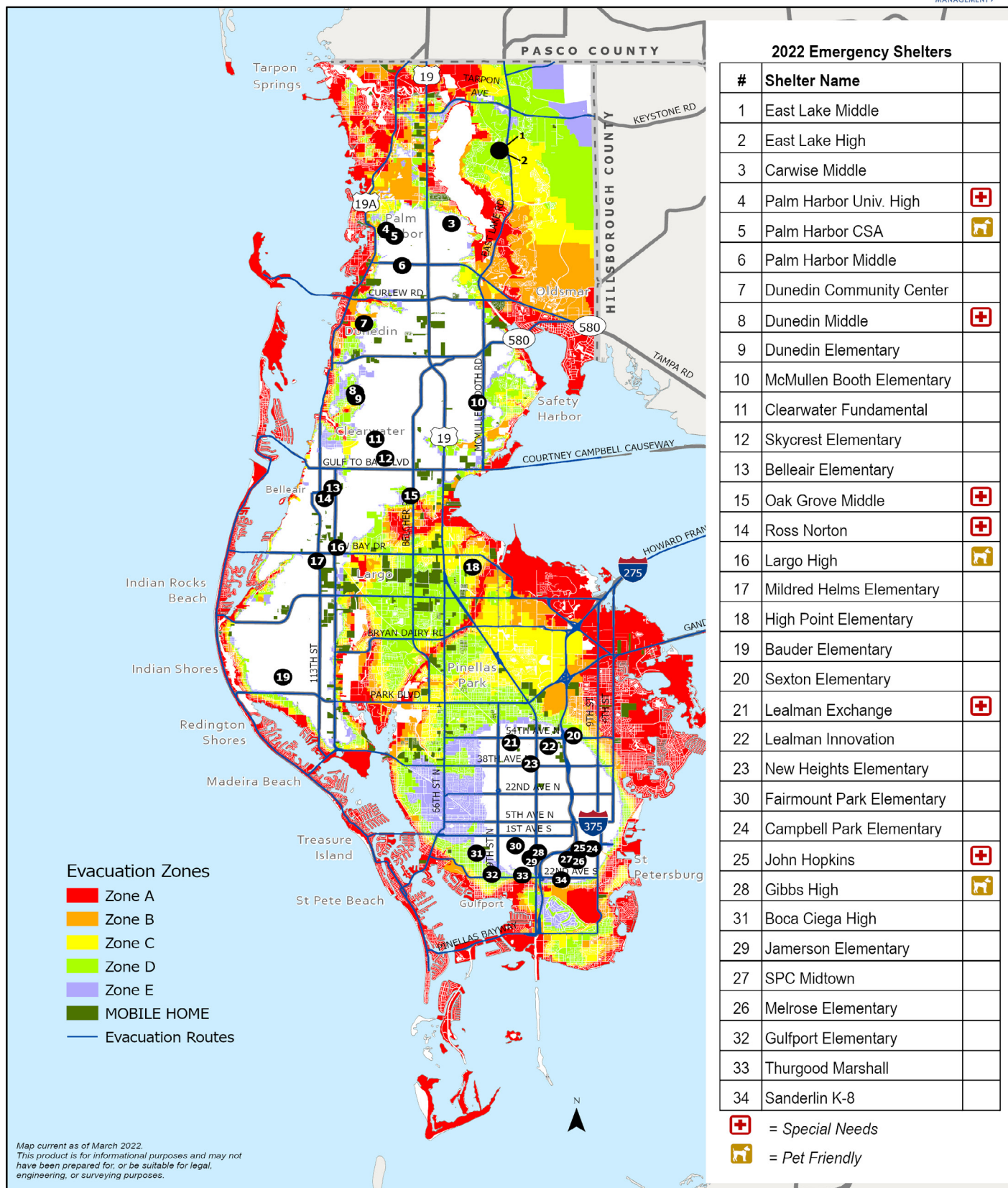


Figure 2: Evacuation Zones and Shelter Locations

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TABLE 3: EVACUATING POPULATION ESTIMATE⁸

Type of Home	Evacuation Level A	Evacuation Level B	Evacuation Level C	Evacuation Level D	Evacuation Level E
Site Built Homes	<u>195,659</u> 178,528	<u>275,607</u> 222,133	<u>365,876</u> 329,665	<u>489,511</u> 423,363	<u>545,529</u> 528,227
Mobile/ Manufactured Homes	<u>76,383</u> 36,906	<u>76,383</u> 39,978	<u>76,383</u> 43,886	<u>76,383</u> 47,531	<u>76,383</u> 49,179
Tourists	18,033	20,728	21,616	22,116	22,607
Total	<u>290,075</u> 233,467	<u>372,718</u> 281,839	<u>463,875</u> 395,167	<u>588,010</u> 493,010	<u>644,519</u> 600,013

8 Florida Statewide Regional Evacuation Program, Florida Division of Emergency Management, Tampa Bay Regional Planning Council – Tampa Bay Region, ~~2017~~2020

From a transportation management standpoint, the number of vehicles evacuating is more important than the population evacuating (Table 4).

TABLE 4: VEHICLES EVACUATING⁹

Type of Home	Evacuation Level A	Evacuation Level B	Evacuation Level C	Evacuation Level D	Evacuation Level E
Site Built Homes	103,923	128,784	186,287	236,923	292,977
Mobile/ Manufactured Homes	33,641	35,511	39,975	43,314	44,796
Tourists	6,840	8,100	8,831	9,090	9,344
Total	144,404	172,395	235,093	289,327	347,117

PUBLIC SHELTERING

The estimate of Pinellas County public shelter demand is based on surveys and behavioral assumptions. Public shelter demand estimates range from 15,314 people in a Category 1 evacuation to 58,433 people in a Category 5 evacuation.¹⁰

When an evacuation order is given, most people in the affected Hurricane Evacuation Zone will begin to seek alternative shelter from the storm. The decision to evacuate to a less vulnerable location within the County or to leave the region entirely is based upon many factors. Evacuees not using public shelters (Figure 2) will seek shelter in a variety of ways, e.g., leaving the region, checking into a hotel or motel, or staying with friends or relatives in less vulnerable areas of the County.

Pinellas County promotes the “Host Home” concept as the preferred kind of evacuation. The Host Home program solicits churches, businesses, and organizations to predetermine the evacuation status of all members, encourage members living in non-evacuation areas to host those living in evacuation areas or mobile homes, and in cases where the entire membership lives in evacuation areas or mobile homes, encourages a church/facility in a non-evacuation area to serve as the “Host” to the other organization’s membership. Additionally, public education and information are used to discourage people who do not need to evacuate from using public shelters. Other alternatives to a traditional public sheltering include retrofitting existing structures, utilizing refuges of last resort as appropriate, and the evacuating of guests from transient accommodations to inland “sister” transient accommodations.

TABLE 5: PINELLAS COUNTY CLEARANCE TIMES (IN HOURS)¹¹					
Clearance Time	Evacuation Level A	Evacuation Level B	Evacuation Level C	Evacuation Level D	Evacuation Level E
Clearance Time to Shelter	10.5	13.5	19	25	35
In-County Clearance Time	17	20	28	37	44
Out-of-County Clearance Time	17	20	28	37	44
Regional Clearance Time	18	22	32	43	52

TABLE 5: PINELLAS COUNTY CLEARANCE TIMES (IN HOURS)¹¹					
Clearance Time	Evacuation Level A	Evacuation Level B	Evacuation Level C	Evacuation Level D	Evacuation Level E
In-County - to Shelter Clearance Time	14	17	23	32.5	41.5
Out-of-County Clearance Time	14	17	23	32.5	41.5
Regional Clearance Time	17	20	26	45	50

Measures taken to maintain or reduce evacuation clearance times include:

- Capital improvements on regional evacuation routes have been completed on Tampa Road, West Bay Drive, Central Avenue and Park Boulevard
- Ordinance 90-87 requires recreational vehicle parks and transient accommodations to develop hurricane evacuation plans
- Through the Forward Pinellas Transportation Improvement Program, the State is encouraged to consider prioritizing road improvements on regional evacuation routes
- Use of the Countywide Advanced Transportation Management System/Intelligent Transportation System (ATMS/ITS) to expedite evacuation
- Development and publication of the annual, multilingual hurricane guide that is distributed countywide at the beginning of hurricane season
- The County's Emergency Management staff and the State Division of Emergency Management work together on evacuation and disaster preparedness plans, and Pinellas County participates in the State's annual drill
- Pinellas County conducts an annual hurricane drill to assess its ability to mobilize and respond during a hurricane. The drill is evaluated by the County, and Pinellas County Emergency Management makes changes to its Comprehensive Emergency Management Plan based upon the observations made during the drill
- Pinellas County promotes the Host Home Program and supports the Pinellas County School Board in emergency sheltering operations
- Land use policy directs residential population out of the CSA, and increases to existing densities in the CSA are prohibited