C. INFRASTRUCTURE ELEMENT

Introduction

The Infrastructure Element is "correlated to principles and guidelines for future land use, indicating ways to provide for future potable water, drainage, sanitary sewer, solid waste, and aquifer recharge protection requirements for the area", as specified in Section 163.3177(6)(c), Florida Statutes.

Potable Water

The City provides potable water to customers within the city limits (Atlantic Beach Service Area) as well as the Buccaneer Service Area which is located in the City of Jacksonville north of city limits. The system consists of nine Floridan aquifer supply wells, four water treatment plants with ground storage tanks, two elevated storage tanks, and an interconnected distribution system. The City's potable water supply is fresh groundwater pumped from the Florida aquifer. Florida Statutes require the St. Johns River Water Management District (SJRWMD) to prepare a water supply plan for a 20-year planning period in order to ensure that existing water sources are adequate to meet projected water demand. As a result of this requirement, the SJRWMD developed the North Florida Regional Water Supply Plan (NFRWSP). This plan contains specific activities and projects that regulated entities must undertake to reduce water consumption. Concurrently, local governments within the regional water supply planning area are required to develop a water supply facilities work plan (WSFWP) to ensure that adequate water supply is available to meet future demands over a minimum 10-year planning period. In 2019, the City of Atlantic Beach completed the 2020-2040 Water Supply Facilities Work Plan (WSFWP). According to the city's WSFWP, the nine Floridan aquifer supply wells that serve the City of Atlantic Beach's public water supply system have an operating capacity of 8.52 million gallons of water per day (MGD), which is adequate to meet the water demands for the next 20-year planning horizon. Also, the NFRWSP did not identify the city as an area with water shortages through the 2035 planning horizon and the findings of this plan indicate that the city may continue utilizing the Floridan aquifer as its source of potable water. No alternative water supply sources were identified. Table C-1 shows the projected water demands and the city's water capacity through 2040.

Table C-1. Atlantic Beach Service Area Water Projections

	2020	2025	2030	2035	2040
Projected Population*	25,670	27,474	29,055	30,509	31,857
Projected Water Demand (MGD)	3.07	3.26	3.44	3.60	3.75
Consumptive Use Permit Allocation (MGD)	3.75	3.75	3.75	3.75	3.75
WTP Combined Capacity (MGD)	8.52	8.52	8.52	8.52	8.52

*UF BEBR & U.S. Census

Sanitary Sewer

The City of Atlantic Beach provides sanitary sewer service within the city limits and to a small area of Jacksonville. There are currently an estimated 46 septic tanks within the city, representing about 3% of the city's total buildings. The remaining buildings within the city are connected to the city's central sewer system. The city operates the Atlantic Beach Wastewater Treatment Facility (WWTF) which has a treatment capacity of 3.5 million gallons per day (MGD) annual average daily flow (AADF). Under the current Florida Department of Environmental Protection (FDEP) permit, the Atlantic Beach WWTF is also

authorized to discharge 4.9 MGD AADF to the St. Johns River at Outfall D-001 and 3.0 MGD AADF to the Intracoastal Waterway at D-002 during extreme wet weather. It also authorizes the reuse of 0.5 MGD AADF via a slow rate public system.

Water Reuse

The City of Atlantic Beach operates a reuse treatment and distribution program. This effort included upgrading the Wastewater Treatment Facility (WWTF) to meet reuse standards and offset up to 0.5 MGD of ground water withdrawal through irrigation at the Atlantic Beach Country Club. The WWTF has consistently provided reuse for on-site use at the facility as well as for irrigation for the golf course, common areas, and residential homes within the Atlantic Beach Country Club. As the reuse system is expanded in the future it is expected that reuse water will be used for irrigation on city right-of-ways adjacent to the country club in addition to other areas throughout the city. The city continues to look for funding opportunities in accordance with the City's Reuse Feasibility Study, as authorized by the Comprehensive Plan. As a requirement of the recently passed Florida Senate Bill 64, the city will initiate a study to eliminate all surface water discharge of treated effluent from the WWTF. This study will identify the means to expand the reuse water system, protect the existing groundwater sources and reduce water consumption. Table C-2 shows the water reuse rates from 2014 to 2021.

Table C-2. Daily Average Water Reuse

Year	Reuse (MGD)
2014	0.384
2015	0.179
2016	0.236
2017	0.278
2018	0.254
2019	0.238
2020	0.201
2021	0.201

Stormwater Management

The City of Atlantic Beach is approximately 4 square miles in area and primarily drains through stormwater pipe collection systems that route water to larger ditch/creek systems. The City's stormwater discharges to the Intracoastal Waterway (ICW) via direct discharge from ditches, by way of Hopkins Creek or Sherman-Puckett Creek. A majority of the City drains through Hopkins Creek or Sherman-Puckett Creek, which flow through a combination of ditches and large culvert crossings owned and maintained by other entities before discharging to the ICW. Most of the city was developed prior to modern stormwater regulations requiring on-site retention/detention systems for flood protection. This, coupled with the flat and low lying topography of the city, has resulted in flooding issues. As a response, the City updated its Stormwater Master Plan (SWMP) in 2018, conducted a Coastal Vulnerability Assessment in 2019 and completed an Adaptation Plan in 2021.

C. Infrastructure Element Goals, Objectives, and Policies

The provision of public facilities and public infrastructure within the City of Atlantic Beach shall be in accordance with the following Goals, Objectives, and Policies.

Goal C.1

The City shall provide needed public facilities and infrastructure in a manner, which protects investment in the existing facilities and promotes efficient and appropriate use by existing and future development.

Objective C.1.1

Adequate Public Facilities and Infrastructure

The City of Atlantic Beach shall maintain procedures to ensure that adequate facility capacity is available at the time a development permit is issued or will be available when needed to serve the development.

Policy C.1.1.1 In order to ensure that Level of Service standards are maintained, methodologies for determining available capacity and demand shall incorporate appropriate peak demand coefficients for each facility and for the type of development proposed.

Policy C.1.1.2 All improvements for the replacement, expansion or increase in the capacity of public facilities shall be compatible with the adopted Level of Service standards for such facilities.

Policy C.1.1.3 Prior to the issuance of a building permit, the City will ensure that adequate water supplies, wastewater treatment capacity, sewer collection infrastructure, and water infrastructure facilities will be in place and available to serve no later than issuance of a certificate of occupancy or its functional equivalent.

Policy C.1.1.4 The City's Director of Public Utilities shall provide written certification verifying that adequate water supplies to serve new development will be available no later than the anticipated date of issuance by the local government of a certificate of occupancy or its functional equivalent.

Objective C.1.2

Public Facilities Planning

The City of Atlantic Beach shall incorporate capital improvement needs for public facilities within the five-year Capital Improvements Schedule to be updated annually in conformance with the review process for the Capital Improvement Element of the Comprehensive Plan.

Policy C.1.2.1 The City shall incorporate the proposed capital improvement projects, as identified within the Water and Sewer Master plans, to create the five-year Capital Improvements Plan and a five-year financial plan for water and sewer improvements. Both plans shall be prioritized and updated annually, as appropriate.

Policy C.1.2.2 The City shall maintain a Water Supply Facilities Work Plan (WSFWP) that is coordinated with the SJRWMD's regional water supply plan. The WSFWP and appropriate

Comprehensive Plan policies will be updated every 5 years, and within 18 months of any update to the NFRWSP that affects the City, pursuant to Section 163.3177(6)(c), Florida Statutes.

Policy C.1.2.3 The City's Water Supply Facilities Work Plan 2025-2045 is adopted by reference as part of this comprehensive plan.

Objective C.1.3

Elimination of Septic Tanks

It is the intent of the City to eliminate all septic tanks within the City. The City shall limit such on-site wastewater treatment systems to areas currently using septic tanks and shall install central sewer service in accordance with Capital Improvements budgeting and planning in order to reduce the number of septic tanks within the City.

Policy C.1.3.1 Pursuant to the City of Atlantic Beach Land Development Regulations, use of on-site wastewater treatment systems (septic tanks) shall be limited to the following conditions.

(a) Existing septic tanks, which are properly functioning, may remain in service until such time as centralized service is available within distances as set forth within the City's utility regulations.

(b) All new subdivisions and new development shall be required to provide central sewer service as set forth within the Land Development Regulations.

(c) The use of new septic tanks on any single lot of record, existing as of the date of this Plan shall be permitted only in accordance with the Land Development Regulations. More than one adjoining, but previously undeveloped lot of record that is developed concurrently with multiple dwellings or as part of any unified development project shall provide central sewer and water services.

Policy C.1.3.2 The City of Atlantic Beach shall continue to coordinate with the Florida Department of Health in Duval County to promote the inspection, efficient operation and maintenance of existing septic tanks.

Policy C.1.3.3 Issuance of building permits shall be conditioned upon demonstration of compliance with applicable Federal, State and local permit requirements for on-site wastewater treatment systems where applicable.

Policy C.1.3.4 The City of Atlantic Beach shall coordinate with appropriate local, federal and state agencies to require that issuance of permits for replacement or expansion of existing onsite waste-water treatment systems is conditioned upon compliance with current regulatory requirements and water quality standards.

Objective C.1.4

Capital Improvements and Infrastructure Facilities

The City of Atlantic Beach shall provide sanitary sewer, solid waste, drainage and potable water facilities and services to meet the existing and projected demands as identified within this Plan.

Policy C.1.4.1 Capital Improvements and infrastructure projects shall be undertaken in accordance with the schedule provided within the Capital Improvements Element of this Comprehensive Plan.

Policy C.1.4.2 Projects and improvements needed to correct existing deficiencies shall be given priority in the formulation and implementation of the annual budget of the City.

Policy C.1.4.3 The construction and expansion of capital improvements shall be scheduled so as to minimize disruption of services and duplication of labor and to maintain acceptable service levels for all facilities.

Policy C.1.4.4 All required Federal and State permits shall be obtained before the City undertakes or authorizes contractors to begin construction and/or operation of infrastructure facilities.

Objective C.1.5

Conservation of Potable Water Resources

The City of Atlantic Beach shall conserve its potable water resources through regulations, policies and coordination activities, which shall reduce consumption and provide encouragement for water reuse, where feasible.

Policy C.1.5.1 The City agrees to comply with the water conservation rules issued by the St. Johns River Water Management District (SJRWMD). The City shall also promote the SJRWMD irrigation restrictions and implement other conservations measures to reduce potable water use by its citizens and shall coordinate with the Water Management District's regional water supply plan.

Policy C.1.5.2 The City shall maintain its adopted water conserving rate structure in order to reduce potable water consumption.

Policy C.1.5.3 The Department of Public Utilities shall continue to monitor all facility meters and quantify water loss within the potable water infrastructure. Any deficiencies shall be remedied through the City's ongoing maintenance and repair program.

Policy C.1.5.4 The City shall continue to consider, where appropriate, reuse water for non-potable water needs in accordance with the Reuse Feasibility Study completed as part of the Florida Department of Environmental Protection (FDEP) Permit renewal and the City's Consumptive Use Permit renewal.

Goal C.2

Adequate stormwater management and provisions for drainage shall be provided to afford reasonable protection from flooding and to prevent degradation in the quality of receiving surface water and ground water.

Objective C.2.1

Protection of Natural Drainage Features

The City shall maintain provisions, in accordance with the Stormwater Master Plan, within the Land Development Regulations that establish a basis for orderly provision of drainage facilities so as to protect natural drainage features and to ensure that future development utilizes drainage facilities consistent with the City's Level of Service standards and the Stormwater Master Plan.

Policy C.2.1.1 The City shall maintain provisions within the Land Development Regulations, which require development to minimize stormwater runoff and eliminate erosion of areas adjacent to natural drainage features.

Policy C.2.1.2 The City shall maintain Land Development Regulations that require land development projects to submit plans, which demonstrate that drainage design and stormwater management will be in compliance with the City's LOS standards and that additional stormwater generated shall be retained on-site and will not adversely impact existing drainage and stormwater systems.

Objective C.2.2

Stormwater Management and Drainage Facilities

The City shall continue to identify existing stormwater and drainage facility deficiencies and correct these through the provision and maintenance of an efficient drainage system, which shall protect life, property, water quality and the natural environment.

Policy C.2.2.1 The City shall work with the Florida Department of Transportation (FDOT) to coordinate maintenance and improvement to the drainage and stormwater facilities owned by the FDOT.

Policy C.2.2.2 The City shall continue to implement the updated Master Stormwater Plan, completed in November of 2018, to address the identified drainage and stormwater problems areas.

Policy C.2.2.3 The City of Atlantic Beach shall update the capital improvement schedule to include improvements to the drainage systems identified in the Stormwater Master Plan in accordance with the priorities as recommended within the Plan, and subject to availability of funding.

Goal C.3

The functions of natural groundwater aquifer recharge areas within the City shall be protected and maintained.

Objective C.3.1

Protection of Aquifer Recharge Areas

The City of Atlantic Beach, in coordination with the SJRWMD, shall maintain a map of natural groundwater aquifer recharge areas within the City.

Policy C.3.1.1 Existing potable water wells are depicted within Map C-1 of the Future Land Use Map Series. Areas that may be identified as potential recharge areas shall be designated as Conservation areas on the City's Future Land Use Map.