

CONSERVATION AND COASTAL MANAGEMENT

5

CHARTING
PORT ST. LUCIE

DATA & ANALYSIS

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CHAPTER 5. CONSERVATION AND COASTAL MANAGEMENT ELEMENT

I. Introduction

This document includes the data and analysis for the Conservation Element and the Coastal Management Element. The purpose of a Conservation Management Element is to identify natural resources in Port St. Lucie and establish policies that would protect and preserve the City's natural resources and environmentally sensitive land. The Coastal Management Element is intended to identify coastal hazards and establish policies that would protect human life, limit public expenditures in areas that are subject to destruction by natural disaster, and make the City more resilient to coastal hazards. The City of Port St. Lucie lies in St. Lucie County, an Atlantic Ocean coastal county located slightly south of the middle of the Florida peninsula. The County is composed of a mainland component, an estuarine lagoon, and a barrier island that is intersected by the Fort Pierce inlet. The City is in the southeast corner of the mainland portion of St. Lucie County with portions of the eastern limits of the City abutting the west shoreline of the estuarine lagoon. The North Fork of the St. Lucie River traverses the City and portions of the Savannas State Reserve, a large, unique freshwater coastal wetland, as well as a portion of the Atlantic Coastal Ridge fall within the City.

The coastal areas and natural resources of the City are dynamic and vulnerable resources and are essential components of the City's economic and social structure. Appropriate protection and management of the City's natural resources and coastal area increase community resiliency, mitigates hazard risk and supports the economic and social structure of the community.

II. Inventory and Analysis of Natural Resources

This section identifies the natural resources that are located within the City including waterbodies, soils, wetlands, floodplains, commercially valuable minerals, vegetative communities, listed species, water, and discusses the protection of air and water quality.

A. Waterbodies

The largest bodies of water near or inside the City of Port St. Lucie are the North Fork of the St. Lucie River (NFSLR) which traverses the City, and the Indian River Lagoon which abuts small portions of the eastern limits of the City. Within the City, the NFSLR is brackish and progresses from a riverine system to an estuarine system as it flows south. Major natural tributaries and embayments of the North Fork in the City are Long Creek, Mud Cove, Kitching Cove, Winters Creek, Blakeslee Creek, and Howard Creek. The City also has an extensive system of manmade bodies of water in the form of lakes, ponds, and canals. The location of all waterbodies within the City of Port St. Lucie can be seen on **Map 5-1.**

The City of Port St. Lucie falls within the St. Lucie River Watershed, managed by the South Florida Water Management District (SFWMD), as does most of St. Lucie County (see **Figure 5-1**). The majority of the City is within the North Folk sub-watershed of the St. Lucie River Watershed.

1. *North Fork St. Lucie River*. The NFSLR is part of Florida's Save Our Rivers Program. Additionally, a portion of the North Fork is designated as an aquatic preserve and is also designated as Outstanding Florida Water pursuant to Chapter 62-302 F.A.C. The North Fork Aquatic preserve is bounded on the north by Midway Road and extends from Coconut Point in Stuart to Jenkins Point in Palm City just west of the Roosevelt Bridge in Martin County. The eastern and western boundaries of the preserve encompass the state-owned sovereign submerged land occurring below the mean high water line to which the state holds title. The preserve is approximately 16 miles long through the natural riverbends and contains

approximately 5,000 acres. The North Fork is located in the Eastern Valley which is composed of long low narrow ridges ranging from 15 to 30 feet in elevation. The natural topography of the watershed is generally flat with few natural rises. The hydrology of the North Fork and its headwaters was altered in the early to mid-1900s to support the growing demands of development and navigation. This began with a network of agricultural and residential canals and drainages. The canals were primarily designed to address flood control and drainage for land reclamation. Prior to these drainage efforts, the North Fork St. Lucie River (SLR) watershed encompassed 187 square miles. Construction of these drainage canals expanded the watershed to 821 square miles by diverting flows from other areas to the North Fork.

Another flood control and navigation project was conducted from the 1920s to the 40s to straighten portions of the North Fork. In the process of straightening the river, the dredged spoil was piled into berms (mounds) along the banks of the new channel. These spoil piles, which can measure up to 50 feet wide and 25 feet tall, block former river bends and oxbows as well as isolate a large portion of the North Fork floodplain. Historically, the slow and meandering path of the North Fork allowed suspended solids to settle out of the water and nutrients to be filtered by vegetation, but the direct river-course does not, which now affects the water quality and sediment loads reaching the estuary.

The creation of St. Lucie Inlet in 1892 connected the Indian River Lagoon to the Atlantic Ocean at the mouth of the St. Lucie River (SLR). This project ultimately converted this freshwater tributary to a riverine estuary (freshwater in the upper reaches and saltwater in the middle and lower sections). This unique salinity gradient changed the natural resources found in the SLR which now supports high species diversity and serves as an important nursery ground for a variety of fish and wildlife. The river is also especially important habitat for the juvenile phases of commercially important species such as blue crabs, snook, snapper, drum and shrimp. Rare tropical peripheral fish species are also found in the upper reaches of the North Fork and the two headwaters - Five Mile Creek and Ten Mile Creek.

The SFWMD in cooperation with the Florida Department of Environmental Protection, the Florida Department of Agriculture and Consumer Services, Martin County, and St. Lucie County developed the St. Lucie River Water Protection Plan. The plan focuses on how to improve the quality, timing, and distribution of water in the natural ecosystem surrounding the watershed.

2. *Indian River Lagoon*. Immediately interior to the coastal barrier island, located between the barrier island and the Atlantic Coastal Ridge, is the Indian River Lagoon (IRL). The IRL is a linear estuarine system that extends along more than a third of Florida's east coast, over 155 miles, from Ponce de Leon Inlet in Volusia County south to Jupiter Inlet in Palm Beach County. Numerous freshwater wetlands and sloughs undergo a transition into riverine systems that connect directly to the IRL. The lagoon interacts with the saline waters of the Atlantic Ocean through the inlets, providing tidal exchange with fresh water discharged into the lagoon from the inland rivers. Although only small portions of the eastern limits of the City abut the west shoreline of the Indian River Lagoon, due to the significance of this water body it is important to discuss this estuarine system that lies in such close proximity to the City.

   The IRL provides a higher species diversity than any other estuary in North America. Portions of the IRL have been designated as Aquatic Preserves. The Jensen Beach to Jupiter Inlet Aquatic Preserve extends from the southern corporate limits of Fort Pierce (St. Lucie County) south (through Martin County) to Jupiter Inlet (West Palm Beach County) and encompasses 22,000 acres. The aquatic preserve was adopted under Florida Statutes, Sections 258.35 – 258.46 by the State of Florida on October 21, 1969

and are managed by the Florida Department of Environmental Protection, Office of Coastal and Aquatic Managed Areas. The Preserve is listed in the Aquatic Preserve Rule, Chapter 18-20 Florida Administrative Code, and have also been designated as Outstanding Florida Water pursuant to Chapter 62.302.7 F.A.C. The IRL is one of only twenty-eight estuaries in the country in the Environmental Protection Agency's National Estuary Program.

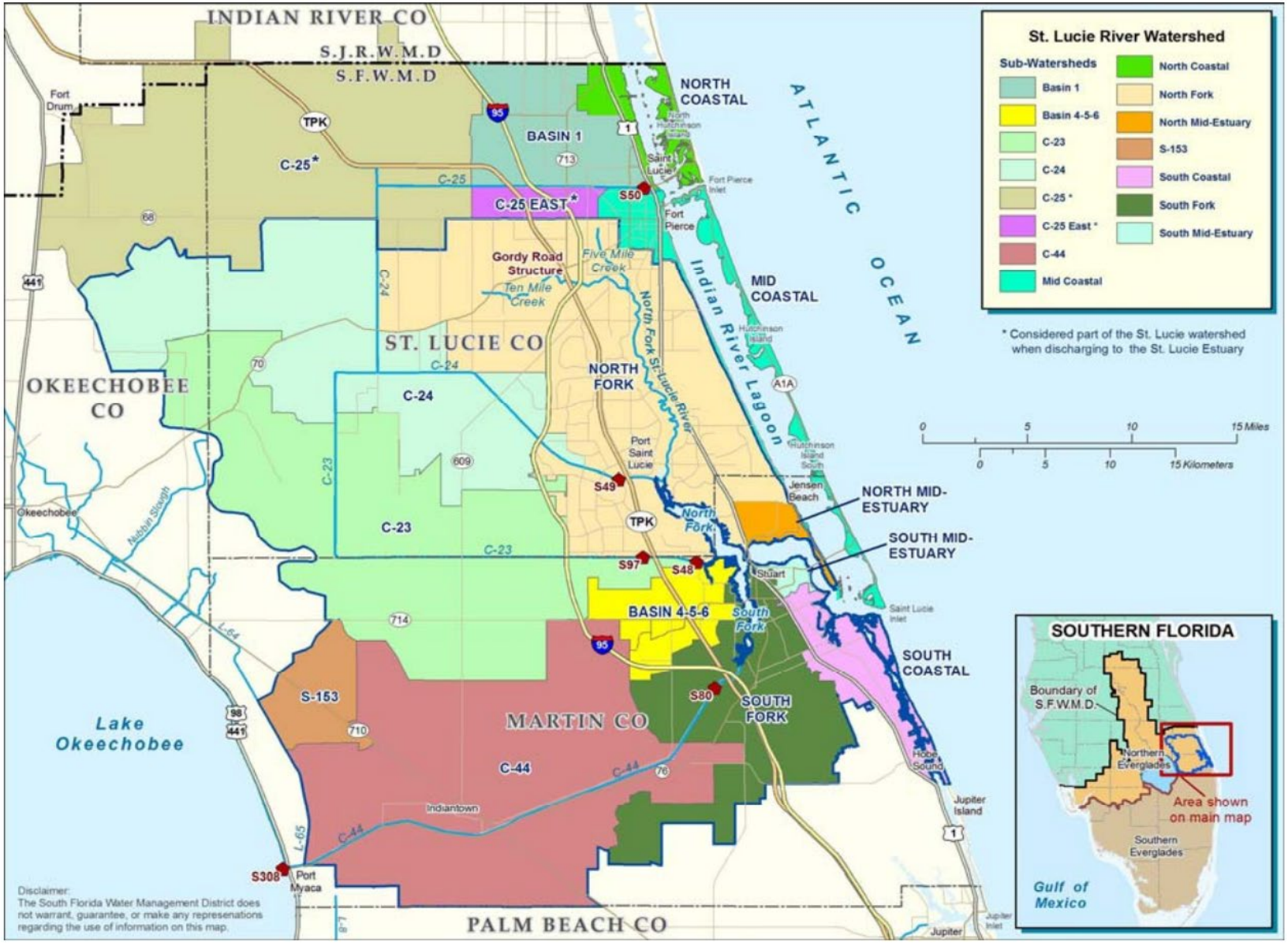
A variety of organizations have monitoring and research underway in the IRL and its watershed.

3. *Drainage Canals.* Port St. Lucie also has an extensive system of drainage canals. The C-24 canal traverses the City, and the C-23 canal runs along the southern limits of the City. There are three major primary drainage and flood control canals in the County, the C-23, C-24 and the C-25 which are part of the Central and South Florida Flood Control project and are managed by the South Florida Water Management District (SFWMD). In addition, the Fort Pierce Farms Water Control District and the North St. Lucie River Water Control District manage numerous secondary canal systems. These canals are solely dependent on rainfall as a source of inflow and are important sources of agricultural irrigation water. Canals C-23, C-24 and the North Fork of the St. Lucie River Water Control District canals drain into the North Fork of the St. Lucie River and its major tributaries. At this time all but a small area in southwestern and northeastern St. Lucie County is drained by these primary and secondary canal systems.

   Alteration and expansion of the historic watershed coupled with ecologically-degrading land use practices have set the stage for the current impaired condition of the North Fork and most other SLR watershed basins. Prior to these manmade alterations, wet season rains pooled broadly across the SLR watershed and moved toward the naturally lower elevations surrounding the river. Historic wetland ecosystems facilitated dynamic watershed storage and sheet flow. Reduced movement through natural features kept wetlands flooded and provided for movement of groundwater to the river during the dry season. This made historic wetlands and estuaries less vulnerable to Florida's variable rainfall. Today, much of the watershed runoff from the North Fork drainage basins flows quickly from smaller, residential canals into large canals that cross the coastal ridge instead of being detained, evaporated, cleansed, and held by natural systems.

4. *The Savannas.* A unique freshwater ecosystem is located in a shallow catchment area between the steeper western slope of the Atlantic Ridge and the gentler slope to the eastern uplands. A large portion of this habitat is under public ownership and is referred to as The Savannas. A large portion of the 6,311-acre Savannas Preserve State Park, under the ownership and management of the State, falls within the City. Outside of the Savannas, inland freshwater wetlands and swamps also occur throughout the City.

Figure 5 - 1. St. Lucie River Watershed



Source: South Florida Water Management District, 2009

B. Wetlands

Wetlands can be classified into two generalized categories, coastal (tidal) and inland (non-tidal). Coastal wetlands, which often line oceanic bodies of water, tend to remain muddy or sandy with little vegetation. Inland wetlands, are often found along river floodplains and lake perimeters, tend to be marshy and highly vegetated. Inland wetlands, also referred to as freshwater emergent wetlands or freshwater forested/shrub wetlands, are often some of the most productive ecosystems on earth. As a result, wetland features throughout Florida are heavily regulated and generally protected from development and other human activities. **Map 5-2** depicts all the wetlands within the City of Port St. Lucie and **Table 5-1** provides an acreage of all wetland typologies. According to the latest wetland GIS data provided by the U.S. Fish and Wildlife Service through the National Wetlands Inventory (NWI), Port St Lucie encompasses approximately 5,061 acres of wetlands (excluding lakes, ponds, and rivers).

Table 5 - 1: Wetlands

Wetland	Acres
Estuarine and Marine	1,002.2
Freshwater Emergent	2,850.2
Freshwater Forested/Shrub	1,208.6
Total	**5,060.9**

Source: U.S. Fish and Wildlife Service, 2021

Wetlands within Port St. Lucie are regulated by the South Florida Water Management District through the Environmental Resource Permit (ERP) and Consumptive Use Permitting (CUP) processes. ERPs help protect wetlands, water quality, and surface waters from new development or construction activities; CUPs ensure that the extraction of water does not result in the deterioration of local water sources and water-dependent ecosystems.

The City actively requires developers to seek ERP permits during the site plan review process. The City also requires a buffer zone of native upland around wetlands and mandates that wetlands be protected from sedimentation during development activities.

C. Ground Water

Water for urban and agricultural uses in the Upper East Coast (UEC) Planning Area comes from three main sources: the Floridan Aquifer System (FAS), the Surficial Aquifer System (SAS) and surface water. Currently, about 31% of the public water supply for the region comes from the shallower Surficial Aquifer. Withdrawals from the Floridan Aquifer have increased in recent years and currently meet about 69% of public water supply demands. In most cases, water from the Floridan Aquifer has a high salinity (relative to surface water) and has to be blended with surface water or water from the Surficial Aquifer before it is used for irrigation.

Because of its diffuse and intermittent nature, stormwater is not generally considered a viable option for direct public-supply applications where reliability is a major consideration. Stormwater management practices that provide for increased soil infiltration and groundwater recharge opportunities should be considered as a means to protect and possibly enhance existing groundwater resources.

The following is a summary of water supply issues in the UEC Planning Area.

- Increased withdrawals from the Surficial Aquifer System are limited due to potential impacts on wetlands, the increased potential for saltwater intrusion, and the proximity to contamination sources.
- Peak discharges of surface water during the wet season are affecting the ecological health of the St. Lucie River and Indian River Lagoon.
- Regulatory limitations prohibit additional surface water allocations from the C-23, C-24 and C-25 canals and from Lake Okeechobee and the Lake Okeechobee Service Area.
- Withdrawals from the Floridan Aquifer are expected to increase to meet future demands. Monitoring water levels and water quality in the FAS are needed to ensure long-term sustainability of the resource.
- Climate change and sea level rise could impact the UEC Planning Area.

D. Surface Water

Compared to most groundwater sources, surface water sources generally are of lower quality. Surface waters tend to contain silts and suspended sediments, algae, dissolved organic matter from topsoil, and chemical and microbiological contaminants from municipal wastewater discharges, stormwater runoff, and industrial and agricultural activities. The quality of surface water may vary seasonally with variation in flow rates or water levels. Traditionally, surface water has not been used for public supply in the SFWMD.

E. Pollutants

There are no sites in the City listed on the U.S. Environmental Protection Agency's (EPA) Federal Superfund list or the National Priorities List (NPL), and there are no brownfields in the City. Currently there are two sites within the City registered in the State Dry Cleaning Solvent Clean-up Program.

The City of Port St. Lucie does not and has never operated a solid waste disposal facility within the City. However, there are two abandoned dump sites within the City that have been identified by the Department of Environmental Protection. One is in the northwest quarter of Section 7, Township 37, Range 41, on the east side of Lennard Road and approximately 1.75 miles south of Walton Road. This site was used by General Development Corporation for disposal of residential and commercial solid waste. The second site is in the northeast quarter of Section 20, Township 36, Range 40, on the west side of Airoso Boulevard approximately 1800 feet north of Floresta Boulevard. This site was used by various property owners to dispose of building materials and some garbage. The Department of Environmental Protection Sites List describes a "minimal potential problem" to these two dump sites.

Nuclear Power Plant. The Florida Power and Light (FPL) St. Lucie Nuclear Power Plant is located on South Hutchinson Island, a barrier island in the southern portion of the County. The Power Plant is located only several miles from the eastern limits of the City. Nuclear energy production is monitored closely by the Nuclear Regulatory Commission, (NRC) a federal agency. Daily inspections are conducted at the St. Lucie Plant to guarantee compliance. Several identical safety systems are in place so that if one fails, others automatically go to work.

F. Floodplains

Floodplains are important ecological features that contribute to a region's water flow and storage, vegetative health, groundwater refreshment, and water quality protection. Whereas wetlands remain wet

throughout the year, floodplain areas are next to bodies of water that experience flooding at different points in time. Floodplains comprise approximately 1,865 acres or 8.7% of Port St. Lucie, and are reflected in **Table 5-2** and in **Map 5-3**.

Table 5 - 2: Floodplains

Floodplain Type	Acres	Percent of Port St. Lucie
100-Year	5,069.9	7.2%
500-Year	1,087.2	1.5%
Total	**6,157.1**	**8.7%**

Source: Federal Emergency Management Agency, 2022

Prior to development by man, the area that presently comprises St. Lucie County had drainage patterns that were controlled by major topographic features such as the Atlantic Coastal Ridge and more subtle features such as minor relict beach dunes (U.S. 1 south of Fort Pierce), Green Ridge (south central County), Osceola Plain (southwest County), Ten Mile Ridge (north central County), and overall a gentle slope from west to east (about 60 feet to about 5 feet). The alignment of these surface features generally parallels the existing coastline and thus traditionally served to impede sheetflow; the St. Johns Marsh, Allapattah Flats, and the Savannas were wetlands formed by these impediments. The Allapattah Flats and the south portion of the St. Johns Marsh slowly flowed east and south to form the headwaters of the North Fork of the St. Lucie River (NFSLR), which drained almost all of mainland St. Lucie County (450 sq. mi.). The Savannas normally percolated through the Atlantic Coastal Ridge to the Indian River, but during extremely high water stages there could be overflow to the North Fork of the St. Lucie River through Platts Creek. These wetland marshes stored water and provided recharge to the shallow aquifer.

Within the City of Port St. Lucie there were minor drainageways such as Howard Creek, Blakeslee Creek and Winters Creek, but the NFSLR was, and remains, the dominant drainage feature of both the City and the County. When comparing the locations of wetlands and floodplains within the community using **Map 5-2** and **Map 5-3**, significant portions of these critical environmental features often overlap. This is because both wetlands and floodplains are typically found within the lowest-lying areas of a community. Managing floodplains in a community is critical and requires proactive measures to protect people and property from hazardous flood events. Chapter 152 of the City's Code of Ordinances designates the city engineer as the floodplain administrator. The floodplain administrator is responsible for regulating development within Port St. Lucie's floodplains. The floodplain has been subjected to very little development in the City and the Future Land Use Plan proposes continued restriction of floodplain development.

G. Commercially Valuable Minerals

Other than sand there are no commercially valuable minerals in the City. Currently, there are no active mining operations in the City.

H. Soils/Soil Erosion

Soils provide several functions including drainage, stormwater filtration, water storage, aquifer recharge, and ground stabilization. The soils in the City are generally sandy. The primary soil types found in Port St. Lucie are Waveland, Oldsmar, Riviera, Wabasco, Arents, and Winder. Most of the soil within the southern portion of the City is Poorly Drained or Somewhat Poorly Drained, while the northern portion of the City is Well Drained or Excessively Drained. **Map 5-4** shows soil permeability within the City.

Due to the relatively flat topography of the City, and the protection the Barrier Island provides, soil erosion from typical geophysical conditions is generally not a problem in the mainland component of the County where the City lies. However, soil erosion and sedimentation can be a problem with large scale mining and agricultural operations if recommended Best Management Practices are not followed.

In the 1920's the headwaters of the North Fork the St. Lucie River were dredged for flood control and navigation. Spoil deposited along the newly created channel isolated both floodplain habitat and oxbows from the original river course. This left canals with steep banks and narrow remains of floodplain habitats degraded by dense stands of non-native vegetation. These altered shorelines with diminished and degraded floodplain are susceptible to erosion and have created sedimentation problems along portions of the North Fork of the St. Lucie River. Restoration projects along the North Fork are proposed within a component of the federal Comprehensive Everglades Restoration Program (CERP) identified as the Indian River Lagoon - South Plan.

The City's Land Development Regulations require the prevention of erosion in development and construction. These regulations are intended to protect water quality and air quality though standard practices, including controlling, filling, grading, and dredging. These actions will help prevent adverse impacts to wetlands and prevent violations of state water quality standards.

I. Physiography

The City of Port St. Lucie is identified by the U.S. Fish and Wildlife Service (FWS) as a part of an Upper East Coast sub-region; which includes St. Lucie, Indian River, Martin and the northern portion of Palm Beach County. This sub-region covers approximately 2,174 square miles and has an average elevation of 20 feet. The area is characterized by three, east to west, physiographic zones: (1) the Atlantic Coastal Ridge, (2) the Eastern Valley, and (3) the Osceola Plain. The Atlantic Coastal Ridge, bordered on the east by the Atlantic Ocean and on the west by the Eastern Valley, consists of relic dune ridges formed by wind and wave action along the coastline. Paralleling the east coast, the Ridge varies in width from a few hundred yards to a mile or two, and ranges in elevation from sea level to approximately 100 feet in Jonathan Dickinson State Park, the highest coastal elevation within this sub-region. In general, U.S. Highway 1 and the Florida East Coast Railway run along the Atlantic coastal ridge.

The City abuts the west shoreline of the Indian River Lagoon, an estuarine lagoon. Portions of the Savannas State Reserve, a unique freshwater coastal wetland, as well as a portion of the Atlantic Coastal Ridge fall within the City. The North Fork of the St. Lucie River traverses the City in a north-south direction. The creation of St. Lucie Inlet in 1892 connected the Indian River Lagoon to the Atlantic Ocean at the mouth of the SLR. This project ultimately converted this freshwater tributary to a riverine estuary (freshwater in the upper reaches and saltwater in the middle and lower sections). This unique salinity gradient changed the natural resources found in the SLR. Because of its geographic location and the tidal connection through the St. Lucie Inlet, the North Fork supports high species diversity and serves as an important nursery ground for a variety of fish and wildlife.

J. Fisheries

There are no fish management areas within the City limits.

K. Wildlife

Imperiled and other animal species depend on native vegetative communities for refuge, foraging, nesting, and denning. The size, quality, and connectivity of native vegetative communities all influence wildlife utilization. The City of Port St. Lucie and surrounding areas are home to a wide array of wildlife species, many of which are recognized as either threatened or endangered by federal and State agencies. The primary agency responsible for the continued identification and protection of these vulnerable species within the State is the Florida Fish and Wildlife Conservation Commission (FWC).

The Commission classifies Florida's threatened or endangered wildlife into five (5) categories of special status, these classifications are listed below in **Table 5-3**.

Table 5 - 3: Threatened or Endangered Species Classifications

Designation	Acronym	Description
Federally designated Endangered	FE	Species in danger of extinction if the deleterious factors affecting their population continue to operate.
Federally designated Threatened	FT	Species that are likely to become endangered in the nation within the foreseeable future if current trends continue.
State designated Threatened	ST	Species that are likely to become endangered in the state within the foreseeable future if current trends continue.
State designated Endangered	SE	Species in danger of extinction if the deleterious factors affecting their population continue to operate.
Species of Special Concern	SSC	Species that do not fit into the previous categories yet warrant special attention.

Source: Florida Fish and Wildlife Conservation Commission, 2024

Table 5-4 lists the threatened or endangered species which are potentially, likely, or confirmed (documented) to be located within St. Lucie County, along with a description of their habitats and current state status. There are currently a total of 22 listed species that could potentially live within St. Lucie County and thus the City of Port St. Lucie.

Table 5 - 4: Listed Species

Name	Habitat	State Status
Reptiles		
American Alligator: Alligator mississippiensis	Alligators occur from southeast Oklahoma and east Texas on the western side of their range to North Carolina and Florida in the east. They prefer freshwater lakes and slow-moving rivers and their associated wetlands, but they also can be found in brackish water habitats and rarely in salt water.	FT(S/A)
Loggerhead Sea Turtle: Caretta caretta	Loggerheads can be found in subtropical and temperate oceans of the world. Florida's sandy Atlantic and Gulf of Mexico beaches host one of the largest loggerhead nesting aggregations in the world. Females return to their nesting beach every two or more years to lay four to seven nests, one about every 14 days. Each nest contains about 100-126 eggs that incubate about 60 days.	FT

Name	Habitat	State Status
Green Sea Turtle: Chelonia mydas	Green sea turtles can be found in subtropical and temperate oceans of the world. Florida hosts one of the largest grouping of green turtle nests in the western Atlantic. More than 37,000 green sea turtle nests were documented in Florida in 2015, a record number. During the day, green turtles occupy shallow flats and seagrass meadows. In the evening, they return to their sleeping quarters of rock ledges, oyster bars and coral reefs.	FT
Leatherback Sea Turtle: Dermochelys coriacea	Leatherbacks can be found in marine waters throughout the Atlantic, Pacific, and Indian Oceans. They also nest on sandy beaches in the same range. Nesting in the United States usually occurs in Florida, Puerto Rico and St. Croix (U.S. Virgin Islands). Leatherbacks are found in Florida's coastal waters, with a small number nesting here, mostly on the Atlantic coast. Globally, they are found throughout the Atlantic, Pacific and Indian oceans. Travelling as far north as Alaska and Labrador, leatherbacks can regulate their body temperature to survive cold waters.	FE
Eastern Indigo Snake: Drymarchon couperi	Eastern indigo snakes inhabit pine flatwoods, hardwood forests, moist hammocks, and areas that surround cypress swamps. They can be found throughout Peninsular Florida and southeastern Georgia.	FT
Hawksbill Sea Turtle: Eretmochelys imbricata	Hawksbill sea turtles can be found in subtropical and temperate oceans of the world. Warm tropical seas are where people are most likely to see hawksbills. In Florida, hawksbills are found primarily on reefs in the Florida Keys and along the southeastern Atlantic coast.	FE
Gopher Tortoise: Gopherus polyphemus	Gopher tortoises prefer well-drained, sandy soils found in habitats such as longleaf pine sandhills, xeric oak hammocks, scrub, pine flatwoods, dry prairies, and coastal dunes. They are also found in a variety of disturbed habitats including pastures and urban areas. Suitable gopher tortoise habitat contains well-drained sandy soils for digging burrows and nesting, abundant herbaceous plants for forage, and open, sunny areas with sparse canopy for nesting and basking.	ST
Kemp's Ridley Sea Turtle: Lepidochelys kempii	The Kemp's ridley is the rarest sea turtle in the world. Its only major nesting beach is an area called Rancho Nuevo on Mexico's Gulf coast. The location of this nesting beach was a mystery to scientists until the discovery of a film made in 1947 by a Mexican engineer showing thousands of Kemp's ridleys crawling ashore to lay eggs there. Today, nesting females are found mainly on the beaches of Rancho Nuevo, however, they can be found on Florida and south Texas beaches.	FE
Pine Snake: Pituophis melanoleucus	The Florida pine snake inhabits areas that feature well-drained sandy soils with a moderate to open canopy. This species can be found	ST

Name	Habitat	State Status
	from southwest South Carolina, west to Mobile Bay in Alabama, south to Florida.	
Birds		
Florida Sandhill Crane: Antigone canadensis pratensis	Florida sandhill cranes inhabit freshwater marshes, prairies, and pastures. They occur throughout peninsular Florida north to the Okefenokee Swamp in southern Georgia; however, they are less common at the northernmost and southernmost portions of this range. Florida's Kissimmee and Desoto prairie regions are home to the state's most abundant populations.	ST
Florida Scrub-Jay: Aphelocoma coerulescens	The Florida scrub-jay is the only species of bird that is endemic to Florida. Scrub-jays inhabit sand pine and xeric oak scrub, and scrubby flatwoods, which occur in some of the highest and driest areas of Florida – ancient sandy ridges that run down the middle of the state, old sand dunes along the coasts, and sandy deposits along rivers in the interior of the state.	FT
Florida Burrowing Owl: Athene cunicularia floridana	Burrowing owls inhabit open prairies in Florida that have very little understory (floor) vegetation. These areas include golf courses, airports, pastures, agriculture fields, and vacant lots. The drainage of wetlands, although detrimental to many organisms, increases the areas of habitat for the burrowing owl. The range of the burrowing owl is throughout the peninsular of Florida in patches and localized areas. Burrowing owls can also be found in the Bahamas.	ST
Crested Caracara: Caracara plancus	Audubon's crested caracara inhabits wet prairies with cabbage palms. It may also be found in wooded areas with saw palmetto, cypress, scrub oaks and pastures. Audubon's crested caracara is found throughout south central Florida, and also occurs in Texas, Arkansas, Mexico, Cuba and Panama.	FT
Little Blue Heron: Egretta caerulea	Little blue herons inhabit fresh, salt, and brackish water environments in Florida including swamps, estuaries, ponds, lakes, and rivers (Rodgers et al. 1995). In the U.S., the little blue heron can be found from Missouri, east to Virginia, down to Florida, and west to Texas. In peninsular Florida they are relatively common and widespread but somewhat rare in the Panhandle. Outside of the U.S, the little blue heron can be found in Cuba, both coasts of Mexico and Central America, down into central South America.	ST
Tricolored Heron: Egretta tricolor	Tricolored herons inhabit fresh and saltwater marshes, estuaries, mangrove swamps, lagoons, and river deltas (Frederick 1997). They can be found from Massachusetts, down through the Gulf of Mexico and Caribbean, to northern Brazil. Breeding sites can also be found on the Pacific Coast from Baja California down to Ecuador. Tricolored herons are widespread, permanent residents in Florida, although they are less common in some parts of the Panhandle.	ST

Name	Habitat	State Status
American Oystercatcher: Haematopus palliatus	The American oystercatcher inhabits beaches, sandbars, spoil islands, shell rakes, salt marsh, and oyster reefs. Oystercatchers can be found from the coasts of the northeastern U.S. down to Florida's Gulf Coast (Nol and Humphrey 1994). Florida is home to both a resident breeding population and a large wintering population of American oystercatchers. Oystercatchers can also be found on the Caribbean coast of Central America.	ST
Wood Stork: Mycteria americana	Wood storks nest in mixed hardwood swamps, sloughs, mangroves, and cypress domes/strands in Florida. They forage in a variety of wetlands including both freshwater and estuarine marshes, although limited to depths less than 10-12 inches. The wood stork breeds in Florida, Georgia, South Carolina, and North Carolina. Non-breeding wood storks have an extensive range throughout North America, to northern Argentina in South America	FT
Roseate Spoonbill: Platalea ajaja	The roseate spoonbill is a resident breeder in South America, generally east of the Andes, and coastal areas of Central America, the Caribbean, and the Gulf of Mexico. Mangrove islands and occasionally dredge-spoil islands are the preferred nesting habitat for the species. In Florida, the species is found in Florida Bay, Tampa Bay, and Brevard County.	ST
Snail Kite: Rostrhamus sociabilis	Everglade snail kites inhabit shallow freshwater marshes and shallow grassy shorelines of lakes. They can primarily be found in the Kissimmee Valley, St. Johns River headwaters, Lake Okeechobee, Loxahatchee National Wildlife Refuge, Water Conservation Areas 2A, 2B, 3A, 3B, in Broward, Palm Beach and Dade counties; and sections of Big Cypress National Preserve and Everglades National Park.	FE
Black Skimmer: Rynchops niger	The black skimmer inhabits coastal areas in Florida such as estuaries, beaches, and sandbars. Skimmers can be found from the coasts of the northeastern U.S., down to Mexico, and over to the Gulf Coast of Florida. Breeding range is from Southern California, down to Ecuador.	ST
Least Tern: Sternula antillarum	The least tern inhabits areas along the coasts of Florida including estuaries and bays, as well as areas around rivers in the Great Plains. In Florida, the least tern can be found throughout most coastal areas. Outside of Florida, least terns are found along the U.S. Atlantic Coast, mid Atlantic states, and down from Mexico to northern Argentina.	ST
Mammals		
Southeastern Beach Mouse: Peromyscus polionotus niveiventris	The Southeastern beach mouse inhabits sand dunes along the Florida Atlantic Coast from Volusia south to Martin County.	FT

Source: Florida Natural Areas Inventory, 2024; Florida Fish and Wildlife Commission, 2024.

L. Vegetative Communities

Vegetative communities within the City are documented and classified using the 2021-2023 Land Use and Land Cover GIS data from the South Florida Water Management District based on the Florida Land Use, Cover, and Forms Classification System (LULC). The top five land use / land covers in the City are Residential, Tree Crops, Upland Coniferous Forests, Cropland and Pastureland, and Reservoirs. The table below provides the acreage and percentage of each of these land cover categories. All land use/land cover categories can be found on **Map 5-5.**

Table 5 - 5: Land Use/Land Cover

Land Use/Land Cover	Acreage	Percent of Port St. Lucie
Residential	38,245.4	49.7%
Tree Crops	6,582.4	8.5%
Upland Coniferous Forests	4,255.7	5.5%
Cropland and Pastureland	3,355.9	4.3%
Reservoirs	3,296.8	4.3%

Source: South Florida Water Management District, 2023

According to the Land Use/Land Cover analysis, there are a total of 16,166.0 acres or 21.0% of the City that are considered a vegetative community. The acreage for all vegetative communities is in **Table 5-6** and these areas can be seen on **Map 5-5**. These areas are mostly concentrated around the St. Lucie River and the Indian River Lagoon.

Table 5 - 6: Vegetative Communities

Land Use / Land Cover	Acres	Percent
Upland Coniferous Forests	4,255.7	5.5%
Reservoirs	3,296.8	4.3%
Vegetated Non-Forested Wetlands	2,890.9	3.8%
Wetland Hardwood Forests	2,062.6	2.7%
Streams and Waterways	1,109.6	1.4%
Upland Shrub and Brushland	817.4	1.1%
Open Land	499.2	0.6%
Lakes	279.4	0.4%
Upland Mixed Forests	241.7	0.3%
Upland Hardwood Forests	202.7	0.3%
Wetland Coniferous Forests	160.6	0.2%
Bays and Estuaries	152.3	0.2%
Herbaceous (Dry Prairie)	86.8	0.1%
Wetland Forested Mixed	84.3	0.1%
Mixed Rangeland	23.5	0.0%
Slough Waters	2.5	0.0%
Total	**16,166.0**	**21.0%**

Source: South Florida Water Management District, 2019

The LULC map is not parcel based but looks at all vegetative communities within the City limits. Therefore, it is important to note that the acreage identified by the LULC map will not directly correspond to the acreage totals established in future or existing land use maps, which are parcel based.

M. Conservation Mechanisms

1. Protection of Air Quality

The quality of air is measured by the percentage of pollutant parts in the air within a set monitoring time window. the Florida Department of Environmental Protection's Office of Air Monitoring is responsible for conducting this activity throughout the State of Florida. This Office currently has one ambient monitoring location (places that measure air quality/pollution) within St. Lucie County. The site is at 1420 East Midway Road in Fort Pierce, and it measures ozone. The data from the monitoring locations is analyzed according to the Air Quality Index (AQI), which ranks air quality in terms of pollution levels into the following categories: good, moderate, unhealthy for sensitive groups, unhealthy, very unhealthy, and hazardous. In the past 10 years, St. Lucie County's AQI rankings have consistently been recorded as "moderate" or "good" with few exceptions.

2. Protection of Water Quality and Quantity

The City is located within the SFWMD's Upper East Coast Water Supply Planning Area which encompasses Martin and St. Lucie counties as well as the northeastern portion of Okeechobee County. The City has adopted a Water Supply Facility Work Plan to provides for the development of alternative water supply and reuse programs to serve the projected population. The Water Supply Facilities is amended following updates to the SFWMD';s Upper East Coast Regional Water Supply Plan. The Port St. Lucie Utility Systems Department USD has added additional Floridan wells to meet the needs identified in the regional water supply plan and continues to identify and obtain rights to additional potential well sites in preparation for the projected growth.

As the Treasure Coast's largest public utility, Port St. Lucie Utility Systems has been a leader in the reclaimed water industry for more than 20 years. Reclaimed water is highly-treated wastewater used for beneficial purposes, such as irrigation of lawns and golf courses. New developments and recreational sites, such as golf courses, work with the PSLUSD to extend and connect to the reclaimed system. The City is committed to reducing demand through conservation practices and the use of reclaimed water for irrigation purposes. The City provides resources for public education programs for water conservation.

The Westport WWTF Nutrient Reduction Project has received grant funding from FDEP to allow for upgrades to the Westport wastewater treatment plant to meet advanced wastewater treatment (AWT) requirements for nitrogen and phosphorus removal. These upgrades are scheduled for completion in Summer 2027.

A water quality storage treatment project is underway on approximately 1,871 acres at the McCarty Ranch extension area that will take a fallow citrus grove and a 315-acre water impoundment and convert them to a shallow water storage facility consisting of seven reservoirs capable of receiving water diverted from the C-23 Canal. It also will capture an annual average of 53 inches of rain on the property reducing the need to discharge. This project is anticipated to keep up to 21% of excess freshwater C-23 Canal discharges from entering the North Fork of the St. Lucie Areas 1-4 already completed. Areas 5-7 are anticipated to be completed by 2030.

The City of Port St. Lucie Utility Systems Department produces an Annual Water Quality Report, that analyzes the City's potable water system for potential pollutants as required by Florida State Statutes. The potential pollutants that are analyzed are microbiological contaminants, inorganic contaminants, pesticides, herbicides, organic chemical contaminants, and radioactive contaminants. The 2023 report stated that no contaminants exceeded maximum containment level.

The protection of natural groundwater aquifer recharge areas is of great importance, as the City relies entirely on aquifers as its sole source of drinking water. The City will continue to implement development regulations and coordinate with state and federal agencies to ensure the protection of the water supply.

3. Pollution

Environmental pollution can be classified as point or non-point source. Point sources are pollutants that originate from one particular site or source, while non-point source pollution is derived from widely distributed sources. Land use coverage is an indicator of non-point source pollution. Non-point pollution can also be difficult to monitor because of the diffuse nature of the discharges. Sources include septic tanks, pesticides, and fertilizers that are used on crops and lawn, which may eventually leak into the aquifer.

Port St. Lucie regulates pollution and stormwater drainage in compliance with the National Pollution Discharge Elimination System (NPDES) – which is a national program designed to control the pollutants discharged into surface waters. Excess nitrogen and phosphorus can pollute local waterways and cause harmful algae blooms. Fertilizer and landscape debris are nutrient sources that can be controlled to prevent such occurrences. To address these issues, the City passed a stringent fertilizer ordinance (Ordinance 14-10) in 2014 which regulates landscape practices and fertilizer usage.

4. Conservation Programs

Conservation opportunities are enhanced through the public ownership of land. For an area to be considered conservation land by the Florida Natural Areas Inventory (FNAI), a significant portion of the property must be undeveloped and retain most of the attributes one could expect it to have in its natural condition. In addition, the managing agency or organization must demonstrate a formal commitment to the conservation of the land in its natural condition. The City contains 198 acres of city-owned natural preserves, out of a total of 2,940.5 acres of natural acres within city limits. The city also holds 3,909.7 acres for the McCarty Ranch Preserve, Recreation, and Water Quality Project.

a. *Conservation Lands Management and Acquisition Plan*. The City of Port St. Lucie has a Conservation Lands Management and Acquisition Plan which includes an inventory of conservation lands currently under the City's ownership and an inventory of lands that are candidates for purchase under the City's Conservation Trust Fund Program. The City's Conservation Trust Fund was formally established in 1992 through the adoption of Chapter 157: Natural Resource Protection in the City's Land Development Regulations. The funding source for the Conservation Trust Fund is a one-time voluntary contribution that developers pay in lieu of preservation or land donation as established under Chapter 157.

b. *Naturally PSL*. The City of Port St. Lucie launched the Naturally PSL initiative at the 2025 Citizen Summit as a resident-driven program to promote access to nature and neighborhood parks. This initiative evolved from feedback collected in previous summits, where access to natural

areas was identified as a top priority in 2023. At the 2024 Citizen Summit, the City collaborated with residents to co-design solutions for natural area preservation. This effort was recognized by the Bloomberg Harvard City Leadership Initiative as one of 40 programs selected worldwide. Through this process, residents and staff identified over 2,900 acres of natural areas and over 700 acres of land for improvement as green spaces.

Naturally PSL aims to increase awareness of the City's green spaces, support current and upcoming conservation projects, and engage residents in stewardship of natural areas. Key components include park and conservation land improvements; trails mapping and website; Environmental Stewardship Awards; Conservation Corps; Village Green Drive Green Street Festival; and in-person and virtual community meetings.

The Naturally PSL Land Bank Program, a central component of Naturally PSL, is a land bank program that focuses on acquiring, conserving, and activating city land for public use. According to the 2025 Neighborhood Citizen Survey (NCS), 63% of participants strongly support and 27% somewhat support a potential sales tax initiative to acquire land for additional parks, green spaces, water quality, and more.

Funding for land acquisition is derived from multiple sources.

- *Conservation Trust Fund*. Established in 1996, the Conservation trust fund collects a one-time donation in lieu of preservation where lands cannot be preserved on developed site of two (2) acres of greater. The donation amount is determined by the Upland Mitigation Fee per acre, which was last adjusted in 2017, and currently under review for update. The current fund balance is $682,178.
- *Private Donations*. Donations of land parcels or funds may be accepted for public purpose. For example, in the past, the City has provided tax abatements on property tax in exchange for parkland donations, job creation, and other benefits. One example is the Riverland Paseo Park.
- *Fees*. Developer contributions to Special Revenue Funds, including the tree mitigation fund, park impact fee funds, and capital project funds, may support land acquisition indirectly.
- *Grants and Bond Programs*. County, state, and federal programs provide funding for conservation acquisitions, including the St. Lucie County Environmentally Significant Lands (ESL) Program (e.g., Spruce Bluff Preserve and Oxbow Eco-Center), the Florida Communities' Trust (e.g., Florida Forever Program for the Port Preserve and Oak Hammock Park), the Land and Water Conservation Fund, and the Florida Recreation Development Assistance Program (FRDAP).
- *City Funds*. The City utilizes the general fund and land swaps for land acquisitions, including ongoing projects at the PSL Elementary School and Torino Park.

Challenges and Opportunities. Nearly half of all City-owned parcels (47%), including 198 acres of conservation land are not yet open or programmed for public use. Seventeen (17) open space recreation sites purchased with the Conservation Trust Fund in 2005 do not yet have implementation or maintenance plans. To address this, the City has launched the first pilot

neighborhood green space project through the Naturally PSL Conservation Corps to demonstrate community-driven activation and stewardship.

The overarching goal of the Naturally PSL Land Bank Program is to acquire, conserve, and activate City land, leveraging a flexible funding structure that combines private donation, grants, and philanthropic contributions. By acquiring and activating an additional 10 public spaces, over 10,000 residents could gain access to a City park within a 10-minute walk.

c. St. Lucie County. In 1991, the St. Lucie Board of County Commissioners formed the Land Acquisition Selection Committee (LASC), which was charged with the task of preparing a proposal for public acquisition or protection of significant natural areas in the County. The LASC still serves as an advisory body to the Board of County Commissioners. In November, 1994, St. Lucie County voters approved a bond referendum authorizing issuance of ad valorem tax bonds, not to exceed $20 million, to participate in state and federal land acquisition programs targeting the protection of natural areas. The St. Lucie County Environmental Lands project began in 1994 with the passage of this local bond program. On December 7, 1995, Spruce Bluff, a 97-acre site along the North Fork of the St. Lucie River, was the first site acquired through the Environmentally Significant Lands program. Since that time, over 7,355 acres have been acquired and more land has been identified for protection through public acquisition, including the Oxbow Eco-Center located in the City.

5. Hazardous Waste Management

Hazardous wastes are corrosive, toxic, flammable, or reactive substances that may harm public health and the environment. The Florida Department of Environmental Protection maintains an inventory of sites that currently have cleanup activities and, according to the October 2024 data, there are no hazardous waste sites within the City of Port St. Lucie classified as a cleanup site.

All residents within St. Lucie County can bring some of their household hazardous waste to the Solid Waste Baling and Recycling Facility at 6120 Glades Cut-Off Road near Ft. Pierce. However, the hazardous waste the facility is able to accept is limited and cannot accept commercially generated hazardous waste.

6. Resilience Planning in St. Lucie County and Port St. Lucie

In 2024, the City of Port St. Lucie entered into a standard grant agreement with the Florida Department of Environmental Protection (FDEP) to prepare a Vulnerability Assessment (VA) in accordance with subsection 380.093, Florida Statutes (F.S.). A contract with a consultant was finalized in April 2025, with project completion anticipated by March 2026.

In October 2020, the Florida Department of Environmental Protection awarded St. Lucie County a $75,000 grant to prepare a Vulnerability Assessment. The City of Port St. Lucie is participated in this effort by serving on the project's steering committee. The County's VA was adopted in Summer 2025.

These assessments focus on identifying risks related to sea level rise and other flood scenarios, including potential impacts to critical infrastructure, public facilities, historic resources, and vulnerable populations.

The County's assessment identified a range of natural resource adaptation strategies that are applicable to Port St. Lucie, such as living shorelines, wetland restoration, and enhanced stormwater management.

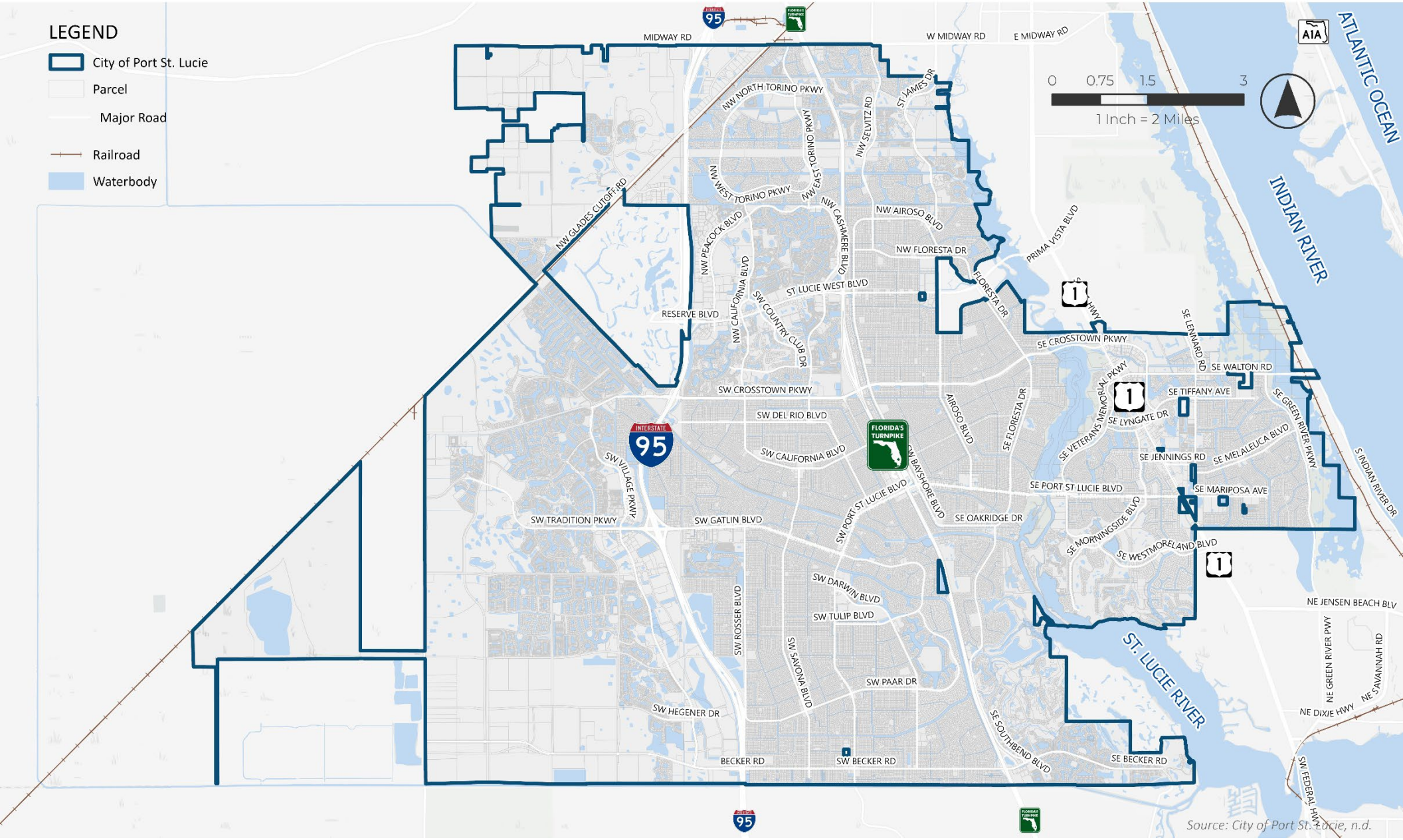
It also emphasized the importance of preserving McCarty Ranch as a key resiliency strategy, recognizing its role as a major stormwater storage facility and water quality improvement project.

Additionally, St. Lucie County received funding from the Florida Department of Commerce's Community Development Block Grant (CDBG) Mitigation Program to complete a Resilience Vulnerability Assessment (RVA) and Regional Resilience Plan (RRP). The CDBG RVA will expand the scope of analysis to include hazards beyond flooding—such as coastal erosion, drought, extreme heat, wildfires, and wind.

The results of the City's Resilient Florida RVA and the County's CDBG RVA will inform the development of the RRP, which will serve as an implementation roadmap for regional adaptation and mitigation efforts. The RRP will include a prioritized list of projects, funding strategies, and policy recommendations. Continued collaboration by the City of Port St. Lucie will be essential to ensure that regional strategies are aligned with local priorities. Together, these documents will provide a foundation for enhancing the City's long-term resilience.

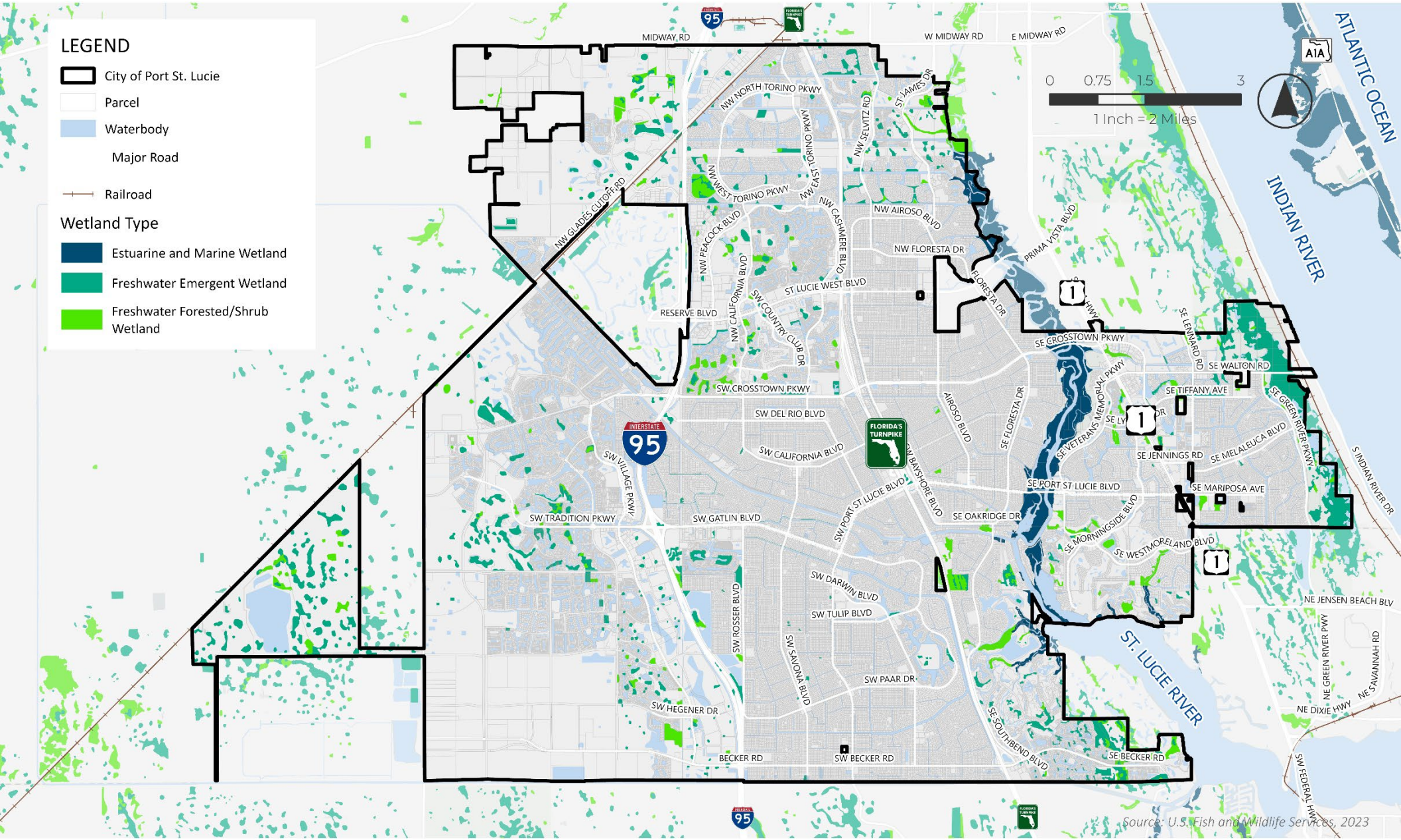
WATERBODIES
COMPREHENSIVE PLAN 2050

MAP 5-1



WETLANDS
COMPREHENSIVE PLAN 2050

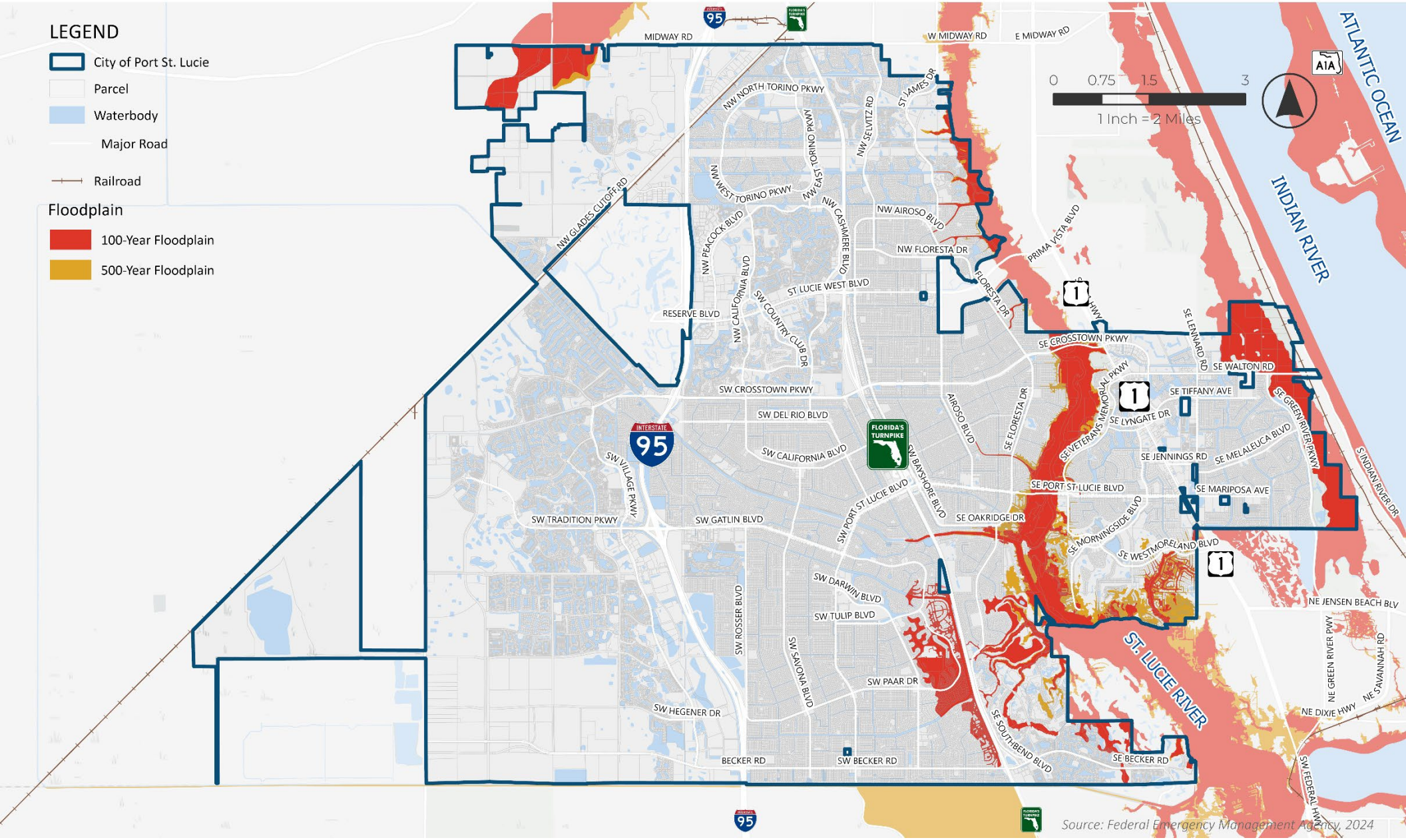
MAP 5-2



Source: U.S. Fish and Wildlife Services, 2023

FLOODPLAINS
COMPREHENSIVE PLAN 2050

MAP 5-3

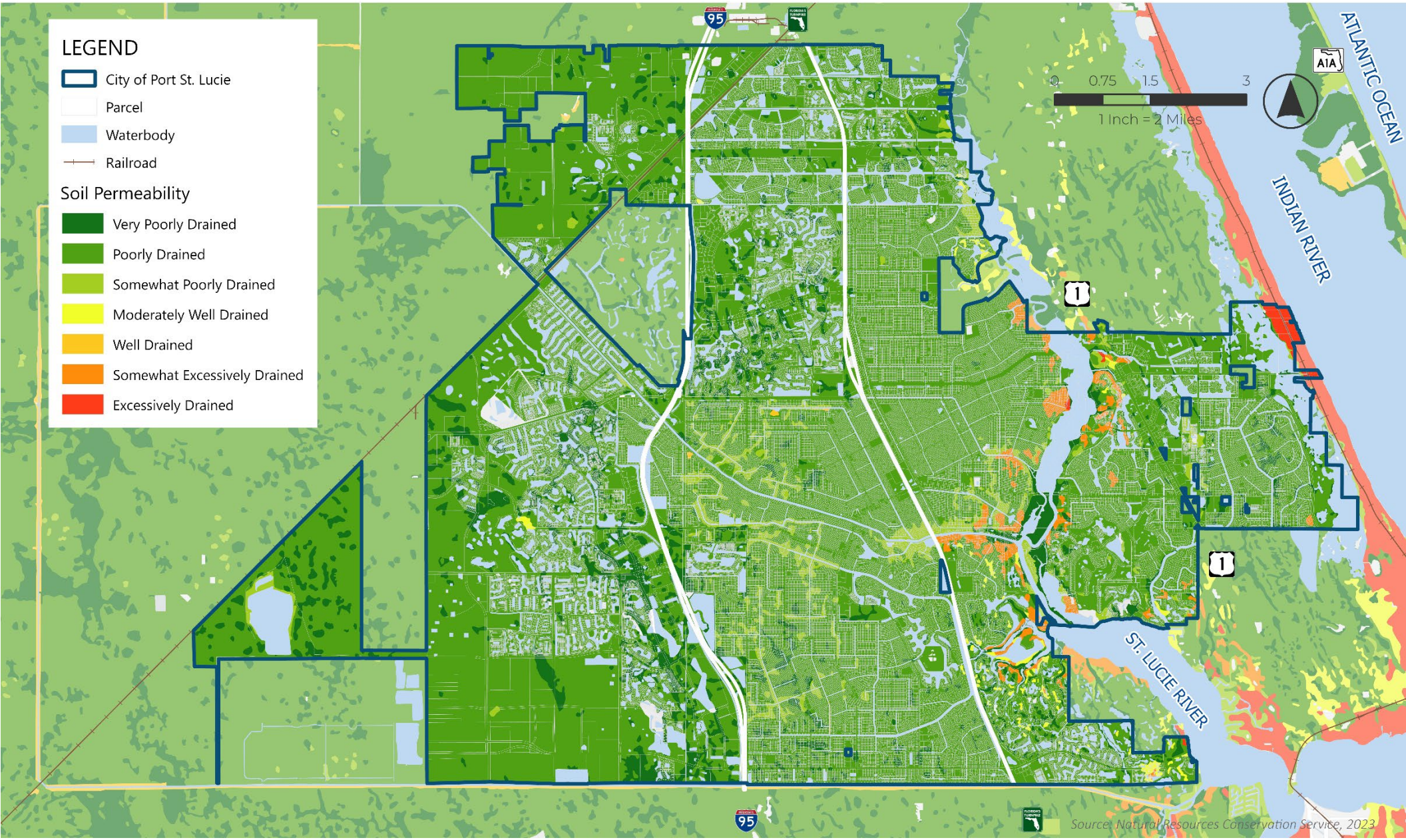


Source: Federal Emergency Management Agency, 2024

SOIL PERMEABILITY

COMPREHENSIVE PLAN 2050

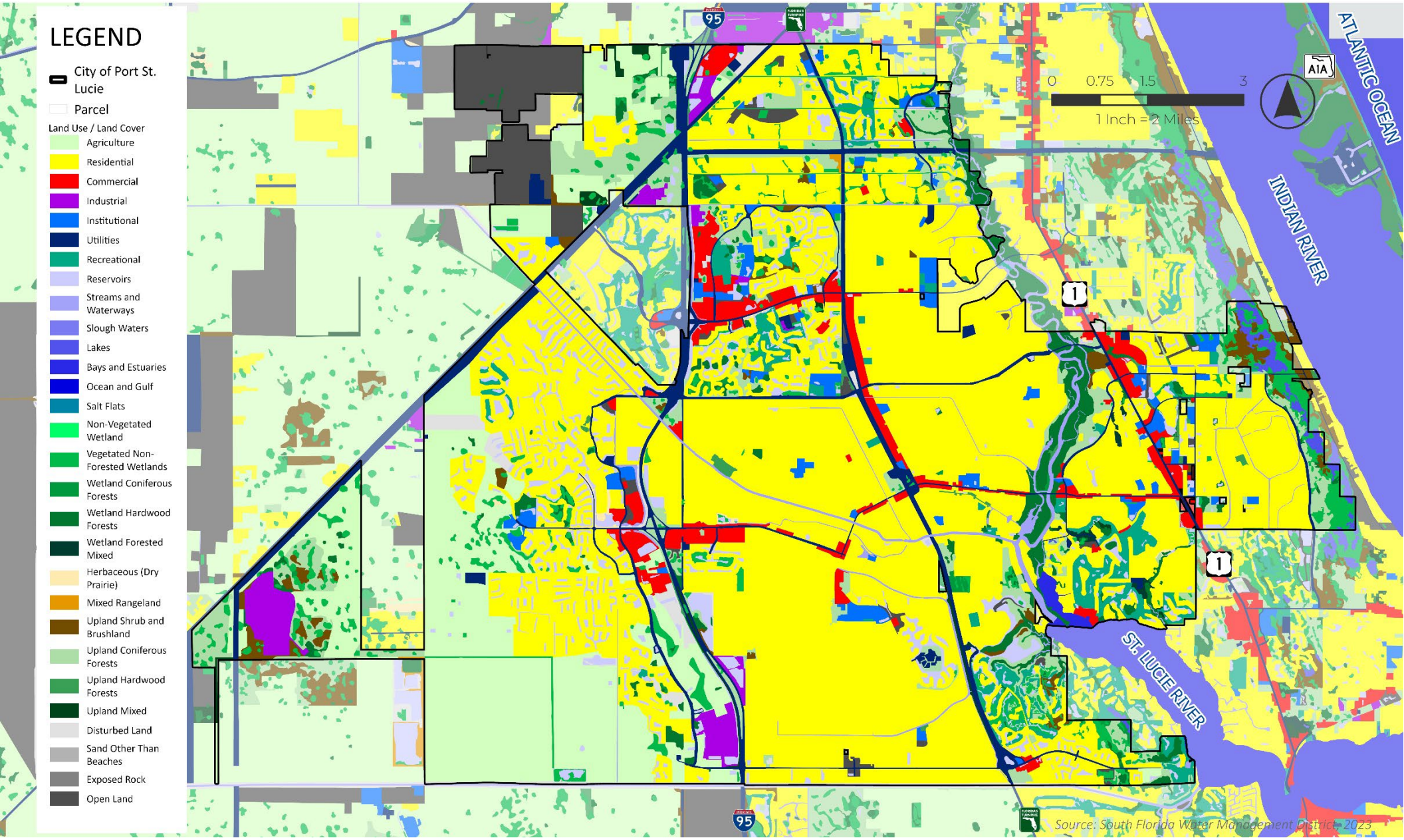
MAP 5-4



LAND USE / LAND COVER

COMPREHENSIVE PLAN 2050

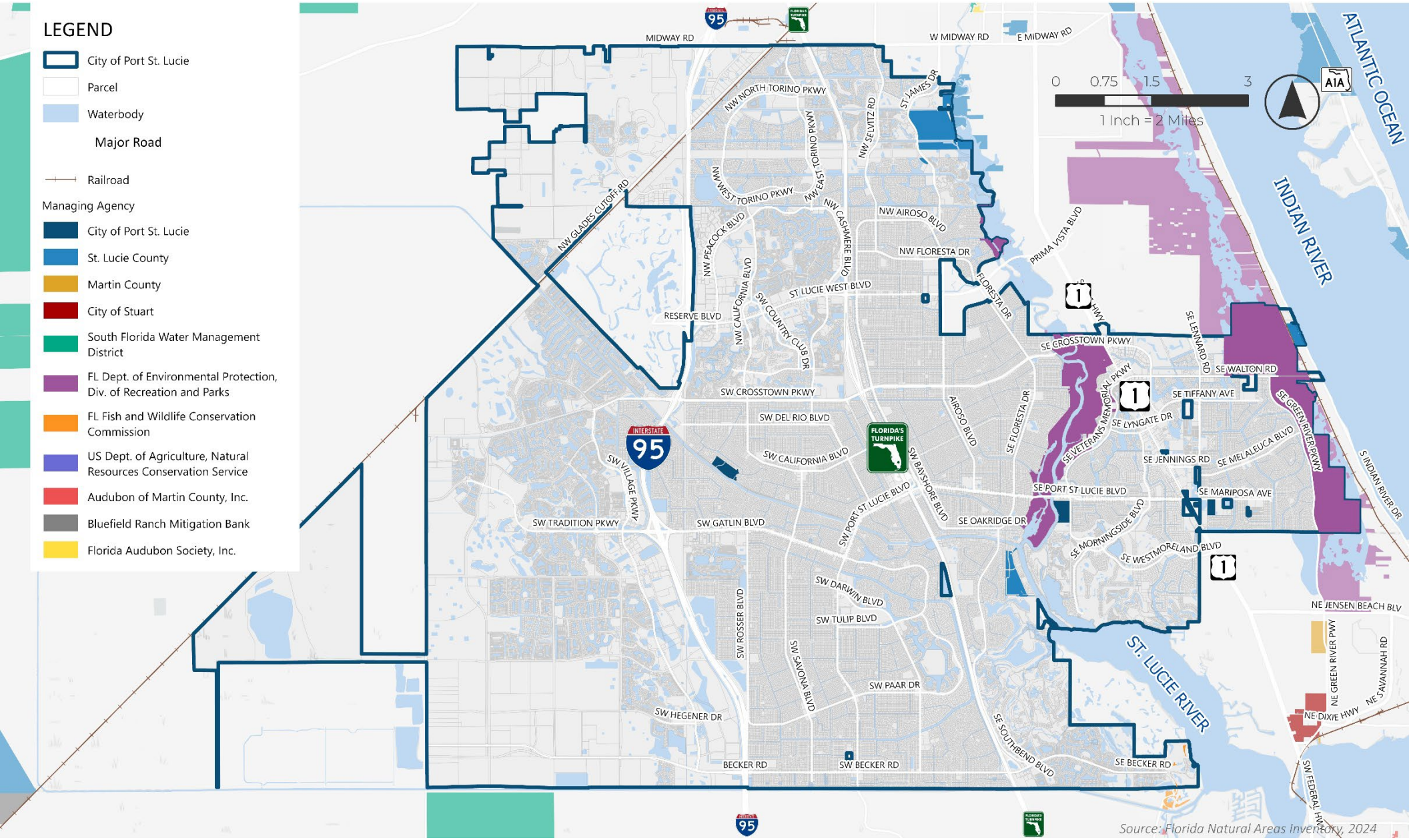
MAP 5-5



CONSERVATION AREAS

COMPREHENSIVE PLAN 2050

MAP 5-6



III. Coastal Management

The City of Port St. Lucie has no direct frontage on the Atlantic Ocean and only a limited stretch of approximately 4,000 linear feet along the Indian River Lagoon (IRL). The North Fork of the St. Lucie River (NFSLR) runs through the city from south to north. This section describes the City's coastal planning area and examines the potential risks associated with its waterfront exposure.

A. Coastal Planning Area

The Port St. Lucie Coastal Planning Area is approximately 11,500 acres in size and is shown on **Map 5-7**. The City boundaries do not extend to Hutchinson Island or the Atlantic coast, and lie about 2 miles west of the Coastal Construction Control Line (CCCL). The CCCL regulates development and activity that may cause beach erosion, damage upland property, interfere with public access, and harm native habitat and vegetation.

There are two separate locations where the eastern limits of the City abut the IRL. The first consists of the corridor along Walton Road that terminates at the mean high water of the IRL. This is delineated by the City limits on the north, east and south and by the Florida East Coast railroad on the west. The second area is slightly north of this area and consists of the northeastern corner of the City limits that abuts the IRL. This area is also delineated by the City limits on the north, east and south, and by the Florida East Coast railroad on the west.

Additionally, the City includes in the coastal planning area the portions of the City that abut the NFSLR; and this too consists of two separate areas. The southern area is identified by the City limits on the north and on the south; and by the City limits and U.S. 1 along the east, whichever is westernmost. The western limit is delineated by S.W. Floresta, South bend Boulevard, S.E. Becker Road and the Florida Turnpike from the north to the south respectively.

The second area abutting the NFSLR is the northeastern corner of the City that abuts the NFSLR. This area is delineated by the City limits on the north, east and south and by N.W. James Drive and S.W. Airoso Boulevard along the west.

1. Natural Resources in the Coastal Planning Area

Immediately interior to the coastal barrier island, located between the barrier island and the Atlantic Coastal Ridge, is the Indian River Lagoon (IRL). The IRL is a linear estuarine system that extends along more than a third of Florida's east coast, over 155 miles, from Ponce de Leon Inlet in Volusia County south to Jupiter Inlet in Palm Beach County. Numerous freshwater wetlands and sloughs undergo a transition into riverine systems that connect directly to the IRL. The lagoon interacts with the saline waters of the Atlantic Ocean through the inlets, providing tidal exchange with fresh water discharged into the lagoon from the inland rivers. Along the IRL, the associated mangrove and salt marsh communities provide valuable filtration, stabilization and habitat and the seagrass beds provide foraging for manatees.

2. Storm Surge Consideration

According to the National Oceanic and Atmospheric Administration (NOAA), storm surge is defined as the "abnormal rise in seawater level during a storm, measured as the height of the water above the normal predicted astronomical tide." NOAA's Sea, Lake and Overland Surges from Hurricanes (SLOSH) model identifies the maximum extent of a community's anticipated storm surge based upon the

category of the storm causing the flooding. The SLOSH model for the City of Port St. Lucie can be seen on **Map 5-8**. The map shows that there is potential storm surge for category 1-5 hurricanes for areas along the St. Lucie River.

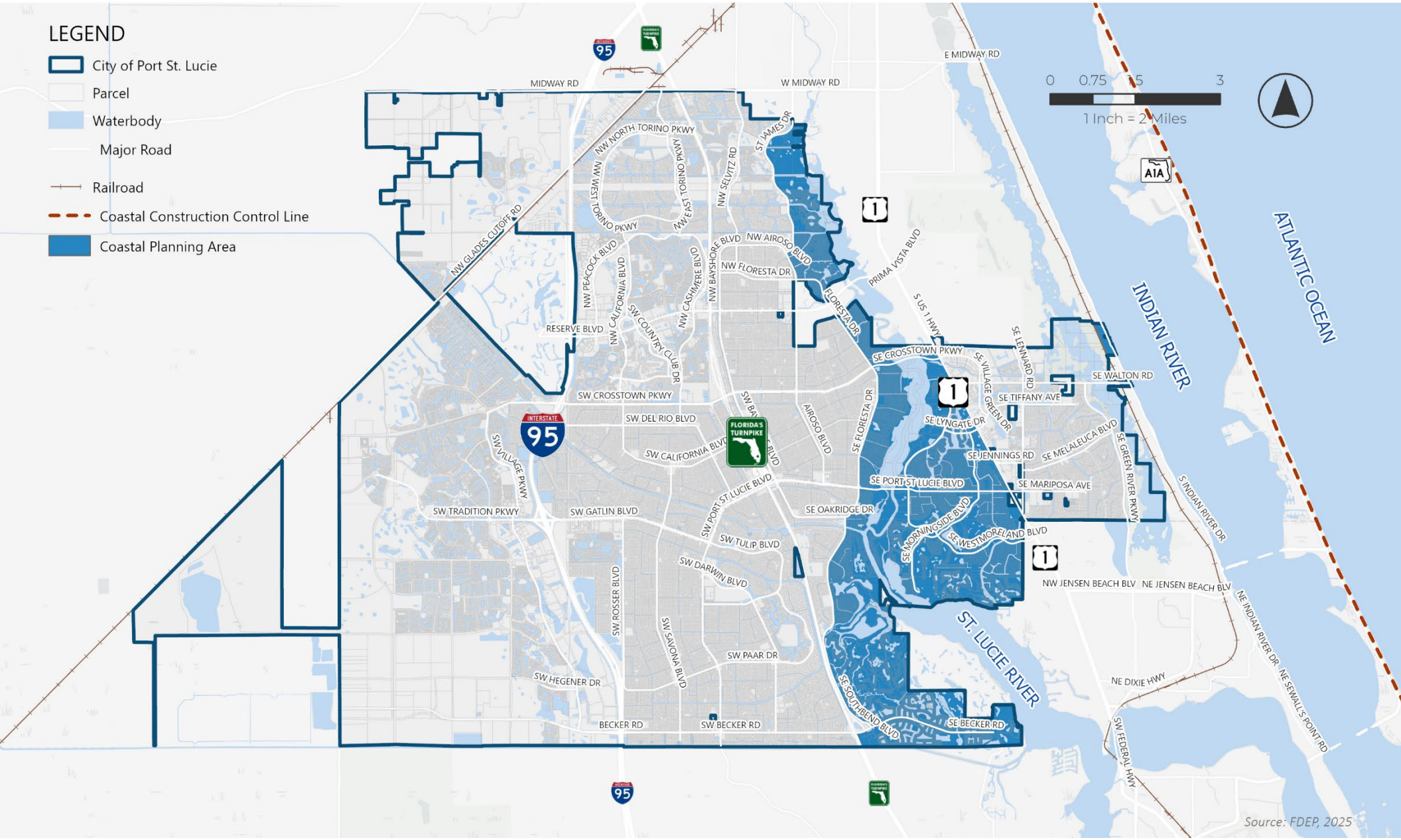
3. Coastal High Hazard Areas

The area projected to experience the most hurricane damage is the coastal high hazard area (CHHA). The coastal high-hazard area 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. The CHHA can be seen in **Map 5-9** and is mainly comprised of undeveloped wetland habitat in the floodplain of the North Fork of the St. Lucie River, and adjacent properties and canals that connect to the St. Lucie River.

COASTAL PLANNING AREA

COMPREHENSIVE PLAN 2050

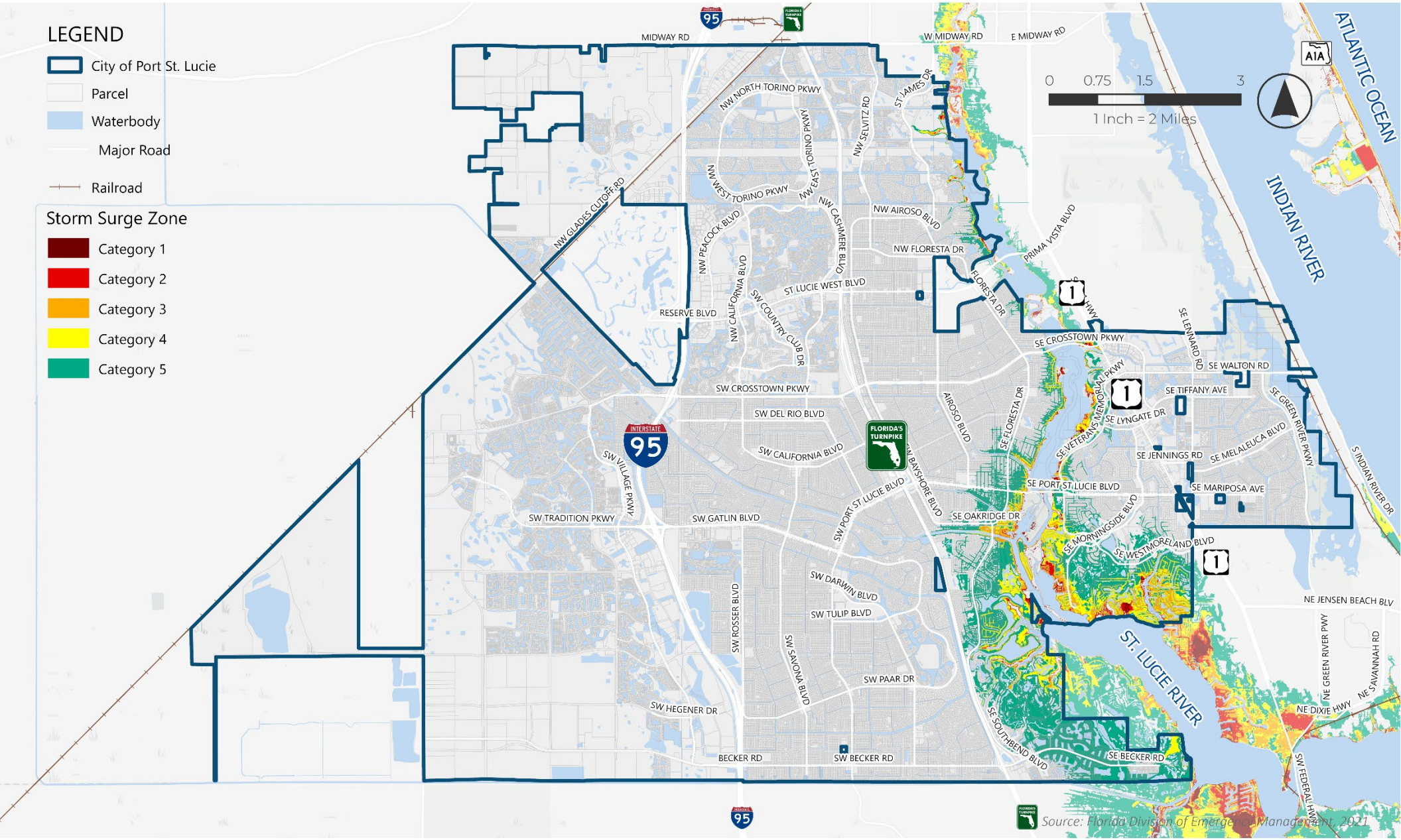
MAP 5-7



STORM SURGE ZONES

COMPREHENSIVE PLAN 2050

MAP 5-8

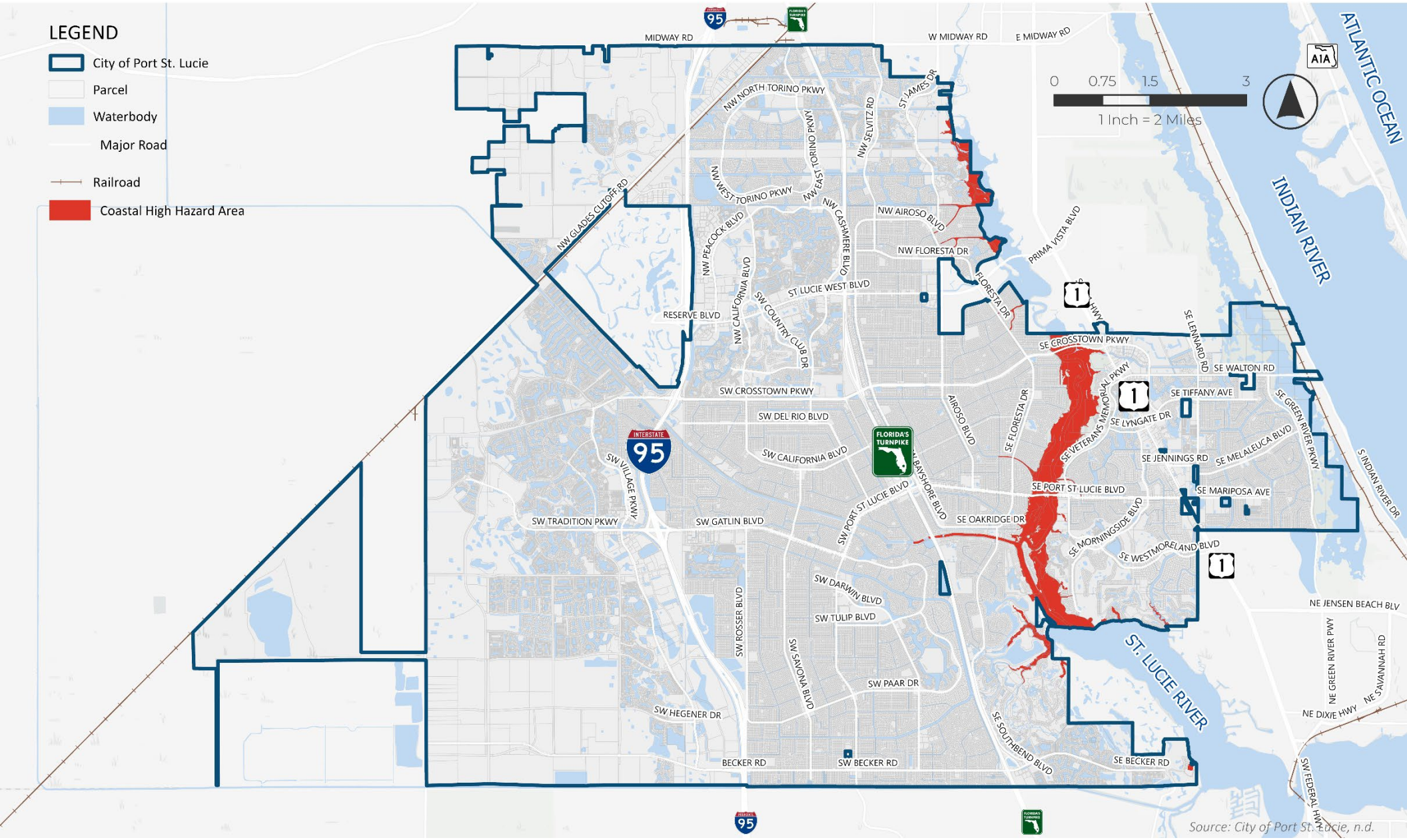


Source: Florida Division of Emergency Management, 2021

COASTAL HIGH HAZARD AREA

COMPREHENSIVE PLAN 2050

MAP 5-9



B. Existing Conditions within the Coastal Planning Area (CPA)

The following overview of the natural resources, development, infrastructure, and populations found within the Coastal Planning Area (CPA) should not be interpreted as a vulnerability assessment, adaptation action area plan, or resiliency plan. These efforts include extensive and exhaustive assessments of the structural and social assets likely to be impacted by coastal flood-related issues and provide strategies for addressing these impacts. Instead, the following analysis should simply be utilized as a factual basis for future decision making regarding new development within the City's most vulnerable areas prone to flood-related issues and providing the basis for policy development in Port St. Lucie's Comprehensive Plan.

1. Natural Resources

According to the Land Use / Land Cover Analysis data from the South Florida Water Management District approximately 3,915 acres or 34.0% of the Coastal Planning Area is a vegetative community. The vegetative communities within the Coastal Planning Area are listed below and can be found on **Map 5-10**.

Table 5 - 7: Vegetative Communities in the Coastal Planning Area

Land Use / Land Cover	Acres	Percent of CPA
Bays and Estuaries	150.6	1.3%
Herbaceous (Dry Prairie)	11.3	0.1%
Lakes	9.9	0.1%
Open Land	57.0	0.5%
Slough Waters	2.5	0.0%
Streams and Waterways	469.1	4.1%
Upland Coniferous Forests	1,133.7	9.8%
Upland Hardwood Forests	21.9	0.2%
Upland Mixed Forests	12.9	0.1%
Upland Shrub and Brushland	175.2	1.5%
Vegetated Non-Forested Wetlands	401.4	3.5%
Wetland Coniferous Forests	53.1	0.5%
Wetland Forested Mixed	79.2	0.7%
Wetland Hardwood Forests	1,338.2	11.6%
Non-Vegetative Community	7,601.7	66.0%
Total	**11,517.6**	**100.0%**

Source: South Florida Water Management District, 2023

A majority of the LULC classifications listed above are highly productive and diverse habitats. In fact, many of these habitats contain wetland features (as shown **Map 5-10)** which are critical to the health and well-being of an abundance of Florida's vegetation and wildlife.

2. Development and Infrastructure

The following inventory and analysis contains a brief overview of the existing land uses and public facilities within the coastal planning area.

a. Existing Uses

As shown in **Map 5-11** and in **Table 5-8**, much of the Port St. Lucie Coastal Planning Area is currently developed. Existing land uses found within the CPA include a mix of residential and nonresidential activities such as commercial, office/professional, public/institutional, recreation, and rights-of-way and utilities. There is a sizable amount of vacant property within the Coastal Management Area; however, much of this land is likely undevelopable due to wetland regulations. Properties within the CPA are more vulnerable to storm surge and coastal flooding.

Table 5 - 8: Current Uses in the Coastal Planning Area

Use	Acres	Percent of CPA
Single Family Residential	3,110.4	34.1%
Multi-Family Residential	37.2	0.4%
Mobile Homes	0.8	0.0%
Commercial	141.0	1.5%
Office	127.2	1.4%
Industrial	199.7	2.2%
Institutional	1,155.4	12.7%
Recreation	1,801.3	19.7%
Common Area	1,133.1	12.4%
Utilities and Infrastructure	98.2	1.1%
Vacant	1,040.2	11.4%
Total	**9122.9**	**100.0%**

Source: St. Lucie County Property Appraiser, 2024

b. Public Infrastructure

The provision, protection, and maintenance of infrastructure is one of the most important functions of local government, as public facilities are critical to supporting the day-to-day operations of its residents and businesses. As such, the disruption or destruction of infrastructure can create significant impacts to the function of a community. Considering that over 11,500 acres of the City are within the Coastal Planning Area, an extensive system of public infrastructure is currently operating within the CPA and thus, is subject to potential damage from coastal flood-related issues. An inventory of the area's most critical and widely utilized infrastructure is provided below. In terms of public infrastructure within the Coastal Planning Area, there are five public schools, which are listed below in **Table 5-9**, one fire station (Station 5), and eight bridges listed below in **Table 5-10**.

Table 5 - 9: Public Schools in the Coastal Planning Area

Name	Level	Address
Southern Oaks Middle School	Secondary	5500 NE St James Dr
Rivers Edge Elementary	Primary	5600 NE St James Dr
Southport Middle School	Secondary	2420 SE Morningside Blvd
Floresta Elementary	Primary	1501 SE Floresta Dr
Morningside Elementary	Primary	2300 SE Gowin Dr

Source: City of Port St. Lucie.

Table 5 - 10: Bridges in the Coastal Planning Area

Roadway	Waterbody
Port St. Lucie Boulevard	C-23 Canal
	E-84 Canal
	C-24 Canal
	St. Lucie River
Oaklyn Street	C-24 Canal
SE Floresta Dr	Elkham Waterway
Ballantrae Boulevard	Howard Creek
SE Westmoreland Boulevard	Howard Creek

Source: City of Port St. Lucie, 2020

3. Vulnerable Populations

For those who reside within Florida's coastal communities, preparing and protecting life and property from significant flood damage is often an annual occurrence—particularly in the event of a major storm. However, some segments of the population are often more vulnerable to experiencing significant disruptions to their lives from coastal flood-related than others. According to the U.S. Climate Resilience Toolkit, vulnerable populations are those which face "uneven exposures and sensitivities to growing coastal risks and limit[ed] adaption options" due to a broad range of socioeconomic factors. Factors which often increase the vulnerability of a household include lacking a motor vehicle, earning below the poverty level, sheltering one or more persons with a disability, and lacking an English-speaking person in the household. These vulnerability conditions were explored within the Port St. Lucie Coastal Planning Area using the demographic analysis tools available on ESRI Business Analyst Online (BAO). The result of this analysis is provided in **Table 5-11** below.

Table 5 - 11: Vulnerable Populations in the Coastal Planning Area

Vulnerability Factor	Number of Households
Total Households	10,898
Owner Occupied Households with No Vehicle[1]	213
Households Earning Below the Poverty Level	979
Households with One or More Persons with a Disability[2]	3,063
Households with No English Speaker	0

[1] This variable was not available for renter occupied households.
[2] The U.S. Census Bureau defines disability broadly as difficulty with one of the following six basic areas of functioning—ambulation, cognition, hearing, independent living, self-care, and vision.

Source: ESRI Business Analyst Online, 2022.

As shown in the table above, there appear to be several potentially vulnerable households within the CPA. The most prominent vulnerability factors within Port St. Lucie's CPA are households earning below the poverty level and those possessing one or more persons with a disability. Households earning below the poverty level are uniquely vulnerable to coastal flood-related events because they may not have the funds needed to make critical repairs, seek emergency medical treatment, or afford temporary

shelters like motels. Additionally, households caring for those with disabilities are at greater risk of failing to escape from hazards, losing essential medications or medical devices, or failing to access transportation accommodations necessary for evacuation.

C. Emergency Management

As a coastal community in Florida, the City of Port St. Lucie is constantly striving to improve its emergency management processes and procedures to ensure the safety of its residents. The City has developed and has in place a Comprehensive Emergency Management Plan and has in place a statewide mutual aid agreement. The City also participates in the Unified Local Mitigation Strategy Program and the National Flood Insurance Program. As identified in the St. Lucie County Local Mitigation Strategy Program (LMS), the following hazards pose a risk to the County and the City: floods, hurricanes/tropical storms, tornadoes, severe thunderstorms/lightning, drought, temperature extremes, muck fires, wildfire/urban interface fires and erosion. Hurricanes/tropical storms and floods are given the highest priority.

Hurricanes have the highest potential to occur from June through November; heavy rainfall, high winds, storm surge and widespread flooding may accompany these storms, as well as a potential for associated tornadoes. During a hurricane evacuation, a significant number of vehicles will have to be moved across the local and regional road network. The quantity of evacuating vehicles will vary depending upon the magnitude of the hurricane, publicity and warnings provided about the storm and particular behavioral response characteristics of the vulnerable population. The City must be prepared to evacuate highly vulnerable populations on critical routes, often concurrently with evacuees from inside and outside the County. Hurricanes are rated on the Saffir-Simpson Hurricane Wind Scale based upon five intensities:

Category 1 hurricanes have sustained winds of 74 to 95 mph. These very dangerous winds will produce some damage.

Category 2 hurricanes have sustained winds of 96 to 110 mph. These extremely dangerous winds will cause extensive damage.

Category 3 hurricanes have sustained winds of 111 to 130 mph. Devastating damage will occur.

Category 4 hurricanes have sustained winds of 131 to 155 mph. Catastrophic damage will occur.

Category 5 hurricanes have sustained winds greater than 155 mph. Catastrophic damage will occur.

Source: NOAA

The St. Lucie County Division of Emergency Management provides a coordinating point for management of local emergencies to catastrophic events in and around St. Lucie County. It is the lead organization in coordinating disaster response from a municipal level to state and federal. Recovery planning and financial assistance from the State of Florida and FEMA are established through the Division's emergency operations center. The County disseminates information concerning the need for residents to evacuate at various hurricane threat levels and strives to educate the general citizenry regarding emergency preparedness plans and evacuation shelter assignments.

Public health and safety will receive the first priority in post-disaster emergency permitting decisions. Post-disaster redevelopment should ensure that actions include the following:

1. Repairs to potable water, wastewater and power facilities;

2. Removal of debris from roadways and required infrastructure;

3. Stabilization or removal of any structure which is about to collapse;

4. Minimal repairs to make structures habitable; and

5. Emergency repairs related to environmental damage.

Additionally, post-disaster redevelopment strategic planning should provide a basis to:

1. Ensure a means to restore economic activity;

2. Establish a framework for deciding whether to implement a temporary moratorium on building activity as may be required for public safety;

3. Develop procedures for reviewing and deciding upon emergency building permits;

4. Coordinate with State and Federal officials to prepare disaster assistance applications;

5. Analyze and recommend to the City Council hazard mitigation options, including reconstruction or relocation of damaged public facilities;

6. Recommend amendments to the Local Comprehensive Emergency Management Plan and other appropriate policies and procedures; and

7. Ensuring timely re-entry by residents following an evacuation.

Included in post-disaster redevelopment planning should be the basis for evaluating future options for damaged public facilities following a hurricane or other disaster event; which includes but is not limited to abandonment, repair in place, relocation and reconstruction with structural modifications. The following considerations will impact final determination:

1. Construction and maintenance costs;

2. History of potential for recurring damages;

3. Impacts on land use, the environment, and the public sector;

4. Inclusion in the inventory of the National Register of Historic;

5. Consistency with federal funding provisions; and

6. Consideration of structural integrity and safety.

The following discussion describes the City's evacuation procedures and routes, as well as identify emergency shelters available within St. Lucie County.

a. Evacuation Procedures and Zones

In the event of a significant storm event, those located within coastal communities may be recommended or mandated to evacuate by the St. Lucie County Emergency Management Department depending on the severity of the storm. Evacuation zones within the City are determined by the Florida Department of Emergency Management using storm surge models. These zones, and their location within the City, are described below in **Table 5-12**.

Table 5 - 12: Evacuation Zones

Evacuation Zone	Description
Zone A:	Areas likely to be impacted by storm surge up to 11 feet and thus are ordered to evacuate first
Zone B:	Areas likely to be impacted by storm surge up to 15 feet
Zone C:	Areas likely to be impacted by storm surge up to 20
Zone D:	Areas likely to be impacted by storm surge up to 28 feet
Zone E:	Areas likely to be impacted by storm surge up to 35 feet

Source: Treasure Coast Regional Planning Council, 2016

Residents and visitors seeking to evacuate Port St. Lucie may use one of the nine designated evacuation routes on **Map 5-12** and listed below:

- Becker Road
- Port St. Lucie Boulevard
- Gatlin Boulevard
- US Highway 1
- St. Lucie West Boulevard
- I-95
- Walton Road
- Veterans Memorial Parkway
- Florida Turnpike

b. Evacuation Clearance Times

Calculated clearance times are used by emergency managers as one input to determine when to recommend an evacuation order. This calculation can include the population-at-risk, shadow evacuees, as well as evacuees from other counties anticipated to pass through the county. Clearance time is developed to include the time required for evacuees to secure their homes and prepare to leave, the time spent by all vehicles traveling along the evacuation route network, and the additional time spent on the road caused by traffic and road congestion. Clearance times for St. Lucie County are studied and projected by the Treasure Coast Regional Planning Council (TCRPC) in coordination with the Florida Department of Emergency Management and local governments. To determine estimated clearance times within St. Lucie County, two primary analyses are utilized. The first method of analysis, base evacuation, is performed using a standardized set of data points and assumptions and, therefore, can easily be compared between counties and regional planning councils across the State. Alternatively, an operational evacuation analysis is performed using set a of data points and assumptions determined by each Regional Planning Council, and therefore, is tailored to each region. Clearance time does not relate to the time any one vehicle spends traveling along the evacuation route network, nor does it guarantee vehicles will safely reach their destination once outside the County. Using both base and operational evacuation analyses, the TCRPC has produced three sets of estimated clearance times for St. Lucie County, which are described and presented in the tables below.

1. **Clearance Time to Shelter**: The time necessary to safely evacuate vulnerable residents and visitors to a "point of safety" within the County based on a specific hazard, behavioral assumptions and evacuation scenario. This is 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.
2. **In-County Clearance Time**: The time required from the point an evacuation order is given until the last evacuee can either leave the evacuation zone or arrive at safe shelter within the county. This does not include those evacuees leaving the county on their own.
3. **Out of County Clearance Time:** The hours necessary to safely evacuate vulnerable residents and visitors to a "point of safety" outside the county based on a specific hazard, behavioral assumptions, and evacuation scenario. It is calculated from the point an evacuation order is given to the point in time when the last vehicle assigned an external destination exits the county.

Table 5 - 13: St. Lucie County Clearance Times

Clearance Time Type	Evacuation Zone A	Evacuation Zone B	Evacuation Zone C	Evacuation Zone D	Evacuation Zone E
Base Evacuation Clearance Time (Hours)					
Clearance Time to Shelter	12.5	13.0	13.5	15.0	17.5
In-County Clearance Time	13.5	14.5	19.5	25.0	32.5
Out of County Clearance Time	14.5	15.0	19.5	25.0	33.0
Operational Evacuation Clearance Time (Hours)					
Clearance Time to Shelter	6.5	7.0	8.5	11.5	14.5
In-County Clearance Time	9.0	10.5	13.0	20.5	26.0
Out of County Clearance Time	9.5	11.0	14.5	21.0	30.0

Source: Treasure Coast Regional Planning Council, 2016

c. Emergency Shelters

The vulnerable population, or population-at-risk, is defined as the portion of the population living within the county designated evacuation zones. This population is living in areas that are at risk for severe flooding during a storm event.

Evacuees are expected to seek shelter through a variety of means, however, many families and individuals which choose to evacuate from a major storm event may elect to stay at an emergency shelter. St. Lucie County organizes its emergency shelters into three distinct, yet occasionally overlapping, categories. The first is General Population Shelters which are open to the general public. The second category of shelters are categorized as Special Needs Shelters, which are operated in partnership with Florida Department of Health for individuals who require medical assistance for medical conditions that do not meet the requirements for hospitalization. The final type of evacuation shelter is Pet-Friendly Shelters, which allow for limited accommodations for families with pets.

According to the FDEM 2024 Statewide Emergency Shelter Plan, there are currently 25 emergency shelters in St. Lucie County in total. Of these 25, two are Pet-Friendly Shelters and two are Special

Needs Shelters. A list of all the emergency evacuation shelters within the County, including their address, operational capacity, and type, is provided in **Table 5-14.**

Table 5 - 14: Emergency Shelters in St. Lucie County

Site Name	Address	Operational Capacity (Spaces)
General Population Shelters		
Bayshore ES	1661 SW Bayshore Blvd Port St Lucie, FL 34984	300
Chester A Moore ES	827 N 29th St Ft Pierce, FL 34947	300
Dan McCarty MS	1201 Mississippi Ave Ft Pierce, FL 34950	-
Floresta ES	1501 SE Floresta Dr Port St Lucie, FL 34983	300
Ft Pierce Central HS	4101 S 25th St Fort Pierce, FL 34981	1,100
Indian River State College	3002 Avenue D Fort Pierce, FL 34947	350
Lakewood Park ES	7800 Indrio Rd Ft Pierce, FL 34951	300
Manatee Academy K-8	1450 SW Heatherwood Blvd Port St Lucie, FL 34986	-
Mariposa ES	2620 SE Maripose Ave Port St Lucie, FL 34952	-
Morningside ES	2300 SE Gowin Dr Port St Lucie, FL 34952	300
Oak Hammock K-8	1251 SW California Blvd Port St Lucie, FL 34953	2,714
Parkway ES	7000 NW Selvitz Rd Ft Pierce, FL 34983	300
Samuel S Gaines K-8	2250 S Jenkins Rd Fort Pierce, FL 34947	560
Savanna Ridge ES	6801 Lennard Rd Port St Lucie, FL 34952	-
Treasure Coast HS	1000 SW Darwin Blvd Port St Lucie, FL 34953	1,100
Weatherbee ES	800 E Weatherbee Rd Fort Pierce, FL 34982	-
West Gate K-8	1050 NW Cashmere Blvd Port St Lucie, FL 34986	560
Windmill Point ES	700 SW Darwin Blvd Port St Lucie, FL 34953	-
Manatee Academy K-8	1450 SW Heatherwood Blvd Port St Lucie, FL 34986	1,423
Samuel S Gaines K-8	2250 S Jenkins Rd Fort Pierce, FL 34947	2,163
West Gate K-8	1050 NW Cashmere Blvd Port St Lucie, FL 34986	2,213
General Population Operational Capacity Subtotal		**13,983**
Special Needs Shelters		
Havert L Fenn Community Center	2000 Virginia Ave Ft Pierce, FL 34982	500
Port St Lucie Community Center	2195 SE Airoso Blvd Port St Lucie, FL 34984	290
Special Needs Operational Capacity Subtotal		**790**
Pet Friendly Shelters		
Ft Pierce Westwood HS	1801 Panther Ln Ft Pierce, FL 34947	750
Village Green Environmental Studies School	1700 SE Lennard Rd Port St Lucie, FL 34952	-
Pet Friendly Operational Capacity Subtotal		750
Operational Capacity Total		**15,523**

Source: Statewide Emergency Shelter Plan, FDEM, 2024

A special needs shelter is 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. Health Department medical staff support these shelters. The State of Florida Division of Emergency Management, Department of Health, local emergency management agencies, and health care agencies have worked together over the last decade to establish Special Needs Shelter standards, protocols and technical assistance that can be integrated into the Florida Emergency Management System. Although not referenced in the Statewide Regional Evacuation Study, the City has identified the Port St. Lucie Community Center as a backup special needs shelter with a capacity of 290.

d. St. Lucie Nuclear Power Plant

The Florida Power and Light (FPL) St. Lucie Nuclear Power Plant is located on south Hutchinson Island only a few miles from the City's eastern boundary. The population within the 10 mile emergency planning zone (EPZ) to the nuclear power plant is considered at greatest risk of exposure to radiation and radioactive materials in the unlikely event of an emergency. State and local officials, together with FPL, have prepared a detailed emergency plan for people within the 10 mile EPZ of the plant.

Nuclear energy production is monitored closely by the Nuclear Regulatory Commission (NRC), a federal agency. Daily inspections are conducted at the St. Lucie Plant to guarantee compliance. Several identical safety systems are in place so that if one fails, others automatically go to work. The purpose of radiological emergency preparedness is to protect people from the effects of radiation exposure after an accident at a nuclear power plant. Evacuation is the most effective protective measure because it protects the whole body (including the thyroid gland and other organs) from all radionuclides and all exposure pathways. However, in situations when evacuation is not feasible, in-place sheltering is substituted as a protective action. In addition, administering potassium iodide is a reasonable, prudent, and inexpensive supplement to both evacuation and sheltering. When the population is evacuated out of the area, and potentially contaminated foodstuffs are interdicted, the risk from further radioactive iodine exposure to the thyroid gland is essentially eliminated.

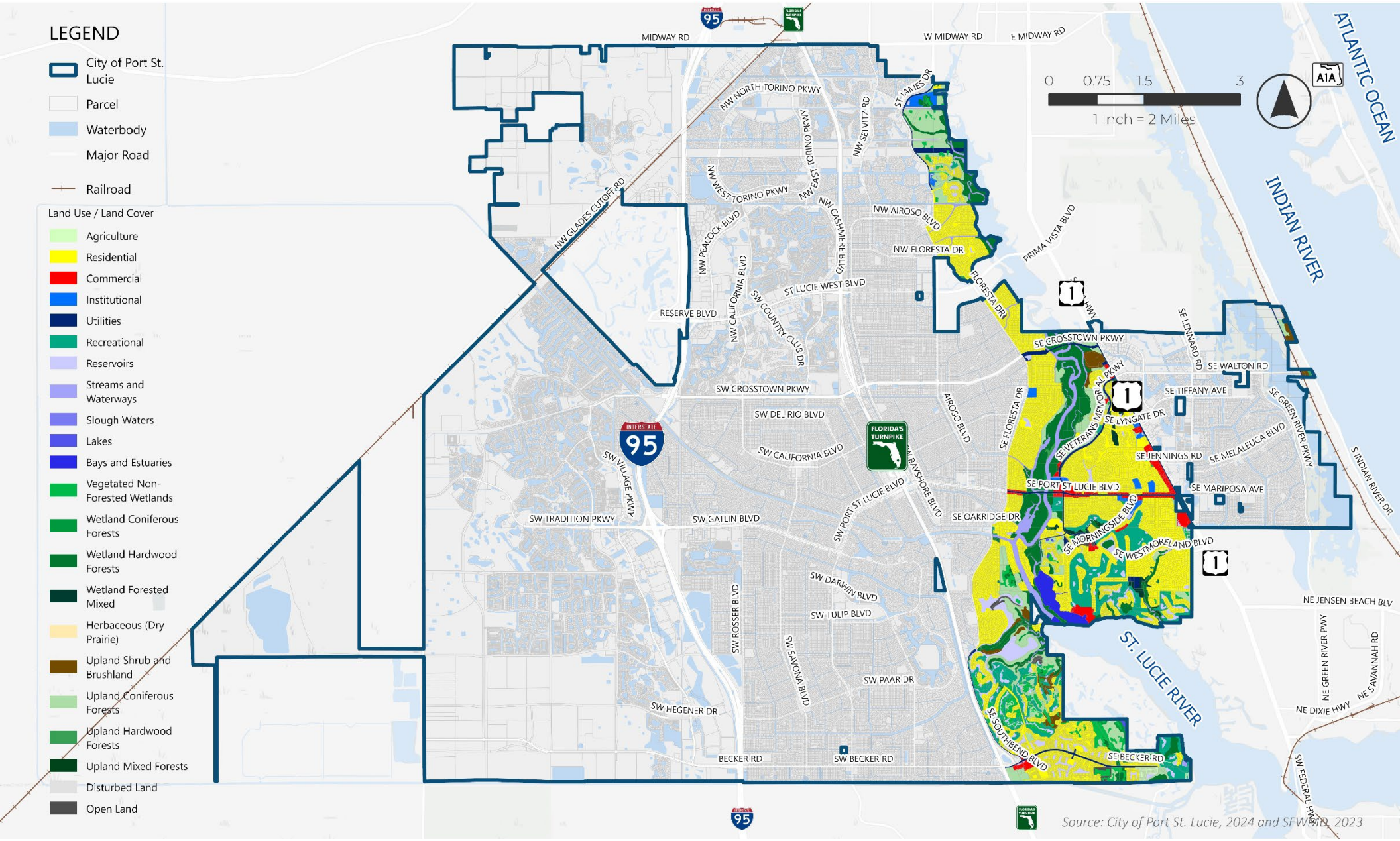
In the unlikely event of radiation contamination, the environmental impacts could range from modest to catastrophic on a wide ranging, long term scale dependent on the type and scope of event triggering a release of contamination. Long term commitments at the federal level will be required in the event of a significant emergency. At the local level, the City and County should continue to endorse the beach nourishment efforts to repair and stabilize the segment of critically eroded beach that is recognized as a threat to the power plant and should consider all current technological advances to address radiation exposure when periodically updating their CEMP.

1. **Procedural** - Outreach and education, real estate disclosure.
2. **Protection** - "Hard" and "soft" structurally defensive measures.
3. **Accommodation** - Altering the design and use of structures to handle flooding.
4. **Strategic Relocation** - Incremental relocation of development to safer areas.
5. **Avoidance** - Directing new development away from vulnerable areas.

LAND USE / LAND COVER IN CPA

COMPREHENSIVE PLAN 2050

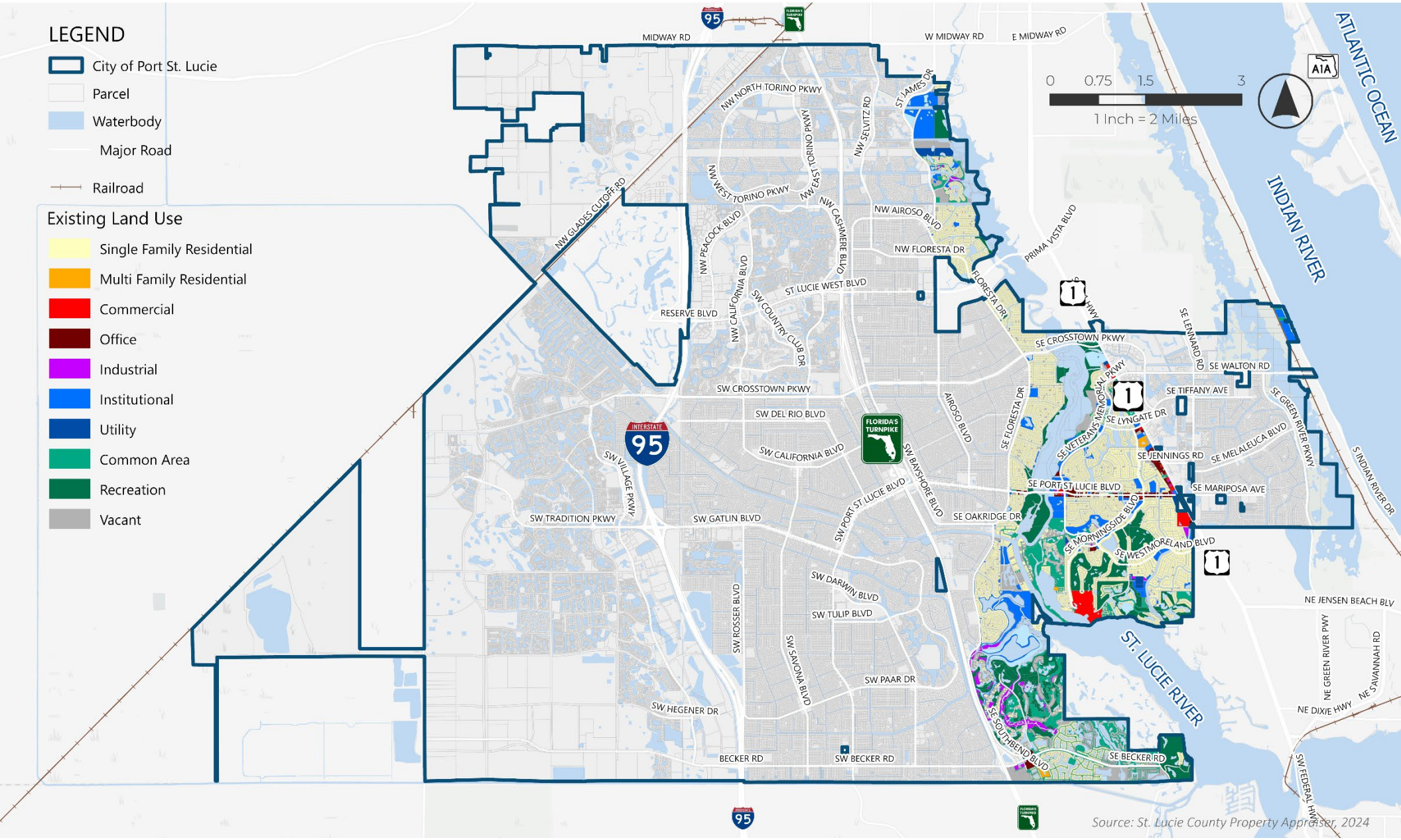
MAP 5-10



EXISTING LAND USE IN THE CPA

COMPREHENSIVE PLAN 2050

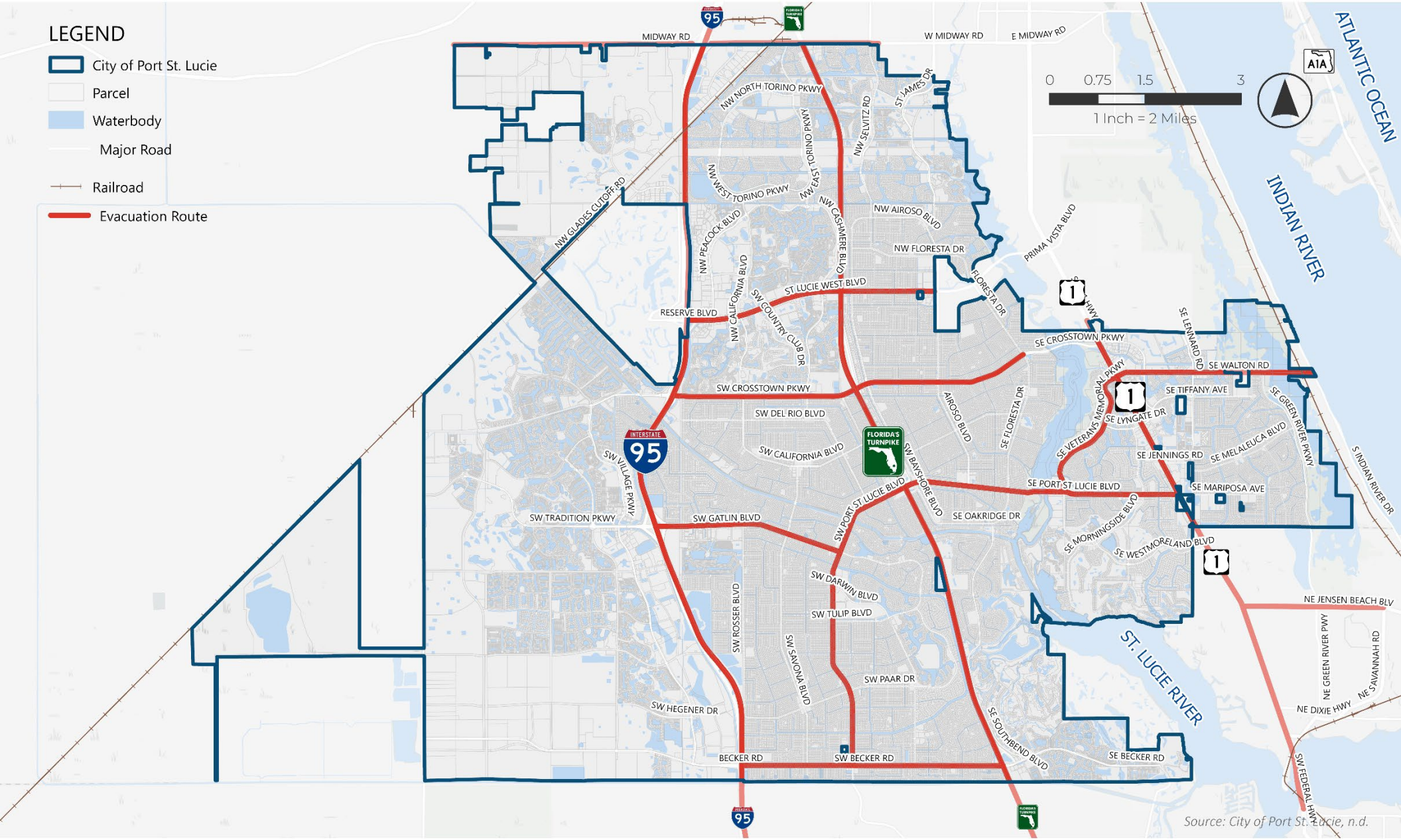
MAP 5-11



EVACUATION ROUTES

COMPREHENSIVE PLAN 2050

MAP 5-12



D. Potential Impacts of Future Development within the CPA

Much of the City's projected economic and population growth is not anticipated to occur within the Coastal Planning Area as evidenced by the less than 1,000 vacant acres in the Coastal Planning Area and large amounts of dwelling units allocated to the Developments of Regional Impact outside of the coastal planning area. However, it is important to examine the potential future development that could occur within the City's Coastal Planning Area.

1. Future Land Use

The future land use categories that are present within the Coastal Planning Area and their acreages are listed below in **Table 5-15** and can be seen on **Map 5-13**. The two largest future land use categories within the Coastal Planning Area are the Residential Golf Course and the Low Density Residential future land use categories which comprise approximately 60% of the coastal planning area.

Table 5 - 15: Future Land Use in the CPA

Future Land Use	Acres	Percent of CPA
Residential Golf Course	2,587.4	22.5%
Low Density Residential	4,272.1	37.1%
Medium Density Residential	144.1	1.3%
High Density Residential	16.9	0.1%
Residential - Office - Institutional	112.8	1.0%
Commercial Limited	51.9	0.5%
Commercial Highway	6.8	0.1%
Commercial General	242.0	2.1%
Commercial Service	47.9	0.4%
Institutional	164.6	1.4%
Conservation Open Space	557.0	4.8%
Preservation Open Space	1,348.1	11.7%
Recreational Open Space	1,304.2	11.3%
Utility	124.6	1.1%
Water	540.5	4.7%
Total	**11,520.8**	**100.0%**

Source: City of Port St. Lucie, 2024

2. Natural Resources

As identified and discussed within land use / land cover analysis of the CPA, 42.5% of the CPA is a diverse mixture of natural habitats. This diverse set of habitats includes a number of uplands, wetlands, and waterbody types. The natural habitats offer

3. Water-Dependent and Water-Related Uses

The City's adjacency to natural water bodies can be a significant driver for the local economy. However, properties located along the waterfront are finite in number and thus, should be encouraged to develop

in a manner which capitalizes on their proximity to hydrological features without harming nearby natural resources.

4. Public Facilities

Continued maintenance and protection of infrastructure and public facilities will be required to ensure a resilient response to potential natural disasters. Continued coordination with utility providers, federal, state, and other government agencies with be essential to effective disaster response planning in Port St. Lucie.

5. Emergency Evacuation and Shelters

Evacuations and shelters are important functions of emergency planning. As the City continues to grow in population, the need for coordination between the Treasure Coast Regional Planning Council, St. Lucie County and the City will increase. These efforts should be focused on identifying ways to prevent the degradation of local evacuation times and to increase the volume and capabilities of County shelters.

6. Coastal Flooding

Based on storm surge models produced by the National Oceanic and Atmospheric Administration the City of Port St. Lucie has the potential for storm surge during Category 1-5 hurricanes. This means Port St. Lucie needs to be prepared for emergency response and limit future potential development and flood prone areas.

E. Estuarine Pollution

The St. Lucie River and Estuary Basin is located in southeast Florida in Martin, St. Lucie, and Okeechobee Counties. The St. Lucie Estuary is a major tributary to the Southern Indian River Lagoon. The basin is an ecologically important area where water quality is affected by freshwater runoff from agricultural and urban sources in the watershed and Lake Okeechobee. To address the nutrient impacts in this important basin, the Florida Department of Environmental Protection adopted Total Maximum Daily Loads to reduce the watershed nutrient inputs to the river and estuary. In response to the adopted Total Maximum Daily Loads a Basin Management Action Plan was developed to address the water quality of the St. Lucie River and Estuary.

IV. Future Considerations

As the City continues to develop, it must protect its natural resources to ensure these areas remain for generations to come and protect coastal areas from natural disasters. The following considerations will be emphasized as the City envisions the next 20 years.

A. Conservation Future Considerations

1. Enhance the Protection of the Indian River

Protecting and restoring the Indian River Lagoon is a top priority within the St. Lucie River Watershed. The City has committed to projects that reduce discharge-related contamination by implementing measures to remove pollutants before they enter the river. To further these efforts, the City will continue implementing and collaborating on programs that protect and enhance the ecological integrity of the Indian River while minimizing harmful discharges.

2. Protecting and Restoring Critical Habitats for Endangered and Threatened Species.

The City is committed to developing a habitat conservation and restoration plan focusing on the protection of critical habitats for threatened and endangered species that are listed in this element. As part of this initiative, the City will implement monitoring programs to assess species populations, promote public education on wildlife conservation, and encourage collaboration with local, state, and federal agencies to support habitat restoration efforts.

3. Expand Household Hazardous Waste Management and Disposal Options.

The City will explore opportunities to expand hazardous waste collection programs by establishing additional drop-off locations, continuing the periodic household hazardous waste collection events, and providing mobile collection services in underserved areas. The City will consider partnerships with neighboring counties to increase disposal capacity.

4. Incorporate Soil Suitability in Land Use Planning and Development Decisions.

Areas with poorly drained soils, especially those in floodplains, wetlands, or near surface waters will be prioritized for conservation or low-impact development. The City will apply mitigation measures to reduce environmental impacts and promote nature-based solutions for better stormwater management and soil stability during development.

B. Coastal Management Considerations

1. Vulnerability Assessment

The City is currently preparing a Vulnerability Assessment to enhance its preparedness for natural disasters. This assessment will include a Hydrologic and Hydraulic modeling analysis task, identify high-risk areas, evaluate critical infrastructure, and prioritize improvements to enhance resilience. Completion of the Vulnerability Assessment will allow the City to apply for implementation project funding from FDEP and will improve the City's eligibility for other federal and state grants dedicated to disaster preparedness and mitigation. The City will also contribute to the County’s CDBG Vulnerability Assessment and Regional Resiliency Plan preparation as part of the Steering Committee.

2. Strengthen Coastal Resilience and Mitigation Strategies for Vulnerable Areas.

The City is committed to establishing a coastal resilience strategy that focuses on reducing the vulnerability of the Port St. Lucie coastal planning area to sea level rise, storm surge, and flooding. This strategy includes regular updates to land use policies to discourage development in the Coastal High Hazard Area and other vulnerable zones. Additionally, the City will consider enhancing the stormwater management system to handle extreme events and prioritize the restoration of natural coastal buffers, such as mangroves and wetlands, to help mitigate storm surge. A key component of this effort is the continued preservation of McCarty Ranch, which provides critical stormwater storage capacity and supports water quality improvements. The City will also increase public awareness through education programs on flood risks, evacuation plans, and property-level mitigation measures, and encourage regional collaboration with neighboring municipalities to address shared coastal challenges.

3. Enhance Support for Vulnerable Populations.

The City is committed to developing targeted outreach and support programs to help vulnerable populations in the Port St. Lucie Coastal Planning Area better prepare for and respond to coastal flood risks. This may include providing financial assistance for flood mitigation measures, emergency repairs, or temporary shelters for low-income households. The City will collaborate with local social services, healthcare providers, and community organizations. Additionally, the City will provide multilingual resources and outreach to ensure that non-English-speaking residents receive the necessary information and support during coastal emergencies.

FUTURE LAND USE IN CPA

COMPREHENSIVE PLAN 2050

MAP 5-13

