

COASTAL MANAGEMENT ELEMENT



ORD. 11-O-06 SEPTEMBER 12, 2011
ORD. 21-O-06 OCTOBER 25, 2021

**Coastal Management Element
Data and Analysis
Table of Contents**

<u>Section</u>	<u>Page</u>
Introduction	3
Definition of Terms	4
Coastal Resources and Land Use Inventory	5
Estuarine Shoreline	5
Land Use Inventory	6
Future Land Use	7
Need for Water-dependent and Water-related Uses	8
Shoreline Land Use Conflicts	8
Economic Base	8
Future Land Use Impacts	9
Estuarine Pollution	9
Current Conditions	9
Point Sources	10
Non-Point Sources	10
Future Land Use Impacts	10
State, Regional, and Local Regulatory Programs	11
Archaeological and Historic Resources of the Coastal Area	11
Inventory	11
Impact of Present and Future Land Use Trends	11
Resource Protection	12
Coastal Hazards	12
Hurricane Vulnerability	12
Hurricane Evacuation	13
Evacuating Population	13
Roadways and Evacuation Routes	14
Shelter Demand and Inventory	15
Clearance Times & Evacuation LOS	17
In-Out-of-County Hurricane Evacuation LOS	18
Mitigation of Property Damage	19
Post-Disaster Redevelopment	20
Coastal High Hazard Area (CHHA)	20
Coastal Construction Control Line (CCCL)	21
Shoreline Use	21
Public Access	21
Water-Dependent and Water-Related Uses	22
Public Services and Facilities	22
Transportation	23

Tables	
CM-1 Existing Land Use, City Total 2020	7
CM-2 Future Land Use in the City	9
CM-3 Citrus County Vulnerable Population from Hurricanes by Evacuation Level, 2017-2020 & Projected 2030	13
CM-4 Citrus County Public Shelter Capacity and Demand for Base and Operational Scenarios	15
CM-5 Citrus County Shelter Inventory and Vulnerability Analysis	16
CM-6 2017 Citrus County Evacuation Clearance Times (in hours)	19
CM-7 Evacuation Vehicles Leaving Citrus County by Evacuation Route	23
Appendix	
CM-1 Existing Land Use Map	24
CM-2 Florida Land Use/Land Cover Classification System (FLUCCS) Map	25
CM-3 Crystal River Area Flood Insurance Rate Map (FIRM)	26
CM-4 Evacuation Map	27
CM-5 Coastal High Hazard Area/Public Services-Facilities Map	28
CM-6 Route Segments Subject to Freshwater Flooding Map	29
CM-7 Public Access Map	30

Coastal Management Element Data and Analysis

Introduction

Given its location on the estuarine waters of the Crystal River and Kings Bay, the City of Crystal River possesses many unique natural attributes. In addition to providing natural amenities, the coastal areas of the City provide opportunities for recreation and business alike. However, in proportion to the benefits offered by a coastal location, there are also constraints, vulnerabilities, and questions about growth that must be adequately considered through the comprehensive plan development process. By planning for its coast and shoreline, the City acts to ensure the preservation of scenic beauty, public access to the shorelines and protection of the coastal habitats, which harbor various upland and aquatic wildlife. This action is essential for the support of the City's tourist industry and quality of life.

The Comprehensive Plan contains a Coastal Management Element, whose sole purpose is to respond to these issues. Consequently, the Coastal Management Element performs a number of important tasks, and it is a required part of the local government comprehensive plan for all coastal communities. To summarize, the Coastal Management element is intended to direct policy toward physical development in coastal planning areas most vulnerable to destruction because of high-tide events, storm surge, flash floods and stormwater runoff. The Coastal Management element is a response to the innate risks of developing in coastal locations. As appropriate, the Coastal Management element has the effect of restricting development activities when they would damage or destroy coastal resources, or place development in areas that are subject to destruction by natural hazards. The underlying purpose is to protect community health, welfare and safety as well as to plan for public expenditure of funds that recognize the problems and limitations of developing in coastal locations.

While the importance of the Coastal Management Element may be self-evident, paragraph 1 in Section 163.3178 Florida Statutes expresses this point when it states legislative intent. It reads as follows:

“(1) The Legislature recognizes there is significant interest in the resources of the coastal zone of the state. Further, the Legislature recognizes that, in the event of a natural disaster, the state may provide financial assistance to local governments for the reconstruction of roads, sewer systems, and other public facilities. Therefore, it is the intent of the Legislature that local government comprehensive plans restrict development activities where such activities would damage or destroy coastal resources, and that such plans protect human life and limit public expenditures in areas that are subject to destruction by natural disaster. ...”

Definition of Terms

Before proceeding to a detailed discussion of local conditions, it makes sense to provide in full a number of definitions that will be referenced throughout. The reader is encouraged to refer to these definitions as needed.

- “Coastal barriers” means barrier islands, spits, peninsulas, or similar landforms, including the Florida Keys, which front on the Atlantic Ocean, Gulf of Mexico, or Straits of Florida and which separate estuaries or harbors from the open waters of the Atlantic Ocean, Gulf of Mexico, or Straits of Florida.
- “Coastal Construction Control Lines” are established on a county basis through State Legislature, along sand beaches of the state to define that portion of the beach-dune system which is subject to severe fluctuations based on a 100-year storm surge, storm waves, or other predictable weather conditions. [Section 161.053, Florida Statutes]
- “Coastal High-Hazard Area (CHHA) is 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. [Section 163.3178(2)(h), Florida Statutes]
- “Environmentally Sensitive Lands” means areas of land or water which are determined necessary by the local government, based on locally determined criteria, to conserve or protect natural habitats and ecological systems. Nothing in this definition shall be construed to prohibit silvicultural operations which employ the Florida Department of Agriculture and Consumer Affairs Best Management Practices as revised in 1993.
- “Estuary” means a semi-enclosed, naturally existing coastal body of water in which saltwater is naturally diluted by freshwater and which has an open connection with oceanic waters, including bays, embayments, lagoons, sounds and tidal streams and mangrove swamp.
- “Evacuation routes” means routes designated by county civil defense authorities or the regional evacuation plan for the movement of persons to safety in the event of a hurricane.
- “Hurricane shelter” means a structure designated by local officials as a place of safe refuge during a storm or hurricane.
- “Hurricane vulnerability zone” (also “areas subject to coastal flooding”) means the areas delineated by the regional or local hurricane evacuation plan as requiring evacuation. The hurricane vulnerability zone shall include areas requiring evacuation in the event of a Tropical Storm through the Category 5 Hurricane Evacuation Zone.

- “Shoreline” or “shore” means the interface of land and water and, as used in the coastal management element requirements, is limited to oceanic and estuarine interfaces.
- “Urban area” means an area of or for development characterized by social, economic and institutional activities which are predominantly based on the manufacture, production, distribution, or provision of goods and services in a setting which typically includes residential and nonresidential development uses other than those which are characteristic of rural areas.

Coastal Resources and Land Use Inventory

One of the primary functions of the Coastal Management Element is to provide an inventory of coastal resources and land uses within the City of Crystal River. The land use inventory helps establish a baseline to assess the specific needs, limitations and impacts of land use. More broadly, the land use inventory is a chance to convey necessary information about local conditions within the City of Crystal River. When analysis is based on local information, it becomes increasingly likely that the range of alternatives identified will represent specific, meaningful solutions that carry a higher chance of successful implementation.

The scope of activity included under the inventory encompasses multiple items of information.

First, the inventory requires identification of the location and extent of the community, utilizing an approach that is consistent with the Future Land Use Element. The inventory must discuss the summary of the mix of land uses present, noting the existence of any land use conflicts. The characteristics of these land uses are exhibited on Map CM-1. In addition, Water-dependent uses and demand for commercial and recreational waterfront shall be evaluated. Finally, the inventory must also assess the economic base of the City. Maps accompany analysis showing the distribution of land uses consistent with how representation is organized within the Future Land Use Map referenced herein as adopted in the Future Land Use Element of the Crystal River Comprehensive Plan.

Estuarine Shoreline

Shoreline present in the City of Crystal River is that of an estuarine river system interface. As a transitional aquatic zone, it has no active beach and dune system. The physical extent of the shoreline ecological zone is 150,000 feet of the entire City. Its land area is mainly composed of transitional lands, flat riparian bottomland, and freshwater marshes.

Generalized ecological communities, Saltwater Marshes and Mixed Wetland Hardwood Forest are identified by the Florida Land Use/ Land Cover Classification System, or FLUCCS (see Map CM-2). Wildlife typically found in these wetland ecological communities include numerous species of birds, and various amphibians and reptiles (see Conservation Element for more

detailed information on vegetation and wildlife). Other vegetation types include Streams and Lake Swamps (bottomland), Freshwater Marshes, and Mixed Hardwood Conifer.

Aquatic communities include a variety of animals and plants. The dominant plant in the Crystal River and King's Bay is hydrilla. Also common are eelgrass, water hyacinth and pond weed, as well as stands of bulrush, cattails and sawgrass along shorelines. Principal fish are mullet, bass, bream, redfish, trout, snook, tarpon and snapper. Numerous crab species, shrimp, oysters and a variety of snails, along with alligators, turtles and the West Indian Manatee, live in the waters of Crystal River and King's Bay.

Preserves and Areas of Special Concern

The Crystal River/King's Bay has been designated as an "Outstanding Florida Water" by the Florida Environmental Regulatory Commission. It is also established as the Crystal River National Wildlife Refuge. This significant refuge provides natural warm water habitat for the endangered West Indian (Florida) manatee. Another preservation area of importance within the City's jurisdiction is a portion of the Crystal River State Reserve which includes upland hammocks, tidewater swamps and pine flatwood communities. The State Archaeological Park and Museum, of which a portion is located within the Crystal River City limit line, is another area of special concern which merits distinction. Total area within the city boundaries assigned to natural land with preservation status, including portions of Crystal River Archaeological State Park, Crystal River National Wildlife Refuge, Crystal River Preserve State Park, and the Three Sisters Springs Area, is 1072 acres, or 1.7 square miles.

Land Use Inventory

Existing Land Use (ELU)

Existing land uses within the City are illustrated and defined in the Future Land Use Element. The generalized coastal land use categories, acreage, and percentages are described in Table CM-1.

A variety of uses with a variety of intensities are represented, including Public/Semi-public, Single-family and Multi-family Residential, Commercial, Wasteland, Vacant Land (Residential and Acreage, Conservation, and Agriculture), and Submerged Land/Water (Wastelands).

West of US-19/98, a portion of the Crystal River Preserve State Park lies within the City. The Existing Land Use Map shows this area as being Conservation, but the total area of state park lands within Crystal River is not contiguous. An area of semi-developed land separates preserve areas. The total amount of Crystal River Preserve State Park within the City measures approximately 1003 acres, or 1.6 square miles. In total, vacant areas dedicated to agricultural and non-agricultural (that includes conservation), and wastelands (categorized by the County

Property Appraiser as not capable of development due to environmental constraints) make up over 50 percent of the City.

Table CM-1 - Existing Land Use, City Total 2020

LAND USE CATEGORY	EXISTING LAND USE ACREAGE	PERCENT
Residential Single-family and multifamily	564.12	13.4
Commercial General and office	613.21	14.6
Industrial	18.36	0.4
Total Public/Semi-Public	532.61	12.7
Public/Semi-Public	402.89	9.6
Educational	86.7	2.1
Transportation/Communication/Utilities	43.02	1.0
Vacant, agriculture and non-ag	2,481.55	58.9
Non-agriculture (includes Conservation)	2,194.61	52.1
Agriculture	100.87	2.4
Other, Wastelands	186.07	4.4
TOTAL	4,209.85	100.0

Source: Citrus County Property Appraiser, January 2021.

Future Land Use (FLU)

Areas within the City of Crystal River contain a broad range of land use categories that represent the City's historical growth. Residential land use represents the existing development pattern of existing residential subdivisions. Residential and commercial committed areas represent less than 50 percent of the City. These land use categories limit development intensity by the provisions and performance standards contained within the Future Land Use Element.

Water-dependent and Water-related Land Uses

Water-dependent land uses are defined as activities which can be carried out in or adjacent to water areas because the use requires access to the water body for: waterborne transportation, recreation-access, electrical generating facilities, or water supply. These include, but are not limited to, commercial marinas, boat ramps/docks, electrical generation plants, and fishing piers.

Water-related land uses are defined as activities which are not directly dependent upon access to a water body, but which provide goods and services that are directly associated with water-dependent or waterway uses. These include, but are not limited to, commercial resorts, campgrounds, fish camps, seafood processing operations, dive ships, and bait and tackle stores.

Need for Water-dependent and Water-related Uses

The need for water-dependent and water-related uses is determinant upon the demand placed on water resources. Water use demands may include recreation, public access, conservation, sport and commercial fishing, navigation, supply withdrawals, and the dissolution of effluent discharges.

The need for future land and resource protection requirements have been considered in the distribution of land uses adjacent to water bodies. The current and future needs for public access, recreation, and conservation are very important in developing and maintaining a healthy community, economy, and water body. Water dependent business and commercial uses have been limited to the WC-Waterfront Commercial District category of the Future Land Use Element. The WC District comprises 50.74 acres on the City's Future Land Use Map, or less than 1 percent of total acreage by land use.

Shoreline Land Use Conflicts

Shoreline land use conflicts are not prevalent within the City. The majority of land uses are Public/Semi-public and Coastal Preservation, which include uses such as parks and undeveloped areas considered passive recreation that are classified as conservation due to public ownership. The balance comprises a mix of predominantly residential platted lands where density is limited to one residence per platted lot of record. Buffering, set-backs, required connection to public water and sewer, and appropriate siting are strategies to protect against potential land use conflict.

Economic Base

Retail, tourism, and commercial are major components of Crystal River's economic base. Water-related industries, such as pleasure boating and related services, commercial fishing, dive shops, and retail and tourist trades, depend upon the resources of the coastal fisheries and the West Indian manatee, which draw tourists state-wide, nationally, and internationally. The area surrounding Kings Bay Park has started to revitalize as part of the City's Community Redevelopment Area, including a new river-walk and a proposed Splash Pad Park to serve as a focal point and attraction for the City's downtown area, a walkable community with its quaint eateries and retail or commercial shops. Major attractions within the City include Three Sister's Springs (a popular location to see the West Indian Manatee), the Crystal River Preserve State Park, and the Crystal River Archaeological State Park (a National Historic Landmark).

Future Land Use Impacts

Future Land Uses in the City (see Table CM-2) include Coastal Low Density Residential, Low Density Residential, Medium Density Residential, High Density Residential, Central Business District, Commercial Waterfront, Highway Commercial, Office/Service Commercial, Industrial, Conservation and Public/Semi-public, that vary in type and intensity as identified in the Future Land Use Element. Potential indirect impacts of the transition from Vacant and Single-family Existing Land Uses to the aforementioned Future Land Uses may include the loss of listed and non-listed wildlife and associated habitats, degradation of surface and groundwaters, and degradation of living marine resources.

**Table CM-2 - Future Land Use Map in the City
Categories and Acreage, 2021-2030**

Land Use Classification	Acreage	Percent
Coastal Low Density Residential- CLDR	404.7	8.2
Low Density Residential – LDR	354.84	7.2
Medium Density Residential – MDR	849.89	17.3
High Density Residential – HDR	204.25	4.2
Central Business District – CBD	30.22	0.6
Commercial Waterfront – CW	50.74	1.0
Highway Commercial – HC	1022.14	20.7
Mixed Use (MXU)	0	0.0
Office/Service Commercial – O/SC	138.12	2.8
Industrial – IND	21.33	0.4
Conservation – CON	1,294.40	26.3
Public/Semi-Public	556.15	11.3
Total Acreage	4,926.78	100.0

Source: Crystal River Future Land Use Element, 2021.

Estuarine Pollution

Current Conditions

The unique water resource of the Crystal River/King’s Bay area is considered as having very good water quality (see Conservation Element for detailed data). However, increased point and non-point sources of pollution, such as stormwater runoff, sewage treatment plant effluent, sanitary sewage seepage, various pesticides, herbicides and fertilizers associated with residential use, and commercial and leisure boating activities, can become degrading factors to water quality if not properly managed.

All development activity within the City shall occur in accordance with all local, regional, and State surface water management regulations. All surface runoff shall be treated within on-site stormwater management swales and ponds, as required by the appropriate governmental agencies, prior to discharge to the Indian or Crystal River. All stormwater management facilities shall be required to meet or exceed the standards contained within the Comprehensive Plan and the latest Southwest Florida Water Management District and State standards for water quality and peak discharge. Rate of post-development runoff shall not exceed pre-development runoff conditions.

Point Sources

Point sources are any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel, or other floating craft, from which pollutants are or maybe discharged (USC 33§1251. 502 (14) of the Clean Water Act). Point sources in coastal areas include any direct discharge into surface waters or adjacent wetlands and all marina/multi-slip docking facilities. Marine and docking facilities are considered point sources due to their ability to concentrate pollutants in sediments and significantly degrade water quality in the docking area. Construction activities are subject to permitting procedures for stormwater, erosion and sediment control in accordance with all applicable local, water management district, state or federal law. Plans must identify potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharge associated with construction activity and the implementation of best management practices which will be used to reduce pollution sources generated by construction activity as required by the National Pollutant Discharge Elimination System (NPDES) permit process and state law.

A major point source of pollution into King's Bay was eliminated with the construction of a sprayfield facility for the City's sewage treatment plant. Effluent from the plant is no longer discharged to a canal leading to King's Bay.

Non-point Sources

Non-point sources of pollution are the most prevalent pollutant in the coastal area. These non-point sources include urban/stormwater runoff, boating activities, on-site sewage disposal facilities, and agricultural runoff. The cumulative effects of non-point sources in the coastal area may prove to be the largest detriment to the estuaries and spring-fed river systems.

Future Land Use Impacts

Although the Future Land Use Classifications within the City include Coastal Low Density, Low Density, Medium Density, and High Density Residential, these areas have been predominately platted. As population density may increase in these areas, Non-point source pollution may also increase. Future development is required to connect to central water and sewer and is subject to stormwater management permitting requirements that must meet NPDES requirements.

State, Regional, and Local Regulatory Programs

State pollution regulation is largely embodied within the Florida Department of Environmental Protection (FDEP). FDEP cooperates with the Army Corps of Engineers (ACOE) and the water management district to regulate dredge and fill in waters of the state and jurisdictional wetlands. FDEP also regulates pollution discharges, establishes water quality standards and minimum treatment requirements, issues permits, licenses water operations, and administers wastewater construction grants.

FDEP is also responsible for selling and leasing state owned submerged lands if “not contrary to the public interest”. The proposed use of the submerged lands must be consistent with the conservation of fish, marine wildlife, or other natural resources.

The Southwest Florida Water Management District (SWFWMD) regulates stormwater discharge and water withdrawal, diversion, storage, and consumption. SWFWMD is the primary regional agency responsible for monitoring water quality associated with freshwaters entering estuarine system. SWFWMD regulates stormwater controls and wetlands. Their Save Our Rivers (SOR) Program established a funding source and mechanism for purchasing environmentally sensitive lands necessary for water management, water supply, and conservation and protection of water resources. This program through the preservation/conservation of these lands will assist in the improvement and maintenance of freshwater entering estuaries.

Archaeological and Historic Resources of the Coastal Area

Inventory

Crystal River has a number of historical structures that date back to the 1800s. There are other historic sites in town, such as the Bayview Cemetery and the Old Cedar Mill site. Archaeological resources can be found near surface waters and the Crystal River Archaeological State Park. The Department of State, Division of Historic Resources maintains the Florida Master Site File, an archive for Florida archaeological and historic sites reported to the Department of State. Many of the sites and structures merit protection because of their significance to the City.

Impact of Present and Future Land Use Trends

Current land use trends demonstrate no impact of historic and archaeological resources within the City. A large portion of the Crystal River Archaeological State Park is adjacent to the Crystal River, only part of which is within City Limits. Much of the land adjacent to the eastern section of the Crystal River Archaeological State Park is Vacant and Low Density Residential. However, Future Land Uses may indirectly impact historic and archaeological sites. In the area adjacent to the eastern side of the Crystal River Archaeological State Park, the Future Land Use category is Medium Density Residential.

Resource Protection

Currently, only the Crystal River Indian Mounds, designated as a U.S. National Historic Landmark on September 29, 1970, are protected by Federal status. This protection status is referred to as the National Register of Historic Sites and Places (National Historic Preservation Act of 1966 - Public Law 89-665 and Executive Order 11593: Protection and Enhancement of the Cultural Environment).

The Florida Archives and History Act, Chapter 267, F.S., provides misdemeanor penalties for appropriating, destroying or altering an archaeological site on State lands without permission.

Coastal Hazards

Map CM-3 –The Crystal River Area Flood Insurance Rate Map illustrates the various FEMA-based flood designations for areas at high risk of flooding. On October of 2018, FEMA issued preliminary flood map data to Citrus County. The preliminary data was presented to include new or revised Flood Insurance Rate Map (FIRM), Flood Insurance Study (FIS) reports and Database. The new map, which includes the City of Crystal River, became effective on January 15, 2021. The maps added approximately 3,800 lots to the Special Flood Hazard Area in Citrus County, increasing the highest base flood elevations up to seven feet in some areas. The majority of the City is located within the 100-year floodplain and requires evacuation in the event of a 100-year storm or Category 1 hurricane event. Therefore, hurricane preparedness and a workable evacuation plan are essential for the City of Crystal River to protect human life and to reduce and mitigate damage from natural disasters.

The information in this section is taken mostly from the *2017 Florida Statewide Regional Evacuation Study Program (SRESP), Volume 4-8 Tampa Bay Region* prepared by the Tampa Bay Regional Planning Council in conjunction with the Florida Division of Emergency Management. The study includes a Hurricane Evacuation Study along with an Evacuation Transportation Analysis.

Hurricane Vulnerability

In the *2017 Florida Statewide Regional Evacuation Study*, the SLOSH model (Sea, Lake and Overland Surges from Hurricanes) Basin from the National Hurricane Center was utilized in predicting the magnitude of storm surge for various scenarios of storm sizes, strengths, and directions. Digital elevation models, hydrographic features, and data from the Cedar Key Basin SLOSH grid were processed to produce an atlas of storm surge inundation areas. Storm surge is a potential threat on the coastline of Citrus County. The SLOSH analysis indicates that a Category 5 storm surge could affect properties up to 10.5 miles from the coastline. Based on these areas of inundation, Evacuation Zones were created (see Map CM-4). Also, the population at risk was determined for various hurricane intensities, and the facilities vulnerable to hurricane-related flooding were identified relative to the CHHA. (see Map CM-5).

Hurricane Evacuation

The entire City is located within Citrus County's Evacuation Zone A. The current County program for planning, managing and enforcing hurricane evacuations is administered by Citrus County Sheriff's Emergency Management and through the guidelines of the County's Emergency Management Plan. The Coastal, Lakes and River Management Element of the Citrus County Comprehensive Plan details vulnerability levels, evacuation routes and zones, shelter designation, location and capacity, and evacuation times that apply to the County's estimated 149,000 + residents. Therefore, any hurricane preparedness or emergency management plan developed or adopted by the City will be in coordination with the County plans already in effect.

In order to quantify the hurricane evacuation times as well as hurricane response and recovery needs, it is essential to know the population-at-risk, or, how many people must be evacuated from the hazards associated with a tropical storm or hurricane. First, it is necessary to enumerate the entire population residing within the areas predicted by the SLOSH model to require total evacuation from storm tide flooding under the five evacuation levels (Evacuation levels A, B, C, D, and E). Second, it is also necessary to quantify all mobile homes and RVs throughout the region -- even in areas not vulnerable to storm tide. These structures are particularly vulnerable to property damage and their inhabitants vulnerable to potential injury and loss of life due to hurricane force winds. Because the entire City of Crystal River is located within the Hurricane Evacuation Zone A, the entire City is included in Citrus County's vulnerable population calculations.

Evacuating Population

The vulnerable population is the number of persons residing in evacuation areas or mobile home residents who would be directly affected by the evacuation level (see Table CM-3). In every evacuation, however, a percentage of persons who live outside of the hurricane-vulnerable areas and who do not live in mobile homes or substandard housing will evacuate. These people are commonly referred to as shadow evacuees.

Table CM-3. Citrus County Vulnerable Population
from Hurricanes by Evacuation Level, 2017-2020 & Projected 2030

	<u>Evacuation Zone A</u>	<u>Evacuation Zone B</u>	<u>Evacuation Zone C</u>	<u>Evacuation Zone D</u>	<u>Evacuation Zone E</u>
Citrus County, 2017*					
Site-built Homes	<u>17,755</u>	<u>8,717</u>	<u>6,812</u>	<u>15,037</u>	<u>8,297</u>
Mobile/Manuf. Homes	<u>12,937</u>	<u>7,069</u>	<u>5,149</u>	<u>12,904</u>	<u>16,941</u>
TOTAL	<u>30,692</u>	<u>15,786</u>	<u>11,961</u>	<u>27,941</u>	<u>25,237</u>
Citrus County, 2020*					
Site-built Homes	<u>25,058</u>	<u>12,332</u>	<u>10,602</u>	<u>25,896</u>	<u>24,106</u>
Mobile/Manuf. Homes	<u>6,028</u>	<u>3,951</u>	<u>1,619</u>	<u>3,139</u>	<u>1,754</u>
TOTAL	<u>31,085</u>	<u>16,283</u>	<u>12,221</u>	<u>29,035</u>	<u>25,860</u>
Citrus County, 2030**					
Site-built Homes	<u>27,442</u>	<u>13,505</u>	<u>11,611</u>	<u>28,361</u>	<u>26,400</u>

	<u>Evacuation Zone A</u>	<u>Evacuation Zone B</u>	<u>Evacuation Zone C</u>	<u>Evacuation Zone D</u>	<u>Evacuation Zone E</u>
<u>Mobile/Manuf. Homes</u>	<u>5,455</u>	<u>3,575</u>	<u>1,465</u>	<u>2,840</u>	<u>1,587</u>
<u>TOTAL</u>	<u>32,897</u>	<u>17,080</u>	<u>13,076</u>	<u>31,201</u>	<u>27,987</u>

Source: *2017 SRESP, Volume 4-8 Tampa Bay Region; ** Projected by calculating percentage of population growth rates for Citrus County.

There will also be a percentage of persons inside the evacuation areas who will not evacuate. ▯

Special needs assistance is provided by the Citrus County Sherriff’s Emergency Management in coordination with Florida Department of Health, Citrus County Unit. A Special needs shelter is opened during emergency events for residents with specific health and medical conditions and those requiring transportation assistance. The Special Needs Program helps to provide assistance in sheltering, evacuation, and transportation for registered residents during times of disaster with resources available within Citrus County. The Special Needs Shelter is located at Forest Ridge Elementary School which is located outside of the CHHA and designated evacuation zones.

Roadways and Evacuation Routes

Both surge and freshwater flooding are real dangers in Crystal River. Many roads can be affected by flooding because of Citrus County’s coastal lowlands (see Map CM-6). It is important for Emergency Managers to consider elevation of roads, potential depth of water from flooding, and the physical conditions of roadways and evacuation routes in determining early closures and re-routing.

Shelter Demand and Inventory

Table CM-4. Citrus County Public Shelter Capacity and Demand for Base and Operational Scenarios

Capacity	Evacuation Level				
	A	B	C	D	E
Base Scenarios 2017					
4,222	4,819	5,208	7,219	12,062	13,374
Base Scenarios 2020					
4,222	5,246	5,583	7,744	12,940	14,346
Base Scenarios 2030 - Projected					
4,222	5,745	6,114	8,481	14,172	15,711
Operational Scenarios 2017					
4,222	3,494	3,875	5,794	10,604	12,684
Operational Scenarios 2020					
4,222	3,748	4,156	6,216	11,378	13,607
Operational Scenarios 2030 – Projected					
4,222	4,105	4,552	6,807	12,461	14,902

Note: Capacity is reduced for shelters unusable in Evacuation Levels D and E

Source: 2017 SRESP, Volume I, Chapter 5, Tampa Bay Region (Regional Shelter Analysis); 2030 Projected by calculating annual percentage growth rates.

In the Behavioral Analysis of the *2017 Florida Statewide Regional Evacuation Study*, planning assumptions were identified to assist in the development of the anticipated Evacuation Population and Public Shelter Demand under different storm scenarios (see Table CM-4). Base Scenarios include 100% evacuation of the population-at-risk and shadow evacuation. Operational Scenarios use planning assumptions determined by the behavioral analysis which are considered to be a more realistic set of assumptions. Although they do not reflect 100% evacuation of vulnerable residents, there is a significant percentage of shadow evacuation especially in the major storm threats.

Citrus County's listed hurricane evacuation shelters (see Table CM-5) are located outside the storm surge inundation areas. Schools and churches make up the majority of listed shelters. Citrus High School maintains a limited number of spaces for special needs shelter described as a temporary emergency facility capable of providing care to residents whose medical condition exceeds the capabilities of the Red Cross Shelter but is not severe enough to require hospitalization. The Health Department medical staff supports these shelters.

Table CM-5. Citrus County Shelter Inventory and Vulnerability Analysis											
NAME	ADDRESS	CITY	RISK CAP @ 20 sq ft	Special Needs Cap @60 sq ft	Pet Friendly	Agency Support	Function	Vulnerability			
								Surge	Evac Zone	Flood	Wild-fire
Beverly Hills Lions Club	72 Beverly Hills Center	Beverly Hills	43		No	ARC	School				✓
Central Ridge Elementary	185 W Citrus Springs Blvd	Citrus			No		School				
Citrus County Renaissance Center	3620 W. Educational Path	Inverness			No	DOH	Community Ctr				✓
Citrus High School	600 West Highland Blvd	Inverness	588	128	No	SD	School				
Citrus Springs Elementary	3570 West Century Blvd	Citrus			No	SD	School				✓
Citrus Springs Middle	150 W Citrus Springs Blvd	Citrus Springs	1,341		No	ARC	School				✓
Crest School	260 S Panther Pride Dr	Lecanto			No	SD	School				✓
First Baptist Church of Crystal River	700 N Citrus Ave	Crystal River	73		No		Church				
First Lutheran Church	1900 W Highway 44	Inverness	51		No	ARC	Church				
First United Methodist of Inverness	3896 S Pleasant Grove Rd	Inverness	165		No		Church				
Floral City Elementary	8457 E Marvin Street	Floral City			No	ARC	School				✓
Forest Ridge Elementary	2927 North Forest Ridge	Hernando	1,718		No	ARC	School				✓
Good Shepherd Lutheran Church	439 E Norvell Bryant Hwy	Hernando	40		No		Church				
Hernando Elementary	2353 N Croft Avenue	Hernando			No	SD	School				✓
Hope Evangelical Lutheran	9425 N Citrus Springs Blvd	Citrus Springs	50		No	ARC	Church				✓
Inverness Middle School	1950 North US Highway 41	Inverness			No	SD	School				✓
Inverness Primary School	206 South Lime Avenue	Inverness			No	SD	School				
Lecanto High School	3810 W Education Path	Lecanto			Yes	ARC	School				✓
Lecanto Middle School	3800 W Education Path	Lecanto			No	DOH	School				✓
Lecanto Primary School	3790 W Education Path	Lecanto			No	ARC	School				✓
Mount Olive Missionary Baptist Church	2105 N Georgia Rd	Crystal River	25		No		Church				
TOTAL (4,222)			4,094	128							

Source: 2017 SRESP, Volume I, Chapter 5, Tampa Bay Region (Regional Shelter Analysis) ARC = American Red Cross, DOH = County Health Department, SD = County School District

Clearance Times & Evacuation Level of Service

The City will continue efforts to reduce Hurricane Evacuation times through implementation of controls on land use density in the coastal area. In addition, proposed development projects in the CHHA should be reviewed using a traffic-modeling program to assure that emergency evacuation times are not increased.

Level of Service Standards for hurricane evacuations were developed using the clearance times referenced in the *2017 Florida Statewide Regional Evacuation Study Program*. Clearance time is the time required to clear the roadway of all vehicles evacuating in response to a hurricane situation. Clearance time begins when the first evacuating vehicle enters the road network (as defined by the Hurricane Evacuation Behavioral Curve) and ends when the last evacuating vehicle reaches an assumed point of safety (refer to *2017 Florida Statewide Regional Evacuation Study Program* for further detail). Clearance time does not relate to the time any one vehicle spends traveling on the road network and does not include time needed for local officials to assemble and make a decision to evacuate. Clearance time is only one major factor involved in issuing an evacuation order or advisory. The other major factor is the time until arrival of sustained tropical storm winds.

Florida Statutes, section 163.3178 Coastal Management, requires that the comprehensive plan include one or more specific objectives that directs population concentrations away from known or predicted coastal high-hazard areas and that maintains or reduces hurricane evacuation times. Section 163.3178(8), *Florida Statutes* states that local governments' comprehensive plan shall be found in compliance with state coastal high-hazard provisions if:

1. the adopted level of service for out-of-county evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale;
 2. A 12-hour evacuation time to shelter is maintained for a category 5 storm event as measured on the Saffir-Simpson scale and shelter space reasonably expected to accommodate the residents of the development contemplated by a proposed comprehensive plan amendment is available; or
 3. Appropriate mitigation is provided that will satisfy numbers 1 and 2 above. Appropriate mitigation shall include, without limitation, payment of money, contribution of land, and construction of hurricane shelters and transportation facilities. Required mitigation may not exceed the amount required for a developer to accommodate impacts reasonably attributable to development. A local government and developer shall enter into a binding agreement to memorialize the mitigation plan.
- (b) For those local governments that have not established a level of service for out-of-county hurricane evacuation by following the process in paragraph (a), the level of service shall be no greater than 16 hours for a category 5 storm event as measured on the Saffir-Simpson scale.

In order to meet the requirements of *section 163.3178(8), Florida Statutes*, the City adopts an out-of-county evacuation time not to exceed 16 hours for a category 5 storm event as measured on the Saffir-Simpson scale and establishes appropriate mitigation measures for evaluating any future development or proposed comprehensive plan amendment within the Coastal High Hazard

Area. The out-of-county level of service standard is based on the analysis of evacuation times prepared by Citrus County in the Coastal, Lakes, River Management Element of the County Comprehensive Plan, 2014.

In-Out-of-County Hurricane Evacuation Level of Service (LOS)

The in-out-of-county clearance times for Citrus County are shown in Table CM-6. Clearance times refer to the amount of time needed to give adequate notice for evacuation to areas outside of Citrus County. It is expected that residents of Crystal River need similar time to evacuate as provided in the County's plan; therefore, the County's analysis is included as data and analysis to support the adopted level of service.

The Level of Service Standard (LOS) for out-of-county Hurricane Evacuation is sixteen (16) hours. The out-of-county evacuation time is defined as the time it takes for county residents to evacuate the county. The sixteen (16) hour LOS standard for a category 5 storm event is referred to in section 163.3178, Florida Statutes, and is considered the established minimum for new projects developing in the coastal area for communities without established LOS standards for out-of-county hurricane evacuation. The most recent information provided for in-out of county clearance times was updated in the 2017 Florida Statewide Regional Evacuation Study Program. The study found that Citrus County has the highest in-county clearance time of 55.5 hours for the Level E scenario due to the influence of trips evacuating from other counties within the region in a northbound direction. Clearance time to shelter shows clearance times ranging from 19 to 20 and one-half hours.

The *clearance time to shelter* is the time to safely evacuate vulnerable residents (including visitors) to a "point of safety" within the county based on a specific hazard, behavioral assumptions, and evacuation scenario. Calculated from the point in time when the evacuation order is given to the point in time when the last vehicle reaches a point of safety within the county. Key points to remember for clearance time to shelter include:

- All in-county trips reach their destination within the county outside of an evacuation zone A-E; and
- This definition does not include any out of county trips.

The *in-county clearance time* is the time required from the point an evacuation is given until the last evacuee can either leave the evacuation zone or arrive at safe shelter within the county (which is not an A-E evacuation zone). This does not include those evacuees leaving the county on their own. Key points to remember for in-county clearance time include:

- All in-county trips reach their destination within the county;
- All out of county trips exit the evacuation zone, but may still be located in the county and not left yet; and
- This definition does not include out-of-county pass-through trips from adjacent counties, unless they evacuate through an evacuation zone.

Table CM-6 – 2017 Citrus County Evacuation Clearance Times for Base Scenario

	Evacuation Level A Base Scenario	Evacuation Level B Base Scenario	Evacuation Level C Base Scenario	Evacuation Level D Base Scenario	Evacuation Level E Base Scenario
Clearance Time To Shelter	19	24	21	25	20.5
In-County Clearance Time	23.5	28.5	34.5	47	55.5

Source: 2017 Florida Statewide Regional Evacuation Study

The City's entire population having a total maximum of 3,190 residents are projected to be located within the Hurricane Evacuation Zone A. The *2017 Florida Statewide Regional Evacuation Study* assumes that 100% of the population-at-risk evacuates plus a (smaller) percentage of non-vulnerable population. According to the study, the hurricane evacuation operational scenario for 2020 proposes 3,748 Citrus County residents seeking public shelter. Accordingly, in a Category 1 hurricane event the 4,222 shelter spaces that exist in Citrus County appear to be adequate. However, shelter demand for a greater hurricane event would create a shortfall of existing public shelter spaces, relying greatly on the presumption that evacuees would stay with friends, hotels/motels or travel out of county.

Mitigation of Property Damage

Approximately 37 percent of Citrus County's Repetitive Loss Properties are in Crystal River. A repetitive loss property is defined as a facility or structure that has experienced two or more insurance claims of \$1,000 or more in any give 10-year period since 1978, under the National Flood Insurance Program (NFIP). A repetitive loss property may or may not be currently insured by the NFIP. Based on the more recent information available from FEMA NFIP reports (HUDEX Report, Policy and Loss Data by Community), there are 192 such properties in Citrus County, including 185 residential properties and 7 commercial properties. According to data provided by FEMA in 2019, there are an additional 112 repetitive loss properties located in the City of Crystal River. The data provided by FEMA did not indicate the building type (residential, commercial, etc.), however in 2015 there were seven commercial repetitive loss properties.

As part of the City of Crystal River's participation in the NFIP, residents and businesses are eligible to obtain flood insurance policies. Within Crystal River there were 976 flood insurance policies in effect as of September 30, 2018. These policies have a total coverage of \$212,516,700 with a total premium of \$1,580,698. The city of Crystal River joined the Community Rating System (CRS) in 2016, and is currently a Class 7 community, resulting in a 15 percent reduction in flood insurance premiums¹.

¹ Citrus County Local Mitigation Strategy, 2020 Update

Additional mitigation measures taken by the City of Crystal River include requiring that the first floor of living space of any building constructed with the City must be at least one foot above the FEMA base flood elevation requirement.

In 2020, Citrus County and the Cities of Crystal and Inverness updated the *Citrus County Local Mitigation Strategy* (LMS) that addresses hurricane evacuation, shelters, and mitigation of property damage. As part of its mitigation plan, the City of Crystal River listed its priorities (included in the goals, objectives and policies of the Future Land Use Element) as listed below:

1. Reduce the number of repetitive loss properties by reviewing the current FEMA NFIP Repetitive Loss List for Citrus County to identify the correct, updated address and exact location of each individual structure. Using the National Flood Mitigation Data Collection Tool, survey property owners to determine interest and eligibility to pursue mitigation measures and identify the most appropriate mitigation measure for each structure using the priority established. Implement mitigation measures on each individual structure using the established property to mitigation future damage as funding becomes available.
2. Provide protection from increased infiltration into the sanitary sewer system during flood events through the installation of portable bypass pumps and portable generators at the lift stations.
3. Investigate, update and/or implement new location for the City Hall in the City of Crystal River.²

Measures to reduce the population's exposure to coastal storm damage include future development and redevelopment guidelines that will limit development activities within any designated hurricane evacuation zones. The City's future land use classifications and "Coastal Low Density Residential" on vacant-undeveloped lands permit unit densities of not greater than 0.5 unit per acre with water and sewer or 1.0 unit per two acres without water and sewer. Additional provisions may allow up to 2.5 units per acre through the use of conservation measures as specified in the Future Land Use Element. These designations support reduced exposure to coastal hazards by not permitting high density concentrations of population or excessive public infrastructure expansion that could be at risk during a storm event.

Post-Disaster Redevelopment

Coastal High Hazard Area (CHHA)

The Coastal, Lakes, River Management Element of the Citrus County Comprehensive Plan addresses Post-Disaster Planning within the designated Coastal High Hazard Area (CHHA) [see Map CM-5]. Land use designations within the County are restricted to reduce exposure to coastal hazards with densities "not designated to permit high density concentrations of population". The County's Low Intensity Coastal and Lakes designation limits residential

² Citrus County Local Mitigation Strategy, 2020 Update, Table 4-5 – Citrus County Action Plan.

development for all vacant land within the CHHA to a maximum of one dwelling unit per 40 acres. It is noted that the City limits is totally located within the CHHA area. The City is predominantly platted out and development is limited to existing densities and intensities identified in the Future Land Use Element. In the City no additional mobile home units are permissible in the CHHA, aside from some vested Mobile Home Parks which will be allowed to continue as provided by law. Separate from residential and non-residential committed areas, approximately 25 percent of the City is held in public lands dedicated to conservation and abuts waterways. Mechanisms are available to reduce exposure to coastal storms and to be considered in post-disaster redevelopment include: relocation under extreme conditions, flood requirements under FEMA guidelines for structural modification (Storm Proofing and elevating, including one-foot freeboard above the minimum base flood elevation), and public acquisition.

Coastal Construction Control Line (CCCL)

The Florida Legislature finds and declares that the beaches in this state and the coastal barrier dunes adjacent to such beaches, by their nature, are subject to frequent and severe fluctuations and represent one of the most valuable resources of Florida and that it is in the public interest to preserve and protect them from imprudent construction which can jeopardize the stability of the beach-dune system, accelerate erosion, provide inadequate protection to upland structures, endanger adjacent properties, or interfere with public beach access. Recognizing the value of its beaches, the Florida Legislature initiated the “coastal construction control line” (CCCL) Program to protect the coastal system from improperly sited and designed structures which can destabilize or destroy the beach and dune system. Where CCCLs have been established for counties in Florida, the county shall be required in its coastal management element to address redevelopment for construction activities seaward of the CCCL as established pursuant to Section 161.053 to be consistent with Chapter 161, Florida Statutes.

As of this writing, the CCCLs for the state of Florida have been established in 25 of Florida counties. Citrus County has **not** been designated with a CCCL. This is likely because the coastal area of the county does not have beaches and sand dunes but is instead formed of coastal estuaries, marshes, and marine grass beds. The County’s Coastal, Lakes, River Management Element of the Citrus County Comprehensive Plan instead identifies the CHHA and post-disaster planning and constraints have been placed on future development in this area.

Shoreline Use

Public Access

The estuarine waters on King’s Bay and the Crystal River offer an abundance of water-related and recreational opportunities (see Map CM-7). The City of Crystal River has no salt water beach shoreline access, but Hunter’s Spring Park provides a freshwater beach. State-owned

waterfront properties are expected to remain in their natural state with limited water access for canoeing and fishing. Other existing public shoreline access facilities are inventoried in the Recreation and Open Space Element, which also include a projected demand for future public shoreline access facilities. These access locations along the springs and riverine system may have limited expansion possibilities, due to the presence of wetlands that edge the shoreline. However, various vacant/unimproved sites exist within the City limits which can fulfill future public access demands.

Water-Dependent and Water-Related Uses

Water-dependent uses are defined as activities which can be carried out in or adjacent to water areas because the activity requires access to the water. Examples of water-dependent uses are: waterborne transportation, recreational access, electrical generating or water supply facilities. Within the City, water-dependent uses can include boat ramps/docks and fishing piers associated with recreation.

Water-related uses are defined as activities which are not directly dependent upon access to a water body which provide goods and services associated with water-dependent or waterway uses. These uses may include commercial resorts, campgrounds, fish camps, dive shops, bait and tackle stores, etc. The City's need for water-dependent and water-related uses is determined on the demand placed on its water resources. The City's Community Redevelopment Area's (CRA) Waterfront District Master Plan was adopted by the City in 2013 on the Future Land Use Map to preserve the small waterfront community that has begun to redevelop in the Kings Bay area. The Waterfront District provides for water-dependent and water-related uses as identified in the Future Land Use Element of the City's Comprehensive Plan. Allocations of land uses adjacent to water bodies incorporate the need for future land use impacts, resource protection requirements and reduced shoreline conflicts. Water-dependent and water-related uses should have priority over the siting of non water-dependent uses.

Public Services and Facilities

As the City of Crystal River grows and development expands current City limits with potential and planned annexations, the City is required to provide new facilities and services to new City areas. Public services and facilities are needed to support growth and development in the City of Crystal River (see Map CM-7); however, any future facilities such as schools or public government buildings should be located outside areas susceptible to storm damage or flooding. The Future Land Use Element of the City's Comprehensive Plan identifies areas where future development can occur. To protect coastal resources and maintain water quality standards, additional review requirements in regards to public services and facilities, such as sanitary sewer, may be required of any proposed development within the City. For example, an area planned for annexation with individual septic systems may have the potential to degrade estuarine water quality and, as such, is required to connect to a central sewer system.

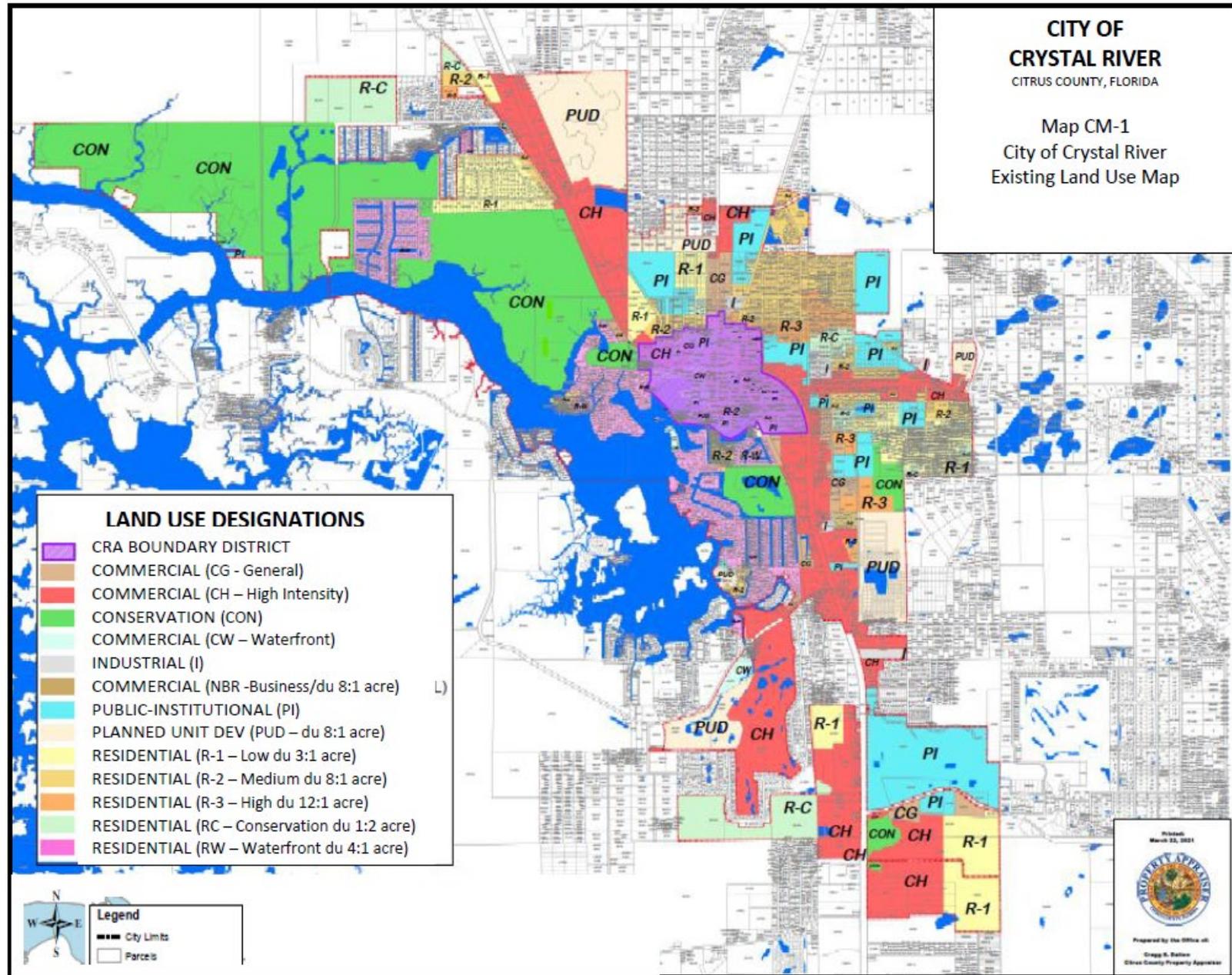
Transportation

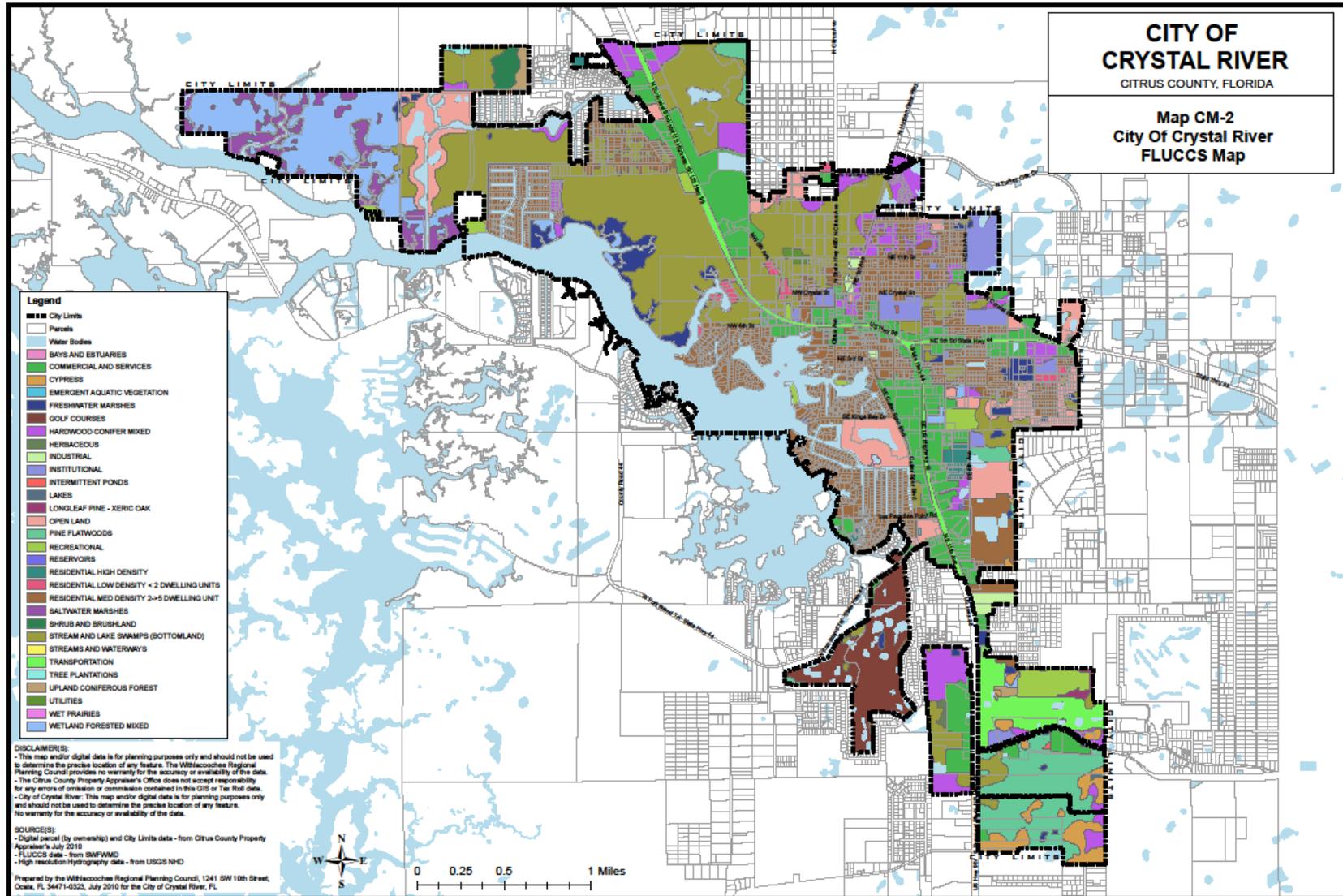
The primary focus of transportation in the Coastal Management Element is hurricane evacuation. The planning for, and construction of, new or expanded roadways within the City of Crystal River must be assessed to ensure LOS standards will not be degraded, especially the hurricane evacuation capacity. The approximate number of evacuating vehicles leaving the county is shown in the Table CM-7 using a 2020 base scenario derived from the *2017 Florida Statewide Regional Evacuation Study* and subsequent years 2025 and 2030 using population growth projections.

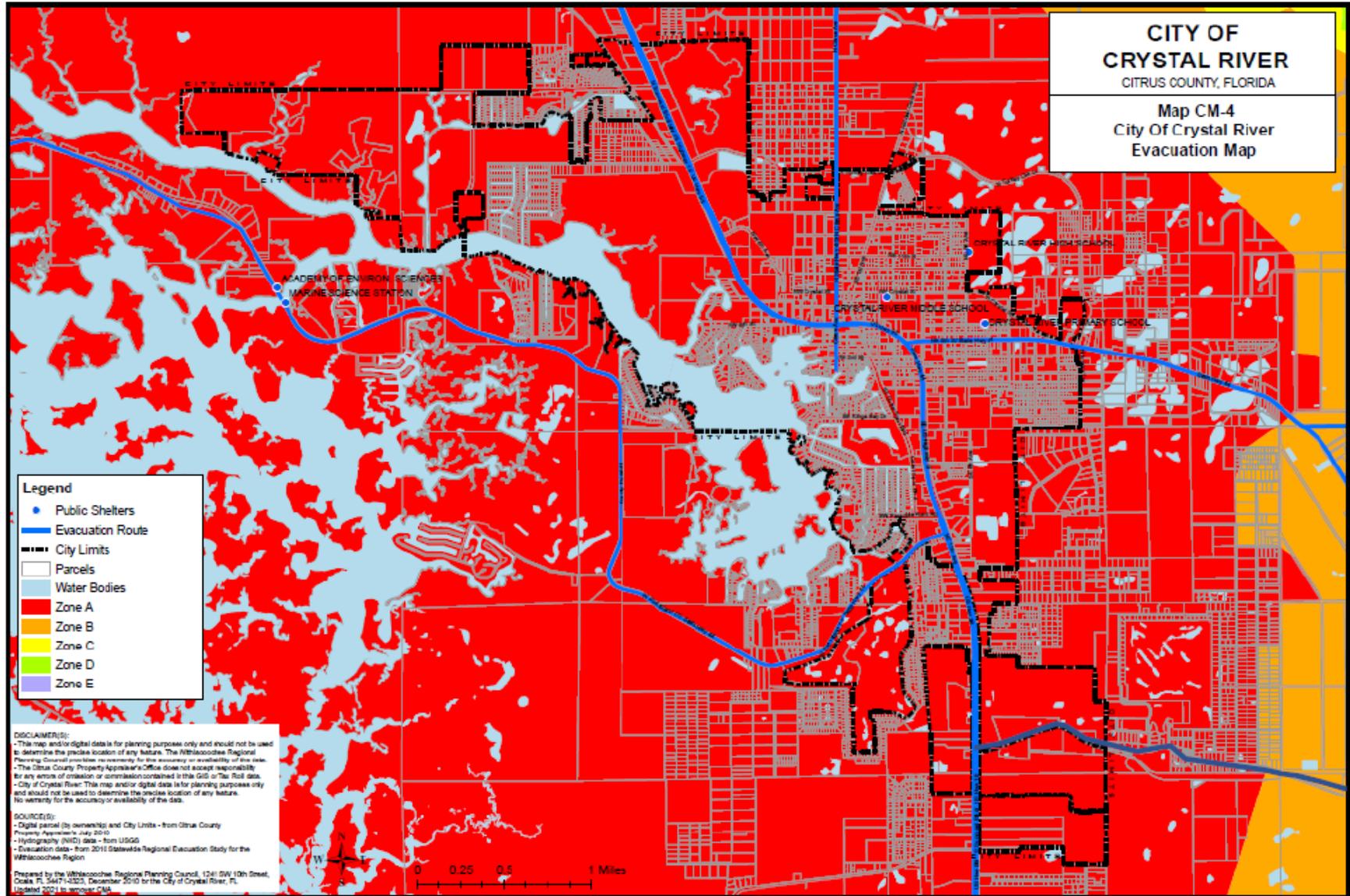
Table CM-7 – Evacuating Vehicles Leaving Citrus County by Evacuation Route – 2020-2030

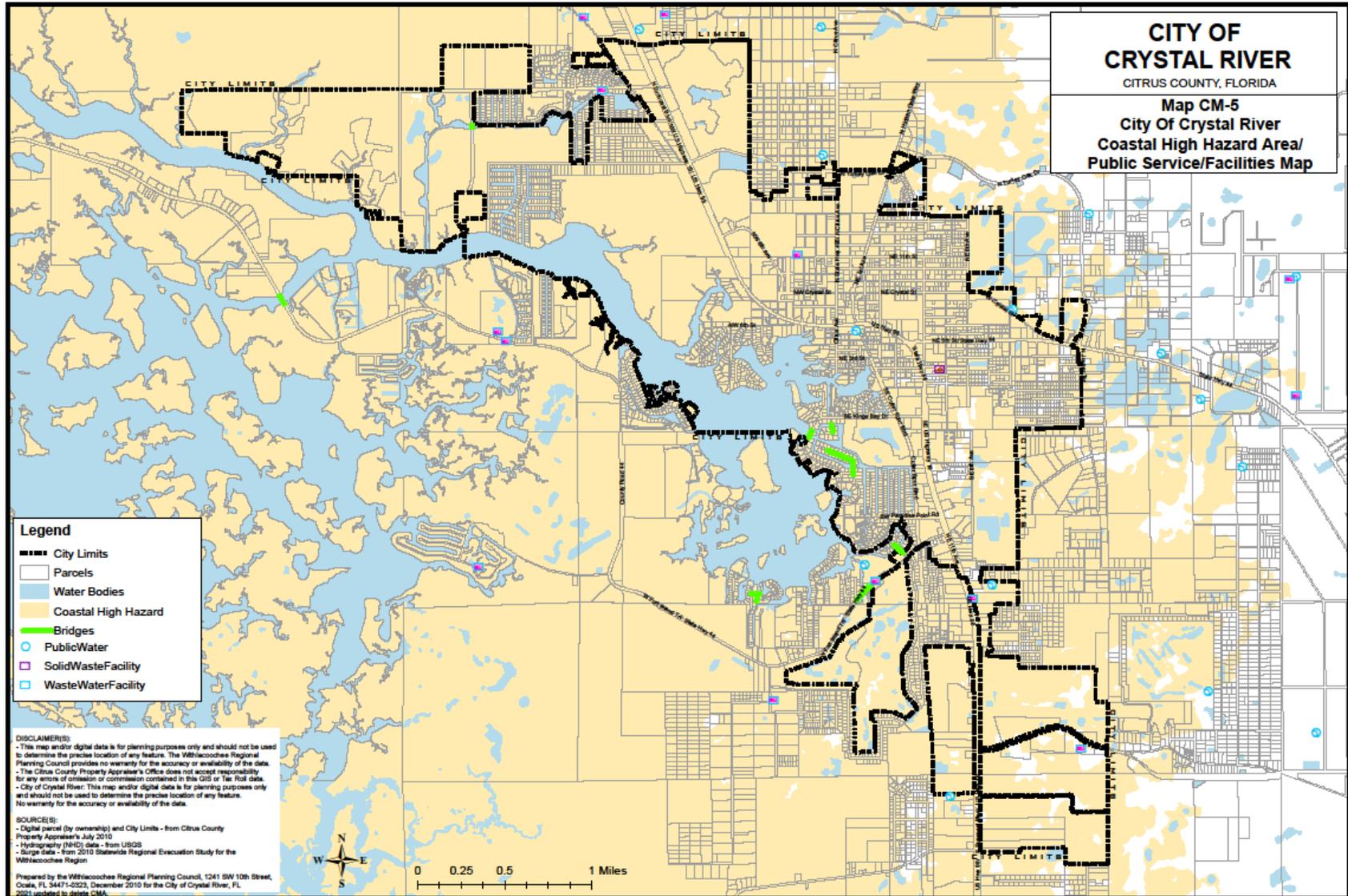
2020*	Evac A	Evac B	Evac C	Evac D	Evac E
US 19 Southbound	400	500	400	400	100
US 41 Southbound	100	100	200	300	400
SR 44 Eastbound	2,300	2,800	4,600	7,700	10,700
US 41 Northbound	4,900	6,000	7,400	10,600	11,800
US 19 Northbound	12,400	14,500	16,900	18,100	19,600
Projected 2025	Evac A	Evac B	Evac C	Evac D	Evac E
US 19 Southbound	420	530	420	420	110
US 41 Southbound	110	110	210	320	420
SR 44 Eastbound	2,420	2,950	4,840	8,100	11,250
US 41 Northbound	5,150	6,310	7,780	11,150	12,410
US 19 Northbound	13,040	15,250	17,770	19,040	20,610
Projected 2030	Evac A	Evac B	Evac C	Evac D	Evac E
US 19 Southbound	440	550	440	440	110
US 41 Southbound	110	110	220	330	440
SR 44 Eastbound	2,520	3,070	5,040	8,430	11,720
US 41 Northbound	5,370	6,571	8,100	11,610	12,920
US 19 Northbound	13,580	15,880	18,510	19,820	21,460

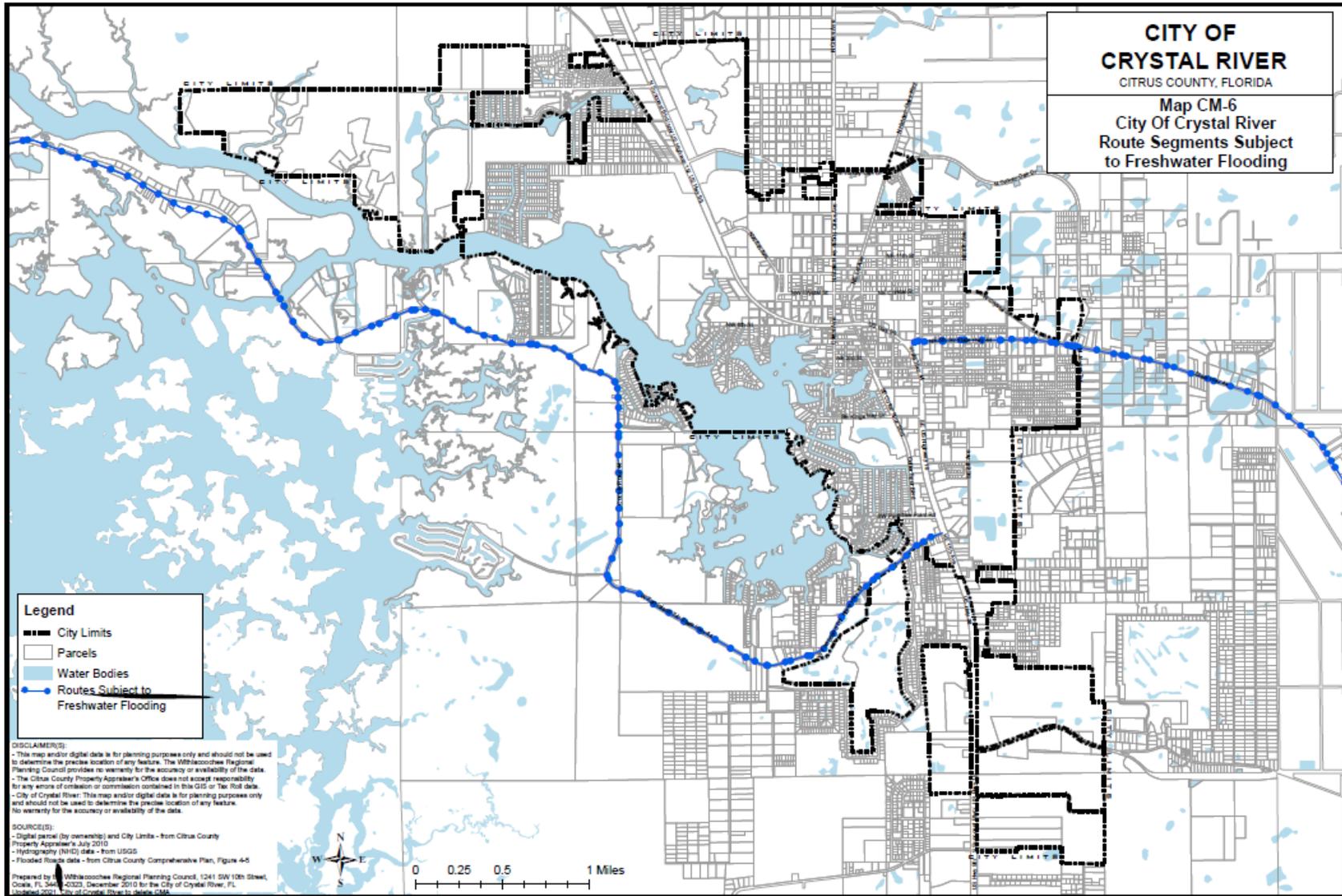
*Source: Statewide Regional Evacuation Study Program, Volume 4-8 Tampa Bay, Table IV-14; Years 2025 and 2030 estimated using County linear pop projections – BEBR Med, December 2020.

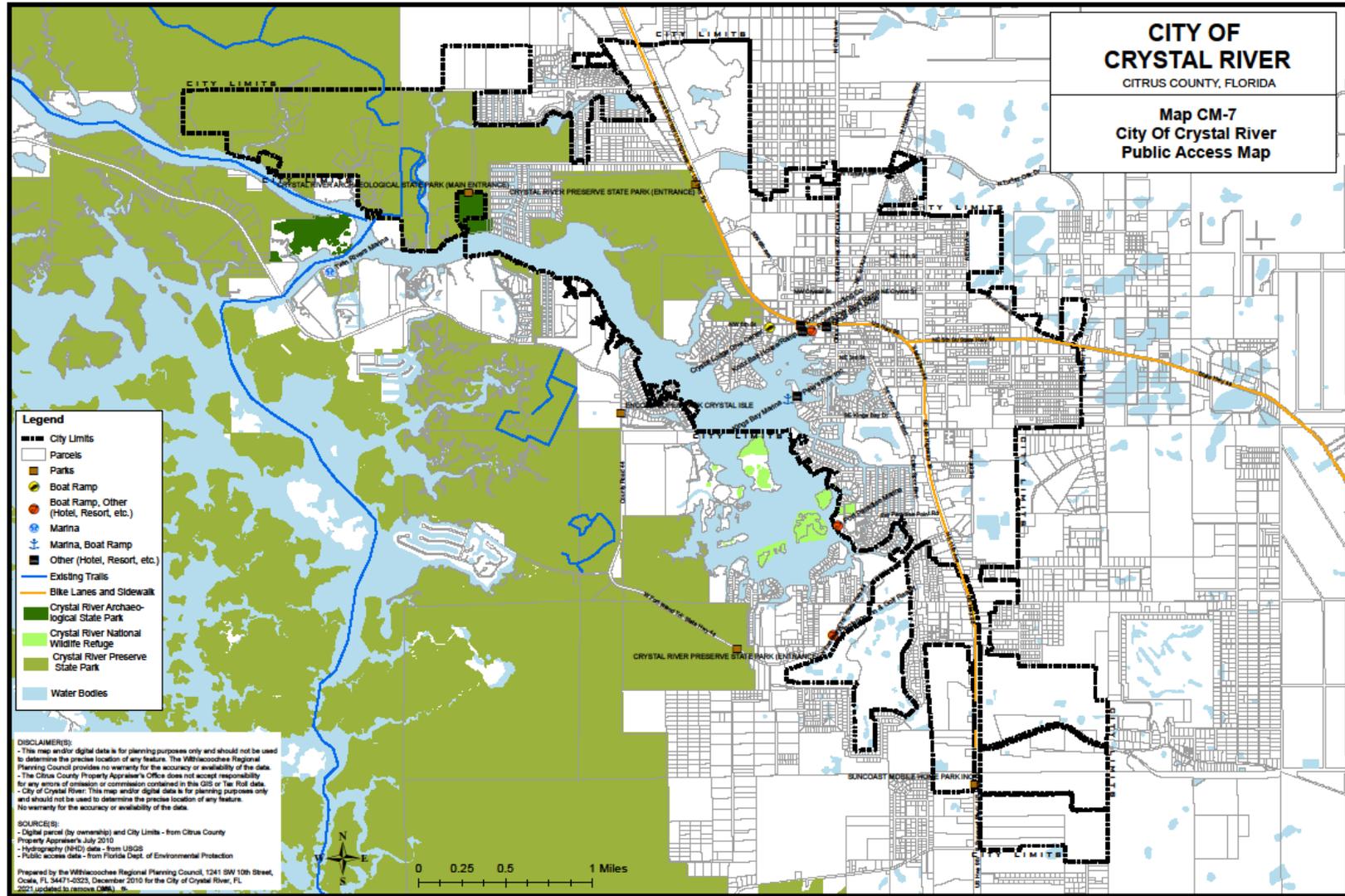












**COASTAL MANAGEMENT ELEMENT
GOALS, OBJECTIVES, AND POLICIES**

GOAL 1: Coastal Resources – Conserve, protect and manage the coastal resources within the City, including the wetland and upland ecosystem so as to maintain and enhance native habitats, floral and faunal species, diversity, water quality and natural surface water characteristics.

OBJECTIVE 1.1: Ensure the protection and enhancement of significant vegetative communities which support wildlife through preserving the diversity and viability of Coastal habitat areas.

POLICIES:

- A) The City of Crystal River shall prohibit non water-dependent development activities which will adversely affect submerged areas containing sea grass habitats.
- B) The City shall require preservation, restoration and/or enhancement of altered natural communities with such areas to be landscaped with native vegetation as a condition of development approval.
- C) The City shall protect habitat areas of species listed by the State of Florida and U.S. Fish and Wildlife Service (USFWS) as Endangered, Threatened or Species of Specific Concern, when such species are sighted consistent with enforcement of land development regulations regarding environmentally sensitive lands.
- D) The City shall continue to coordinate with all applicable State of Florida resource protection agencies through cooperation with the Tampa Bay Regional Planning Council (TBRPC) and other appropriate resource programs.

GOAL 2: Land Use – To conserve, protect and restore coastal resources within the City by managing growth and land use so as not to damage or destroy those resources.

OBJECTIVE 2.1: Establish the location, extent, and distribution of land uses consistent with the protection of coastal resources.

POLICIES:

- A) The City shall regulate land uses which have demonstrated adverse impact on coastal resources, such that those impacts are mitigated.

- B) The City shall limit residential densities to the maximum density of one unit per two (2) gross acres in the Coastal Low Density Residential land use category for those areas not previously platted.
- C) Sites proposed for development shall be examined, through the use of best available data and analysis, for the presence of listed species' habitat. For sites 5 (five) acres or larger, the City's Land Development Code shall contain criteria to require that a biological survey for endangered, threatened, special concern or commercially exploited species be conducted and reviewed by appropriate agencies to assess development impacts on these species. All development approvals will be conditioned on an agreement that provides for the preservation of habitat adequate to maintain viable populations.
- D) The City shall require that significant environmental or ecological features, wildlife habitat, environmental system corridors or conservation areas be protected through a variety of mechanisms conservation, easements, acquisitions, density transfers, transfer of development rights (TDRs), purchase of development rights or land exchanges.

OBJECTIVE 2.2: The City shall develop standards for appropriate densities, intensities, buffer zones, resource protection, and location for development adjacent to aquatic and natural preserves and wildlife refuges, to protect the natural character, scenic values and public benefit of these areas.

POLICIES:

- A) The City shall undertake a program to identify, review, and prepare recommendations for lands designated for development which are inconsistent or incompatible with the protection of conservation of coastal resources.
- B) The City shall consider the use of innovative or alternative zoning districts or techniques to protect coastal resources in its rezoning program following adoption of any land use amendment adjacent to aquatic and natural preserves and wildlife refuges. Such techniques may include overlay districts, floating zones, bonus ordinances performance standards, fast-tracking of development applications, quality development programs, Transferable Development Rights or other incentive-based methods.
- C) Reserved
- D) The City shall cooperate and coordinate with other local governments, state agencies and Citrus County in maintaining appropriate land use categories, standards, criteria and land development regulations for protection of coastal resources.

OBJECTIVE 2.3: The City shall give priority for shoreline land use to water-dependent uses over water-related land uses, and shall be based on type of water-dependent use, adjacent land use, water quality, impact on habitat and impact on coastal resources.

POLICIES:

- A)** When reviewing applications for re-zoning, Plan amendments or development orders within the WC-Waterfront Commercial District, shoreline land uses shall have the following priorities:
1. Water-dependent uses such as fish, shellfish and wildlife production, protection and conservation of coastal and natural resources, recreation, public access, marinas and navigation, and water-dependent utilities and industry, which do not create a significant adverse impact upon the water or land use.
 2. Water-enhanced uses such as recreation, commercial, and industrial uses.
 3. Water-dependent residential uses such as homes with private docks or launch facilities.
 4. Nonwater-dependent or related activities such as intensive urban residential, nonwater-dependent industry and commerce.
- B)** Per the Manatee Protection Element, no new marinas shall be sited within Crystal River city limits or within Kings' Bay unless a facility of similar size is removed. Therefore, these standards apply in the event a new marina is approved as a replacement, or where an expansion of an existing facility is initiated:
1. Marinas shall be located in areas where the least dredging, filing, and maintenance are required and where aquatic resources shall not be adversely affected.
 2. Sufficient upland shall exist to accommodate needed support facilities such as adequate parking, dry storage, work areas, stormwater management facilities and other nonwater-dependent uses.
 3. Marinas and docking facilities shall be located in areas which require minimal or no dredging or filing to provide access by either canal, channel or road.

4. The marina areas and navigation access channels shall not be dredged to depths greater than necessary to prevent prop dredging.
 5. Marina basins shall be located where there is an existing basin and access channel and adequate depths to accommodate the proposed use.
 6. Facilities shall be designed to not adversely affect existing circulation patterns.
 7. Marinas shall not be permitted in areas where approved or conditionally approved shellfish harvesting would be severely impacted and/or sections permanently closed to shellfish harvesting.
 8. Prior to the operation of any new marina fueling facility or expansion of an existing facility, a fuel management/spill contingency plan shall be developed. The plan shall describe methods to be used in dispensing fuel and all the procedures, methods and materials to be used in the event of a spill.
 9. Sewer pump-out service and facilities shall be available and accessible to all new boat slips constructed or renovated, inside marinas.
 10. All new or expanded marinas shall provide water quality monitoring data which complies with state water quality standards under a program approved by the FDEP.
 11. All new or expanded marinas shall prepare a hurricane preparedness plan subject to review by Citrus County's Division of Emergency Management.
- C) The City shall require adherence to the location and building standards for wetlands and shoreline projection as specified in the City of Crystal River Land Development Code for proposed development within 150 feet of King's Bay, Crystal River, and all navigable tributaries and surface waters of the State of Florida.

OBJECTIVE 2.4: Restrict overdevelopment within the City through required conformance with the Future Land Use Plan and implementation of flood damage prevention regulations.

POLICIES:

- A) Require that land development applications for proposed development not exceed density limitations and meet performance standards established by the City's Comprehensive Plan and Land development Code.

- B) Require that land development applications, except for a single dwelling unit on an existing lot of record, be planned in a specific manner which is compatible with site environmental characteristics through the use of stormwater management plans.
- C) Require the ability for clustering of uses for land development projects located within uplands of properties containing wetlands through implementation of Planned Unit Development (PUD) zoning requirements.
- D) Prohibit the siting of new or the expansion of existing mobile homes within the CHHA, except in mobile home parks in existence at the adoption of this regulation and being authorized by the Department of Health may continue as long as they otherwise remain lawful.
- E) Prohibit the siting of park models (park trailer recreational vehicles as defined by Chapter 320.01 Florida Statutes) on the west side of US Highway 19. (Park trailers may be allowed within an approved RV Park PUD located east of US Highway 19.)
- F) Limit the siting of new acute care medical facilities or any other facilities which house nonambulatory persons to the east side of US Highway 19.
- G) Prohibit the generation, storage or disposal of hazardous waste materials in excess of 100 kilograms per month, as defined and listed in 40 Code of Federal Regulations (CFR) 260.10, and as adopted in Chapter 62-730 Florida Administrative Code, (F.A.C).

OBJECTIVE 2.5: Protect and preserve historic and archeological resources within the City of Crystal River, consistent with the other elements.

POLICIES:

- A) Cooperate with state, regional and agency programs for open space, recreation, preservation or conservation.
- B) Coordinate applications for development approval with the Florida Department of State, Division of Historical Resources to ensure proper identification and protection of archaeological and historical resources.
- C) Prohibit the destruction or disturbance of any known historical resource sit without the consent of the City of Crystal River and the Florida Department of State, Division of Historical resources.
- D) Encourage the re-use of historic resources which are deemed appropriate for public viewing, through specific site planning mechanisms such a density transfer bonuses and variances from setbacks and maintenance of open space.

- E) Require that known historic resources shall be designated on site plans submitted as part of the development review process.
- F) Nominate eligible historic and archaeological resources to the National Register of Historic Place.

GOAL 3: Water Quality - To protect, enhance and improve the quality of the estuarine environment within Coastal Management Area of the City of Crystal River.

OBJECTIVE 3.1: Meet or exceed state estuarine water quality standards for designated classification and uses of coastal water bodies.

POLICIES:

- A) Encourage the use of altered, isolated wetlands which are not of high enough quality to warrant preservation, in conjunction with stormwater management plans, as a means to limit off-site stormwater discharge into coastal waters through the development review process.
- B) Restrict the use of public funds to construct infrastructure that would subsidize development in the coastal high hazard area, except to serve development consistent with the Future Land Use Map or to correct existing water quality/public health or safety problems.
- C) Require all activities permitted and monitored by FDEP and SWFWMD as a source of water pollution to establish and implement a stormwater management system that meets or exceeds the latest SWFWMD and State standards for water quality and peak discharge.
- D) Continue to require the use of best management practices that limit the amount of sediment, reaching all surface waters, through land development regulations. These practices shall be used in agriculture, silviculture, construction, dredge and fill operations, and stormwater management systems.
- E) Continue to upgrade the City's sewage treatment plant and a concerted effort and commitment shall be made to utilize the highest level of treatment possible.
- F) Use alternative methods of effluent disposal such as reuse and land spreading/spray irrigation to reduce nutrient loadings to the rivers and estuaries.

GOAL 4: Hurricane evacuation levels of service shall be adopted to provide for the safety of residents and visitors in the event of evacuations.

OBJECTIVE 4.1: The City shall maintain or reduce hurricane evacuation times by requiring that new developments not degrade the existing evacuation Level of Service (LOS).

POLICIES:

- A) The Level of Service (LOS) for out-of-county hurricane evacuation shall be no greater than 16 hours for a category 5 storm event.
- B) No new hurricane shelters shall be located within the Category 5 hurricane evacuation area.
- C) The Coastal High-Hazard Area (CHHA) is defined 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. All proposed Comprehensive Plan Amendments and new developments within the CHHA must meet the following criteria:
 - 1. The adopted LOS for “out of county” hurricane evacuation is maintained for a category 5 storm event as measured on the Saffir-Simpson scale.
 - 2. A 12 hour evacuation time to shelter is maintained for a category 5 storm event as measured on the Saffir-Simpson scale and shelter space reasonably expected to accommodate the residents of a development contemplated by the proposed comprehensive plan amendment is available; or
 - 3. Appropriate mitigation is provided that will satisfy Policy C1. Or 2). Appropriate mitigation shall include, without limitation, payment of money, contribution of land, and construction of hurricane shelters and transportation facilities not to exceed the amount required for a developer to accommodate impacts reasonably attributable to development.
 - a. City shall enter into a binding contract with the developer detailing with any required mitigation.
 - b. If the LOS for the host evacuees has not be established the LOS shall not exceed 16 hours for a category 5 event.
- D) City shall assess and adopt regulations in the CHHA which:
 - 1. limit new development in Velocity Flood areas and prohibits additional mobile home units; and/or
 - 2. allow new development provided that mitigating measures are established which do not increase hurricane evacuation times;
 - 3. promote land acquisition; and/or
 - 4. establish a fee in lieu program and use those funds generated by fees to support future shelter development.

OBJECTIVE 4.2: Shelter for Protection. The City of Crystal River shall designate hurricane evacuation shelters to protect the population evacuated from the Hurricane Vulnerability Zone.

- A) The City of Crystal River, in cooperation with Citrus County, other Coastal Cities and the American Red Cross, shall identify appropriate and adequate hurricane emergency shelter facilities to accommodate the population within the Hurricane Vulnerability Zone for all identified evacuation zones.
- B) New hurricane emergency shelter space shall not be located in the Coastal High Hazard Area.

OBJECTIVE 4.3: Mitigation of Property Damage. The City shall minimize danger to life and property in the Hurricane Vulnerability Zone and Coastal High Hazard Area.

POLICIES:

- A) If constructed, all public facilities in the Hurricane Vulnerability Zone shall be floodproof to ensure minimum damages from storms and hurricanes.
- B) The City, through coordination with the County Sheriff's Office, shall provide on its website continuing information to residents concerning hurricane evacuations and shelters.
- C) A new residential development of 25 units or more in the Hurricane Vulnerability Zone shall be required to formulate an emergency hurricane preparedness plan for that development. Prior to the issuance of the first Site Development Permit, the plan shall be reviewed by the Citrus County Director of Emergency Operations for Consistency with the County Emergency Plan.
- D) All development in the flood hazard areas as designated on the Flood Insurance Rate Map (FIRM) shall be consistent with the Federal Emergency Management Agency (FEMA) requirements for elevation or floodproofing.

OBJECTIVE 4.4: Post-Disaster Redevelopment. In order to reduce the exposure of human life and public/private property to natural hazards, a post-disaster redevelopment plan shall be consistent with the Citrus County Plan.

POLICIES:

- A) The City's post-disaster redevelopment plan shall be consistent with the adopted Citrus County Plan.

- B)** The post-disaster redevelopment plan shall provide operational strategies and roles and responsibilities for implementation that will guide decisions affecting long term recovery and redevelopment of the community after a disaster and include:
- Recovery Task Force (appointed body);
 - Guidelines for determining feasibility of repairing and reconstruction damaged structures including standards to which reconstruction should be complete;
 - Post-disaster, timetable outlining recovery, redevelopment, relocation, and hazard mitigation priorities;
 - Identification of those areas which have the highest potential for damage on past experiences and studies' and establish policies for evaluating the possibility of relocating or structurally modifying public infrastructure located in those areas;
 - Identification of funding sources or funding mechanisms which may be needed to replace, repair, and/or relocate damaged public infrastructure; and
 - Identification of the feasibility of public acquisition following a natural disaster. Acquisition should address areas adjacent to public holdings and those areas with a history of frequent storm impacts.
- C)** Immediate repair and cleanup actions needed to protect the public health and safety include repairs to potable water, wastewater, and power facilities; removal of debris; stabilization or removal of structures about to collapse; and minimal repairs to make dwellings habitable. These actions shall receive first priority in permitting decisions. Long-term redevelopment efforts activities shall be postponed until the Recovery Task Force has completed its duties.
- D)** Structures which suffer repeated damage to pilings, foundations, or load-bearing walls shall be required to modify the structure to correct the reoccurring damage.
- E)** The recommendations of interagency hazard mitigation reports shall be considered for incorporation in the City's Comprehensive Plan.

OBJECTIVE 4.5: Conformance with the Florida Division of Emergency Management and Tampa Bay Planning Regional Council's Florida Statewide Regional Evacuation Study Program (Hurricane Evacuation Study). The City shall revise as necessary the Comprehensive Plan and related land development regulations to incorporate findings of the Hurricane Evacuation Study as updated.

GOAL 5: Shoreline Use – Maintain and improve public access to the sovereign lands of the City of Crystal River.

OBJECTIVE 5.1: Increase public access to the Coastal Area’s natural resources through expansion or refurbishing of existing facilities, or acquisition or new property, which will be consistent with the public’s needs and the natural resource capacity of the selected area.

POLICIES:

- A) Acquire shoreline areas along the Crystal River for public access through federal, state, regional and/or locally funded land acquisition programs, or as part of the development review process.
- B) Manage all public access facilities in a manner consistent with federal, state, regional and local environmental regulations.
- C) Limit vehicular access to publicly-owned shoreline areas along the Crystal River to designated parking areas except for maintenance and natural resource enhancement/restoration activities.

GOAL 6: Public Services and Facilities – Public services and facilities shall be adequate and available to serve both current and future residents.

OBJECTIVE 6.1: The City of Crystal River shall ensure that the provision of roads, potable water, sanitary sewer, drainage and solid waste facilities and services required to maintain the adopted Level of Service standards shall be consistent and phased with the level of development proposed in the Future Land Use Element.

POLICIES:

- A) Transportation – Ensure through required capital improvements the adopted Level of Service standards.
- B) Potable Water – Ensure through capital improvements and development review, sufficient water resources to provide potable water to meet the needs of the Coastal Area population.
- C) Wastewater – Provide sufficient treatment capacity and effluent disposal methods to meet the demand projected by growth and development consistent with adopted water quality standards.
- D) Stormwater Management – Ensure through monitoring programs and development approvals that stormwater management systems do not degrade coastal resources.

- E) Solid Waste – No solid waste disposal facilities shall be constructed west of US Highway 19.
- F) Public Buildings – Ensure through capital improvement planning and site selection that public buildings meet the needs of population growth and are located outside of areas most susceptible to damage from storms or flooding.
- G) Extension of Infrastructure – Ensure that the cost of the extension of infrastructure to serve a development is to be borne by the developer.

GOAL 7: Intergovernmental Coordination – Foster and encourage intergovernmental coordination between the City of Crystal River, Citrus County and regional, state, and federal governmental entities.

OBJECTIVE 7.1: Pursuant to the Intergovernmental Coordination element of the City of Crystal River Comprehensive Plan, the City shall coordinate the implementation of the Coastal Management element with the plans of all adjacent local governments and with any local, regional, and state agencies that directly provide services or have jurisdiction within the City limits.

POLICIES:

- A) The City shall file a written request with Citrus County to receive copies of the proposed Comprehensive Plans or plan amendments for review and shall forward to the County copies of proposed Comprehensive Plans and Plan Amendments.
- B) The City shall coordinate its planning activities implemented with the Comprehensive Plan of Citrus County, the long-range Plan of the Citrus County School Board, other units of local government providing services, but not having regulatory authority over the use of land, the Tampa Bay Strategic Regional Policy Plan, and the State Comprehensive Plan.
- C) The City shall make information available to the public on all development plans and proposals and services provided by City government.
- D) The City shall make staff available to participate in intergovernmental coordination activities with other governmental, public, and private entities.
- E) The City shall review the potential impact of all projects proposed in the City by other units of governments, both within and adjacent to the City.

- F) The City shall ensure that evacuation routes shall be designated in such a way as to distribute traffic demand to provide optimum utilization of available roadway facilities.

GOAL 8: Coastal Redevelopment – Eliminate inappropriate and unsafe development in the coastal areas of the City of Crystal River when opportunities arise.

OBJECTIVE 8.1: To provide development and redevelopment principles, strategies, and engineering solutions that reduce the risk in the City’s coastal areas which results from high-tide events, storm surge, flash floods, stormwater runoff, and the related impacts of sea-level rise.

POLICIES:

- A) The City will evaluate areas prone to flooding in order to improve local drainage to control increased runoff that might increase the danger of flooding to other properties.
- B) The City shall prohibit nonessential or improper installation of public utilities and public facilities in flood-prone areas.
- C) The City, through its Floodplain Administration Ordinance, shall provide minimum floodproofing standards for non-residential re-development and public or quasi-public facilities already located in the flood-prone area, to enable them to withstand flood damage.

OBJECTIVE 8.2: To encourage the use of best practices development and redevelopment principles, strategies, and engineering solutions that will result in the removal of coastal real property within the City from flood zone designations established by the Federal Emergency Management Agency.

POLICIES:

- A) The City shall consider preservation of flood-prone areas for open space purposes where opportunities become available through designation of conservation areas or by partnering with State of Florida conservation efforts of public lands.
- B) The City shall consider the use of Transfer of Development Rights (TDRs) for diversion of residential development to areas safe from flooding considering the need to reduce flood damages and in light of the need to prevent environmental incompatible flood plain use.

- C) To minimize impervious surfaces and control stormwater, the City shall encourage the use of Low Impact Development (LID) technologies that uses natural and engineered infiltration and storage techniques.

OBJECTIVE 8.3: To identify site development techniques and best practices that may reduce losses in the City due to flooding and claims made under flood insurance policies issued in the State of Florida.

POLICIES:

- A) The City shall continue to implement and enforce the Land Development Code where it requires 25-foot building setbacks from waterways, including open water, bays, bayous, lakes over five (5) acres in area, manmade canals, and similar navigable waters as measured from either the mean high-water line or ordinary high-water line.
- B) The City in its Land Development Code shall encourage the design of residential homes constructed on a raised foundation of piers and crawlspace, protecting the main body of the residence from flooding, while allowing air to circulate and prevent water damage and mold.
- C) The City in its Land Development Code shall require stormwater management requirements to minimize the detrimental effects of stormwater runoff and to provide for mitigation of stormwater impact from new development and redevelopment, and ensure consistency with the latest stormwater standards established by the State of Florida and Southwest Florida Water Management District (SWFWMD).
- D) The City in its Land Development Code shall require stormwater management plans to be submitted with an application for a single-family dwelling where it is not located in a subdivision having a valid stormwater management permit.

OBJECTIVE 8.4: To be consistent with, or more stringent than, flood-resistant construction requirements in the Florida Building Code and applicable flood plain management regulations set forth in 44. Code of Federal Regulations (C.F.R.) part 60.

POLICIES:

- A) The City shall strictly enforce all appropriate federal floodplain management regulations to reduce the number of repetitive loss properties.
- B) The City shall require that the first floor of living space of any building constructed within the City must be at least one-foot freeboard above the Federal Emergency

Management Agency's Flood Insurance Rate Map (FIRM) designated Base Flood Elevation.

OBJECTIVE 8.5: To participate in the National Flood Insurance Program Community Rating System (CRS) administered by the Federal Emergency Management Agency to achieve flood insurance premium discounts for the City's residents.

POLICIES:

- A) The City shall continue to participate in the CRS and seek ways to maintain its CRS rating or better.
- B) The City will consider updates to its Floodplain Administration Ordinance as may be recommended by the Florida Department of Emergency Management, State Floodplain Management Office to add CRS prerequisites announced by the Federal Emergency Management Agency (FEMA) as a means for the City to retain or obtain a better CRS rating.
- C) In order to increase public awareness of development in flood-prone areas, the City, through pre-application meetings and other forms of web-based media, will make available to its citizens flood plain management information.
- D) The City shall cooperate with Citrus County and the Citrus County Sheriff's Office in providing adequate flood warning and assistance with adherence to emergency preparedness plans.
- E) The City shall be prepared to assist the Sheriff's Office in providing alternative vehicular access and escape routes when normal routes are blocked or destroyed by flooding.