6.0 – Public Services

In order to provide the best public service delivery and still maintain their sovereign identity, the City has implemented several successful new capital improvement projects while continuing their partnerships with other public agencies for efficient use of resources.

Provide adequate public facilities with existing and future land use in order to promote a desirable pattern of and degree of certainty to land development while maximizing use of and protecting investment of existing facilities. "City invests in water of the future"

6.1 Description of the Issue

Less dependency on the Surficial Aquifer System, greater connection to available central sewer, increasing residential and commercial recycling, and supporting projects that help meet the City's resiliency and sustainable goals will be the priority for capital improvement projects and policy change. Strategic investment made now in these infrastructure areas will help create the kind of community where families want to live work and play. The following major issues will be addressed through an update to the comprehensive goals, objectives, and policies:

a) **Potable Water:** The City owns and operates its own potable water supply system; in addition, there are areas of the City, which receive potable water service from the Martin County Consolidated Water System. Raw water for the Stuart water system is provided by 24 production wells drawing from the Surficial Aquifer System (SAS). In order to supplement supply, the City has a plan to construct a reverse osmosis water treatment facility and has a 20-year Interlocal Agreement with Martin County to provide water from an alternative source to meet future demand.

Table 3-1 Population Projections (Resident Population) Stuart Water Service Area

Year	Service Area Component		Service Area Total
	City of Stuart	Unincorporated Area	
2020	16,769	1,150	17,918
2025	17,490	1,199	18,689
2030	18,212	1,248	19,460
2035	19,064	1,297	20,361

Source: *Stuart Ten-Year Water Supply Facilities Work Plan*; January-2019

"City invests in water of the future"

b) **Water Reclamation:** Although many areas within the City's service area now have central sewer available, 48% of the properties where service is available have not yet connected. As septic systems fail, The Martin County Health Department mandates that those properties connect to the City's central sewer system. The exception to this requirement is that the Health Department will not mandate connection to the central sewer system if the property is subject to annexation. The water reclamation facility has a design capacity of 4.0 MGD and is currently permitted by the Florida Department of Environmental Protection (FDEP) at 4.0 MGD. The City's primary effluent disposal option is providing reclaimed water for irrigation purposes with the deep injection well disposal system, rated at 13.4 MGD as an alternative disposal option.

c) **Solid Waste:** Solid waste, including residential and commercial garbage, single stream recycling and yard trash, is collected and transported by the Public Works Department and is the responsibility of the City for properties within Stuart. Recent historical City solid waste generation data are presented in Table 3-4.

Table 3-4 Current Solid Waste Generation

Type (measure)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020*
Residential Garbage (cubic yards)	2,762	2,855	2,834	2,746	3,200
Residential Recycling (tons)	1,302	1,214	1,246	1,164	1,344
Commercial Garbage (cubic yards)	17,263	16,434	16,563	17,753	18,670
Commercial Recycling (tons)	635	638	694	645	678
Yard Waste (yards)**	21,633	18,745	20,633	22,658	22,000
Debris (tons)	1,082	1,222	1,322	1,200	1,250

* Estimated generation

** Waste hauled to Old City Landfill to be mulched and removed

Source: City of Stuart FY 2020 Budget

6.2 Potential Social, Economic and Environmental Impacts

a) **Potable Water:** Projections of finished water demand for the Stuart service area are presented in Table 3-2. It is projected that the Stuart service area finished water demand will attain a level of 3.36 MGD by 2029. Based upon this projection, the City's 6 MGD water treatment plant has the capacity to provide for the finished water needs of the Stuart service area beyond the 2035 period. Due to emerging contaminants and potential for saltwater intrusion in the surficial aquifer, the City is also proactively planning to phase in a 3.0 MGD Reverse Osmosis Water Treatment Facility by the year 2032, utilizing the Floridan Aquifer System as an alternative water source. Investing in the Floridan Aquifer as an alternate water supply would both diversify the City's water supply while adding system flexibility to ensure that the City meets its mission of supplying the highest quality drinking water to its customers.

Table 3-2 Projected Finished Water Demand Stuart Service Area

Year	Population	Use Rate (gpcd)	Total Use (million gal./year)
2020	17,918	174	1,137.9
2025	18,689	174	1,186.9
2030	19,460	174	1,235.9
2035	20,360	174	1,293.1



Source: *Stuart Ten-Year Water Supply Facilities Work Plan;* January 2019

A modification to the City's Consumptive Use Permit will be submitted to the South Florida Water Management District in the 1st Quarter of 2020. The City is meeting its LOS standard for potable water service. The planned Floridan Aquifer well and reverse osmosis water treatment facility are intended to diversify the City's source of raw water. The City expects to have a one million gallon per day reverse osmosis water treatment facility on line in 2022.

b) **Water Reclamation:** Current wastewater use is measured at 1.80 MGD (average daily flow). It is projected that the City's wastewater needs will attain a level of 3.275 MGD (average daily flow) by 2035 Wastewater projections prepared for the 2020 to 2035 period using the total generation rate are presented in Table 3-3.

Table 3-3 Wastewater Treatment Demand Projections (MGD)

Stuart Service Area

	2020	2025	2030	2025
Resident Population (service area)	17,918	18,889	19,460	20,361
Annual Average Day Flow (MGD)	1.54	1.77	2.04	2.13
Maximum Three Month Day Flow (MGD)	1.80	2.07	2.38	2.74

Source: Staff projections based on a connection rate of 3% per year

Based upon the demand projections presented in Table 3-3, the wastewater plant has sufficient capacity to serve projected population within the service area at least through 2035.

The City is meeting its LOS standard for sanitary sewer service and no additional plant expansion improvements are required during the 2020 - 2035 period. Planned projects oriented toward improving operations will be scheduled in the annual update to the Five-Year Schedule of Improvements in the Capital Improvements Element, as necessary.

c) **Solid Waste:** The City's adopted solid waste level-of-service (LOS) standards are as follows:

- Non-Residential: 0.006 pounds per square foot per day

Projections of residential and commercial (non-residential) solid waste generation, assuming growth rates proportionate to projected population growth, are presented in Table 3-5

Table 3-5 Projected Solid Waste Generation

Type (measure)	2020	2025*	2030**	2035**
Residential Garbage (cubic yards)	3,200	3,360	3,528	3,704
Residential Recycling (tons)	- 1,344	1,411	1,462	1,556
Commercial Garbage (cubic yards)	18,670	17,504	18,379	19,298
Commercial Recycling (tons)	-679	713	749	787
Yard Waste ((yards)***	22,000	23,100	24,255	25,468
Debris (tons)	1,250	1,313	1,378	1,447



* Estimated generation, City of Stuart FY 2020 Budget
** Staff projections

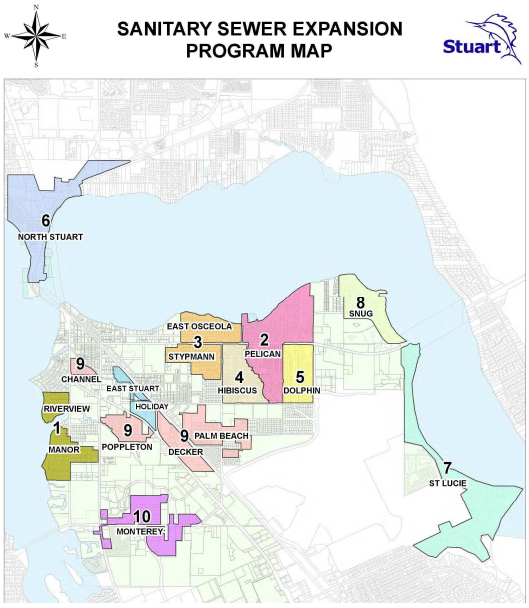
*** Waste hauled to Old City Landfill to be mulched and removed

Source: Staff projections

Combined, the City currently (FY 2019) generates approximately 18% of the solid waste (garbage + trash and other waste) generated in the County. It is anticipated that the City's role will continue to consist of collection and transport services during the five-year planning period. Comprehensive Plan Evaluation

a) Potable Water: The City has adopted a finished potable water level-of- service (LOS) standard, 250 gallons per day per equivalent residential connection, as part of the Ten-Year Water Supply Facilities Work Plan (2018-2028) amendments to the Comprehensive Plan. Current consumption data provided by the City's Utility Department; however, indicates that a potable water generation rate of 174 gallons per capita per day is appropriate for projecting long-term finished water needs.

b) Water Reclamation: While the program is not yet mandatory, the City is offering financial incentives for residential and commercial users to connect online so that the program can be completed in 10 years. With EPA recommendations, the City could initiate a phased connection requirement that would allow for users to finance the connection over time. Policy could support Programs to require lift station installation to promote commercial and multi-family projects to go online.



Solid Waste: In order to show its commitment to improving waste reduction and recycling efforts, the City must enforce implementation of its established policies. The City is meeting its LOS standard for solid waste collection and disposal services. An increased emphasis on residential and commercial recycling are anticipated during the 2020 - 2025 period. While no additional improvements are anticipated during the 2020- 2025 period, the comprehensive plan objectives should be updated to ensure the City and community can evaluate and measure progress.

6.3 Recommendations

Resilience and Sustainability

- Invest in projects which support the resiliency and sustainability goals
- Identify roadway areas which will be vulnerable to sea level rise and storm surge
- Expand upon the charging station implementation project in public parking lots
- Expand on renewable energy projects and provide incentive to developers for those elements

Potable Water

- Develop a monitoring program: identify a baseline and then set and time line and measurable goal

Water Reclamation

- Create a timeline and goal for both residential and commercial septic to sewer online connections.
- Ask for voluntary support of septic to sewer
- Provide incentives for commercial business to go online for septic

Solid Waste

- Evaluate tools and identify education programs which will help improve and promote more recycling
- Develop a monitoring program: identify a baseline and then set and time line and measurable goal
- Provide incentives for commercial business to engage in recycling effort