

INFRASTRUCTURE

4

CHARTING
PORT ST. LUCIE

DATA & ANALYSIS

September 28, 2026

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CHAPTER 4. INFRASTRUCTURE ELEMENT

I. Introduction

The purpose of the Infrastructure Element is to provide for necessary public facilities and services correlated to future land use designations. This element addresses general utilities which are provided by or managed by the City of Port St. Lucie. These include:

- Sanitary Sewer
- Solid Waste
- Drainage and Natural Groundwater Recharge
- Potable Water

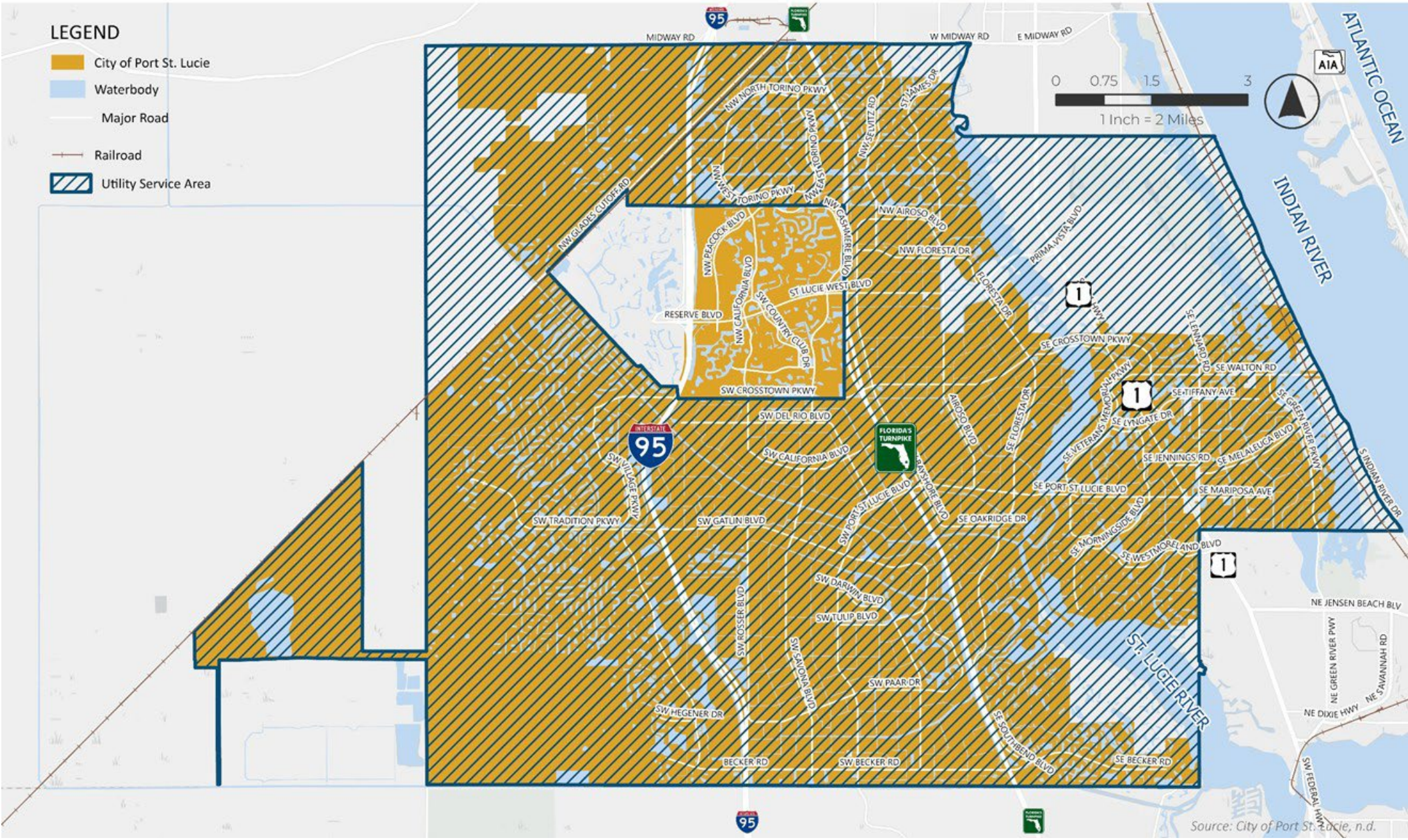
This document provides an inventory and analysis of current public utility systems and the groundwater aquifer and identifies future improvements to the potable water, wastewater treatment, solid waste collection, drainage, and stormwater management systems to support the anticipated population growth.

The City's utility service area (see **Map 4-1**) includes the incorporated City limits, excluding St. Lucie West, which operates with private utilities. The service area also extends beyond the City limits, as permitted under Chapter 180, F. S. This element assumes that Port St Lucie Utility Systems Department will continue to serve the same area through the planning horizon. **Due to this arrangement, the population figures noted in this element for sanitary sewer and potable water section vary from the projected population for other elements. The projections are derived from the 2022 Water Supply Facility Work Plan.**

UTILITY SERVICE AREA

COMPREHENSIVE PLAN 2050

MAP 4-1



II. Sanitary Sewer

A. Introduction

This section provides a description of the existing sewage collection, treatment and disposal methods in use in the City of Port St. Lucie. Private utility systems and on-site treatment facilities is also noted.

B. Wastewater Facilities Inventory

The City of Port St. Lucie is the responsible entity for the sanitary sewer collection and treatment facilities managed and operated by the Port St. Lucie Utility Systems Department (PSLUSD). The PSLUSD owns and operates two wastewater treatment facilities: the Glades and the Westport wastewater treatment facilities. As of May 2025, the City has approximately 82,221 active wastewater connections. In addition to the two wastewater treatment facilities, the wastewater system includes a network of gravity collection, low pressure force mains, lift stations force mains, three major inline regional wastewater booster stations, effluent disposal facilities containing deep injection wells, and reclaimed water production. Within the City boundary, the St Lucie West Services District also treats wastewater effluent.

1. Wastewater Treatment System

The Glades Wastewater Treatment Facility (WWTF) has a current treatment capacity of 12.0 Million Gallons per Day (MGD) with a build-out treatment capacity of 30.0 MGD. The Westport WWTF has a permitted capacity of 6.00 MGD.

The Glades wastewater treatment facility can also provide up to 12.0 MGD of reclaimed water. Effluent disposal at the Glades Wastewater Treatment Facility occurs with deep well injection. Effluent disposal is accomplished via reclaimed water for irrigation and deep well injection.. The Westport Wastewater Treatment Facility provides up to 6.0 MGD of irrigation quality reclaimed water, which is used for spray irrigation at various golf courses and common areas within the city.

Currently the Westport Wastewater Treatment Facility is undergoing updates to achieve advanced wastewater treatment through improved nutrient reduction. This project is part of a federal grant program, and the total project budget is $65 million.

The improved facilities will produce higher-quality wastewater treatment to meet the new Florida Department of Environmental Protection (FDEP) standards and Florida State Statutes, which require facilities to implement the updated Best Management Action Plan (BMAP) for wastewater treatment and include Advanced Wastewater treatment (AWT). Reclaimed water for irrigation could percolate through the sandy soils and enter the St. Lucie River Estuary. These upgrades ensure that nitrogen and phosphorus are removed from the waste stream before disposal into a deep injection well or irrigation-quality reclaimed water. This project will also reduce possible negative impacts on the environment and water quality.

Construction, which began in January 2024 and is scheduled to conclude Summer 2027, includes upgrades to the existing wastewater treatment facility, including expansion of the aeration basin facilities and upgraded pretreatment systems, as well as new components such as new high-efficiency turbo-blowers, electrical systems, filtration system, and hardening of the infrastructure to better withstand weather events. Located close to the Sawgrass Lakes neighborhood, the construction at Westport is being strategically planned to minimize any possible disruptions and impacts to the

surrounding neighbors. New sound attenuation improvements are also being implemented to reduce noise levels at the facility. These improvements are designed to advance the overall efficiency and final properties of treated and disinfected effluent quality.

2. Private Utilities

St. Lucie West and The Reserve Community Development District provide wastewater treatment to areas within City boundaries. Additionally, smaller private utilities serve limited areas within the City. On-site private septic systems and smaller package treatment plants are also present and in use.

a. St. Lucie West Services District

St. Lucie West is a large mixed use development of approximately seven square miles in the western part of the City. Wastewater treatment and disposal facilities to serve the community are provided through this Community Development District. Wastewater effluent is treated to reclaimed water standards. Currently, the permitted treatment capacity is 2.13 MGD three-month average daily flow (TMADF) with IQ water storage of15.0 MG. All wastewater from the Reserve goes to the St. Lucie West facility. All disposal is effluent reuse into HDPE lined ponds. The wastewater plant has a 3 MG HDPE lined pond for reject/non-compliant effluent.

b. The Reserve Community Development District

The Reserve Community Development District (CDD) wastewater treatment facility serves The Reserve at PGA Village, a gated residential/golf course community located outside the City of Port St. Lucie near the intersection of St. Lucie West Boulevard and Interstate 95. CDD also serves the Reserve Commerce Centre, which is within City limits. All flows are pumped to an onsite surge tank. From the surge tank all flows are pumped to St. Lucie West Services District. In 2025, an agreement between the Reserve and St Lucie West was signed to eventually transfer the Reserve assets to St. Lucie West. The transfer is pending area improvements.

c. Package Treatment Plants

Package treatment plants are essentially small treatment systems that have a collection network, treatment plant, and disposal system. According to the DEP, one permitted package plant is located within the City's Utility Service Area, the Savannah Club WWTF. Package plants may be designed to provide any level of treatment, but plants providing secondary treatment, or enhanced secondary treatment, are most commonly used. Package plants are available in a range of capacities up to one-million gallons per day. They are generally used to serve isolated developments and are usually modular units partially or completely pre-assembled by the manufacturer prior to shipment to the site of use.

Effluent disposal in package plants may take a variety of forms. Most common in Port St. Lucie are drain fields and percolation ponds. Small package plants usually do not require full-time attendance by an operator, and private operating services runs many small package plants in the County. Some of the larger package plants have their own operators, usually for only a portion of the day.

d. Harbor Ridge

Harbor Ridge, a golf course community spanning approximately 885 acres along the St. Lucie River, operates their own wastewater treatment for their 695 residents and golf course.

e. Septic Tanks

Septic tank systems are most commonly used to serve single or small multiple housing units. The tank receives wastewater from the residence and provides a period of settling during which time a significant portion of the suspended solids settle out to be biologically (anaerobically) degraded. The effluent is discharged through underground, perforated drainage pipes (drainfield) and percolate into the soil where microorganisms and filtration purify the liquids. **Map 5-4**, Soil Permeability, indicates the general soil types present in the City as identified in the 2023 Natural Resource Conservation Service (NRCS) SSURGO Soils Maps. The soils located within the city have moderate or severe limitations for drainfields. Due to the soil conditions, the St. Lucie County Health Department requires removing and replacing 95 percent of existing soils when permitting a drainfield. Septic tanks generally require cleaning every two to three years to remove accumulated solids. These solids, called septage, are generally transported to treatment and disposal facilities.

Septic tanks can be adversely affected by a number of conditions, including high water table, poor drainage, lack of space, and miscellaneous effects from other conditions such as overloads from washing machines. In areas not previously provided with municipal utility service, but where such service is now available, residences may retain their on-site systems until they fail, at which time connection to the utility system is mandatory.

C. Level of Service

The majority of the City receives wastewater treatment from Port St Lucie Utilities. The level of service standard adopted by the City of Port St. Lucie for sanitary sewer facilities is 70.0 gallons/capita/day. The St. Lucie West service district uses a level of service of 100 GPCD.

D. Needs Assessment/Future Wastewater Treatment Demand

The future capacity of the wastewater treatment facilities is evaluated based on the projected growth and the City's adopted level of service standards. The City currently has the capacity to treat **18 MGD** of wastewater; however, according to the projected population this is less than the projected future demand of 37.1 MGD. **Table 4-5** indicates the projected future wastewater demand. The City will need to expand the total treatment capacity of the wastewater treatment system to keep up with the demand.

Table 4 - 1. Sanitary Sewer Treatment - Projected Demand*

Year	Population	Projected Wastewater Treatment Demand (MGD)
2025	246,292	24.6
2030	278,239	27.8
2035	304,061	30.4
2036	308,301	30.8
2040	325,265	32.5
2045	342,982	34.3
2050**	371,490	37.1

**Demand based upon 100 gallons per day per person*
***2050 population projection based on projected population trend in the Utility Service Area*
Source: City of Port St. Lucie, 2024

E. Septic to Sewer

Since 2023, the state has been requiring that all municipalities and counties to assess the feasibility of providing sanitary sewer services to sites currently served by septic systems within a 10-year planning horizon. The jurisdictions must identify the name and location of the wastewater facility that could receive sanitary sewer flows after connection; the capacity of the facility and any associated transmission facilities; the projected wastewater flow at that facility for the next 20 years, including expected future new construction and connections of onsite sewage treatment and disposal systems to sanitary sewer; and a timeline for the construction of the sanitary sewer system. Additionally, municipalities and counties are required to include projects necessary to achieve pollutant load reductions established in the basin management action plan.

Starting prior to the state mandate, the City has been converting approximately 400 septic systems to the municipal sewer system per year. Since the City started the program in 1999, approximately 10,700 conversions have been completed. This program is supported by interest-free loans and annual grant funding from the Indian River Lagoon program, helping to reduce nitrogen and phosphorus from entering the Indian River Lagoon, its tributaries, and surrounding waterways.

In 2024, the City completed a feasibility study to identify properties currently served by septic systems. As part of the BMAP Wastewater Treatment and Onsite Sewage Treatment and Disposal Systems (OSTDS) Remediation Plan, the study concluded that significant upgrades are required including improvements to existing wastewater treatment facilities and the construction of approximately 14 miles of new force mains to connect the City and areas within the Port St. Lucie Utility Service District (PSLUSD) to the central sewer system. As of 2024, there were 13,421 properties with septic systems located within 100 feet of an existing sewer line, and an additional 3,330 properties located more than 100 feet away. The total estimated cost for connecting all properties and upgrading wastewater infrastructure is approximately $208.7 million. The City plans to complete these connections over the next 20 years, at an average rate of 838 septic system conversions per year, which will double the current rate of conversion. The report determined that there were no financially feasible projects; however, the City is seeking grant funding to assist its residents.

F. Wastewater System Improvements

The Water Supply Facility Work Plan has identified the following projects to ensure sufficient wastewater treatment remains throughout the 2050 timeframe.

1. **Westport Wastewater Treatment Facility Nutrient Reduction Project**: With grant funding from the Florida Department of Environmental Protection, this project aims to upgrade the Westport Wastewater Treatment Facility to meet advanced wastewater treatment requirements for nitrogen and phosphorus removal.
2. **Septic-to-Sewer Program:** The City continues to convert approximately 400 residents per year from private, on-site septic to sewer systems, supported by interest-free loans and annual grant funding via the Indian River Lagoon program. The City will need to increase its rate of conversion to meet the twenty year deadline to convert all properties to central sewer over the 20 year time period.
3. **Glades Wastewater Treatment Facility Expansion:** The Glades Wastewater Treatment Facility will be expanded by an additional **12 MGD** by 2034, with design planned for 2032.

III. Solid Waste Collection

The appropriate collection and disposal of solid waste is an important function to protect the public health of the community. Through a franchise agreement, the City partners with FCC Environmental Services Florida for the collection of Solid Waste and Recyclable Materials. The current agreement expires on September 30, 2029, with a mutual option for a three-year extension.

Residential collection is made twice per week for household refuse, once per week for recyclable materials and yard trash, and by request for special items such as white goods (i.e. appliances). Commercial collection is made twice or more each week.

A. Solid Waste Facilities Inventory

1. Active Landfills

There are no active landfills within the City of Port St Lucie. Through an interlocal agreement, solid waste collected within Port St. Lucie is transported to the St. Lucie County Baling and Recycling Facility, the only solid waste disposal facility currently permitted in St. Lucie County. This facility, located at 6120 Glades Cut Off Road in Fort Pierce, collects and processes recycling, Class I waste, and construction and demolition waste The 333 acre site is owned and operated by St. Lucie County.

2. Transfer Stations/Collection Centers

There is currently one drop off center for yard waste and bulk waste within the city located at 1501 SW Cameo Boulevard. However, this will be phased out in 2026.

3. Recycling Program

Recycling is picked up once a week through the agreement with FCC Environmental Services Florida.

4. Hazardous Waste

There are no hazardous waste collection or disposal sites in the City of Port St Lucie. The St. Lucie County Sanitary Landfill, located in Fort Pierce, is open for drop off of hazardous materials. The City of Port St Lucie offers two Household Hazardous Waste Collection Days and rechargeable battery drop off is available at all City buildings.

B. Existing Demand Surpluses and Deficiencies

The current level of service for solid waste is 3.88 pounds per capita day for Class I solid waste and 0.81 pounds per capita day for construction and demolition (C & D) waste.

C. Future Demand Capacity

Total estimated capacity remaining of Class I Landfill is 11,971,202 cubic yards (per St. Lucie County 2025 Comprehensive Plan Update). The St. Lucie County Baling and Recycling Facility has capacity to meet the demand through 2050 for Class I waste.

In 2025, the total estimated capacity of the C & D Debris landfill was 628,080 pounds. At the current rate of use, the landfill will reach capacity for C & D Debris around 2035. The County may decide to combine the C & D with Class I waste if an alternative solution or location is not found. The County is investigating this matter and has yet to reach a decision.

D. Needs Assessment

The City via their interlocal agreement with St. Lucie County has solid waste disposal facilities sufficient to satisfy the needs of the City for the short-term planning period. However, the County will need to assess alternative disposal site between 2018 and 2022.

E. Solid Waste Future Improvements

The City plans to continue contracting with FCC Environmental Services Florida to provide solid waste collection However as the current agreement draws to a close, the City is currently exploring the possibility of providing solid waste collection in-house. The City will need to coordinate with the County to devise a solution for the disposal of construction & demolition debris. Additionally, the City should collaborate with the County to seek alternatives to reduce the volume of the waste stream that must be landfilled to extend the life of the Baling and Recycling Facility.

IV. Drainage and Stormwater

This section provides an evaluation of the City's stormwater management system and the established level of service standard that will promote the health, safety and welfare of the citizens of the City of Port St Lucie.

A. Current System and Levels of Service

Historically, the City had a drainage pattern that was controlled by the Atlantic Coastal Ridge with a gentle slope from west to east The North Fork of the St. Lucie River (NFSLR) varies from 200 to 400 feet in width and meanders through a lush floodplain that is approximately one-half mile wide in the City. The area surrounding the St. Lucie River is identified as preservation open space in the Future Land Use Map, which maintains restrictions for development within the area to protect natural resources.

Major drainage modifications started to occur and improvements in St. Lucie County commenced with the formation of the North St. Lucie River Water Management District and the Fort Pierce Farms Water Management District. during the 1960's, when the Army Corps of Engineers constructed canals C-23A, C-24 and C-25 and their control structures, which discharges within the City and south of the City. This was done in order to improve drainage, provide irrigation supply, and to divert a portion of the headwaters of the North Fork of the St Lucie River (NFSLR). Today, there are three canals that serve the City for drainage purposes: C-23, C-23a, and C-24. As land is urbanized, the volumes of stormwater have increased and runoff times) have decreased. Since the majority of the urban areas are downstream, the potential for flooding has increased in several areas.

The City of Port St. Lucie's stormwater management system is located within the North Fork of the St. Lucie Estuary Drainage Basin. The City's system discharges into the South Florida Water Management District's C-23 and C-24 canals, the North Fork of the St. Lucie River, or the Savannas Preserve State Park, which ultimately drains into the St. Lucie River. Most of the swales, canals, and waterways that transport stormwater to these discharge points are within public drainage rights-of-way maintained by the City. However, there are a handful of Community Development Districts that eventually discharge into the City system, the canals, or the North Fork.

In order to combat the additional runoff and address drainage concerns, the City has launched several initiatives. The City addressed the stormwater issues within the eastern side of the City by implementing as the Eastern Watershed Improvement Project (EWIP) that created new stormwater treatment areas to

improve water quality and attenuation, new collection/transmission systems, pumps, and improvements to increase or restore the original capacity of the existing drainage system. The City has also implemented some low impact design standards in order to better manage stormwater runoff. These include bioswales, bioretention areas, and grassed swales.

1. Water Quantity

The stormwater treatment system(s) may be project-specific, serve designated sub-areas within the City, or function citywide. Stormwater runoff treatment is required for all development or redevelopment projects and for the City reflects the applicable South Florida Water Management District (SFWMD) and National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permits and rules . The City mandates that peak post-development runoff rates not exceed pre-development levels. If no specific rate is established for the receiving body, runoff shall be limited to 0.5 cubic feet per second (cfs) per acre.

The City mandates that all new developments provide on-site stormwater detention or retention, and treatment in compliance with the requirements of the South Florida Water Management District (SFWMD) permit and state and federal agencies.. Additionally, finished floor elevations for buildings must be at or above the level of a 100-year, 3-day storm event without off site discharge. Approved stormwater management methods include retention ponds, swales, and vault systems. For existing platted developments without SFWMD permits, the City requires building floor elevations to be at least two feet above the crown of the road.

2. Water Quality

The City implements a development review process to ensure that proposed projects appropriately mitigate drainage and stormwater impacts on-site. Stormwater discharge facilities must be designed to maintain receiving water quality and prevent degradation below the minimum conditions necessary for their designated use.

Currently, the City is advancing the St. Lucie River/C-23 Water Quality Project, which will convert approximately 1,871 acres of former citrus groves into a shallow water storage facility. This project aims to divert nutrient-laden freshwater into the C-23 Canal and the NFSLR to improve water quality.

Additionally, the City participates in the National Pollution Discharge Elimination System (NPDES), a national permitting program focused on enhancing stormwater quality. To further these efforts, the City conducted a Microbial Tracking Study in 2018 to identify and mitigate sources of contamination. The City is hoping to conduct another if funding becomes available.

Since 2013, the City has also been part of the St. Lucie River and Estuary Basin Management Action Plan (BMAP), a state initiative designed to reduce total nitrogen concentrations to below 0.72 milligrams per liter (mg/L) and total phosphorous concentrations to below 0.081 mg/L at the Roosevelt Bridge, where the North and South Forks of the St. Lucie River converge. As of January 2020, 229 projects had been completed, with additional 35 planned.

3. Drainage Areas

Within the City, there are five major drainage areas: North, Central, East, South, and McCarty Ranch. With the exception of McCarty Ranch, each contains small private systems, as well as commercial or multifamily developments that eventually discharge into the City's stormwater system

The North drainage area features 120 acres of stormwater treatment areas and 62 acres of wetlands, whereas the East, South and Central drainage areas lack designated stormwater treatment areas.

McCarty Ranch serves primarily as a water storage and quality improvement facility. Once fully completed, it will provide 1,916 acres dedicated to water storage and treatment, with the added benefit of serving as a potable water source.

B. Future Demand

The City of Port St Lucie experiences some flooding after major rain events. The roadways and intersections experiencing flooding issues are as follows:

1. SW California Boulevard and SW Savona Boulevard intersection
2. SW Thornhill Drive between SW Brisbane Street and SW Airoso Boulevard
3. SW Thornhill Drive and SW Bayshore Boulevard & SW Biltmore Street intersections
4. SW Thornhill Drive and SE Manth Lane intersection
5. SE Port St. Lucie Boulevard and SE Gowin Drive intersection (FDOT roadway)
6. SW Port St. Lucie Boulevard construction area south of SW Gatlin Boulevard
7. SE Darwin Boulevard between SW Tulip Boulevard and SW Paar Drive
8. SW Airoso Boulevard and SW Pisces Terrace intersection
9. SW Gatlin Boulevard and Savona Boulevard intersection
10. SW Airoso Boulevard and SE Port St. Lucie Boulevard intersection
11. SE Melaleuca Boulevard and SE Lennard Road intersection
12. SW Cashmere Boulevard and SW Heatherwood Boulevard intersection
13. Walton Road and US-1 intersection
14. SE Port St. Lucie Boulevard and US-1 intersection

C. System Improvements

The City Stormwater Management Plan prioritizes improvements throughout the City based on public safety, water quantity, problem areas, and water quality. The highest priority projects identified are:

1. Zullo St./Fears Ave. Flood Mitigation Retrofit
2. E-8 Canal Retrofit from Tempico to Structure B15
3. Watershed C Retrofit area West of I-95
4. Elkcam Waterway Detritus Excavation – Project N
5. Kingsway Waterway Retrofit – Project E
6. Tiffany Pump Station Outfall Channel Retrofit

V. Aquifer Recharge

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. Rainwater replenishes these aquifers by percolating through the soil or entering through sink holes and fissures. Additionally, aquifers may receive recharge from adjacent aquifers or surface water bodies, depending on the extent of impervious surfaces such as roads, parking lots, and rooftops.

The expansion of impervious surfaces reduces the land available for percolation, thereby decreasing the natural recharge of aquifers. Not all precipitation reaches the aquifers, and if total water loss and withdrawals exceed recharge levels, stored groundwater supplies diminish. Well-drained areas, often prime location for development, also serve as the most effective recharge zones.

Beyond quantity, the quality of recharge water is equally important. Development can introduce contaminants into groundwater, which may then be transmitted to the aquifer, posing risks to the City's drinking water supply. Ensuring both the quantity and purity of recharge water is essential for long-term water sustainability.

A. Existing Conditions

Indian River County is underlain by two distinct sources of groundwater the shallow unconfined or semi-confined Surficial Aquifer and the deep artesian Floridan Aquifer, which are separated by impermeable green clay. **Map 4-2** shows the aquifer recharge area associated with the City of Port St Lucie. A portion of the City is within a high recharge area; however, most of the recharge of the Floridan Aquifer for St Lucie County occurs in West Central Florida

The soils in the City are generally sandy. The primary soil types found in the City are Ankona and Farmton sands, Lawnwood and Myakka sands, Nettles and Oldsmar sands, Pineda sand, Wabasso Sand, and Waveland and Immokalee fine sand. The fine textured soils do not allow rapid infiltration of rainfall and the majority is lost as runoff although some recharge does occur through bank storage in canals.. Most of the soil within the City is poorly drained or somewhat poorly drained, while some areas along the St. Lucie River are designated as somewhat excessively drained.

B. Aquifer Contamination

The potential for contamination of public water systems is monitored by the Florida Department of Environmental Protection under the Source Water and Protection Program (SWAP). The City published its Utility Systems Water Quality Report in 2024 in compliance with Federal legislation. The report includes the results of the sampling and testing conducted between January 1, 2024, and December 31, 2024. According to the report, there are five types of contaminants: microbiological, inorganic, pesticides and herbicides, organic chemical, and radioactive. The water quality report provides a list of likely sources of contamination which includes pesticides and herbicides, salt water intrusion, and corrosion of household plumbing According to the report, there no contaminants that exceed the maximum contaminant level (MCL) within city limits.

C. Regulatory Framework

Florida Administrative Code rules, local regulations, and state statutes have been enacted to prevent negative impacts of excessive water consumption. Extreme lowering of aquifer levels and surface water

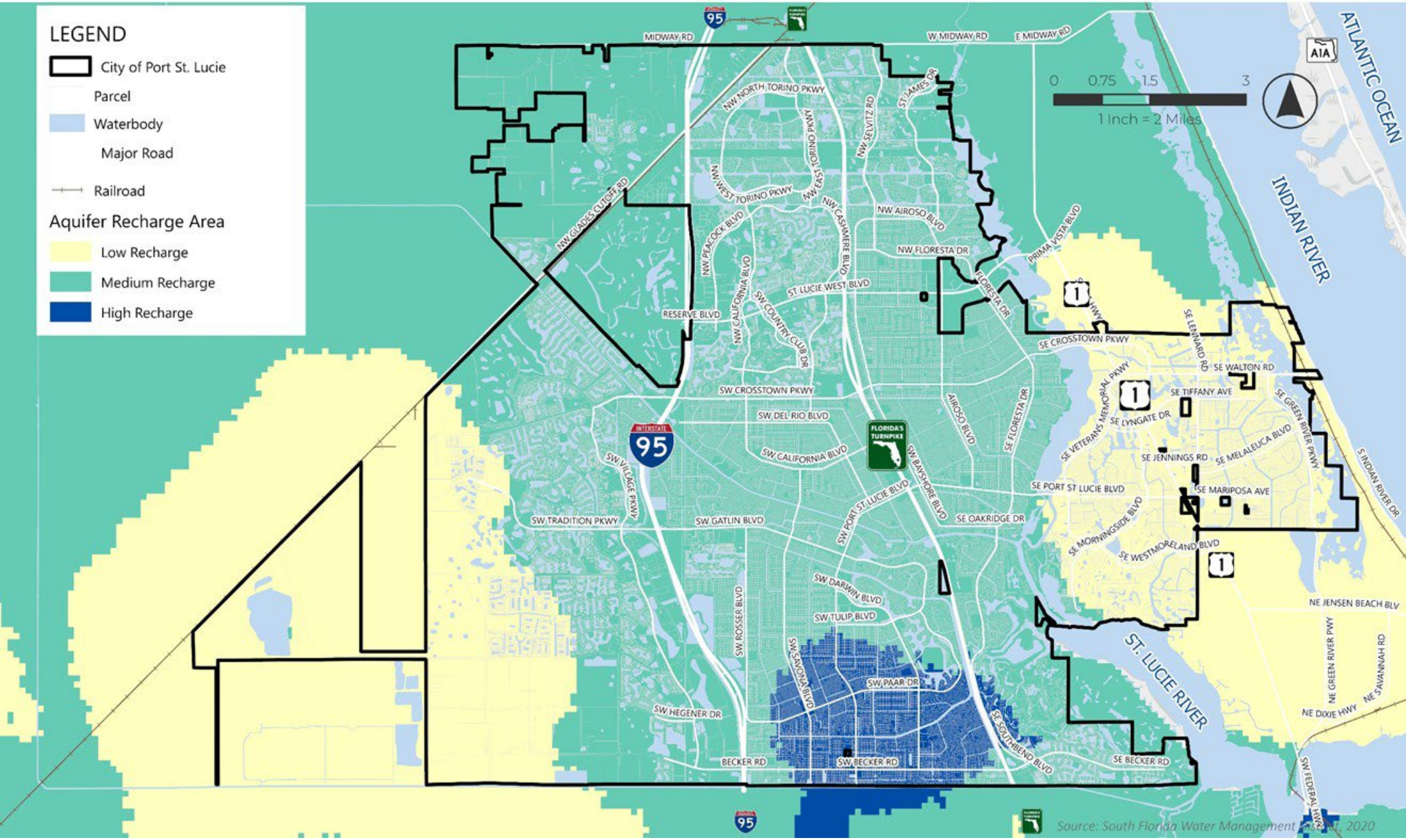
flows can adversely impact ecosystems by lowering lake levels, degrading wetlands and other natural systems and habitats, and saltwater intrusion.

In Chapter 373 of the Florida Statutes, the state delegates powers to water management districts to regulate potable water well construction and consumptive use permitting.

AQUIFER RECHARGE

COMPREHENSIVE PLAN 2050

MAP 4-2



VI. Potable Water

The City of Port St Lucie owns, operates, and maintains a potable water distribution system that pumps water from the surficial aquifer and the Floridan Aquifer. The Port St. Lucie Utility Systems Department (PSLUSD) is in charge of treating and distributing potable water to customers within the service area mentioned earlier. Other major regional water suppliers in the area include the St. Lucie West Service Department (SLWSD), and The Reserve. While The Reserve serves an area that is outside the City, it also serves a portion that is within the city limits.

A. System Inventory

The potable water distribution system of PSLUSD is comprised of three water supply and treatment facilities, five water storage and re-pump stations, and 48 wells. The City's potable water system provides water for both residential and non-residential customers. The SLWSD system consists of three wells and one water treatment facility. The Reserve water distribution system consists of one wellfield and one water treatment facility.

1. Public Water Wells

While the City's construction and operation of the potable water treatment plant facilities that serve the City are permitted by the Florida Department of Environmental Protection (FDEP), the withdrawal of groundwater as a source of raw water supply for treatment is governed and permitted by the South Florida Water Management District (SFWMD).

PSLUSD is currently permitted for 48 operating wells 19 from the brackish Floridan Aquifer and 29 from the Surficial Aquifer. **Map 4-2** displays the location of the wellheads and associated protection zones. The SLWSD has three permitted Floridan Aquifer wells and The Reserve has one surficial aquifer well. The City has a Wellfield Protection Ordinance to protect its water supply wells. The ordinance includes setbacks from water supply wells and regulates land uses to prevent contamination.

Table 4-1 lists the water use permits, permitted amounts, and 2019 estimated withdrawals for the Port St. Lucie water district with areas outside of the City included as well. The withdrawal rates from both aquifers are limited per the Consumptive Use Permit Modification 56-00142-W issued on July 10, 2008, and will expire in 2028. The permit is currently in the process of being renewed That permit restricts the total annual allocation to 18,754 MG (51.38 MGD) and the monthly allocation to 1,906.6 MG (63.6 MGD).

Table 4 - 2. Permitted and Estimated Withdrawal, 2019

Permit #	Reference	Annual Average Permitted Withdrawal (MGD)	2019 Withdrawal (MGD)	Functional Population Served
56-00142	Surficial Aquifer- PSLUSD	5.0	16.71	187,815
	Floridan Aquifer- PSLUSD	46.38		
56-00552-W	Surficial Aquifer- The Reserve	0.17*	0.23	3,353
56-00614-W	Floridan Aquifer—St. Lucie West	3.1	1.98	13,785
TOTAL CITY		**54.65**	**18.92**	**204,953**

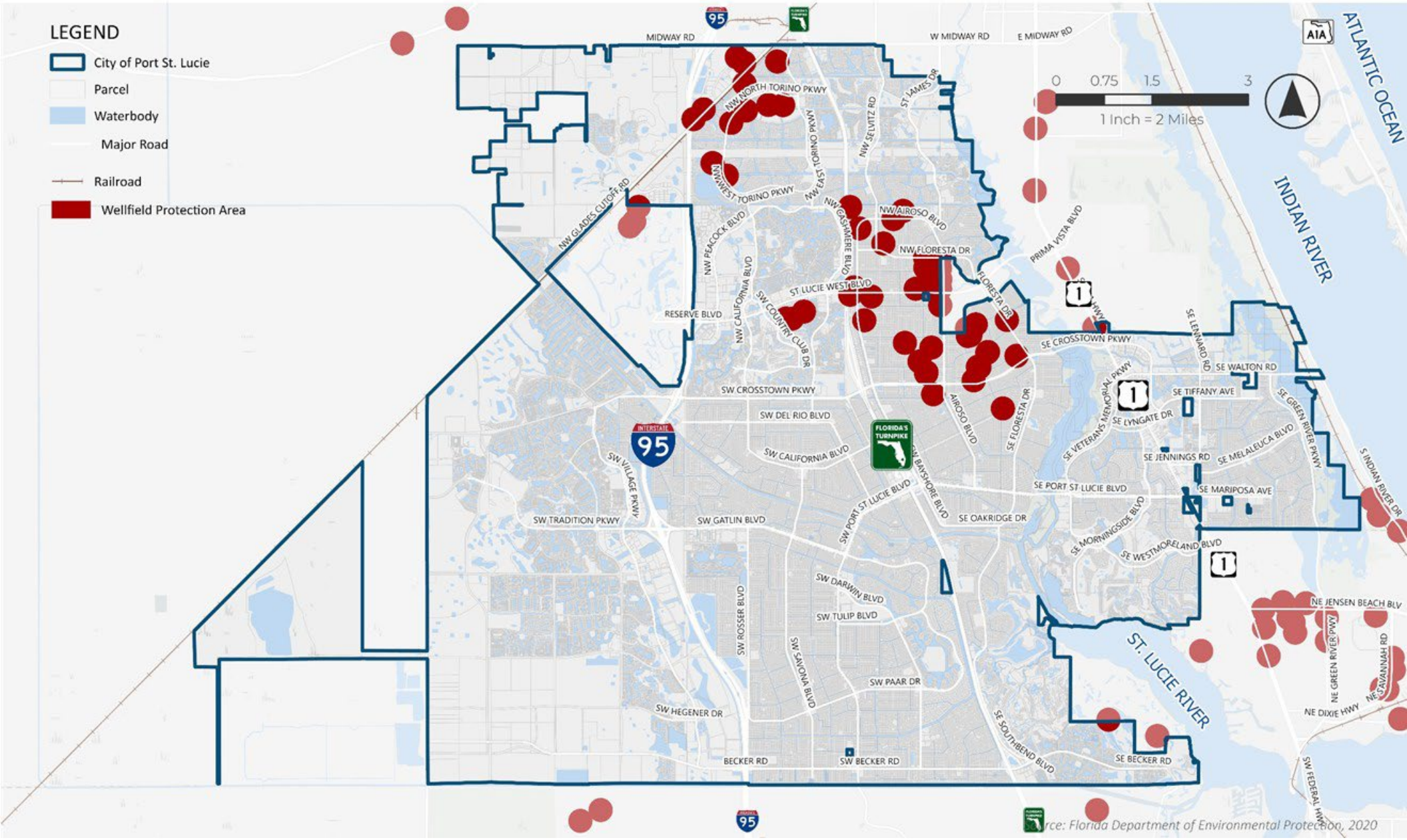
**The Reserve purchases .3 MGD of potable water from St Lucie West*

Source: Upper East Coast Water Supply Plan 2021

WELLFIELD PROTECTION AREAS

COMPREHENSIVE PLAN 2050

MAP 4-3



2. Water Treatment

The PSLUSD currently operates three water treatment facilities. (WTP), which are operating within their respective FDEP permitted capacities based on average and maximum daily flows (see **Table 4-2**).The combined PSLUSD system capacity is 41.65 million gallons of water per day. As of May 2025, there were 98,713 connections. The Reserve Community Development District and the SLWSD each also have one water treatment plant.

Table 4 - 3. Water Treatment Plants Permitted Capacities

WTP Name	Location	MDF Permitted Capacity (MGD)	Average	Maximum Daily Production (MGD)
Prineville WTP Lime Softening	1001 SE Prineville St	8.0	16.71	11.15
Prineville WTP Reverse Osmosis	1001 SE Prineville St	11.15		18.01
James E. Anderson WTP	7599 LTC Pkwy	22.50		31.50
The Reserve WTP	2160 Reserve Park Trace	0.17	0.23	0.17
St. Lucie West WTP	450 SW Utility Dr	3.60	1.98	3.60
	TOTAL	**45.42**	**18.92**	**64.43**

Source: City of Port St Lucie, Water Supply Facility Work Plan, 2022

The Prineville Lime Softening Water Treatment Plant, originally constructed in 1963, treats water from the surficial aquifer using lime softening technology. The plant has a maximum permitted daily flow capacity of 8.0 million gallons per day (MGD) and has undergone several modifications over the years to maintain its efficiency and capacity.

Constructed in 1999 and expanded in 2003, the Prineville Reverse Osmosis Water Treatment Plant treats brackish groundwater from the Floridan Aquifer. The plant has a maximum daily flow capacity of 11.15 MGD and includes significant storage capacity to ensure a steady supply of treated water.

The James E. Anderson Reverse Osmosis Water Treatment Plant, built in 2005 and expanded to its full capacity in 2008, also treats brackish groundwater from the Floridan Aquifer. With a maximum daily flow capacity of 22.5 MGD, it is the largest of the three plants.

The St. Lucie West Water treatment plant was originally constructed in 1987 and most recently expanded to its current capacity in 2013. The SLWSD water treatment facility uses reverse osmosis to treat the raw water entering the facility. The Reserve also has one water treatment plant.

3. Water Distribution

a. Port St. Lucie Utility Systems Department

The PSLUSD water distribution system covers approximately 132 square miles, including the entire City limits and some unincorporated areas of St. Lucie County adjacent to the City limits. The service area is bordered on the north by Midway Road, on the east by the Atlantic Ocean, on the west by Rangeline Road, and on the south by the St. Lucie County southern boundary. The overall permitted design treatment capacity of the system is 60.66 MGD.

b. Private Utilities with Capacities Greater than 0.1 MGD

i. St. Lucie West Services District

St. Lucie West Services District distribution system covers approximately a seven square mile area. The service area is bordered east and west by Interstate 95 and the Florida Turnpike, the southern boundary is Crosstown Parkway and the northern boundary is Peacock Boulevard. Expansion of treatment and storage capacity is planned to match the rate of development.

ii. The Reserve

The Reserve District is just west of the St. Lucie West Service District. While it primarily serves areas outside the City, a 336.42-acre portion of the Reserve, known as the Go Team Industrial Park, is located within the City limits. The Reserve is supplied with potable water from two sources, its own Reserve Utility Corporation and by the St. Lucie West Services District. In 2025, an agreement between the Reserve and St Lucie West was signed to eventually transfer the Reserve assets to St. Lucie West. The transfer is pending certain needed improvements.

c. Other Private Utilities

Harbor Ridge, a golf course community along the St. Lucie River at the southeastern border of the City also has its own water utility system. Additionally, there are small self-supply facilities that mobile home parks or water associations get their water from.

d. Domestic Self Supply

It is estimated that there are approximately 523 homes in the City that depend on on-site domestic wells for potable water. The City has an average of 58 well conversions per year and so most residents within the City will eventually be connected to the City's water distribution system.

B. Current Water Demand / Level of Service

The City's water withdrawal permit limit is for 54.65 MGD and the daily average potable water demand in 2019 was 18.92 MGD, leaving approximately 35.73 MGD of surplus water supply capacity.

The City's adopted level of service varies depending on the type of use:

- Residential uses (single and multi-family) within PSLUSD: 100 gallons per capita per day (GPCD)
- Residential uses (single and multi-family) within SLWSD: 100 gallons per capita per day (GPCD)
- Commercial: 125 gallons per day per 1,000 square feet
- Hotel/Motel: 112.5 gallons per day per room
- Industrial: 150 gallons per day per 1,000 square feet
- Office/School/Institutional: 120 gallons per day per 1,000 square feet

C. Future Water Demand and Capacity

The potable water demand projections for the City's Utility Service Area were based on the population projections and the historical per capita potable water usage. The2021 UEC Water Supply Plan Update

projected the per capita use rate (PCUR) of finished water to be 89 for the City of Port St. Lucie Utility Systems Department (PSLUSD) which is the result of water conservation efforts.

According to the 2022 Water Supply Facility Work Plan Update, future water demand was based on a projected population of 342,982 residents within the PSLUSD service area by 2045. This projection was extended to 2050 using the established population growth trend for the Utility Service Area. **Table 4-3** presents the projected water demand in five-year increments, and **Table 4-4** indicates that the PSLUSD system is expected to maintain a surplus capacity of 13.45 million gallons per day (MGD) by 2050

Table 4 - 4. Projected Water Supply Demand (PSLUSD)

	2025	2030	2035	2036	2040	2045	2050
Population	246,292	278,239	304,061	308,301	325,265	342,982	371,490
Finished Water Demand (mgd)	20.44	23.1	25.24	25.59	27.0	28.47	30.83
Raw Water Demand (mgd)	25.14	28.41	31.05	31.48	33.21	35.02	37.93

Source: City of Port St Lucie, Water Supply Facility Work Plan, 2022

Table 4 - 5. Future Water Supply Capacity and Demand, (PSLUSD)

2019 Demand (MGD)	2036 Demand (MGD)	2050 Demand (MGD)	PSLUSD Currently Permitted Quantity (MGD)	2036 Surplus (MGD)	2050 Surplus (MGD)	Surplus as a Percentage of 2036 Demand	Surplus as a Percentage of 2050 Demand
16.71	31.48	37.93	51.38	19.9	13.45	38.7%	26.2%

Source: City of Port St Lucie, Water Supply Facility Work Plan, 2022

D. System Improvements

Based on the utility service area projections and permitted capacity, the City of Port St. Lucie will have enough water supply to serve the projected growth over the next twenty years. Additional water supply wells, treatment facilities and water delivery infrastructures will be needed as the City expands. Besides regular maintenance, no major improvements are currently planned for St. Lucie West or The Reserve Service District areas.

The City plans to continue maintenance on the existing distribution system and upsizing existing lines where necessary to keep up with the expected growth.

Extensions of water lines, pumps, and interconnection upgrades are currently planned pursuant to the 2022 Water Supply Facilities Work Plan Update. They include:

1. Short-Term Improvements

- **Water Supply Wells:** The City plans to add more Floridan wells. Each well will contribute approximately 2.65 million gallons per day (MGD) of raw water supply.
- **Reuse System Expansion:** The reclaimed water system will be expanded to reduce the use of potable water for irrigation purposes. This includes extending reclaimed water mains to new developments and recreational sites.

- **McCarty Ranch Water Quality Impoundment**: This project involves capturing stormwater from the C-23 canal to feed the new Rangeline Water Treatment Facility (WTF) for surficial water treatment. The first four areas are completed, and the fifth is under construction, with a total storage capacity of approximately 7,600 acre-feet.

2. Long-Term Improvements

- **Rangeline Reverse Osmosis Water Treatment Facility**: This new facility will be fed by the additional Floridan wells and is part of the long-term plan to meet projected water demands adding an additional 10 MGD with capacity. The expected completion date is 2030.

VII. Future Considerations

As Port St. Lucie continues to grow, maintaining a sustainable infrastructure and protecting environmental quality will be essential for both current and future residents. The City must continue its proactive approach to water supply protection and management, wastewater treatment capacity, and the expansion of reclaimed water use to support long-term resilience and sustainability.

- **Ensuring Water Supply Availability and Quality.** The McCarty Ranch Extension Project is a key initiative in securing Port St. Lucie's long-term water supply while preserving water quality. Once completed, the project will serve multiple purposes, including reducing harmful discharges into the North Fork of the St. Lucie River and increasing the availability of potable water. Additionally, the City will explore strategies to expand aquifer recharge efforts and implement further water conservation measures.
- **Addressing Wastewater Treatment Capacity.** With projected demand expected to exceed the capacity of existing wastewater treatment facilities, the City must plan for necessary capacity expansions. This includes increasing treatment plant capacity and exploring alternative solutions to reduce the overall load on wastewater treatment facilities.
- **Expanding Reclaimed Water Use.** To enhance sustainability and decrease reliance on potable water for non-drinking purposes, the City will consider expanding its reclaimed water system. Key initiatives include increasing reclaimed water distribution, promoting its use for irrigation and industrial purposes, and adding additional storage capacity to ensure a consistent supply during dry periods.
- **Incorporating the Wastewater Feasibility Analysis.** As required by Florida statutes the City has incorporated the results of the Wastewater Feasibility Analysis into the Goals, Objective and Policies. The City has conducted the BMAP Wastewater Treatment & OSTDS Remediation Plan and has noted while none of the projects are financially feasible the wastewater facilities will need to be updated to lower the target limits of total phosphorus and nitrogen outputs, an additional 14 miles of force main will need to be extended to have sewer availability to all properties, and convert the outstanding 16,751 septic systems to sewer.