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## INFRASTRUCTURE ELEMENT GOALS, OBJECTIVES, AND POLICIES

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### Goal 3

**Provide high quality, healthy, effective, reliable, efficient, environmentally sound and necessary services for coordinated sanitary sewer, solid waste, drainage, potable water and natural ground water aquifer recharge to meet the current and future needs of the City residents and visitors.**

#### SANITARY SEWER

##### Goal 3.1

**Coordinate with the Fort Pierce Utilities Authority (FPUA) to provide cost effective, equitable and adequate sanitary sewer facilities which meet all applicable design standards and effluent water quality standards for the short and long term planning horizons.**

*3.1 Objective:*

*The City shall coordinate with the FPUA to identify existing deficiencies in the capacity of the sanitary sewer system and to correct any identified deficiencies to maintain the adopted LOS standard through the short and long term planning horizons.*

**3.1.1 Policy:**

The City shall ensure through the FPUA budget approval process that FPUA will maintain funding for the system improvements identified in the Capital Improvement Element to address sanitary sewer deficiencies consistent with the priorities established in the adopted Water and Wastewater Master Plan.

**3.1.2 Policy:**

The City shall work with the FPUA to ensure projects and programs are funded to correct system deficiencies and maintain the adopted LOS standard.

**3.1.3 Policy:**

The City shall coordinate with the FPUA to update the Water and Wastewater Master Plan every five years to program sanitary sewer improvements to maintain the adopted LOS standard.

*3.2 Objective:*

*Sanitary Sewer facilities shall be provided at or above the adopted LOS standard of 240 gallons per day (GPD) per equivalent residential connection (ERC) to meet the City's short and long-term needs for the adopted planning horizon.*

3.2.1 Policy:

The LOS standard for sanitary sewer facilities shall be 240 GPD per ERC. The LOS standard for the FPUA wastewater treatment plants shall be measured by average daily flow. The number of ERCs provided for residential connections shall be:

- 1 ERC (240 GPD) for each single family unit
- 0.875 ERC (210 GPD) for each multi-family unit

For general service, commercial, or industrial connections, the wastewater treatment system shall be sized to provide the number of ERCs as agreed upon by the FPUA in the Water and Wastewater Supply Agreement with developers. The ERC shall be based on existing wastewater flows from similar land uses, best available data, or from the Estimated Sewage Flows provided in Table 1 in Section 64E-6.008 *System Size Determinations*, Florida Administrative Code.

The capacity of the FPUA collection system shall be measured by peak hour flow. The following peak factors will be used to assess the capacity of the collection system:

Flow Range (Maximum Month Average Daily Flow), MGD	Peak Factor
0.000 to 0.250	1.67
0.250 to 1.000	1.50
1.000 to 4.000	1.40

3.2.2 Policy:

The City shall coordinate with the FPUA to prepare and submit an updated Capacity Analysis Report to the Department of Environmental Florida Protection (FDEP) at intervals described in Section 62-600.405, *Planning for Wastewater Facilities Expansion*, F.A.C. When the Capacity Analysis Report indicates that additional capacity will be needed within the next five years, design and permitting for additional capacity shall be initiated in accordance with this same code.

3.2.3 Policy:

The City shall coordinate with the FPUA to devise a strategy to transition customers with private septic tanks to connect to the public sanitary sewer collection system when service is available. The City shall work with FPUA to establish criteria for connections and timing requirements.

3.2.4 Policy:

The City shall maximize the use of existing sanitary sewer facilities through the support of infill and redevelopment.

3.3 *Objective:*

*The City shall coordinate with the FPUA to ensure sanitary sewer facilities are designed, constructed, maintained and operated in a manner that protects the functions and quality of ground and surface waters, natural groundwater recharge and natural drainage features.*

3.3.1 Policy:

The City shall coordinate with the FPUA to implement the FDEP requirements of the St. Lucie County Public Health Unit and the Florida Department of Health to continue to protect the groundwater supply from potential sources of contamination pursuant to Chapter 1-10, "Health and Sanitation," St. Lucie County Code of Ordinances. All new developments will be required to connect to the public sanitary sewer system or provide documentation that the septic tanks are permitted by the St. Lucie County Health Department.

3.3.2 Policy:

The City shall coordinate with the FPUA to continue to implement the FDEP requirements prohibiting direct wastewater effluent discharges to surface and ground waters within wellfield zones of influence. The Island Wastewater Reclamation Facility will continue to be operated to meet the conditions and limits of its Industrial Wastewater Discharge Permit and an Industrial Wastewater Discharge permit will be obtained from FDEP for any future wastewater treatment facilities prior to discharging to surface and ground waters.

3.3.3 Policy:

The City shall coordinate with the FPUA to reduce wastewater effluent discharges to surface and ground waters at future wastewater treatment facilities by including the infrastructure to treat wastewater to reclaimed water standards at new facilities. The FPUA has entered into an Agreement with Florida Municipal Power Agency to provide reclaimed water from the future Mainland Water Reclamation Facility (MWRf) once it is available.

3.3.4 Policy:

The City shall coordinate with the FPUA to protect ground and surface waters from pollution through permitting of domestic collection and transmission systems. As part of the certification process for permitting with FDEP, FPUA will review the construction plans and specifications for their conformance to applicable FDEP standards and implement FDEP requirements to protect ground and surface waters from pollution through licensing of collection and transmission systems.

3.3.5 Policy:

The City shall require the proper maintenance of septic tanks by the owner to prevent pollution of groundwater, per requirements of the St. Lucie County Health Department.

3.3.6 Policy:

The City shall require that properties on private sewer systems obtain permits whenever modifications are made which could affect the quantity, quality or peak to average loading ratio of their sewage.

3.3.7 Policy:

The City shall coordinate with the FPUA to regularly inspect and monitor the conditions of gravity sanitary sewers, pump stations and force main systems. The inspection and monitoring should report the following parameters to locate and address areas with leaks, high infiltration and inflow, and other identified issues:

- Age, remaining service life;
- Infiltration and inflow;
- Capacities, compared to loading demands;
- Operating pressures;
- Physical conditions, need for repairs/replacement; and
- Reliability in emergency situations.

3.3.8 Policy:

The City shall coordinate storm drainage and roadway projects with the FPUA to minimize impacts on the sanitary sewer system and maintain adopted LOS standard.

3.3.9 Policy:

Water conservation practices shall be employed including maintenance and operation to minimize groundwater and surface water infiltration and informing the public about the effective use of water conservation plumbing fixtures and participation in County programs to improve water conservation.

3.3.10 Policy:

The City shall coordinate with the FPUA to require that all customers who connect to the sanitary sewer system meet the water quality requirements established by the FDEP and the FPUA for wastewater entering the wastewater treatment facilities. The discharge from existing and proposed industrial sites shall be evaluated to determine if pretreatment prior to discharge into the sanitary sewer system is required to meet the water quality requirements.

## SOLID WASTE

### Goal 3.2

**Provide a cost-effective and sustainable solid waste collection and disposal system which emphasizes resource recovery and meets all environmental quality standards.**

3.4 *Objective:*

*The City shall coordinate with St. Lucie County to identify existing deficiencies in the solid waste management and correct any identified deficiencies to maintain the adopted LOS standard through the adopted planning horizon.*

3.4.1 Policy:

The LOS standard for solid waste management facilities shall be 200 tons per day of Municipal Solid Waste Citywide.

3.4.2 Policy:  
The City shall continue to require applicants for development permits to demonstrate available capacity of solid waste disposal sites and sufficient collection equipment of the Public Works Department prior to issuance of the permit or development order.

3.5 *Objective:*  
*The City shall coordinate with St. Lucie County to reduce demand on the solid waste disposal facilities through recycling. The City shall strive to recycle at least 30 percent of the overall solid waste stream by increasing the recycling of cardboard, metal, paper, glass, and plastic to at least 50 percent.*

3.5.1 Policy:  
The City shall continue to maintain or expand its recycling services and education program as a means of reducing the solid waste stream.

3.5.2 Policy:  
The City shall encourage greater reliance upon electronic media to reduce the amount of paper consumed and provide recycling services in all public facilities.

3.6 *Objective:*  
*Protect the functions of the City's groundwater aquifer recharge areas and natural features from improper disposal of solid waste.*

3.6.1 Policy:  
The City shall maintain and implement its solid waste collection practices consistent with solid waste recycling and hazardous waste disposal requirements of the St. Lucie County solid waste disposal and recycling system.

3.6.2 Policy:  
The City's contracted solid waste collection provider shall maintain collection services at the City's adopted LOS standard.

3.6.3 Policy:  
The City shall participate in the hazardous waste collection and disposal programs of St. Lucie County by enforcing hazardous waste collection practices required by the County and other agencies with jurisdiction. Participation shall consist of an annual hazardous waste notification by mail insert in utility billings or local newsletter to City residents. Such notification shall indicate that the City does not provide hazardous waste collection services and inform the public that such services are provided by St. Lucie County and others.

3.6.4 Policy:

The City shall monitor the general operation of its solid waste collection services to maintain the adopted LOS standard. As appropriate, the monitoring shall provide recommendations for capital improvements to maintain the adopted LOS standard including equipment and facilities.

## **DRAINAGE**

### **Goal 3.3**

**Maintain a stormwater management system in the City which reduces flooding, promotes aquifer recharge, minimizes degradation of water quality in surface and ground waters and protects the functions of wetlands.**

3.7 *Objective:*

*Stormwater management facilities shall be designed in accordance with South Florida Water Management District (SFWMD) criteria.*

3.7.1 Policy:

The City shall continue to implement Land Development Regulations which establish the minimum design criteria for stormwater management. These design criteria shall serve as the LOS standard to assess adequacy of stormwater management facilities and development concurrency:

1. Minimum roadway and parking lot elevations shall be set at the peak elevation of the 10-year one-day storm event;
2. Minimum site perimeter elevations shall be set at the 25-year, 3-day peak stage. Site runoff up to such stage level may not overflow onto any adjacent property, unless a permanent drainage easement is obtained;
3. Dry or wet retention/detention, stage versus storage, stage versus discharge and flood routing calculations for the 10-year, one day, 25-year, 3-day and 100-year, 3-day storm events for the site shall be submitted with the site development plans;
4. Building floor elevations shall be at or above the 100-year flood elevation, as determined from the Federal Flood Insurance Rate Maps, City's code enforcement ordinances or calculations following the latest SFWMD methodology, whichever is greater;
5. Off-site discharge shall be limited to pre-development runoff based on the 25-year, 3-day storm event calculated by SFWMD methods; and
6. All roof runoff shall be detained on site.

3.7.2 Policy:

The City shall adhere to the National Pollution Discharge Elimination System - Municipal Separate Storm Sewer System (NPDES-MS4) Permit and shall implement the permit conditions including monitoring of outfalls and Best Stormwater Management Practices.

3.7.3 Policy:  
The impact of stormwater management facilities and support services on adjacent natural resources shall be considered in accordance with SFWMD regulations during the construction, siting, and operation of new or expanded stormwater management facilities.

3.7.4 Policy:  
The City shall coordinate with the SFWMD and the independent drainage districts to implement applicable portions of the SFWMD regional water resource projects, the Upper East Coast Regional Water Supply Plan, and the Indian River Lagoon Stormwater Improvement and Management (SWIM) Plan which intend to reduce losses of excess stormwater to tide, recharge the surficial aquifer and water preserve areas or provide additional storage for surface waters.

3.7.5 Policy:  
The City shall work with the FDEP to develop an action plan to meet the objectives and requirements of the FDEP's Basin Management Action Plan for the St. Lucie Basin to address stormwater management issues on a watershed (basin) basis in accordance with SFWMD permits as a means of providing cost effective water quality and water quantity solutions to specific watershed problems.

3.7.6 Policy:  
The City shall continue to implement a basin-wide water management protocol that optimizes flood protection, water quality, stormwater storage, wetlands sustainability and ground water recharge functions. As part of the 2009 Stormwater Master Plan, a computer model of the existing surface water management system was developed that accounted for ground water levels, existing and projected stormwater flows, and canal stages. As part of the land development review process, the City shall use this model to evaluate the impact of proposed connections to the City's surface water management system and will update the model to include the new developments if the connections are approved.

3.7.7 Policy:  
The City shall manage the construction and operation of its facilities which dam, divert or otherwise alter the flow of surface waters to minimize damage from flooding, soil erosion or excessive drainage.

3.8 *Objective:*  
*Maintain and protect ground water recharge of the surficial aquifer system so as to maintain all of the functions of the Floridan Aquifer.*

3.8.1 Policy:  
The City shall use Best Management Practices (BMPs) for stormwater management in accordance with its regulations and those of the SFWMD.

3.8.2 Policy:  
The City shall work cooperatively with the SFWMD and independent drainage districts to implement plans for additional surface water storage such as water

preserve areas, the Upper East Coast Regional Water Supply Plan and any other plans and operating procedures to increase recharge water to the surficial aquifer.

3.8.3 Policy:

The City shall utilize, preserve, restore and enhance natural water bodies and functions by encouraging non-structural and structural erosion control devices and discourage the channelization, installation of seawalls or other alteration of natural rivers, streams and lakes.

3.8.4 Policy:

The City shall protect the water storage and water quality enhancement functions of wetlands, floodplains and aquifer recharge areas through acquisition, enforcement of rules and the application of land and water management practices which provide for compatible uses.

3.8.5 Policy:

The City shall coordinate with St. Lucie County to protect aquifers from depletion through water conservation and preservation of the functions of high recharge areas, including, but not limited to, the water conservation areas and water preserve areas.

3.8.6 Policy:

All new drainage facilities shall be designed to provide pollution control sufficient to meet criteria of all regulatory requirements, including, but not limited to, the following:

- Retention of stormwater;
- Flow of stormwater over grassed and vegetated areas;
- Sumps;
- Grease separation baffles;
- Mosquito control; and
- Infiltration and percolation prior to overflow or outfall discharge.

## POTABLE WATER

### Goal 3.4

**Provide a cost-effective and sustainable potable water supply system which meets all applicable water quality standards, maintains the adopted LOS, and maintains the City's water quality standards, and does not compromise the City's future water supply.**

3.9 *Objective:*

*The City shall coordinate with the FPUA to identify existing deficiencies in the potable water system and to correct any identified deficiencies to maintain the adopted LOS through the adopted planning horizon.*

3.9.1 Policy:  
The City shall ensure, through the FPUA budget approval process, that the FPUA will maintain funding for the systems improvements identified the Capital Improvements Element to address identified potable water deficiencies consistent with the priorities established in the adopted Water and Wastewater Master Plan.

3.9.2 Policy:  
The City shall coordinate with the FPUA to fund projects and programs to correct identified system deficiencies and maintain the adopted LOS standard.

3.9.3 Policy:  
The City shall coordinate with the FPUA to update the Water and Wastewater Master Plan every five years to assure that potable water facilities are available to provide adequate fire flow protection and to meet the existing needs of FPUA's customers. The Water and Wastewater Master Plan is next scheduled to be updated in 2011.

3.10 *Objective:*  
*Potable water facilities shall be provided at the adopted LOS standard of 300 GPD per ERC for the adopted planning horizon.*

3.10.1 Policy:  
The LOS standard for potable water facilities shall be 300 GPD per ERC. The number of ERCs provided for residential connections shall be:

- 1 ERC (300 GPD) for each single family unit
- 0.70 ERC (210 GPD) for each multi-family unit

For general service, commercial, or industrial connections, the potable water facilities treatment system shall be sized to provide the number of ERCs as agreed upon by FPUA in the Water and Wastewater Supply Agreement with developers. The ERC shall be based on existing potable water demands from similar land uses or best available data.

The LOS standard for the FPUA water treatment plants shall be measured by maximum daily flow.

3.10.2 Policy:  
The City shall work with the FPUA to provide adequate fire flow protection. The FPUA will review new construction projects to ensure that new projects have been designed and constructed to provide a minimum system pressure of 20 pounds per square inch during maximum day demands with fire flow.

3.10.3 Policy:  
The City shall coordinate with FPUA to prepare and submit an Updated Capacity Analysis Report to the FDEP at the scheduled intervals described in the F.A.C. Section 62-555.348, *Planning for Expansion of Public Water System Source, Treatment, or Storage Facilities*. When the Capacity Analysis Report indicates that

additional capacity will be needed within the next five years, design and permitting for additional capacity shall be initiated in accordance with this same code.

The August 2009 Capacity Analysis Report prepared for FPUA indicated that there was adequate capacity to meet the projected growth demands through 2018. If additional capacity is required in the future, an assessment of the impacts of the construction and operation of new or expanded water treatment plants and support services on adjacent natural resources shall be prepared during site review, in accordance with the FDEP and SFWMD regulations.

3.10.4 Policy:

The City, through the FPUA, shall maximize the use of existing potable water facilities by encouraging infill and redevelopment.

3.10.5 Policy:

The City and the FPUA shall continue to maintain, administer, and implement an integrated geographic information system (GIS) to make standardized land use and potable water supply facilities information available for local and regional planning purposes.

3.11 *Objective:*

*Encourage compact urban growth patterns including infill and redevelopment to maximize the use of existing potable water facilities.*

3.11.1 Policy:

The City shall work with the FPUA to identify opportunities to increase the efficiency and optimize the use of existing facilities as an alternative to new potable water facilities. The FPUA will continue its planned and preventive maintenance program to maximize the useful life of existing infrastructure.

3.11.2 Policy:

The City shall work with the FPUA to give priority to providing water service to areas that are infill, enclave, or redevelopment areas.

3.12 *Objective:*

*Optimize the utilization of water resources through effective water management practices to conserve and protect potable water resources with primary focus on the surficial aquifer.*

3.12.1 Policy:

The City shall develop a basin-wide water management protocol in accordance with SFWMD permits that optimizes flood protection, water quality, stormwater storage, wetlands sustainability and groundwater recharge functions while protecting management system, wellfield characteristics, groundwater levels, saltwater intrusion limits, flows and canal stages to better utilize the water resource.

3.12.2 Policy:

The FPUA shall continue to monitor water loss within its utility system and identify strategies to minimize system loss and continue its preventive maintenance program for the distribution system.

3.12.3 Policy:

The City shall utilize the development review process of the Land Development Regulations to require applicants for development permits to prepare landscaping plans that incorporate xeriscape principles, encourage native plant communities, and meet the Florida Irrigation Society's standards and specifications for turf and landscape irrigation systems. The City shall revise the Land Development Regulations to include more stringent requirements for these areas.

3.12.4 Policy:

The City shall continue to implement a year-round public information and education program promoting water conservation. The City shall coordinate with the FPUA to encourage conservation by continuing to implement a multi-tier rate structure which increases the unit cost as consumption levels increase.

3.12.5 Policy:

The City, in conjunction with FPUA, shall implement the adopted 10-year Water Supply Plan consistent with the SFWMD plans.

3.12.6 Policy:

The City and the FPUA shall coordinate and participate in the SFWMD Upper East Coast Water Supply Plan process.

3.13 Objective:

*Potable water facilities shall be designed, constructed, maintained and operated in such a manner as to protect the functions of natural groundwater recharge areas and natural drainage features.*

3.13.1 Policy:

If increased capacity is required in the future, the City shall coordinate with the FPUA and SFWMD for the design, construction, operation and maintenance of new or expanded potable water facilities that will focus on the use of an alternative water source as defined in the Upper East Coast Water Supply Plan. These potential sources could include the Floridan aquifer, aquifer storage and recovery (ASR) wells, desalinization, capture and storage of excess stormwater currently lost to tide, reuse and grey water, where technically feasible, and other technologies.

3.13.2 Policy:

The construction, operation and maintenance of new or expanded potable water facilities shall consider the short-term and long-term impacts to natural groundwater recharge areas, wetlands, surface and groundwater levels and exacerbation of saltwater intrusion. The design shall also consider whether or not the construction, operation and maintenance will harm the aquifer system. Adverse

impacts of construction, operation, and maintenance to the aquifer system shall be avoided or at least minimized.

3.14 *Objective:*

*Provide a cost-effective, sustainable potable water system meeting all applicable standards at the adopted LOS standard.*

3.14.1 Policy:

The City shall continue to coordinate the provision of potable water services with the FPUA through agreements with municipalities and other service providers.

3.14.2 Policy:

The City shall coordinate storm drainage and roadway projects with the FPUA to minimize impacts to the potable water system and maintain adopted LOS standard.

3.14.3 Policy:

The City shall assist the FPUA to identify possible sources of financing for the water system improvements in the 2006 Water and Sewer Master Plan and the future 2011 Water and Sewer Master Plans.

3.14.4 Policy:

The City shall coordinate with the FPUA to continue to provide potable water that meets the drinking water standards described in F.A.C 62-555 and to provide FPUA customers an annual report on the quality of their water as required by the EPA Safe Drinking Water Act.

3.15 *Objective:*

*Continue to provide potable water use in the quantity and quality necessary to satisfy existing and projected growth compliant with the latest standards acceptable to the City, the County, the State and the U. S. Environmental Protection Agency, and according to the regulations implementing the "Safe Drinking Water Act" (1986).*

3.15.1 Policy:

The City shall continue to rely upon the facilities and personnel of the Fort Pierce Utilities Authority to satisfy the potable water supply, treatment and distribution needs of residents and businesses.

3.15.2 Policy

The City shall consider adopting potable water level of service standards for non-residential land uses, such as office and commercial, by 2011.

3.16 *Objective:*

*The City shall ensure that potable water facilities and services meet the level of service standards established within the Comprehensive Plan.*

3.16.1 Policy:

The City shall correct existing facility deficiencies and provide for correction of the

existing water supply and replacement of facilities using the Capital Improvements Program and the Capital Improvements Element.

3.16.2 Policy:

The City shall implement the 10-Year Water Supply Plan addressing water supply facilities necessary to serve existing and future development within the City consistent with the water service districts' consumptive use permit.

## **NATURAL GROUNDWATER AQUIFER RECHARGE**

### **Goal 3.5**

#### **Protect the function of natural ground water/aquifer recharge areas and natural drainage features.**

3.16 *Objective:*

*Manage the natural ground water aquifer recharge conditions in a safe, effective and reliable manner as required by current design standards and codes.*

3.16.1 Policy:

Improve groundwater recharge by requiring all construction projects to meet or exceed the City of Fort Pierce Site Development Technical Regulations and Stormwater Management Requirements, including:

- Requiring development and redevelopment to provide a minimum of 25% of pervious open and green space; and
- Amending the Land Development Regulations to limit the stormwater runoff for new gravity connections to the volumetric equivalent of not more than 2.0 inches of depth over the area served for any 24-hour period from the 10-year frequency, 72-hour duration rainfall. The City shall amend the Land Development Regulations to limit the total pump capacity of new connections to surface waters (canals or bay) to not more than the volumetric equivalent of 2.0 inches of depth per day from the area to be served by the pump.

3.16.2 Policy:

The City will promote the use of reclaimed water through citywide efforts to educate residents and business community on the merits of using reclaimed water to diminish groundwater withdrawals. The City shall coordinate with FPUA to assess the viability of providing reclaimed water to new developments and if feasible, will require new developments to utilize reclaimed water for irrigation once the MWRP is constructed and operating.

3.16.3 Policy:

The City shall continue to require that all development and redevelopment codes at a minimum, comply with SFWMD environmental protection rules for stormwater disposal methods.