



07



INFRASTRUCTURE

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1.0 INTRODUCTION

This Element provides an inventory and analysis of the City of Palm Bay's public facilities and services, including potable water, reclaimed water, wastewater treatment, solid waste collection, stormwater management, and natural groundwater aquifer recharge. The City's centralized water and sewer systems are managed by the Palm Bay Utility Department, while solid waste, stormwater, and aquifer recharge fall under the purview of the Department of Public Works. Each facility and service will be described below and include an existing and projected needs analysis for the 2045 planning horizon, if applicable.

2.0 POTABLE WATER SYSTEM

The City of Palm currently owns and operates a centralized potable water system which includes supply, treatment, transmission, and localized distribution to over 40,000 accounts within its Water Service Area (WSA) (**see Map INF-1**). Users of the City's potable water system include both residential and nonresidential customers located within portions of the City, the Towns of Malabar and Grant-Valkaria, and unincorporated Brevard County. Approximately 12,000 Palm Bay households remain unconnected from the City's potable water system and thus rely on private wells to meet their potable water needs. The 2,400+ households that are using well water in locations where the City has readily available services are encouraged to connect to the City's centralized system, as this water is vulnerable to potential chemical runoff from nearby agricultural uses and general pollutant-causing activities that would otherwise be monitored through the City's potable water system.

An inventory of the City's current potable water system is provided below:

- 41 production wells
- 1 Aquifer Storage & Recovery (ASR) well
- 13 miles of raw water transmission piping
- 2 water treatment plants split between 2 water treatment facilities (with a total rated capacity of 14.0 million gallons per day (MGD))
- 4 ground storage tanks
- 1 elevated storage tank
- 1 Repump station
- 650+ miles of distribution and transmission piping

2.1 POTABLE WATER SOURCE

The City's potable water system derives its supply from the surficial and Floridan aquifers obtained via approximately 41 raw water wells located throughout the Palm Bay WSA. Most of the wells withdraw water from the surficial aquifer ranging from 80-150 feet in depth and six of the wells withdraw water from the Floridan aquifer at a depth between 360-850 feet. The City also has an Aquifer Storage and Recovery (ASR) well with a storage capacity of 100 million gallons. Treated water is pumped into the ASR well during periods of low demand and then is recovered during periods of peak demand. A map of each well within the Palm Bay WSA is shown in **Map INF-2** as well the wellhead protection areas (200 feet and 1,000 feet).

The City's current consumptive use permit (CUP) was issued on May 18, 2010, and is scheduled to expire on April 30, 2029. The CUP (202-11) limits the City's water withdrawal to a total annual volume of approximately 6,194 million gallons per year (GPY), or an average daily withdrawal of 16.97 MGD. Approximately 1,715.5 million gallons per year, or an annual average daily withdrawal of 4.70 MGD, is permitted from the surficial aquifer. The permitted annual

withdrawal from the Floridan aquifer increases incrementally each year through year 2029 when the annual permitted withdrawal is 4,478 million gallons per year, or approximately 12.27 MGD.

2.2 TREATMENT

Palm Bay possesses and operates two water treatment facilities within the City which feature a combined rated capacity of 14 MGD. One treatment facility is located in the northern portion of the City (1105 Clermont Street NE) and is known as the North Regional Utilities Campus. The other treatment facility is located on the south end of the City is known as the South Regional Utility Campus, which is found at 250 Osmosis Drive SE. The potable water treatment capabilities of these facilities are described below.

2.2.1 North Regional Utilities Campus

At one time, there were originally two water plants located within this facility. The first plant, which still remains, is a lime softening treatment plant that was constructed in the 60s and upgraded in 1975 to a capacity of 3.0 MGD. A decade later, the plant was expanded which resulted in capacity expansion to 6.0 MGD. In 1990, the plant was expanded to its current capacity of 10 MGD.

The second plant was constructed in 2001 and utilized reverse osmosis processes and technology with a total capacity of 1.5 MGD. Due to the desire of the City to save energy and money, this plant was placed out of service in January 2009. Over time the plant fell into a state of disrepair and in 2022 the remnants of the abandoned plant were removed from the campus. The City is currently designing a replacement reverse osmosis facility to be located at the North Regional Utilities Campus.

2.2.2 South Regional Utilities Campus

Unlike the North Regional Utilities Campus, its southern counterpart was designed and constructed to only contain one water treatment plant. This plant was placed into service in 2006 and utilizes a reverse osmosis process to achieve a capacity of 4 MGD. The plant is expandable 20 MGD and is currently under construction to increase the capacity to 6 MGD. The expansion to 6 MGD will be completed in 2023.

2.3 DISTRIBUTION/TRANSMISSION

The City's potable water distribution system is pressurized by several high services pumps located in both the North and South Regional Utilities Campus and the Nash Repump Station. This Station is used to maintain normal operating pressures and boost pressure in both the north and northwest areas of the potable water system during periods of peak demand. Pressure in this network generally ranges between 50 and 70 pounds per square inch(psi). Seven pumps are located at the North Campus and four pumps are located at both the South Campus and Nash Repump Station. The pumping combined high-service pumping rate at each facility is listed below.

- The North Regional Utilities Campus possesses a total combined pumping rate of 9,100 gallons per minute (GPM) with a firm capacity (i.e., adequate pumping and/or treatment capacity to meet peak daily demand when the largest pumping station or treatment is out of service) of 7,400 GPM.
- The South Regional Utilities Campus achieves a total combined pumping of 6,600 GPM with a firm capacity at 4,400 GPM.
- The Nash Repump Station maintains a total combined high-service pumping rate of 3,750 GPM and a firm capacity of 2,500 GPM.

These pumps distribute water throughout the City's 673-mile pipe network, which ranges in size from 2 to 36 inches and are made from the following materials: asbestos cement, ductile iron, polyethylene, and polyvinyl chloride (PVC).

2.4 STORAGE

The City's potable water system currently includes four ground storage tanks and one elevated tank. Of the four ground storage tanks, two are stationed at the North Regional Utility Campus, one is found at the South Regional Utilities Campus, and the remaining tank is located at the Nash Repump Station located in the northern portion of the City. Palm Bay's sole elevated storage tank services the North Campus. When combined, the potable water system has an overall storage tank capacity of 5.50 million gallons.

2.5 CURRENT & PROJECTED LEVEL OF SERVICE

The current level of service for potable water demand is calculated by dividing the volume of water treated and pumped by equivalent residential connections (ERCs). The current adopted LOS is 225 gallons per day per residential equivalent for water. Based on the current population the residential water demand is 9.21 MGD; however, the observed average in 2022 was 7.21 MGD.

In 2016 and as part of the City's Water Master Plan, the average daily demand was 6.31 MGD of potable water. Based on historical usage and the estimated the level of service (LOS) was determined to be 185 gallons per capita per day. This amount is for residential and non-residential combined. The existing and projected potable water demand based on a LOS of 185 gallons per capita for existing customers and 225 gpd, using estimates and projections for the City's population. The current demand is far less than the existing LOS due to a sizeable portion of the City that is not served by the centralize water services; those home utilize private wells for potable water. There are no recommendations to change the adopted level of service standard.

Table INF - 1: Projected Potable Water Demand

	2020	2025	2030	2035	2040	2045
Projected Population	125,924	137,879	146,795	154,289	160,931	166,848
Projected Residential Units (Pop/PPH)	40,490	44,334	47,201	49,610	51,746	53,649
Residential Demand Based on LOS (MGD)	9.11	9.98	10.62	11.16	11.64	12.07
Non-Residential Demand per 2017 Master Plan	0.41	0.97	0.99	1.00	1.00	1.00
Total	9.52	10.95	11.62	12.16	12.64	13.07

*PPH - Persons per Household: 3.11

*LOS - Level of Service: 225 gallons per day per residential unit

*MGD - Million Gallons per Day

2.6 FUTURE DEMAND

There are no immediate plans to expand the water system into underserved areas due to the expense of extending services in developed locations, the overall lack of funding for mainline extensions and the Department's focus on rehabilitating the aged system while performing treatment plant upgrades to accommodate developer-driven expansion. Without a mandatory connection ordinance in place to require existing developments throughout the City to connect to services when made available, there is no feasible way for the Utilities Department to fund expansions and achieve a return on investment through the payment of mainline extension (MLE) fees. Expansion of the system will be dependent on the ability to acquire City Council approval for Mandatory Connection.

Expansion of the potable water system is critical for the success of the City. Expansion will provide fire protection to all neighborhoods and will provide clean drinking water to residents that rely on well water. To accommodate these residents, additional trunk water lines will need to be extended and plant capacities will likely need to be upgraded in the future.

3.0 SANITARY SEWER SYSTEM

The City owns, operates, and maintains a wastewater system which facilitates collection, treatment, and disposal services within the Palm Bay Wastewater Service Area (WWSA) (**see Map INF-3**). Users of the centralized sewer system include both residential and nonresidential customers located within certain portions of the City and the Town of Malabar. Approximately 73% of the City does not have access to the sewer system with over 32,000 Palm Bay households relying on permitted septic tanks and drain fields to meet their wastewater needs.

With over 12,000 private water wells and 32,000 septic systems located throughout the City, there is increased risk for groundwater contamination from the individual septic systems. While septic tanks can benefit groundwater recharge and help remove pollutants if properly maintained, system failures are a common occurrence due to improperly maintained tanks and drain fields. In most municipalities, including the City of Palm Bay, there is no local-level regulation and oversight of these small, out-of-sight, independent septic systems. There is the potential that as septic tanks fail across the City, untreated sewage may leak into the land and water supply – posing a significant local health risk.

An inventory of the City's current sanitary sewer system is listed below:

- Two treatment facilities with a total permitted capacity of 5.2 MGD
- 1 deep injection well for secondary effluent (treated wastewater) disposal with a permitted capacity of 12.73 MGD
- 110 public lift stations
- 236 miles of gravity sewer main piping
- 104 miles of force main piping

3.1 COLLECTION

The City uses a combination of gravity mains, force mains, and lift stations to collect wastewater from its customers and transfer it to one of the City's treatment plants. The piping which comprises the City's gravity sewer network is made from a combination of PVC and vitrified clay pipe and ranges in size from 4 to 18 inches in diameter.

Wastewater from gravity mains flows to lift stations where it is pumped to the City's North Regional Utilities Campus. There are currently 110 public lift stations and 86 privately-owned lift stations within the City of Palm Bay. The City's force main network is comprised of approximately 104-miles of piping made from PVC, Ductile iron, and polyethylene. The size of these pipes range between 2 and 20 inches in diameter.

3.2 TREATMENT

The City currently owns, operates, and maintains two wastewater treatment plants—the North Regional Wastewater Treatment Plant (NRWWTP) and the North Regional Water Reclamation Facility (NRWRF). Both are located at the North Regional Campus and have a combined permitted capacity of 5.2 MGD. They are regulated by the Florida Department of Environmental Protection (FDEP) and are covered under permit number FLA648744. A more detailed description of each facility is provided below.

3.2.1 North Regional Wastewater Treatment Plant

Constructed in 1962 and originally owned by General Development Utilities (GDU), the NRWWTP is located on the east side of Clearmont Street at the North Regional Utilities Campus. The plant is a conventional activated sludge process which has been improved and expanded since it was originally constructed. The NRWWTP currently maintains a permitted capacity (as measured by Average Annual Daily Flow (AADF) of 4 MGD and a hydraulic capacity (peak flow) of 8 MGD. In 1992, the City acquired the NRWWTP from GDU.

3.2.2 North Regional Water Reclamation Facility

30 years after the construction of the NRWTP, the City constructed the NRWRF, which is located on the west side of Clearmont Street at the North Regional Utilities Campus. This plant is an extended aeration, activated sludge facility which discharges tertiary treated effluent to a nonrestricted public access reuse system. The plant has a permitted capacity of 1.2 MGD (AADF) and a hydraulic capacity (peak flow) of 3.69 MGD. The permitted capacity of the tertiary treatment process is 2.3 MGD, which allows for flows from both plants to be treated and provide as reclaimed water (reuse).

3.2.3 South Regional Water Reclamation Facility

In anticipation of the growing wastewater treatment needs, the City has designed and is currently constructing a new wastewater treatment plant to be located at the South Regional Utilities Campus. The South Regional Water Reclamation Facility (SRWRF), which will initially be a 1 MGD Membrane Bioreactor wastewater treatment plant with tertiary treatment processes necessary to generate reclaimed water, has received full funding from the Florida Department of Environmental Protection’s State Revolving Fund. The construction contract was awarded in October 2020, construction started in January 2021, and the contractual completion date is May 2023. The Contractor for the SRWRF project has noted there are significant delays in the acquisition of parts and equipment and has provided documentation noting a delayed completion date of August 2024.

Reclaimed water projects related to the SRWRF are under evaluation and in the early stages of planning and design. In preparation for the design, the City has completed a corridor study to determine the most feasible routes for reuse infrastructure to support the SRWRF.

3.3 EFFLUENT DISPOSAL

Secondary Effluent (treated wastewater) from Palm Bay’s wastewater treatment plants is disposed of using one of two methods within the City: deep well injection or application of reclaimed water for permitted, non-potable uses. These methods are described in further detail as follows.

3.3.1 Deep Well Injection

The primary disposal method of secondary effluent is the system’s deep injection well (DIW) which is classified as a Class I municipal well with a maximum permitted flow capacity of 12.73 MGD. The system is comprised of three vertical turbine pumps, each with a rated capacity of 5 MGD designed to pump treated secondary effluent into the DIW. The DIW extends to a depth of 3,000 feet below land surface (BLS). To ensure there are no failures or integrity issues in the casing of the DIW, a well is used to sample water and monitor quality of the aquifer.

3.3.2 Reclaimed Water (Reuse)

The secondary disposal method for secondary effluent is through the City’s reclaimed water (also referred to as reuse) land application system, which currently maintains a permitted capacity of 2.3 MGD. Secondary effluent is sent through the NRWRF’s tertiary treatment process where it is filtered, disinfected, and provided to specific customers for median irrigation, landscape irrigation and cooling tower applications. Reclaimed Water is not authorized for potable uses (i.e. drinking, washing, etc).

What is a Class I Deep Injection Well?

According to the Florida Department of Environmental Protection (FDEP), **deep injection wells** are used to dispose of appropriately treated fluids by placing them underground. The injection control program regulates the usage of this and prevents degradation of drinking water.

Class I wells are installed well below the surface and are used for disposal of domestic and industrial wastewater below protected aquifers.

Operators of these wells are required to submit a monthly report to FDEP which provides data of their monitoring regarding physical and chemical characteristics.

As a water conservation measure and a means to efficiently dispose of secondary effluent, the City provides on a limited basis reclaimed water to specific users throughout the City. At this time reclaimed water is supplied by the North Regional Water Reclamation Facility (NRWRF). Reclaimed water is distributed to four sites for irrigation and two sites for industrial cooling. The permitted effluent disposal capacity via nonrestricted public access reuse is 2.3 mgd.

Current reclaimed water customers include Harris Corporation, Intersil, Knecht Park, Palm Bay WWTP and WRF, Sandy Pines Preserves Subdivision, and Country Club Lakes Subdivision. Excess reclaimed water generated by the NRWRF is disposed of in the deep injection well (DIW) system.

3.4 CURRENT & PROJECTED LEVEL OF SERVICE

The current adopted LOS is 210 gallons per day per residential equivalent for sewer. Based on the current population the residential sewer demand is 8.59 million gallons per day; however, the observed average in 2022 was 3.32 MGD.

In 2016 and as part of the City's Wastewater Master Plan, the average daily demand was 3.631 MGD of wastewater. Based on historical usage and the estimated the level of service (LOS) was determined to be 176 gallons per capita per day. This amount is for residential and non-residential combined. The existing and projected wastewater demand based on a LOS of 176 gallons per capita, using estimates and projections for the City's population. The current demand is less than the existing LOS due to a sizeable portion of the City that is not served by the centralize water services; those home utilize private wells for potable water and septic systems. There are no recommendations to change the adopted level of service standard.

Table INF - 2: Projected Sewer Demand

	2020	2025	2030	2035	2040	2045
Projected Population	125,924	137,879	146,795	154,289	160,931	166,848
Projected Residential Units (Pop/PPH)	40,490	44,334	47,201	49,610	51,746	53,649
Residential Demand Based on LOS (MGD)	8.50	9.31	9.91	10.42	10.87	11.27
Non-Residential Demand per 2017 Master Plan	0.38	0.91	0.99	0.99	0.99	0.99
Total Demand	8.83	10.22	10.90	11.41	11.86	12.26

*PPH - Persons per Household: 3.11

*LOS - Level of Service: 210 gallons per day per residential unit

*MGD - Million Gallons per Day

3.5 FUTURE DEMAND

The City desires to connect residential and nonresidential developments which currently utilize septic tanks; however, the Utilities Department focus remains primarily on rehabilitating the existing sewer system and accommodating the expansion needs of developers. There are no immediate plans to expand the sewer system into underserved areas due to the expense of extending services in developed locations, the overall lack of funding for mainline extensions and the Department's focus on rehabilitating the aged system while performing treatment plant upgrades to accommodate developer-driven expansion. Without a mandatory connection ordinance in place to require existing developments throughout the City to connect to services when made available, there is no feasible way for the Utilities Department to fund expansions and achieve a return on investment through the payment of mainline extension (MLE) fees. Expansion of the system will be dependent on the ability to acquire City Council approval for Mandatory Connection.

Installation of centralized sewer systems in platted/developed/paved areas is extremely cost prohibitive (more than \$30,000 per lot). Expansion of the system will be dependent on the ability to acquire City Council approval for Mandatory Connection. Once Mandatory Connection is approved and codified, the Utilities Department would be eligible for certain grants/programs to assist in the installation of sewer systems. To accommodate underserved residents, additional sewer mains will need to be extended or enhanced and plant capacities will likely need to be upgraded in the future. Connecting more homes to the sewer system will reduce the environmental impacts septic systems have on the ecosystem (i.e., Indian River Lagoon and the St John's Preserve) and provide a more reliable means of wastewater disposal.

4.0 SOLID WASTE

Solid waste services within the City are primarily facilitated by Republic Services of Florida and Brevard County. Republic Services provides garbage, recycling, bulk waste, and yard waste collection services to both residential and nonresidential customers within Palm Bay. Solid waste collected throughout the City is then delivered to the Sarno Road Transfer Station and Landfill in Melbourne, which is owned and operated by the Brevard County Solid Waste Management Department. Residents within the County also have the ability to drop off household hazardous waste to one of the County's three hazardous waste collection centers for disposal at no additional cost. These services are discussed in greater detail below.

4.1 TRASH & RECYCLING COLLECTION

Republic Services provides twice-a-week garbage collection and once-a-week recycling collection to households throughout the City. Collection schedules for residents are publicly available for review on the City's website. Solid waste pickup for commercial operations are generally provided once per week. Extra carts for garbage collection upon request and monthly payment to Republic Services. Palm Bay currently does not operate any landfill sites and no future landfill facilities are planned. As such, garbage collected by Republic Services is delivered to Sarno Road Transfer Station, which is located at 3379 Sarno Road in Melbourne, while recyclables are sent to a licensed recycling center.

4.2 BULK WASTE

Bulk waste products are generally considered to be discarded household items such as furniture, mattresses, and other goods that are typically too large to fit in bins or containers. As part of their franchise agreement with the City, Republic Services of Florida provides bulk waste collection services to participating residential and nonresidential customers throughout Palm Bay once per week. Bulky waste collected by Republic Services is then delivered to the Sarno Road Landfill in Melbourne (3379 Sarno Road).

4.3 YARD WASTE

Similar to bulk waste, the City contracts with the Republic Services of Florida for the collection and disposal of yard waste. Yard waste pickup occurs weekly for participating customers and is delivered to the Sarno Road Landfill in Melbourne (3379 Sarno Road).

4.4 HAZARDOUS WASTE

Three permanent household hazardous waste collection centers are located within Brevard County: the Central Disposal Facility in Cocoa (2250 Adamson Road), the Mockingbird Mulching Facility in Titusville (3600 South Street), and the Sarno Landfill in Melbourne (3379 Sarno Road). Each of these facilities are owned and operated by the Brevard County Solid Waste Management Department. Each center accepts household hazardous waste from non-business activities for safe disposal at no cost for County residents.

4.5 CURRENT & PROJECTED LEVEL OF SERVICE

The current adopted LOS is 7.51 pounds per capita per day for solid waste. Based on the current population the residential solid waste demand is 0.96 million pounds per capita per day. There are no recommendations to change the adopted level of service standard.

Table INF - 3: Projected Solid Waste Demand

	2020	2025	2030	2035	2040	2045
Projected Population	125,924	137,879	146,795	154,289	160,931	166,848
Demand Based on LOS MPCD	0.95	1.04	1.10	1.16	1.21	1.25
Non-residential Demand	N/A	N/A	N/A	N/A	N/A	N/A
Total Demand	0.95	1.04	1.10	1.16	1.21	1.25

*LOS - Level of Service: 7.51 pounds per capita per day

*MPCD - Million Pounds per Capita per Day

4.6 FUTURE DEMAND

The City will continue to coordinate with Brevard County and the rest of the municipalities in the county to determine the when and where new landfill facilities will be developed. With the Sarno Road Landfill nearing the end of its lifecycle, the County has identified a new location near the county line off US 192. This landfill is planned to be operational in 2026. In the interim, all local solid waste will be routed to Cocoa Landfill.

5.0 DRAINAGE & STORMWATER MANAGEMENT

The City of Palm Bay currently utilizes two primary methods of managing stormwater run-off, detention and retention of rainfall, and ensuring water quality through treatment. The enforcement of stormwater management regulations within the City falls under the jurisdiction of four (4) government agencies: Melbourne Tillman Water Control District (Water Control District), St. Johns River Water Management District (SJRWMD), Florida Department of Environmental Protection, and Army Corp of Engineers when new development requires dredging or filling of jurisdictional surface waters and wetlands the Florida Department of Transportation (FDOT), Brevard County, and the City of Palm Bay. Depending on the location of a project, it is conceivable that permits could be required from three (3) of the four (4) agencies.

Established in 1922 by the Florida Legislature, the Water Control District was created to manage and prevent damage from flooding, erosion, and excessive drainage. The Water Control District is a dependent water control district of Brevard County authorized by the Florida Legislature under Ch.2001-336, Laws of Florida as amended by Ch. 2003-334, Laws of Florida and Ch. 2010-1053, Laws of Florida, and Ch. 2019-175, Laws of Florida. The Water Control District spans 64,500 acres in southern Brevard County, which includes portions of the unincorporated area, the cities of Palm Bay and West Melbourne. Within the boundary, the Water Control District owns and operates over 163 miles of canals. User fees collected on an annual basis provide the funding source for the Water Control District, which is based on property size and use. There are three distinct user fee use categories that consist of Agricultural, Residential, and Commercial and are applied to each property.

5.1 DRAINAGE AND STORMWATER INVENTORY

Developed land within the City relies on existing stormwater management systems. In areas of the City developed in the distant past (prior to 1982), stormwater run-off is most often directed via overland flow to one of the many canals, to isolated wetlands located throughout the City. In areas of the City more recently developed, stormwater

run-off is conveyed via underground pipes (storm sewer) or via wetlands to the MTWCD C-1 Canal and C-82 canal, which both drain to Indian River Lagoon. The C1 also drains westerly to the St. Johns River, and south of the MTWCD C-38 to the San Sebastian River or graded to allow sheet flow to either detention or retention ponds. The City operates and maintains a stormwater system of nearly 12,000 stormwater pipes and culverts, over 2000 miles of swales, culverts and canals.

The City of Palm Bay, the Melbourne Tillman Water Control District, the SJRWMD and the FDOT have developed design criteria for the management of runoff. The Mean- Annual/ 24-hour design storm post-development attenuation is required for development that is less than 40 acres in size and greater than fifty percent impervious. The 10-yr/ 24 -hour design storm is required for all development within the city of Palm Bay by the City. The 25-year/24-hour design storm is required for commercial development that is greater than 40 acres in size and all roadway projects. The 25- year/ 96- hour design storm is required for projects which are land-locked, that is, without existing outfall to a surface water or wetland. The FDOT has numerous design storms which are required for roadway projects or development within their jurisdiction. The MTWCD does not require design storms and has separate design criteria. The attenuation criteria which is the most stringent of all agencies having jurisdiction at a specific location will govern design. The applicant must demonstrate this through the stormwater management calculations submitted to the city during site plan review.

5.2 DRAINAGE AND STORMWATER NEEDED FACILITIES

Any new land development or redevelopment within the City of Palm Bay must meet the stormwater quantity and quality standards and requirements of the SJRWMD through the Environmental Resource Permitting process. The City requires evidence from the MTWCD and/ or FDOT design standards and specifications, where those agencies have overlapping jurisdiction, that all agency permits have been granted prior to issuing any construction permits.

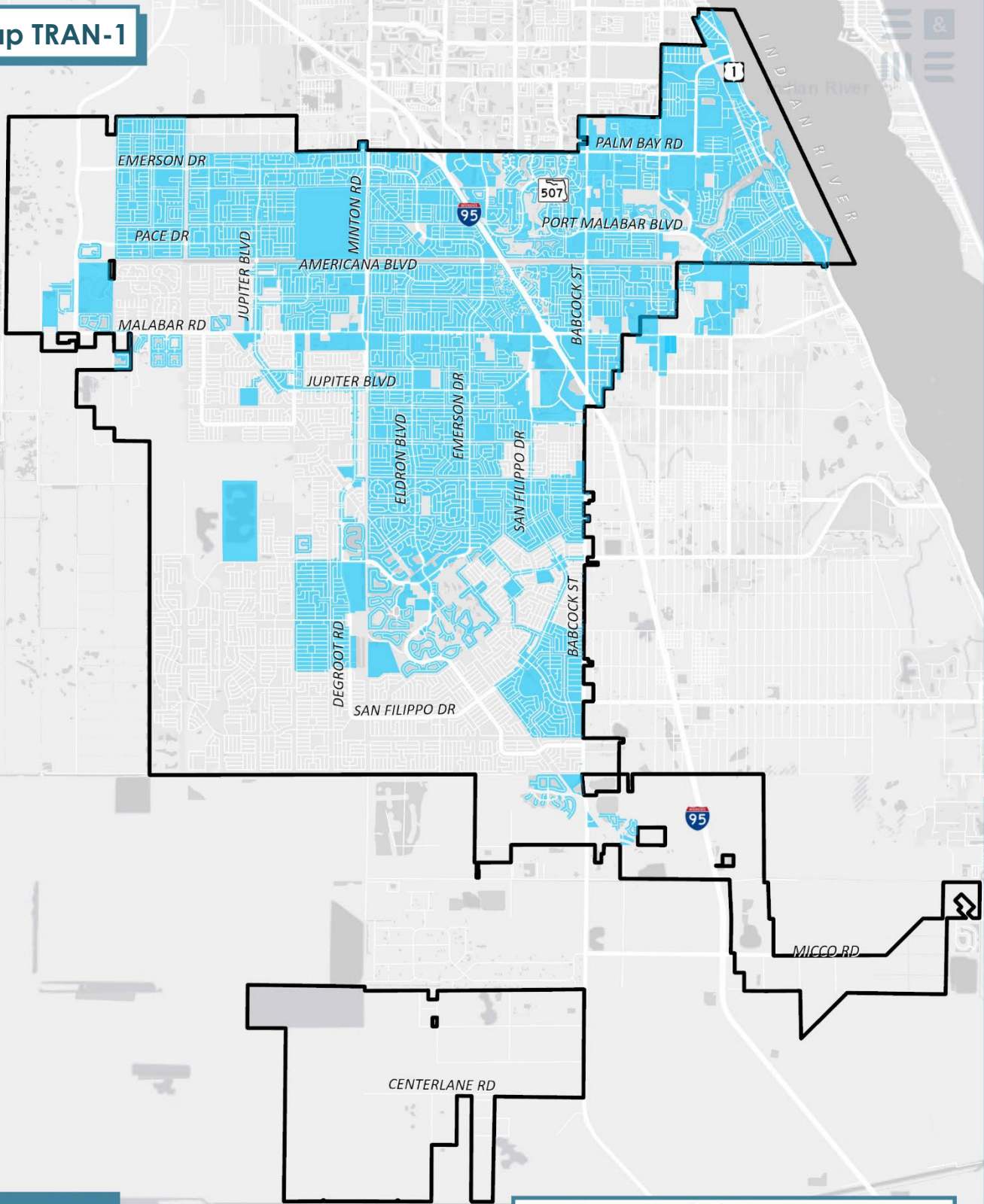
The City of Palm Bay Land Development Code regulates the stormwater management capacity of various infrastructure components that will be publicly or privately maintained, such as streets, bridges, culverts, ditches, and storm sewer pipes. In addition, the Land Development Code prohibits new discharges new discharges are not allowed by the City or the State. Any work in, across, or over wetlands and surface waters is prohibited, unless authorized.

5.3 FUTURE DEMAND

During the next update of the City's Stormwater Management Master Plan, particular attention needs to be paid to the lack of stormwater facilities along many of the substandard roads constructed by the General Development Corporation. In some cases, stormwater management may be addressed by providing swales and culverts along the existing roadway facilities to alleviate flooding issues and provide a means to treat run-off. Additionally, the updated Stormwater Management Master Plan should address sea level rise, coastal resiliency, and sustainability as methods for adapting to changing future conditions. There are two Stormwater Master Plans completed in 2000 for the TC Basin and the rest of Palm Bay to MT C-38 in 2002. New Stormwater Master Plans are underway for the northwest and southeast portions of the City.

In addition to requiring new development to comply with local, state and federal stormwater regulations, the City will continue to address localized flooding through the Capital Improvements Plan as funding becomes available. The fees collected by the Melbourne-Tillman Water Control District are utilized by the Water Control District to maintain and operate its stormwater facilities. Stormwater utility fees are assessed to City residents and are utilized to maintain and operate city-owned facilities. There are no recommendations to change the adopted level of service standards.

Map TRAN-1



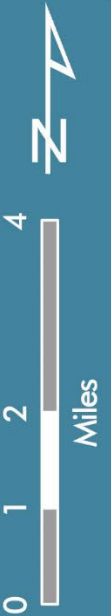
LEGEND

-  City of Palm Bay
-  Water Feature
-  Water Service Area

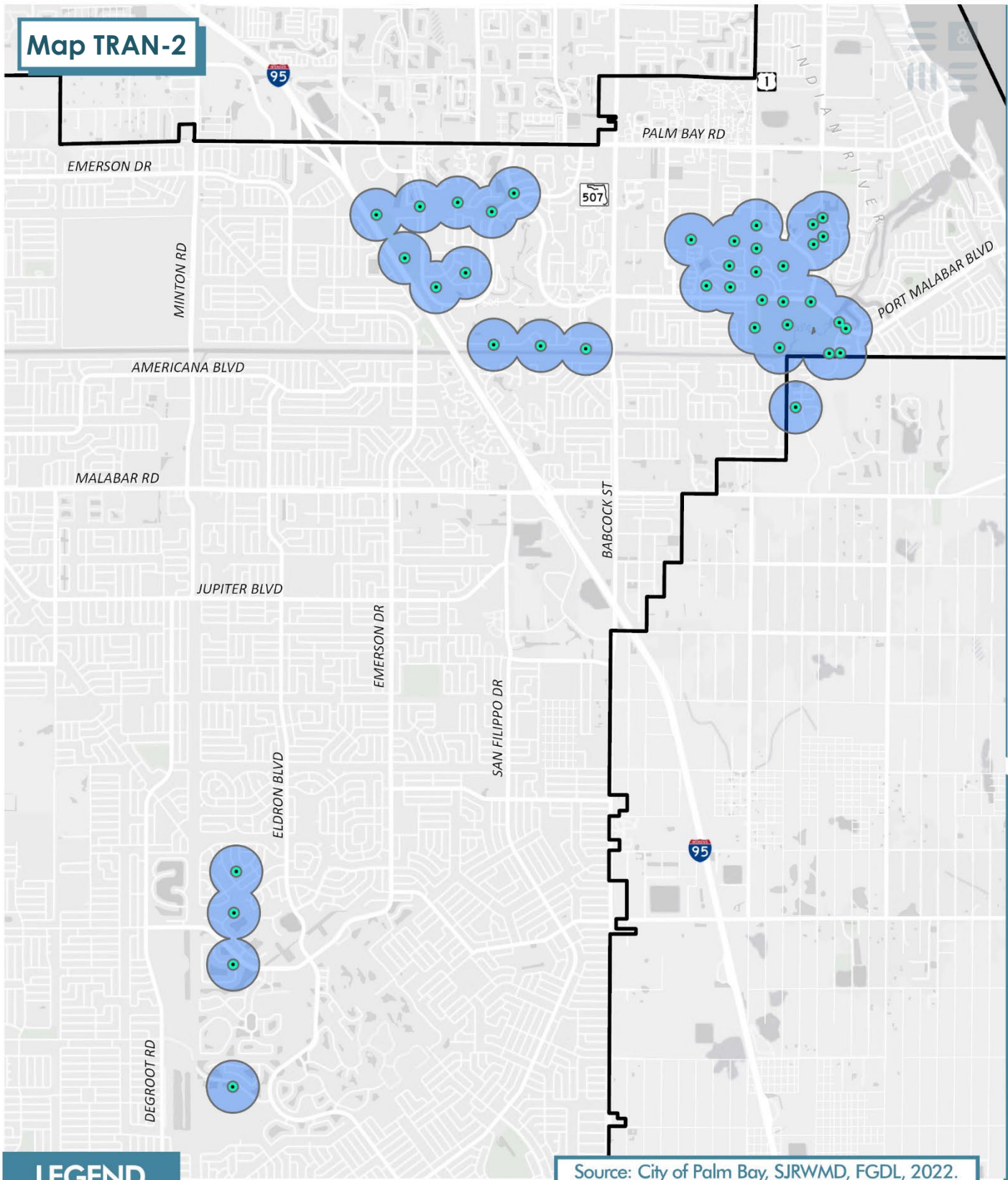
Source: City of Palm Bay, FGDL, 2022.

VISION PALM BAY
COMPREHENSIVE PLAN

WATER SERVICE AREA



Map TRAN-2



Source: City of Palm Bay, SJRWMD, FGDL, 2022.

LEGEND

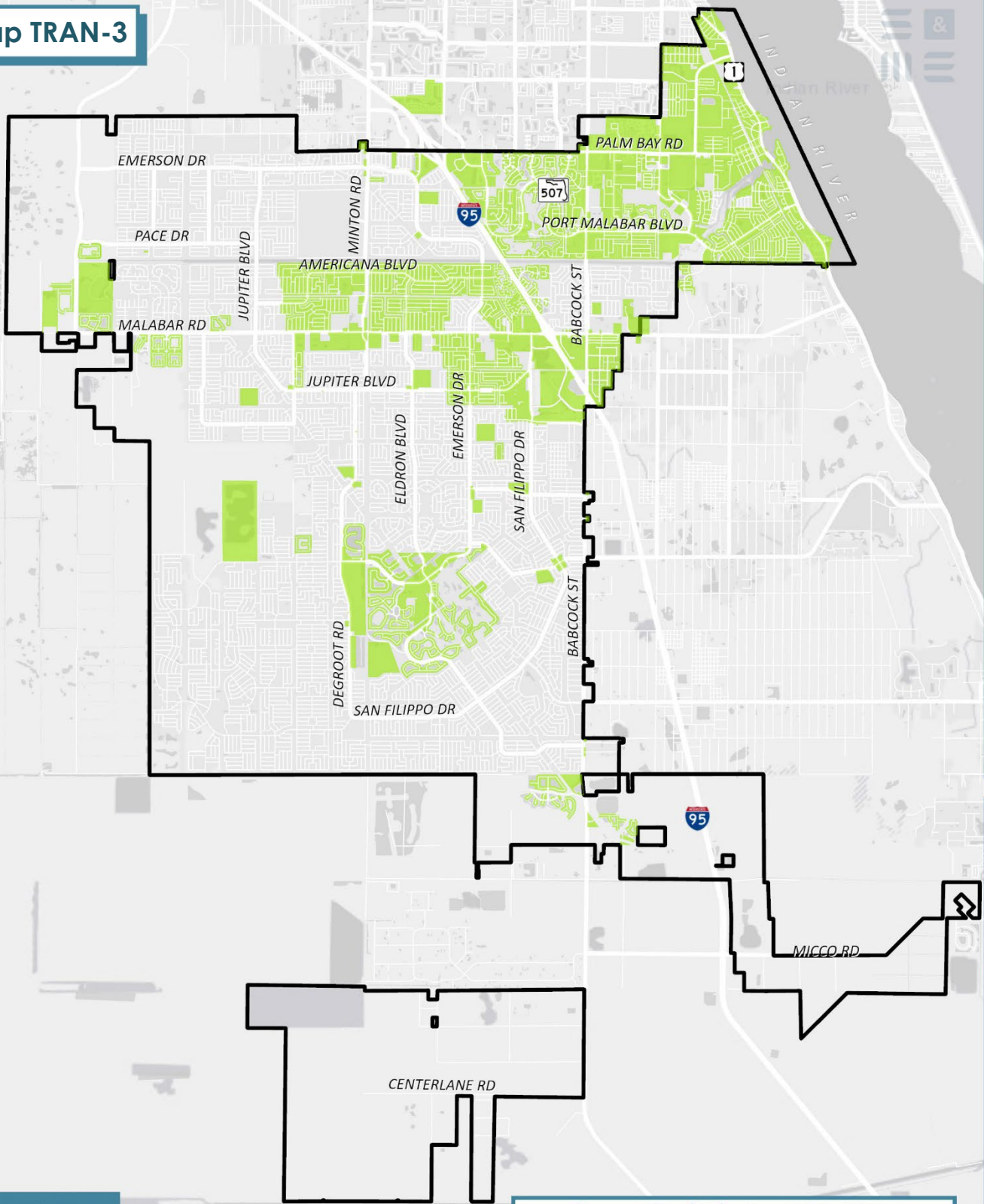
-  City of Palm Bay
-  Water Feature
-  Well
-  200-Ft Wellhead Protection Area
-  1000-Ft Wellhead Protection Area

VISION PALM BAY
COMPREHENSIVE PLAN

WELLHEAD PROTECTION AREA



Map TRAN-3



LEGEND

- City of Palm Bay
- Water Feature
- Wastewater Service Area

Source: City of Palm Bay, FGDL, 2022.

Vision PALM BAY
COMPREHENSIVE PLAN

WASTEWATER SERVICE AREA

