

INFRASTRUCTURE
ELEMENT

4. INFRASTRUCTURE ELEMENT

CITY OF SEBASTIAN
Comprehensive Plan
2040





The purpose of the **Infrastructure Element** is to ensure the availability of wastewater, solid waste, drainage, and potable water facilities to meet the existing and projected demands within the City. This Element aims to effectively manage growth and maintain environmental quality while providing safe and adequate facilities for residents and visitors. The **Infrastructure Element** also establishes level of service standards in coordination with the Indian River County Utility Department.

INFRASTRUCTURE ELEMENT HIGHLIGHTS

1. Requires that essential public facilities be provided concurrent with the impacts of new development;
2. Encourages disaster preparedness measures to protect critical infrastructure and ensure the City's resilience;
3. Encourages the mitigation strategies referenced in the City's Resiliency Plan in regard to increasing the City's adaptive capacity in the case of sea level rise and chronic flooding scenarios;
4. Supports septic to sewer efforts and requires the connection to the central wastewater system and the elimination of septic tanks;
5. Ensures cost-effective and environmentally-sound solid waste management and recycling services within the City;
6. Requires adequate stormwater drainage to protect against flood conditions and prevent degradation of surface and groundwater quality;
7. Requires continuous updates to the City's Stormwater Management Master Plan in order to address deficiencies and meet stormwater needs for future growth;
8. Ensures the conservation of potable water supplies and the protection of shallow and deep aquifer water resources.

GOALS, OBJECTIVES, POLICIES

Goal 4-1: Provide Public Infrastructure to Meet Existing and Projected Needs.

Ensure the availability of needed public facilities and services to meet existing and projected demands in a manner which protects investments in existing facilities, maximizes their use, effectively manages growth, and maintains environmental quality.

Objective 4-1.1: Ensure Available Public Facilities and Prevent Urban Sprawl.

The City of Sebastian shall maintain the land development code (LDC) to include performance standards requiring that requisite public facilities be provided concurrent with the impacts of new development. The LDC shall include a concurrency management program consistent with the **Governance & Implementation Element** and **Land Use Element**. The LDC shall maintain provisions by which all new development is required to connect to central potable water and wastewater systems, and provisions by which approval of the Indian River County Public Health Department is required where no central wastewater service is available. The City's regulatory system shall ensure that existing and planned public facilities shall be used to the maximum feasible extent in order to:

- Achieve economy of scale;
- Promote compact growth; and
- Prevent urban sprawl.

Policy 4-1.1.1: Coordination. The City shall coordinate with Indian River County Utility Department (IRCUD) to provide water and wastewater facilities that comply with the adopted level of service (LOS) and capacity standards that are established by the IRCUD; the LOS standards are provided in **Policies 4-1.1.2** and **4-1.1.3** accordingly.

Policy 4-1.1.2: LOS Standards. The following LOS standards are hereby adopted specific to potable water, wastewater, drainage, and solid waste, and shall be used as the basis for determining the availability of facility capacity and the demand generated by a development:

- a. **Sanitary Sewer:** 250 gallons per day per equivalent residential unit.
- b. **Potable Water:** 250 gallons per day per equivalent residential unit.
- c. **Drainage Facilities:** Post development runoff shall not exceed the pre-development runoff rate for a 25-year, 24-hour storm event. Stormwater treatment and disposal facilities shall be designed to meet the design and performance standards established in Chapter 17-25, FAC, with treatment of the runoff from the first one inch of rainfall on-site to meet the water quality standards required by Chapter 17-302, FAC.
- d. **Solid Waste:** 7.52 pounds per day per capita.



Policy 4-1.1.3: Compliance with LOS Standards. Through provisions within the LDC, all public improvements including new facilities or replacements, expansions, or other alterations to public facilities shall comply with the adopted LOS standards for the facilities prior to the issuance of development orders and permits. Issuance of development orders or permits shall be conditioned upon demonstrated compliance with applicable federal, state, and local permit requirements for potable water, wastewater, drainage, and solid waste facilities.

Policy 4-1.1.4: Coordination Between Future Land Use and Potable Water/ Wastewater System Needs. The City shall coordinate with Indian River County Utilities to ensure that potable water and wastewater system needs, plans, and the location and timing of improvements are consistent with land use and conservation resource management policies stipulated in the City's Comprehensive Plan.

Policy 4-1.1.5: Areawide Planning for Potable Water and Wastewater Systems. The LDC shall prohibit the proliferation of small fragmented water or wastewater systems except in cases where the City Council determines that the public health and safety is served by such a system and areawide service systems are not available.

Policy 4-1.1.6: Available Infrastructure for Developments. The City shall issue no development order for new development which would result in an increase in demand on deficient facilities prior to completion of improvements needed to bring the respective facility up to standard. The monitoring and evaluation system referenced in **Objective 4-1.1** shall include provisions which establish an early warning system which identifies if and when the designed capacity of infrastructure is nearing capacity. The City shall also consider the mitigation data, information, and strategies contained in the City of Sebastian, Coastal Resiliency Plan, Prepared By: Kimley-Horn and Associates, Inc., March 2019 (Coastal Resiliency Plan).

Policy 4-1.1.7: Compliance with Governance & Implementation Element. The City shall ensure that projects required to meet projected demands are included in the **Governance & Implementation Element** in accordance with state statutes. All major public facility projects shall be undertaken in accordance with the schedule provided in the **Governance & Implementation Element**. In developing the annual schedule of capital improvement projects, the City shall rank and prioritize projects consistent with the evaluation criteria in **Policy 7-2.1.3** of the **Governance & Implementation Element**. When developing the Capital Improvements Plan and prioritizing the expenditure of public funds, the City will consider the recommendations of the City's Coastal Resiliency Plan.

Policy 4-1.1.8: Public Facility Planning and Management Efficiency. In scheduling the location, timing and staging of public facility improvements, the City Council shall consult the City's Coastal Resiliency Plan. The City Council shall also use the following criteria:

- Minimize disruption of services;
- Prevent duplication of labor; and
- Maintain service levels for all respective facilities.

Policy 4-1.1.9: Additions of Public Facility Project Approvals. All required federal, State, and County permits shall be obtained before the City undertakes or authorizes contractors to undertake construction and/or operation of facilities.



Policy 4-1.1.10: Planning for Resilient Infrastructure. The City of Sebastian shall identify critical infrastructure in which resident's activities will be affected by interruptions to these facilities. The City shall evaluate the vulnerability of this critical infrastructure in the event of a natural disaster or emergency such as sea level rise/flooding events, hurricane/tornado winds, fires, pandemics/epidemics, terrorism, or earthquakes to determine potential damages and preparedness measures needed. For critical infrastructure assets at greatest risk, the City shall identify potential mitigation projects and implementation feasibility. In planning for post-disaster redevelopment activities, factors to be considered in order to protect the public health and safety shall be consistent with **Policy 5-2.4.2** of the **Conservation & Coastal Management Element**.

Policy 4-1.1.11: High-Speed Internet Access. In recognition of the importance of high-speed internet to City operations, economic activity, and access to information for City residents, the City supports the availability of affordable high-speed internet to encourage economic development, enhance access to educational and healthcare resources, facilitate civic engagement, promote resilience, and provide for effective response and communications in the event of natural disasters or emergency situations.

Objective 4-1.2: Ensure Adequate Wastewater Facilities. Ensure adequate wastewater facilities and services for the City.

Policy 4-1.2.1: Use of On-site Wastewater Treatment Systems. The LDC shall regulate the use, location, and removal of on-site wastewater treatment systems consistent with all applicable local, state, and federal regulations, and maintain provisions by which development is required to connect with the central wastewater system. If a central wastewater main is not within five hundred (500) feet of the proposed development, on-site wastewater service must be approved by the Indian River County Public Health Department consistent with Policy 4-1.2.4.

Policy 4-1.2.2: Compliance with On-Site Wastewater Treatment and Water Quality Regulations. The LDC shall include performance criteria regulating on-site wastewater treatment, including impacts on water quality. The performance criteria shall stipulate that the City shall not issue any permit for new or altered on-site wastewater treatment systems. Due to the area's vulnerability to sea level rise and flooding, the respective LDC's should reflect the mitigation strategies that are outlined in the City's Coastal Resiliency Plan.

Policy 4-1.2.3: Septic to Sewer Conversion. The conversion of septic tanks to centralized sewer services is critical, considering the location of existing septic tanks within environmentally sensitive areas and areas vulnerable to the impacts of flooding and sea level rise. The City shall continue to support the implementation of the Sebastian CRA Septic to Sewer Conversion Program and Indian River County initiatives to expand sanitary sewer service within the City such as the North Sebastian Septic to Sewer Phase I Conversion Project.

Policy 4-1.2.4: Coordination with the Indian River County Public Health Department. The LDC shall require that all proposed development which impacts an existing septic tank or generates need for a new septic tank be required to provide evidence of approval by the Indian River County Public Health Department prior to receiving a development order or permit from the City. Any such approval by the



City shall be conditioned upon the applicant's compliance with Indian River County requirements for ongoing facility maintenance and operation.

Policy 4-1.2.5: Conditions Governing Development Orders or Permits. Consistent with **Policy 4-1.1.7**, the LDC shall include performance criteria regulating the location, timing, and scale of development in order to ensure that new development is effectively served by wastewater services. The performance criteria shall utilize recognized best management practices, discourage the proliferation of permanent package treatment plants and the extensive use of septic tanks and wastewater drain fields on areas with characteristics or conditions unsuited for their adaptation, and comply with all applicable permitting procedures.

Policy 4-1.2.6: Use of Reclaimed Water for Irrigation. The City shall collaborate with Indian River County to improve and expand reclaimed water service within the City to enhance cost effectiveness, conserve natural resources, and promote multiple use of water resources.

Objective 4-1.3: Ensure Adequate Solid Waste Management and

Services. Ensure cost-effective and environmentally-sound solid waste management and recycling services within the City and monitor performance to maintain adopted LOS standards.

Policy 4-1.3.1: Solid Waste Projects. The City shall coordinate with Indian River County to improve solid waste management services and to address countywide issues, including, but not limited to the following:

- Achieving access to resource recovery facilities or other alternatives to conventional landfill operations;
- Enhancing solid waste collection and transfer operations;
- Management strategies for implementing recycling efforts;
- Curbing illegal dumping of solid waste as well as disposal activities which adversely impact natural systems;
- Developing improved information dissemination regarding hazardous waste generators;
- Determining feasibility of hazardous waste storage/transfer facilities;
- Improving management of the collection and disposal of hazardous waste; and
- Drafting policy for appropriate regulatory measures governing solid waste and hazardous waste including identification of long-term operating costs and capital improvement needs associated with various policy options.

Objective 4-1.4: Ensure Adequate Stormwater Drainage. Ensure adequate stormwater drainage to protect against flood conditions and prevent degradation of surface and groundwater quality.

Policy 4-1.4.1: Protect Natural Drainage Features. The City shall protect natural drainage features and ensure future development utilizes stormwater management systems consistent with criteria of all appropriate local, state, and federal agencies, improvements identified in the City's Stormwater Management Master Plan (SWMMP), prepared by Neel-Schaffer (December 6, 2013), and the City's future stormwater management planning efforts. At a minimum the LDC shall address the following:

- Establish a coordination mechanism with the Sebastian River Improvement District (SRID) for controlling the flow of water through the SRID radial gate dam in order to protect the natural drainage features in Sebastian;
- Establish a buffer zone along all natural drainage features;
- Maintain on-site drainage requirements to ensure natural drainage features are not overloaded by runoff from adjacent properties (water quantity);
- Prohibit direct discharge of untreated stormwater into natural drainage features (water quality);
- Existing stormwater engineering, design and construction standards for on-site systems should be evaluated and amended as needed;
- Existing standards for erosion and sediment controls should be evaluated and amended, if necessary; and
- Periodic inspection of on-site systems shall be required to ensure continuance of system design and maintenance.

Policy 4-1.4.2. Stormwater Management Master Plan Update. The City shall pursue the development of an update to the 2013 Stormwater Management Master Plan to appropriately identify existing conditions, stormwater needs for planned future growth, and approaches to address existing and potential deficiencies in the City's existing stormwater management system. The updated Stormwater Master Plan should include a city-wide evaluation to improve the numerical model with the latest datasets as outlined in the City's Coastal Resiliency Plan. As part of the plan update, a detailed inventory of stormwater assets should be completed, and the update of the model should include the development of a program to increase the adaptive capacity for the City in the case of sea level rise and chronic flooding scenarios. The City shall coordinate the development of any update to the Stormwater Management Master Plan with Indian River County and all other applicable local, regional, state, and federal agencies. The City shall pursue an update to the Stormwater Master Plan every 5 years, or more frequently if necessary.

Policy 4-1.4.3: Ensure that Urban Lands Provide Adequate Drainage and Protection from Flooding and Manage the Retention of Ground and Surface Water at Levels that Enhance Natural Storage Capacity of Watersheds and Promote Aquifer Recharge. The functions of natural groundwater aquifer recharge areas within the City shall be protected and maintained. The City shall promote the ecological, biological, and hydrological role that surface waters play in sustaining recharge to aquifers and supporting surface vegetation. The City shall also manage the location design and intensity of urban development in order to foster continuance of natural hydrological processes, including preserving recharge areas, promoting on-site retention of surface waters and natural return of

surface water into the soil, and channeling excess stormwater volume primarily via natural grassy swales. The City shall require the integration of natural storage areas and natural drainage courses into water management plans for new development. The recognition of sea level rise and flooding risks should be taken into consideration and there should be the incorporation of the data sets and mitigation strategies that are outlined in the City's Coastal Resiliency Plan.

Policy 4-1.4.4: Provide Adequate On-Site Retention and Ground Water Recharge while Directing the Surplus Run-off to Receiving Waterways in a Manner which Prevents Imbalance to their Ecosystems. The City shall continue to enforce the adopted LOS standards for retention/detention through the utilization of best management practices provisions within the LDC. This includes the incorporation of the mitigation strategies that are outlined in the City's Coastal Resiliency Plan. The impacts of future sea level rise and combined rain events may cause more flooding and LOS violations and water quality issues that require best management practices to be devised, consistent with **Policy 5-1.4.8** of the **Conservation & Coastal Management Element**. Given the hydrology of the area, the city shall develop a pollutant load model as recommended in the City's Coastal Resiliency Plan. There shall also be the consideration of hardening the pump-stations based on their criticalities.

Policy 4-1.4.5: Pursue the Development of Adequate Off-Site Surface Water Management Facilities. The City shall monitor at regular intervals the performance of existing off-site drainage facilities, evaluate existing and potential future problems or issues, and pursue the funding of necessary structural and non-structural system improvements for effective surface water management. All new developments shall provide an equitable contribution for off-site drainage improvements necessitated by the development. No new development shall be allowed which overloads existing off-site facilities or unduly increases the potential for flooding.

Policy 4-1.4.6: Coordinate Watershed Management Plans and Policies with Appropriate Public Agencies. The City shall coordinate watershed management plans and policies with local, regional, state and federal agencies, including Indian River County, SJRWMD, Treasure Coast Regional Planning Council, Florida Department of Environmental Protection, the Agricultural Sciences Extension Service, the United States Army Corps of Engineers, and other agencies as appropriate.

Policy 4-1.4.7: Buffer Zone Requirements. The LDC shall include performance criteria which shall require that new development provide buffer zones adjacent to natural drainageways and retention areas.

Policy 4-1.4.8: Managing Land Use in the Floodplain. Consistent with **Policy 5-2.2.1** of the **Conservation & Coastal Management Element** and the City's Coastal Resiliency Plan, the LDC shall include performance criteria regulating development within floodplain areas, including necessary restrictions on encroachment, alteration, and compatible use of the floodplain and major drainage corridors.

Policy 4-1.4.9: Inspection and Maintenance of Drainage Systems. The City shall ensure that drainage system components are monitored, inspected, and maintained pursuant to best management practices.

Policy 4-1.4.10: Implementation of the City's Stormwater Management Master Plan. The City shall incorporate the stormwater management system improvements recommended in the Stormwater Management Master Plan into the City's Capital Improvement Program.

Policy 4-1.4.11: Stormwater Utility Fee. The City shall utilize the Stormwater Utility Fee Resolution (Resolution No. R-19-03) and Ordinance No O-19-02, as may be amended, and its policies, procedures, fee structure, including provisions for credits in addressing stormwater and drainage improvements throughout the City.

Policy 4-1.4.12: Retain Run-off to Maximize Recharge. The LDC shall maintain performance standards designed to manage stormwater management so that post-development conditions do not increase the amount or rate of runoff beyond predevelopment conditions.

Objective 4-1.5: Conserve Potable Water Resources. Through the City's LDC, and in coordination with Indian River County, conserve potable water supplies.

Policy 4-1.5.1: Enforcement of LOS Standards. The LDC shall incorporate criteria for enforcing the adopted LOS for consumption of potable water from public wells.

Policy 4-1.5.2: Coordination with Other Entities. The City shall support the education and outreach efforts of other appropriate agencies related to water conservation programs within the City.

Policy 4-1.5.3: Conservation of Potable Water Supply. The City shall support the conservation of potable water supplies through performance standards within the LDC, and in accordance with SJRWMD best practices.

Policy 4-1.5.4: Emergency Conservation of Water Sources. The City shall develop and implement a water conservation program supporting SJRWMD policies and program resources.

Policy 4-1.5.5: Coordinate Issues Surrounding Aquifer Recharge. The City shall coordinate with Indian River County and SJRWMD in providing for the maintenance of aquifer recharge area functions. The City shall also coordinate with local, State, and federal agencies to achieve regional aquifer recharge protection objectives. The City shall also coordinate with the appropriate local and state agencies to maintain water quality through the monitoring of private wells and public potable water sources.

Policy 4-1.5.6: Surficial Aquifer Recharge Area Protection. Since the shallow aquifers are the City's chief public and private source for potable water, the City shall protect these areas from impacts that would significantly alter their ability to function. Consistent with the **Land Use Element** and the **Conservation & Coastal Management Element**, the City's LDC shall include standards restricting development within aquifer recharge areas.



Policy 4-1.5.7: Deep Aquifer Water Conservation. In order to protect the quality and quantity of deep aquifer water resources, the City shall coordinate with SJRWMD and other applicable regulatory agencies in identifying the existence and location of free flowing deep aquifer wells and in requiring corrective measures, including capping, plugging, or installing regulatory devices which control the discharge of water from the deep aquifer pursuant to SJRWMD policies.

Policy 4-1.5.8: Intergovernmental Coordination. Specific Objectives and Policies regarding intergovernmental coordination and this Element are provided and identified in the **Governance & Implementation Element**.

DATA INVENTORY AND ANALYSIS

Introduction

Pursuant to the requirements of Chapter 163 of the 2019 Florida Statutes, the **Infrastructure Element** consists of data inventory and analysis (DIA) that influences and informs the element's overarching goals, objectives, and policies. Provided in this inventory and analysis is sanitary sewer, solid waste, stormwater, and potable water facilities and services in the City of Sebastian.

The City of Sebastian does not maintain sanitary sewer, solid waste, or potable water facilities within its corporate limits. These services are provided to the City pursuant to the terms of respective franchise agreements herein discussed. This DIA shall identify the nature of the existing facilities within Sebastian. This identification shall include the following information:

- Entity having operational responsibility for the facility;
- Design capacity of the facility;
- Current demand on the facility capacity and the level of service provided by the facility; and
- Impact on adjacent natural resources.

This DIA will also provide an analysis of future public facilities for the City of Sebastian by determining future service demands as well as necessary levels of service to meet them.

Potable Water

This section evaluates the potable water system serving the City of Sebastian inclusive of all structures designed to collect, treat, and distribute potable water in addition to water wells, treatment plants, reservoirs and distribution mains.

Indian River County Utilities Department (IRCUD) Geographic Service Area

The City of Sebastian's potable water is provided by a system operated by the Indian River County Utilities Department. The City is located within the North County Service Area and serviced by the North County Water Treatment Plant.

Water Sources

Potable water in the City of Sebastian is received from either private on-site wells or from the County's water treatment plant. Currently, the plants operated by the Indian River County Utilities Department use the Upper Floridan aquifer as their primary water source. The County uses reverse osmosis to treat water drawn from the Floridian Aquifer.

Water Treatment Plants (WTPs)

Located on the north side of 77th Street, west of 58th Avenue, the North County Water Treatment Plant began operating in 1997. According to Indian River County, the current permitted design capacity of the plant is 11.44 MGD. Currently, there is adequate treatment capacity for the planning period. Additionally, the County is currently upgrading the Roseland Tank to a storage and repump station that will improve pressure in the North Sebastian area.



Potable Water Level of Service

The City’s adopted Level of Service Standard for potable water is 250 gallons per day per equivalent residential unit. **Table 4-1** provides a listing of the projected potable water demand based upon the population projections and the entire City being connected to the County potable water system. In order to meet projected demand in 2040, the City will require an estimated 3,978,000 gallons per day. To ensure the efficient and acceptable delivery of potable water services to the City of Sebastian continued coordination with Indian River County Utilities is recommended.

Table 4-1: Projected Potable Water Demand

Year	Population	Residential Units	Gallons/Unit/Day	Estimated Average Demand (gallons/day)
2020	25,957	11,616	250	2,904,000
2025	28,562	12,933	250	3,233,250
2030	30,806	14,100	250	3,525,000
2035	32,757	15,029	250	3,757,250
2040	34,567	15,912	250	3,978,000

Source: Population projections and household estimates from Florida Housing Data Clearinghouse

Water Conservation

The City of Sebastian participates in water conservation, use, and protection through programs and policies supported by SJRWMD. Per Section 373.016, F.S., the SJRWMD, and all other water management districts are required to "promote the conservation, replenishment, recapture, enhancement, development, and proper utilization of surface and groundwater." To accomplish this directive, the SJRWMD considers conservation in the development of policy and rules, public information programs, planning, and resource management and evaluation.

Conservation measures are also witnessed through the use of a consumptive use permitting process, which enables the SJRWMD to review certain proposed and existing developments for reasonable and beneficial use of water.

The SJRWMD encourages the reuse of wastewater for irrigation purposes as a measure to conserve water. Incentives to install and utilize wastewater reuse facilities are provided in the Water Management District's permitting process for wastewater treatment facilities.

Included among the SJRWMD's conservation efforts is a program targeted at plugging unattended, free-flowing artesian wells. This program attempts to identify abandoned wells, seal them, and restore them to their natural hydrologic condition.

SJRWMD also promulgates information to the public concerning water conservation. Pamphlets, slide shows, speeches, and addresses made through media sources are a variety of ways in which the District educates and informs the public about water conservation.

Sanitary Sewer

The sanitary sewer system is defined as structures or systems designed for the collection, transmission, treatment, or disposal of sewage. Disposal includes solids and effluent reuse, which is also referred to as reclaimed or grey water.





Geographic Service Area

The City of Sebastian does not maintain a sanitary sewer facility within its corporate limits and the majority of the homes are serviced by septic tanks. Those homes within the City of Sebastian on central sewer service receive service from Indian River County Utilities. The entire City is within the County's service area.

Treatment Facilities and Capacity

The design capacity and demand for the North Regional Wastewater Treatment Plant is 0.850 MGD. According to the Indian River County Comprehensive Plan, approximately 60% of the Plant's capacity is allocated to Sebastian. It is projected the plant will need to process 2,000,000 gallons per day in 2030. This plant is interconnected to the rest of the County's wastewater treatment system, thereby allowing sanitary sewer flow to be directed to another County facility for treatment, if necessary. In 2017, flows from the North Regional Plant were transferred to the Central Plant which has a capacity of 4 MGD.

Table 4-2 depicts projected wastewater demand based upon the population projections and the entire City being connected to the County wastewater system. This would be approximately half of the projected County's projected demand. To ensure the efficient and acceptable delivery of wastewater services to the City of Sebastian, continued coordination with Indian River County Utilities is recommended. Additionally, as the County extends sewer service to the entire City, the number of units on central sewer would increase, thereby, reducing the number of septic tanks and minimizing the associated environmental risks.

Table 4-2: Projected Wastewater Demand

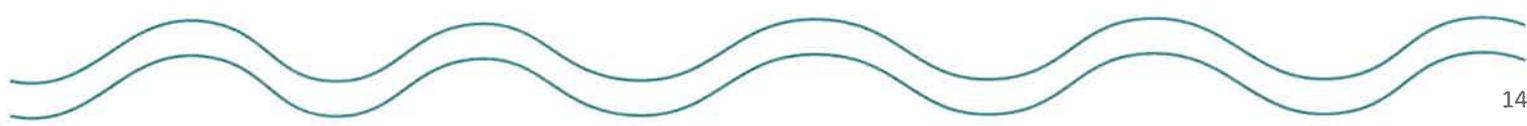
Year	Population	Residential Units	Gallons/Unit/Day	Estimated Average Demand (gallons/day)
2020	25,957	11,616	250	2,904,000
2025	28,562	12,933	250	3,233,250
2030	30,806	14,100	250	3,525,000
2035	32,757	15,029	250	3,757,250
2040	34,567	15,912	250	3,978,000

Source: Population projections and household estimates from Florida Housing Data Clearinghouse

Septic to Sewer Conversion

The key opportunity for wastewater service expansion within Sebastian is the large percentage of homes still on septic tanks, which need to be converted to the County's sanitary sewer. The use of a single central sewer system rather than many septic tanks will reduce the potential for contamination of water within the surficial aquifer, and also will lessen chances of pollution and nutrients entering the Indian River Lagoon. Additionally, new sewer lines will allow existing vacant land to develop due to access to sewer.

Disposal of wastewater through septic tanks and wellfields has potential for adversely impacting adjacent natural resources. However, the City and the County Environmental Health Departments have enforced regulations requiring septic tanks and drain fields to be elevated in order to abate groundwater pollution. The City has soils, including the Sebastian Highlands and most areas west of the coastal ridge, which could have severe limitations for septic tanks and





drain fields. The concern regarding septic tanks is related to two issues: 1) contamination of drinking water; and 2) pollution of the Indian River Lagoon.

Sebastian CRA Septic to Sewer Conversion Program

The City is currently in the process of implementing the Sebastian CRA Septic to Sewer Program (SSP). The program is designed to provide individual grants to qualified property owners for costs incurred to remove an operational septic tank system that serves an occupied facility or building and connects to the Indian River County sanitary sewer system. The SSP is available to businesses or residences located within the CRA District currently utilizing septic systems. Grant funds will be disbursed as a reimbursement after receipts and documentation is submitted and inspection of improvements occurs.

The City of Sebastian established a wastewater sewer hook-up program in 2014 that offered incentives to property owners in the Riverfront CRA in the removal of existing septic tanks and hookup to existing sewer lines. Since the start of this project the number of applicants (and septic tank conversions) has increased due to the support from the Indian River Lagoon Council matching grant, gravity sewer line installation by Indian River County, and increased educational efforts by the City.

Currently connection cost to tie into the existing sewer force main along Indian River Drive have been high resulting in 21 conversions in a two year period. With the addition of the gravitational line within the northern CRA district, approximately 50 properties are now eligible for septic to sewer conversion at a lower cost. This program has the capability of incentivizing the conversion of the majority of septic systems in this area. A long term benefit is the removal of excess nutrients and other pollutants from legacy sources resulting in a reduction in harmful algal blooms and potential increase in the return of healthy seagrass beds.

North Sebastian Septic to Sewer (S2S) Phase I Conversion Project

The North Sebastian Septic to Sewer (S2S) Phase I Conversion Project deals with the installation of centralized gravity sewer service for 58 parcels within the un-incorporated Indian River County and the City of Sebastian city limits. Completion was scheduled for the fall of 2018.

Solid Waste

The purpose of this sub-element is to ensure that adequate solid waste collection and disposal services and facilities are available to meet the demands of projected population growth in the City of Sebastian.

The entire City of Sebastian located within the service area for solid waste collection and disposal and the County's landfill near I-95 and Oslo Road serves all of Indian River County, including unincorporated and incorporated areas.

The County's solid waste system is an organized dependent special district known as Indian River County Solid Waste Disposal District (SWDD). The purpose of the Refuse Disposal Division under SWDD is to operate five Customer Convenience Centers (CCC's) around the County and transport materials delivered to these centers by county residents to the landfill site for recycling and/or disposal. The five county-wide CCC's provide collection points for the residents to deliver municipal solid waste, yard trash, household hazardous waste and various recyclable materials. SWDD then transports these materials to the landfill for ultimate disposition to maintain the health and well-being of the community and environment.



City residents may voluntarily subscribe with a private hauler (Waste Management) to provide solid waste collection, or may dispose of waste themselves at a CCC, with the Roseland CCC located in relatively close proximity to the City. The private hauler utilizes the Indian River County transfer and landfill facilities for processing and disposal. The private hauler is obligated to pick up residential solid waste two (2) times per week, with collections being at least three (3) days apart. Collection is from the roadway right-of-way with exceptions made for disabled/handicapped residents, whose refuse is approved for rear yard pick-up. The hauler is also obligated to collect commercial refuse no less than two (2) times per week, and up to six (6) times per week, if required, to protect public health and safety.

According to the Indian River County 2030 Comprehensive Plan, Indian River County's unit contribution rate of solid waste averages 2.4 tons per capita/per year for the County's permanent population plus weighted seasonal population. The County landfill is operated and maintained in accordance with applicable local and state requirements and has been certified by the Florida Department of Environmental Protection. The County does not currently regulate proportional capacity allotments at the County landfill or at the County transfer stations. Therefore, this data is not available.

The management and disposal of hazardous wastes are discussed in the **Conservation & Coastal Management Element**.

Solid Waste Level of Service

The City's Level of Service Standard for solid waste is 7.52 pounds per capita per day and projects this generation rate will continue. This requires a collection and disposal capacity of 97.60 tons per day in 2020 (projected population 25,957) and will require a collection and disposal capacity of 129.97 tons per day in 2040 (projected population 34,567). Solid waste capacity is not a major concern for the City as it is transported to the Indian River County landfill for disposal.

According to 2019 figures provided by the City's private hauler (Waste Management), there were 7,775 customers within the City of Sebastian accounted for 6,328 tons of residential garbage and 2,637 tons of residential recycling. This shows that City solid waste customers are produced approximately 4.46 pounds per day in 2019.

There is sufficient capacity in the Indian River County landfill to meet the City's needs for solid waste disposal for the short term and long term planning horizons. According to Indian River County, the landfill has permitted capacity through 2070. Should extensive redevelopment or future annexations cause a significant increase in the City's solid waste production, new service and collection equipment may be required.

The projected demand for the planning horizon is shown in **Table 4-3** below.

Table 4-3: Projected Demand on Solid Waste

Year	Population	Tons Per Day	Annual Tonnage
2020	25,957	97.60	35,624
2025	28,562	107.39	39,197
2030	30,806	115.83	42,278
2035	32,757	123.17	44,957
2040	34,567	129.97	47,439





Stormwater/Drainage

The City's Stormwater Utility operates and maintains the extensive stormwater collection and treatment system of swales, ditches, culverts, catch basins, baffle boxes and the 8.15 mile Elkcam Canal/Collier Creek Canal.

The development of the Sebastian Highlands and surrounding areas required a substantial system of canals and drainage ways to accommodate run-off. These modifications are normally in the form of swales and ditches, which collect stormwater run-off and direct it to larger man-made facilities and eventually the Indian River Lagoon, either directly or via the Sebastian River. The City maintains a maintenance program designed to remove debris and other obstructions from the drainage system.

Because of its relatively flat terrain, the City has extensive amounts of poorly drained areas that require modification prior to development. In addition to the topographic drainage characteristics, the area is also comprised of a large amount of soils with moderate to poor drainage capabilities. The site plan review process provides a management process for addressing this issue by requiring that each development accommodate stormwater so that post development conditions do not increase the amount or rate of run-off beyond pre-development conditions.

The man-made drainage features within the City have been designed to accommodate major flood flow conditions. The City's recent stormwater management efforts are concentrated in the area of improving maintenance of the existing system and mandating efficient drainage infrastructure for all new development. Site plan review activities have prevented encroachment of development into sloughs, watersheds, creek beds, or other low areas.

In 2013, the City prepared a Stormwater Management Master Plan Update (Appendix 4-X) with the following objectives:

- Updating the existing stormwater model to represent current hydrologic and hydraulic conditions within the basin;
- Evaluating existing capacity and the future demand of the previous stormwater management system;
- Developing alternative improvements (structural and non-structural) and providing recommendations for reducing system deficiencies
- Developing a master plan that prioritizes the recommended alternatives with individual preliminary cost estimates
- Prioritizing areas for water quality retrofit and consider these areas in the design of stormwater improvements for flooding.

In 2014, The City established a water quality monitoring and testing of storm water discharges. City staff collects monthly samples of water from discharge locations to test for nitrogen and phosphorus. And, in 2015, the City received an achievement award for Environmental Stewardship from the League of Florida Cities for Water Monitoring and testing program.

In 2016, the City completed the Tulip Drainage Improvement Project. The project involved the installation of a retention pond which had been identified in the City's Stormwater Master Plan as a required retention basin to retain stormwater during storm events. The drainage system for the City's central area of the Sebastian Highlands is unable to handle the flow of runoff during heavy storm events and typically several streets like Tulip Drive will flood for a short period. Due to the need to improve storm water runoff and to help improve water quality, the City received funds from FDEP Section 319 Grant to help in the construction, monitoring, and education.

The City has identified the following stormwater improvement projects in the 2020-2025 Five -Year Capital Improvement Program.

- Stormwater Master Plan - \$200,000
- Drainage Correction for Streets - \$100,000
- Roadway Swale Work - \$360,000
- Bay Drive Retention Area - \$240,000
- Concha Dam Repair - \$800,000
- Tulip Road Design - \$232,000
- Bayfront Road Crossing - \$250,000
- Ocean Cove Drainage - \$300,000
- Major Canal Improvements - \$3,000,000
- Stonecrop Drainage - \$860,000

The City intends to undertake another update to the Stormwater Management Master Plan during the course of the short-term planning horizon to include a city-wide evaluation to improve the numerical model with the latest datasets as outlined in the City's Coastal Resiliency Plan. As part of the plan update, a detailed inventory of stormwater assets should be completed, and the update of the model should include the development of a schema to increase the adaptive capacity for the City in the case of sea level rise and chronic flooding scenarios.

Drainage Level of Service

Post development runoff shall not exceed the pre-development runoff rate for a 25-year, 24-hour storm event. Stormwater treatment and disposal facilities shall be designed to meet the design and performance standards established in chapter 17-25, FAC, with treatment of the runoff from the first one inch of rainfall on-site to meet the water quality standards required by chapter 17-302, FAC.

Aquifer Recharge

There are no areas within the City that have been adopted by the St. John's River Water Management District as prime groundwater recharge areas for the Floridan aquifer. The coastal ridge area has the best recharge potential. However, most of this area has been developed as part of the "Old Town." Other portions have been mined for sand. The Floridan aquifer is recharged in eastern Osceola County and very little down migration of water is possible due to two factors:

- A confining layer of silt and clay and various other materials separates the surficial and deep (Floridan) aquifer; and
- The potentiometric surface of the aquifer is approximately +30 feet NGVD (National Geodetic Vertical Datum), this upward pressure will not permit recharge except under extremely high head conditions.

The top of the surficial aquifer within the City is generally located between five (5) and ten (10) feet below the ground surface but may be much closer to the ground surface depending upon the amount of rainfall which is present. The rainfall in the area recharges the surficial aquifer, and as such, the water table depth fluctuates with the amount and intensity of the rainfall.

The surficial aquifer recharge areas within the City may not supply large quantities of water to the aquifer but serve to prevent lateral saltwater intrusion into inland groundwater supplies.



The City's zoning regulations, flood damage prevention ordinance, and subdivision regulations accomplish an adequate degree of protection for natural drainage and recharge areas. Sebastian's existing land use has generally developed in a manner favorable to natural groundwater recharge and natural flood protection.



~~GOAL 4-1: NEEDED PUBLIC FACILITIES. ENSURE AVAILABILITY OF NEEDED PUBLIC FACILITIES INFRASTRUCTURE IN A MANNER WHICH PROTECTS INVESTMENTS IN EXISTING FACILITIES, AND PROMOTES ORDERLY, COMPACT~~

Goal 4-1: Provide Public Infrastructure to Meet Existing and Projected Needs.

Ensure the availability of wastewater systems, solid waste disposal, drainage, and potable water facilities and services to meet existing and projected demands in a manner which protects investments in existing facilities, maximizes their use, effectively manages growth, maintains environmental quality.

Objective 4-1.1: Ensure Available Public Facilities, and Prevent Urban

~~Sprawl.~~ ~~By December 31, 1998, the~~ The City of Sebastian shall have adopted- maintain the land development code regulations (LDC) which to include performance standards requiring that requisite public facilities be provided concurrent with the impacts of new development. The LDC shall include a concurrency management program consistent with the Governance & Implementation Element and Land Use Element. The LDC shall maintain provisions by which development is required to connect to central potable water and wastewater systems. A concurrency management program shall also be adopted as part of the land development regulations. The land development regulations shall stipulate that applications for a development permit comply with the concurrency management Objective 9-1.5 and Policy 9-1.5.1. The City shall adopt land development regulations which mandates hook-up to central potable water and wastewater systems for all new development; however, if a central wastewater main is not within five hundred (500) feet of the proposed development, the developer must obtain approval for on-site wastewater service from the Indian River County Environmental Health Unit. In this manner, The City's regulatory system shall ensure that existing and planned public facilities shall be used to the maximum feasible extent in order to:

- Achieve economy of scale;
- Promote compact growth; and
- Prevent urban sprawl.

Policy 4-1.1.1: Coordination. The City shall coordinate with Indian River County Utility Department (IRCUD) to provide water and wastewater facilities that comply with the adopted level of service (LOS) and capacity standards that are established by the IRCUD; the LOS standards are provided in Policies 4-1.1.2 and 4-1.1.3 accordingly.

Policy 4-1.1.2 4-1.1.1: Level of Service Standards-LOS Standards. The following level of service LOS standards are hereby adopted specific to potable water, wastewater, drainage, and solid waste, and beginning in January 1, 1998, these standards shall be included in amended land development regulations at the earliest date possible which shall be used as the basis for determining the availability of facility capacity and the demand generated by a development:

- Sanitary Sewer: 250 gallons per day per equivalent residential unit
- Potable Water: 250 gallons per day per equivalent residential unit
- Drainage Facilities: Post development runoff shall not exceed the pre-development runoff rate for a 25-year, 24-hour storm event. Stormwater treatment and disposal facilities shall be designed to meet the design and performance standards established in Chapter 17-25, FAC, with treatment of the runoff from the first one inch of rainfall on-site to meet the water quality standards required by Chapter 17-302, FAC.
- Solid Waste: 7.52 pounds per day per capita

Table 4-1: Potable Water Systems

Potable Water Systems Indian River County Utility Department	LOS Standards
Residential Uses	100 gpcpd
Commercial/Industrial Uses	2,500 gallons per acre [±]

(1) Equivalent to twenty-five (25) persons per acre
 Note: gpcpd represents "gallons per capita per day."

Table 4-2: Wastewater

Wastewater Indian River County Utility Department	LOS Standards
Residential Uses	100 gpcpd
Commercial/Industrial Uses	2,500 gallons per acre [±]

(1) Equivalent to twenty-five (25) persons per acre
 Note: gpcpd represents "gallons per capita per day."

Table 4-3: Drainage

Drainage Years 1990-2010	LOS Standards
Off-site	25-year, 24-hour design storm
On-site	10-year 24-hour design storm

Note: Post-development conditions shall not increase the amount or rate of run-off beyond pre-development conditions. Water quality standards of Chapter 62-25, F.A.C. shall be applied as the quantitative standard. Chapter 62-25 F.A.C., requires the Outstanding Florida Waters (i.e., Indian River Lagoon) to reduce pollution loads by an additional 50 percent prior to discharge.

Table 4-4: Solid Waste

Solid Waste Years 1990-2010	LOS Standards
	7.52 pounds per day

Policy 4-1.1.3 4-1.1.2: Compliance with Level of Service LOS Standards. Through provisions within the LDC LDRs, As a condition of the issuance of development orders and permits, all public improvements including new facilities or replacements, expansions, or other alterations to public facilities shall be compatible comply with the adopted level-of-service LOS standards for the facilities prior the issuance of development orders and permits. Issuance of development orders or permits shall be conditioned upon demonstrated compliance with applicable federal, state, and local permit requirements for potable water, wastewater, drainage, and solid waste facilities.

Policy 4-1.1.3: Demand and Supply Information System. The City shall coordination with Indian River County Utilities on a regular basis in order to obtain receive current data on related to the demand and capacity of County facilities providing services to Sebastian.

Policy 4-1.1.4 4-1.1.4: Coordination Between Future Land Use and Potable Water/ Wastewater System Needs. The City shall coordinate with Indian River County Utilities to ensure that potable water and wastewater system needs, plans and the location and timing of improvements are consistent with land use and conservation resource management policies stipulated in the City's Comprehensive Plan.

Policy 4-1.1.5 4-1.1.5: Areawide Planning for Potable Water and Wastewater Systems. The LDC City-amended land development regulations shall not permit prohibit the proliferation of small fragmented water or

wastewater systems except in cases where the City Council determines that the public health and safety is served by such a system and areawide service systems are not available.

~~**Policy 4-1.1.6 4-1.1.6: Available Infrastructure for Developments Approved Prior to Plan Adoption.** The LDC City's land development regulations together with the monitoring and evaluation system referenced in Objective 4-1.1 shall ensure that adequate levels of public services are made available to developments for which development orders were issued prior to the adoption of the Comprehensive Plan. The monitoring and evaluation system shall include provisions which establish an early warning system which identifies if and when the designed capacity of infrastructure system components are is nearing capacity. The LDC land development regulations as amended shall continue to ensure that developers construct all proposed infrastructure improvements contained in approved plans of developments for which a development order or permit was approved prior to adoption of the Comprehensive Plan. The timing of such infrastructure improvements shall ensure that infrastructure is on line concurrent with the impacts of development. In addition, the LDC land development regulations as amended shall include provisions which ensure that development orders and permits have a specified expiration date.~~

Policy 4-1.1.6: Available Infrastructure for Developments.

The City shall issue no development order for new development which would result in an increase in demand on deficient facilities prior to completion of improvements needed to bring the respective facility up to standard. The monitoring and evaluation system referenced in Objective 4-1.1 shall include provisions which establish an early warning system which identifies if and when the designed capacity of infrastructure is nearing capacity. The City shall also consider the mitigation data, information, and strategies contained in the City of Sebastian, Coastal Resiliency Plan, Prepared By: Kimley-Horn and Associates, Inc., March 2019 (Coastal Resiliency Plan).

Policy 4-1.1.7: Compliance with Governance & Implementation Element. The City shall ensure that projects required to meet projected demands are included in the Governance & Implementation Element in accordance with state statutes. All major public facility projects shall be undertaken in accordance with the schedule provided in the Governance & Implementation Element. In developing the annual schedule of capital improvement projects, the City shall rank and prioritize projects consistent with the evaluation criteria in Policy 7-2.1.3 of the Governance & Implementation Element. When developing the Capital Improvements Plan and prioritizing the expenditure of public funds, the City will consider the recommendations of the City's Coastal Resiliency Plan.

Policy 4-1.1.8: Public Facility Planning and Management Efficiency. In scheduling the location, timing and staging of public facility improvements, the City Council shall consult the City's Coastal Resiliency Plan. The City Council shall also use the following criteria:

- Minimize disruption of services;
- Prevent duplication of labor; and
- Maintain service levels for all respective facilities.

Policy 4-1.1.9: Additions of Public Facility Project Approvals. All required federal, State, and County permits shall be obtained before the City undertakes or authorizes contractors to undertake construction and/or operation of facilities.

Policy 4-1.1.10: Planning for Resilient Infrastructure. The City of Sebastian shall identify critical infrastructure in which resident's activities will be affected by interruptions to these facilities. The City shall evaluate the vulnerability of this critical infrastructure in the event of a natural disaster or emergency such as sea level rise/flooding events, hurricane/tornado winds, fires, pandemics/epidemics, terrorism, or earthquakes to determine potential damages and preparedness measures needed. For critical infrastructure assets at greatest risk, the City shall identify potential mitigation projects and implementation feasibility. In planning for post-disaster redevelopment activities, factors to be considered in order to protect the public health and safety shall be consistent with Policy 5-2.4.2 of the Conservation & Coastal Management Element.

Policy 4-1.1.11: High-Speed Internet Access. In recognition of the importance of high-speed internet to City operations, economic activity, and access to information for City residents, the City supports the availability of affordable high-speed internet to encourage economic development, enhance access to educational and healthcare resources, facilitate civic engagement, promote resilience, and provide for effective response and communications in the event of natural disasters or emergency situations.

Objective 4-1.2: MAINTAINING A SCHEDULE OF PUBLIC FACILITY CAPITAL

IMPROVEMENT NEEDS. The City shall develop and maintain a five-year schedule of capital improvement needs for public facilities and shall annually update the schedule as stipulated in the Capital Improvements Element. During the process of programming and budgeting for capital outlays, the City shall investigate new ways to finance public facilities and services, including impact fees.

Policy 4-1.2.1: Capital Improvement Schedule. The City Council, after considering the recommendations of the Planning and Zoning Board, shall annually evaluate and rank capital improvement projects proposed for inclusion in the five-year schedule of capital improvement needs.

Policy 4-1.2.2: Public Facility Evaluation Criteria. Proposed capital improvement projects shall be evaluated and ranked according to the following priority level guidelines:

- a) "Level 1": Whether the project is needed to:
 - Protect public health and safety.
 - Fulfill the City's legal commitment to provide facilities and services.
 - Preserve or achieve full use of existing facilities.
- b) "Level 2": Whether the project accomplishes the following:
 - Increases efficiency of existing facilities.
 - Prevents or reduces future improvement costs.
 - Provides service to developed areas lacking full service or promotes in-fill development
- c) "Level 3": Whether the project:
 - Represents a logical extension of facilities and services in a manner consistent with future Land Use Element goals, objectives and policies, including the Future Land Use Map.

Objective 4-1.2 4-1.3: Procedures and Standards For On-Site Ensure Adequate Wastewater Facilities Treatment Systems. The City shall on a continuing basis, assist in assuring implementation of existing State regulations imposing mandated standards for inspections, operation, and maintenance of on-site wastewater treatment systems. Ensure adequate wastewater facilities and services for the City.

Policy 4-1.2.1 4-1.3-1: Use of On-site Wastewater Treatment Systems. The LDC shall regulate the use, location, and removal of on-site wastewater treatment systems consistent with all applicable local, state, and federal regulations, and maintain provisions by which development is required to connect with the central wastewater system. shall be limited to the following conditions:

- a) Existing septic tanks may remain in service until such time as centralized service is made available.
- b) Use of septic tank systems for new development shall be restricted to sites on which the Indian River County Public Health Unit renders a finding that the site and facility design is in compliance, with State and local regulations governing the same.
- c) New development shall be required to connect with the central sewer system. Pursuant to the standards established by Indian River County.

Policy 4-1.2.2: Compliance with On-Site Wastewater Treatment and Water Quality Regulations. The LDC shall include performance criteria regulating on-site wastewater treatment, including impacts on water quality. The performance criteria shall stipulate that the City shall not issue any permit for new or altered on-site wastewater

treatment systems. Due to the area's vulnerability to sea level rise and flooding, the respective LDC's should reflect the mitigation strategies that are outlined in the City's Coastal Resiliency Plan.

Policy 4-1.2.3: Septic to Sewer Conversion. The conversion of septic tanks to centralized sewer services is critical, considering the location of existing septic tanks within environmentally sensitive areas and areas vulnerable to the impacts of flooding and sea level rise. The City shall continue to support the implementation of the Sebastian CRA Septic to Sewer Conversion Program and Indian River County initiatives to expand sanitary sewer service within the City such as the North Sebastian Septic to Sewer Phase I Conversion Project.

Policy 4-1.2.4 4-1.3.2: Coordinate Coordination with the Indian River County Public Health Department Unit. The City's land development regulations LDC shall require that all proposed development which impacts an existing septic tank or generates need for a new septic tank be required to provide evidence of approval by the Indian River County Public Health Department Unit prior to receiving a development order or permit from the City. Any such approval by the City shall be conditioned upon the applicant's compliance with Indian River County requirements for ongoing facility maintenance and operation.

Policy 4-1.2.5 4-1.3.3: Conditions Governing Development Orders or Permits. Beginning in January 1, 1998, the City shall adopt amended land development regulations at the earliest date possible which shall include performance criteria stipulating that prior to the issuance of development orders or permits all development shall be found consistent with regulations of all federal, State, and local on-site wastewater treatment systems. Consistent with Policy 4-1.1.7, the LDC shall include City's performance criteria shall also regulate regulating the location, timing, and scale of development in order to ensure that new development is effectively served by wastewater services. The performance criteria shall utilize recognized best management practices, discourage the proliferation of permanent package treatment plants and the extensive use of septic tanks and wastewater drain fields on areas with characteristics or conditions unsuited for their adaptation, and comply with all applicable permitting procedures. System reviews shall be coordinated with the State Florida Department of Environmental Protection (DEP) in order to promote best management practices and compliance with relevant State permitting procedures. Similarly, through application of the performance criteria the City shall discourage extensive use of septic tanks and wastewater drain fields on areas with characteristics or conditions unsuited for their adaptation.

Policy 4-1.2.5 4-1.3.4: Compliance with On-Site Wastewater Treatment and Water Quality Regulations. By September 1990 The LDC City shall adopt amended land development regulations which require that performance criteria be incorporated in order to include performance criteria regulate regulating on-site wastewater treatment, including impacts on water quality. The performance criteria shall stipulate that all new or altered on-site wastewater treatment improvements shall be compliant with applicable county, state, and federal regulations of federal, State, and County agencies having jurisdiction. The performance criteria shall stipulate that the City shall not issue any permit for new or altered on-site wastewater treatment systems. Due to the area's vulnerability to sea level rise and flooding, the respective LDC's should reflect the mitigation strategies that are outlined in the City of Sebastian, Coastal Resiliency Plan, Prepared By: Kimley Horn and Associates, Inc., March 2019 (Coastal Resiliency Plan).

GOAL 4-2: PROVIDING PROVIDE PUBLIC INFRASTRUCTURE FACILITIES TO MEET EXISTING AND PROJECTED DEMANDS, ASSURE THAT WASTEWATER SYSTEMS, SOLID WASTE DISPOSAL, DRAINAGE AND POTABLE WATER FACILITIES AND SERVICES ARE AVAILABLE TO MEET EXISTING AND PROJECTED DEMANDS IDENTIFIED IN THE COMPREHENSIVE PLAN.

Objective 4-2.1a: SANITARY SEWER SERVICE AND RECONCILE EXISTING WASTEWATER SYSTEM DEFICIENCIES.

Currently, there are no existing wastewater system deficiencies in Sebastian. The City shall coordinate In coordination with Indian River County, to the City shall maximizes use of existing wastewater facilities to ensure capacity is available for existing and future demands, as well as to promote and promotes orderly, compact growth. As central wastewater service becomes available, all new users shall be required to hook up connect to the central County wastewater system. This objective shall be measured through the implementation of the following policies:

~~**Policy 4-2.1.1: Connection to County Wastewater System.** The LDC shall include provisions which require all new users to connect to the central wastewater system as the service becomes available.~~

~~**Policy 4-2.1.1 a.1: North Indian River County Wastewater System Projects.** The City shall coordinate with ensure that Indian River County to ensure achieves timely construction of the subregional wastewater system improvements proposed to serve the City of Sebastian. The North County subregional wastewater system treatment plant located in the Hobart Road area was constructed in the early 1990's and is operated by Indian River County. Upon adoption of this Plan, new development, shall be required to connect with the central sewer system. Pursuant to the standards established by Indian River County.~~

~~**Policy 4-1.2.6 4-2.1a.2: Use of Reclaimed Water for Irrigation.** By the end of 2001, The City shall initiate conversations collaborate with Indian River County to improve and expand reclaimed water service within the City to and/or with other entities capable of providing reclaimed water to the City and its residents for irrigation purposes. The City shall apply innovative concepts in wastewater collection and disposal, including wastewater reuse through such programs as use of reclaimed water for spray irrigation. System improvements shall integrate proven technological concepts in order to enhance cost effectiveness, conserve natural resources, and promote multiple use of water resources.~~

~~**Objective 4-1.3 4-2.1b: Ensure Adequate Solid Waste Management and Services To Meet Existing And Future Solid Waste Needs.** The City has not identified any existing solid waste deficiencies. However, The City shall participate on a Joint Task Force or similar committee organized by Indian River County in order to analyze and Ensure cost-effective and environmentally-sound solid waste management and recycling services within the City, and monitor performance to maintain adopted LOS standards. new solid waste management directives stipulated in State legislation as cited in the below-stated policy. By December 31, 2005 the City shall develop an effective system for monitoring solid waste collection capabilities of private companies having a franchise agreement with the City. This process shall be a subcomponent of the concurrency management process. The procedures shall include working with the private companies to ensure that solid waste collection needs and evolving private market conditions are effectively coordinated so that the City's future population is adequately served by solid waste collection.~~

~~**Policy 4-1.3.1 4-2.21b.1: Solid Waste Projects.** The City shall coordinate with Indian River County's solid waste management program to improve solid waste management services and to address countywide issues, including, but not limited to the following: achieve improvements in hazardous waste collection and disposal. In addition, the City shall coordinate with Indian River County in developing a local response, including recycling of solid waste. The City shall cooperate with county officials and technicians on a Joint Committee or through other appropriate mediums in order to address countywide approaches for achieving access to resource recovery facilities or other alternatives to conventional landfill operations. Other specific issues which shall be addressed include:~~

- ~~• Achieving access to resource recovery facilities or other alternatives to conventional landfill operations~~
- ~~• Enhancing solid waste collection and transfer operations;~~
- ~~• Management strategies for implementing recycling efforts;~~
- ~~• Curbing illegal dumping of solid waste as well as disposal activities which adversely impact natural systems;~~
- ~~• Developing improved information dissemination regarding hazardous waste generators;~~
- ~~• Determining feasibility of hazardous waste storage/transfer facilities;~~
- ~~• Improving management of the collection and disposal of hazardous waste, consistent with state law;~~
- ~~• Drafting policy for appropriate regulatory measures governing solid waste and hazardous waste including identification of long term operating costs and capital improvement needs associated with various policy options.~~

Objective 4-2.31c: IMPROVE POTABLE WATER SERVICE AND ADDRESS RECONCILE EXISTING POTABLE WATER DEFICIENCIES. Currently, there are no potable water deficiencies in Sebastian. In coordination with Indian River County, the City shall coordinate with Indian River County to maximize use of existing potable water facilities to ensure capacity is available for existing and proposed development as well as promote orderly, compact growth. The City shall adopt land development regulations which include performance standards mandating all new users to connect to the central potable water system as the service becomes available. This objective shall be measured through the implementation of the following policies:

Policy 4-2.3.1: Connection to County Potable Water System. The LDC shall include provisions which require all new users to connect to the central potable water system as the service becomes available.

Policy 4-2.3.21c.1: Potable Water System Projects. Indian River County is constructing the North County Regional Water Treatment Plant, which is to be completed in 1998. The City will be served by this plant. The City shall coordinate with the appropriate local and state agencies to maintain water quality through the monitoring of private wells and public potable water sources, and potential contamination from septic tank leachate, a work with the County Environmental Health Unit on a case by case basis to undertake periodic monitoring of private wells when a complaint is filed with the City. This activity is desirable since the City relies on private wells draining from the shallow surficial aquifer, on septic tanks for sewage treatment, and has areas of poorly drained soils. The monitoring program will check possible contamination from septic tank leachate. The City shall contact the St. Johns River Water Management District (SJRWMD) on a case by case basis to analyze existing or potential future problems surrounding withdrawal of potable water resources for which SJRWMD has jurisdiction.

Objective 4-2.41d: IMPLEMENTATION OF THE CITY'S STORMWATER MANAGEMENT SYSTEM CONCEPTUAL MASTER PLAN. The City has, through Craven Thompson and Associates, Inc., prepared a Stormwater Management System Conceptual Master Plan (SWCMP). The SWCMP was developed to two factors: 1) the City has developed to the point where flooding potential is acute, and 2) public awareness and dissatisfaction with current drainage conditions. The basic finding of the SWCMP is that the Sebastian Highlands subdivision has severe drainage system deficiencies that, in the event of a severe storm, would cause major flooding of streets and homes as well as damage infrastructure. The City shall incorporate the stormwater management system improvements recommended in Stormwater Management System Conceptual Master Plan (SWCMP), prepared by Craven Thompson and Associates, Inc. (adopted XXXX) into the City's Comprehensive Plan Capital Improvement program through the implementation of the following policies.

Policy 4-2.41d.1: Stormwater Management Plan Implementation Projects. The City shall work towards continue to implementing over the next 10 years the following projects identified in the SWCMP. City's Stormwater Management Conceptual Master Plan:

PROPOSED WORK PHASE	EST. TOTAL COST	EST. AVG YEARLY COST
Maintenance: Primmv	\$750,000	\$75,000
Maintenance: Secondary	\$770,000	\$77,000
Maintenance: Back and Side Ditches	\$415,000	\$41,500
Maintenance: Swales	\$160,000	\$16,000
Capital Improvements: Perimeter Culverts	\$2,843,000	\$284,300
Capital Improvements: Control Structures	\$900,000	\$90,000
Capital Improvements: Stormwater Puma Stations	\$1,500,000	\$150,000
Capital Improvements: Stormwater Park	\$2,000,000	\$200,000
Capital Improvements: Interior Systems North	\$10,800,000	\$1,080,000

of CR 512		
Capital Improvements: Interior Systems South of CR 512	\$11,200,000	\$1,120,000
TOTAL	\$31,338,000	\$3,133,800

~~**Policy 4-2.1.1: Compliance with Capital Improvements Element.** All major public facility projects shall be undertaken in accordance with the schedule provided in the Capital Improvements Element of this plan, as may be hereinafter amended.~~

~~**Policy 4-2.1.2: Priority for Correcting Existing Deficiencies.** In developing the annual schedule of capital improvement projects, the City shall assign highest priority to those projects required for purposes of correcting existing deficiencies.~~

~~**Policy 4-2.1.3: Existing Deficiencies Shall Not Be Increased by New Development.** The City shall issue no development order for new development which would result in an increase in demand on deficient facilities prior to completion of improvements needed to bring the respective facility up to standard. The City shall include an adequate facilities requirement as part of the updated Land Development Code. The adequate facilities ordinance shall mandate that future applications for development shall include a written evaluation of the impact of the anticipated development on the levels of services for the water and wastewater systems, solid waste system, drainage, recreation, and the traffic circulation system.~~

The latest point for determining whether public facilities shall be available concurrent with the impacts of development shall be prior to the issuance of a development order or permit which contains a specific plan for development, including the densities and intensities of use. Prior to issuing such development order or permits, the City shall render a finding that the applicant has provided written assurance that the proposed development shall be served with each of the above cited facilities with a level of service at least equal to that level of service stipulated in Policy 4-1.1.1. The developers application shall include written assurances that any required improvements shall be in place concurrent with the impacts of the development (i.e., by the time a certificate of occupancy is granted by the City). The application process shall be consistent with requirements cited in Objective 9-1.5 and Policy 9-1.5.1.

~~**Policy 4-2.1.4: Coordinate with Indian River County Hazardous Waste Planning Efforts.** The City shall offer assistance to Indian River County as the County assesses and plans for hazardous waste management in a manner consistent with the provisions of §403.7265, F.S.~~

~~**Objective 4-2.4.2.2: MEETING PROJECTED PUBLIC FACILITY DEMANDS TO 2002.** The City shall Plan for projected public facility demands through the year 2002 by undertaking the necessary following projects:~~

- ~~a) Wastewater System Projects.~~
- ~~b) Solid Waste Projects.~~
- ~~c) Drainage Projects.~~
- ~~d) Potable Water System.~~

~~**Policy 4-2.4.1-4-2.1.1: Compliance with Governance & Implementation Capital Improvements Element.** All major public facility projects shall be undertaken in accordance with the schedule provided in the Capital Improvements Governance & Implementation Element of this plan, as may be hereinafter amended.~~

~~**Policy 4-2.4.2-4-2.1.2: Priority for Improving Public Infrastructure, Correcting Existing Deficiencies.** In developing the annual schedule of capital improvement projects, the City shall rank an prioritize projects consistent with the evaluation criteria in Policy X-X.X of the Governance & Implementation Element. assign highest priority to those projects required for purposes of correcting existing deficiencies. When developing the~~

Capital Improvements Plan and prioritizing the expenditure of public funds, the City will consider the recommendations of the City's Coastal Resiliency Plan.

~~**Policy 4-2.4.3 4-2.1.3: Existing Deficiencies Shall Not Be Increased by New Development.** The City shall issue no development order for new development which would result in an increase in demand on deficient facilities prior to completion of improvements needed to bring the respective facility up to standard. The City will consider the mitigation data, information, and strategies contained in the City's Coastal Resiliency Plan.~~

~~**Policy 4-2.2.1: Coordinate with Capital Improvements Element.** All public facility projects shall be undertaken in accordance with the schedule provided in the Capital Improvements Element of this Plan.~~

~~**Policy 4-2.4.4 4-2.2.2: Public Facility Planning and Management Efficiency.** In scheduling the location, timing and staging of public facility improvements, the City Council shall consult the City's Coastal Resiliency Plan. The City Council shall also use the following criteria:~~

- ~~a) Minimize disruption of services;~~
- ~~b) Prevent duplication of labor; and~~
- ~~c) Maintain service levels for all respective facilities.~~

~~**Policy 4-2.4.5 4-2.2.3: Additions of Public Facility Project Approvals.** All required federal, State, and County permits shall be obtained before the City undertakes or authorizes contractors to undertake construction and/or operation of facilities.~~

~~**Objective 4-2.3: MEETING PROJECTED DEMANDS FOR THE YEAR 2003 THROUGH**~~

~~**YR 2010.** The City shall meet projected public facility demands between 2003 and 2010 by undertaking the following projects:~~

- ~~a) Wastewater System Projects.~~
- ~~b) Solid Waste Projects.~~
- ~~c) Drainage Projects.~~
- ~~d) Potable Water System.~~

~~**Policy 4-2.4.6 4-2.3.1: Scheduling Needed Capital Improvements.** The City Council shall ensure that projects required to meet projected demands through the year 1996 shall be in are included with the Capital Improvements Governance & Implementation Element of this plan in accordance with state statutes, the requirements of 5163.3177(3), F.S.~~

~~**GOAL 4-3 Objective 4-1.4: Provide Ensure Adequate Stormwater Drainage.** Provide Ensure adequate stormwater drainage in order to protect against flood conditions and prevent degradation of surface and groundwater quality receiving waters.~~

~~**Objective 4-3.1 Policy 4-1.4.1: Protect Natural Drainage Features.** By September 1998 The City shall adopt land development regulations maintain provisions protecting natural drainage features and ensuring that future development utilizes stormwater management systems consistent with criteria of all appropriate local, state, and federal agencies, DEP and SJRWMD as well as the improvements identified in the City's Stormwater Management Master Plan (SWMMP), prepared by Neel-Schaffer (December 6, 2013), City's Stormwater Management System Conceptual Master Plan (SWCMP), and the City's future stormwater management planning efforts. As At a minimum the LDC regulations shall include address the following:~~

- ~~• Establish a coordination mechanism with the Sebastian River Water Control District (SRWCD) for~~

controlling the flow of water through the SRWCD's radial gate dam in order to protect the natural drainage features in Sebastian;

- Establish a buffer zone along all natural drainage features;
- Maintain on-site drainage requirements to ensure that natural drainage features are not overloaded by runoff from adjacent properties (water quantity);
- Prohibit direct discharge of untreated stormwater into natural drainage features (water quality);
- Existing stormwater engineering, design and construction standards for on-site systems should be evaluated and amended as needed;
- Existing standards for erosion and sediment controls should be evaluated and amended, if necessary; and
- Periodic inspection of on-site systems shall be required to ensure continuance of system design and maintenance.

Policy 4-1.4.2: Stormwater Management Master Plan Update. The City shall pursue the development of an update to the 2013 Stormwater Management Master Plan to appropriately identify existing conditions, stormwater needs for planned future growth, and approaches to address existing and potential deficiencies in the City's existing stormwater management system. The updated Stormwater Master Plan should include a city-wide evaluation to improve the numerical model with the latest datasets as outlined in the City's Coastal Resiliency Plan. As part of the plan update, a detailed inventory of stormwater assets should be completed, and the update of the model should include the development of a schema to increase the adaptive capacity for the City in the case of sea level rise and chronic flooding scenarios. The City shall coordinate the development of any update to the Stormwater Management Master Plan with Indian River County and all other applicable local, regional, state, and federal agencies. The City shall pursue an update to the Stormwater Master Plan every 5 years, or more frequently if necessary.

Policy 4-1.4.3 4-3.1.1: Ensure that Urban Lands Provide Adequate Drainage and Protection from Flooding and Manage the Retention of Ground and Surface Water at Levels that Enhance Natural Storage Capacity of Watersheds and Promote Aquifer Recharge. The functions of natural groundwater aquifer recharge areas within the City shall be protected and maintained. The City shall promote the ecological, biological, and hydrological role that surface waters play in sustaining recharge to aquifers and supporting surface vegetation. The City shall also manage the location design and intensity of urban development in order to foster continuance of natural hydrological processes, including preserving recharge areas, promoting on-site retention of surface waters and natural return of surface water into the soil, and channeling excess stormwater volume primarily via natural grassy swales. The City shall require the integration of natural storage areas and natural drainage courses into water management plans for new development. The recognition of sea level rise and flooding risks should be taken into consideration and there should be the incorporation of the data sets and mitigation strategies that are outlined in the City's Coastal Resiliency Plan.

Policy 4-1.4.4 4-3.1.1: Provide Adequate On-Site Retention and Ground Water Recharge while Directing the Surplus Run-off to Receiving Waterways in a Manner which Prevents Imbalance to their Ecosystems. Upon adoption of the Comprehensive Plan, The City shall continue to enforce the adopted level of service LOS standards identified for retention/detention through the utilization of best management practices provisions within the LDC in Policy 4-1.1.1. By September 1990 the City of Sebastian shall adopt amended land development regulations which shall include land use controls, such as subdivision regulations, zoning, including site plan review and performance criteria as well as special erosion controls, landscape and flood management ordinances which shall to assist in implementing stormwater management and water quality controls. The programs shall be continually updated based on improved knowledge of problems, issues, and best management practices. In FY 1992-93 the City shall commence the engineered stormwater management plan which shall provide recommended regulatory measures designed to protect and preserve water quality, retard runoff, and enhance percolation. By the end of 1994, the Stormwater Management Plan shall be implemented by adopting regulatory

ordinances for implementing the Plan. In addition, by the end 1994 the City shall amend the capital improvement schedule by incorporating capital improvement items recommended in the Stormwater Management Plan. This includes the incorporation of the mitigation strategies that are outlined in the City's Coastal Resiliency Plan. The impacts of future sea level rise and combined rain events may cause more flooding and LOS violations and water quality issues that require best management practices to be devised, consistent with Policy 5-1.4.8 of the Conservation & Coastal Management Element. Given the hydrology of the area, the city shall develop a pollutant load model as recommended in the City's Coastal Resiliency Plan. There shall also be the consideration of hardening the pump-stations based on their criticalities.

Policy 4-1.4.5 4-3.1.1: Pursue the Development of Adequate Off-Site Surface Water Management Facilities.

The City shall monitor at regular intervals the performance of existing off-site drainage facilities, evaluate existing and potential future problems or issues, and pursue the funding of necessary structural and non-structural system improvements for effective surface water management. All new developments shall provide an equitable contribution for off-site drainage improvements necessitated by the development. No new development shall be allowed which overloads existing off-site facilities or unduly increases the potential for flooding.

Policy 4-1.4.6 4-3.1.1: Coordinate Watershed Management Plans and Policies with Appropriate Public Agencies.

Assure coordination of The City shall coordinate watershed management plans and policies, with appropriate local, regional, state and federal agencies, including Indian River County, SJRWMD, the St. Johns River Water Management District, Treasure Coast Regional Planning Council, the State Florida Department of Environmental Protection, the Agricultural Sciences Extension Service, the United States Army Corps of Engineers, and other agencies as appropriate agencies.

Policy 4-1.4.7 4-3.1.1: Buffer Zone Requirements. ~~By December 1998 The City LDC shall amend its land development regulations to include performance criteria which shall require that new development provide buffer zones adjacent to natural drainageways and retention areas. Such regulations shall be approved by the City Engineer prior to adoption by the City Council.~~

Policy 4-1.4.8 4-3.1.1: Managing Land Use in the Floodplain. ~~By September 1990 the City shall amend its land development regulations to~~ Consistent with Policy 5-2.2.1 of the Conservation & Coastal Management Element and the City's Coastal Resiliency Plan, the LDC shall include performance criteria regulating development within floodplain areas, including- ~~The criteria shall include refinements to the existing stormwater management and floodplain protection ordinance. By 1994 these regulations shall be reevaluated to include regulatory measures recommended in the Stormwater Management Plan scheduled for completion in FY 93-94. These regulations shall address necessary restrictions on encroachment, alteration, and compatible use of the floodplain and major drainage corridors.~~

~~**Policy 4-3.1.7: Implementing Stormwater Management Plan.** The Stormwater Management Plan implementation shall commence in FY 1997-98 and shall be completed by FY 2005-06. The City has included a program and funding mechanism in the capital improvement schedule in order to ensure plan implementation.~~

~~**Policy 4-1.4.9 4-3.1.8: Inspection and Maintenance of Drainage Systems.** By September 1990 The City shall develop a program and schedule for the inspection and maintenance of drainage components. As part of the Stormwater Management Plan implementation program the City shall ensure that drainage system components are monitored, inspected, and maintained pursuant to best management practices. The plan shall specify criteria for frequency of inspections and shall develop procedures for perpetual maintenance.~~

Policy 4-1.4.10: Implementation of the City's Stormwater Management Master Plan. The City shall incorporate the stormwater management system improvements recommended in the Stormwater Management Master Plan into the City's Capital Improvement Program.

Policy 4-1.4.11: Retain Run-off to Maximize Recharge. The LDC shall maintain performance standards designed to manage stormwater management so that post-development conditions do not increase the amount or rate of

runoff beyond predevelopment conditions.

~~GOAL 4-4: PROTECT THE FUNCTIONS OF GROUNDWATER AQUIFER RECHARGE AREAS. THE FUNCTIONS OF NATURAL GROUNDWATER AQUIFER RECHARGE AREAS WITHIN THE CITY SHALL BE PROTECTED AND MAINTAINED.~~

~~Objective 4-4.1 Policy 4-3.1.11: COORDINATE ISSUES SURROUNDING AQUIFER RECHARGE.~~ The City shall Coordinate with Indian River County and SJRWMD, the St. Johns River Water Management District in providing for the maintenance of aquifer recharge area functions. This objective shall be measured through the implementation of the following policies:

~~Policy 4-4.1.1: SURFICIAL AQUIFER RECHARGE AREA PROTECTION.~~ Since the shallow aquifers are the City's chief public and private source for potable water, the purpose and intent of this policy is to protect these areas from impacts that would significantly alter their ability to function. Consistent with the Land Use Element and the Conservation & Coastal Management Element, the City's LDC shall include standards restricting development within aquifer recharge areas.

~~I. Recharge Area.~~ For the purposes of this regulation, recharge areas shall be defined as those areas that have good to excellent recharge potential as generally identified on map B-5 of the City of Sebastian Comprehensive Plan Goals, Objectives, and Policies. The following list, prepared by the Indian River County Soil Conservation District, identifies the specific soil types that provide for aquifer recharge. Recharge areas shall include land identified on referenced map I-5 which based on field investigations are demonstrated to have any of the following soil types:

- ~~● Paola~~
- ~~● St. Lucie~~
- ~~● Astatul~~
- ~~● Archbold~~
- ~~● Pomella~~
- ~~● Orsino~~
- ~~● Jonathan~~
- ~~● Satellite~~

~~II. Restrictions on Development within Recharge Areas.~~ All development within designated recharge areas shall comply with the following development requirements:

- ~~a. Development shall be required to be designed so as to maximize recharge of the surficial aquifer. The groundwater level and fluctuations shall be no worse than under pre-development conditions.~~
- ~~b. Removal of soil from a development site or any portion thereof, which is located above twenty-five (25) feet mean sea level (MSL) is prohibited except for sand mines operating under duly approved permits. On such sites or portions thereof the reduction of the natural topography shall be limited to six feet above the normal high water table (with the exception of drainage conveyance or retention ponds) or eight (8) feet below existing land surface, whichever is more restrictive.~~
- ~~c. No clearing of soil or vegetation may occur before a permit issued.~~
- ~~d. No excavation which cuts below the seasonal high water table (this practice lowers the water table level) shall be allowed. This includes but is not limited to excavations for building foundations parking lots, and site drainage. Open drainage conveyances below the normal high water table shall be prohibited. Underground piping of stormwater is required when inverts are lower than the normal high water table.~~
- ~~e. Impermeable surfaces of recharge areas shall be regulated as follows:~~

- i. ~~Development on sites with any land having an elevation no greater than twenty five (25) feet above mean sea level (MSL) shall restrict impermeable surfaces to fifty (50) percent of the total area of the site which is twenty five (25) feet or less MSL.~~
- ii. ~~Development on sites with any land exceeding twenty five (25) feet means sea level (MSL) shall restrict impermeable surfaces to thirty five (35) percent of the total area of the site which is above twenty five (25) MSL.~~

iii. ~~Prohibited Land Uses. The following land uses and activities are prohibited within aquifer recharge areas:~~

- a. ~~Sanitary landfills;~~
- b. ~~Wastewater treatment facilities;~~
- c. ~~Animal feedlots;~~
- d. ~~Incinerators;~~
- e. ~~Petroleum and pesticide storage facilities without proper containment~~

~~Also, all other land uses that store, handle, or generate hazardous materials or wastes are prohibited. A hazardous material or waste, as regulated by this section shall consist of the following:~~

- ~~Chapter 38F-41 of the Florida Administrative Code (the Florida Substance List).~~
- ~~Title 40 of the Code of Federal Regulations Part 261 (Identification and Listing of Hazardous Wastes).~~
- ~~Title 40 of the Code of Federal Regulations Part 302.4 (Table 302.4) (List of Hazardous Substances and Reportable Quantities).~~
- ~~Title 40 of the Code of Federal Regulations part 355, Appendix A and B (List of Extremely Hazardous Substances).~~

~~Policy 4-4.1.2: Deep Aquifer Water Conservation.~~ ~~In order to protect the quality and quantity of deep aquifer water resources, the City shall coordinate with SJRWMD the St. Johns River Water Management District and other applicable regulatory agencies in identifying the existence and location of free flowing deep aquifer wells and in requiring corrective measures, including capping, plugging, or installing regulatory devices which control the discharge of water from the deep aquifer pursuant to the St. Johns River Water Management District SJRWMD policies.~~

~~Policy 4-4.1.3: Retain Run-off to Maximize Recharge.~~ ~~By September 1990 the City shall amend its land development regulations to The LDC shall maintain include performance standards designed to manage stormwater management so that post-development conditions do not increase the amount or rate of runoff beyond pre-development conditions. Similarly, the ordinance shall incorporate minimum level of service criteria of Policy 4-1.1.1 for retention/detention.~~

~~Policy 4-4.1.4: Coordinate with Other Recharge Protection Programs.~~ ~~The City will coordinate with local, State, and federal agencies to achieve regional aquifer recharge protection objectives.~~

~~Objective 4-1.5 4-4.2: Conserve Potable Water Resources.~~ ~~By December 31, 1998, the City shall have adopted land development regulations as cited herein for achieving conservation of potable water, including coordination with Indian River County. Through the City's LDC, and in coordination with Indian River County, conserve potable water supplies.~~

~~Policy 4-1.5.1 4-4.2.1: Enforcement of Level of Service LOS Standards.~~ ~~By September 1999, The LDC shall City shall amend its land development regulations and incorporate criteria for enforcing the adopted level of service LOS for consumption of potable water from public wells.~~

Policy 4-1.5.2 4-4.2.2: Coordination with Other Entities. The City shall ~~distribute material to educate the public on the need to conserve water and function as a information center for other agencies, including the St. Johns River Water Management District, Indian River County Public Utilities (IRCPU), and others as necessary, to notify residents of any support the education and outreach efforts of other appropriate agencies related to-water conservation programs within the City.~~

Policy 4-4.2.3: Use of Reclaimed Water for Irrigation. ~~By December 2001, the City shall begin discussion with IRCPU regarding the possibility of providing reclaimed water to Sebastian businesses and residents for irrigation purposes. The City shall also discuss with IRCPU the potential for applying innovative concepts in wastewater collection and disposal as well as system improvements in order to enhance cost effectiveness, conserve natural resources, and promote multiple use of water resources.~~

Policy 4-1.5.3 4-4.2.4: Conservation of Potable Water Supply. The City shall support the conservation of potable water supplies through performance standards within the LDC LDRs, and in accordance with ~~In order to comply with SJRWMD best practices, potable water conservation policies of the St. Johns River Water Management District, and achieve a reduction in the current rates of water consumption, the land development regulations shall incorporate the following performance standards:~~

- ~~a. Where reclaimed water is available, potable water supplies may not be used to meet irrigation needs.~~
- ~~b. Require the use of water saving plumbing fixtures on all new development.~~
- ~~c. In order to reduce demand for irrigation water (which in turn often places greater demand upon potable water sources), at least thirty (30%) percent of all landscaping material obtained from off-site sources for use on any site should be native plants. Further, at least fifty (50%) percent of all trees used in landscaping shall be native species in order to lessen water demand.~~

~~The level of service standards herein adopted are predicated on engineered analysis by Indian River County, the County's engineering consultant, and the City's inventory of existing and projected future characteristics surrounding potable water supply and demand.~~

Policy 4-1.5.4 4-4.2.5: Emergency Conservation of Water Sources. ~~By December 31, 1999 The City shall develop and implement a water conservation program supporting that coordinates water conservation issues with SJRWMD policies and program resources. In addition, the City shall coordinate in disseminating water conservation education literature prepared by the SJRWMD.~~

Policy 4-1.5.5 Coordinate Issues Surrounding Aquifer Recharge. The City shall coordinate with Indian River County and SJRWMD in providing for the maintenance of aquifer recharge area functions. The City shall also coordinate with local, State, and federal agencies to achieve regional aquifer recharge protection objectives. The City shall also coordinate with the appropriate local and state agencies to maintain water quality through the monitoring of private wells and public potable water sources.

Policy 4-1.5.6: Surficial Aquifer Recharge Area Protection. Since the shallow aquifers are the City's chief public and private source for potable water, the City shall protect these areas from impacts that would significantly alter their ability to function. Consistent with the Land Use Element and the Conservation & Coastal Management Element, the City's LDC shall include standards restricting development within aquifer recharge areas.

Policy 4-1.5.7: Deep Aquifer Water Conservation. In order to protect the quality and quantity of deep aquifer water resources, the City shall coordinate with SJRWMD and other applicable regulatory agencies in identifying the existence and location of free flowing deep aquifer wells and in requiring corrective measures, including capping, plugging, or installing regulatory devices which control the discharge of water from the deep aquifer pursuant to SJRWMD policies.

Policy 4-1.5.8: Intergovernmental Coordination. Specific Objectives and Policies regarding intergovernmental coordination and this Element are provided and identified in the **Governance & Implementation Element**.

