

Infrastructure Element

Introduction

Infrastructure is the support system for all activities within the City. The presence of infrastructure dictates the location and types of land uses that can be accommodated on a property. Likewise, the proper planning of new infrastructure improvements can be a powerful tool in shaping the urban form into a compact and sustainable city environment.

The City of Winter Haven provides water, sanitary sewer, and solid waste collection service to all households and businesses within the city limits. In addition to those served inside the city limits, the City also provides water and sanitary sewer service to a large number of households and businesses outside of the City in a 65-square mile utility service area. In recent years, the City has begun development of a reclaimed water reuse system serving new subdivisions located in the Lucerne Park area as well as several businesses located in the central part of the City.

The Infrastructure Element contains five sub-elements: Potable Water, Water Supply, Sanitary Sewer, Solid Waste, and Drainage and Aquifer Recharge. Each sub-element sets forth guidelines for the development of new infrastructure required to support projected growth as well as improve the overall efficiency of existing infrastructure systems which serve the City. The intent is for specific land development regulations to be used to implement these guidelines. Additionally, the infrastructure sub-elements are also intended to be used as a guiding factor in the assignment of land uses on the Future Land Use Map.

Water Supply Sub-Element PC Review Draft

Goal 1: Ensure the provision of adequate water resources to meet the needs of all residents, visitors, and businesses in Winter Haven.

Objective 1.1: The City shall provide sufficient amounts of safe, high quality water to meet the needs of current and future users through the year ~~2020~~ 2025.

Policy 1.1.1: The City shall maintain water sources capable of supplying a minimum of 147 gallons per person per day.

Policy 1.1.2: The City's current and future water needs shall be met from a variety of sources including groundwater, reclaimed water, and through conservation of existing water sources.

Policy 1.1.3: Sufficient sources of water shall be in place, or scheduled to be in place, to serve new development prior to the approval of development plans.

Policy 1.1.4: Population projections shall be periodically evaluated to verify whether actual growth has followed projected growth. When necessary, population projections shall be adjusted to reflect observed conditions.

Policy 1.1.5: Continually monitor water consumption trends to ensure the most efficient use of existing water sources and the timely development of new water sources.

Objective 1.2: The City shall take direct actions to conserve existing potable water resources.

Policy 1.2.1: Enforce Building Code Regulations requiring the use of water conservation fixtures in all new development.

Policy 1.2.2: Periodically undertake a systematic calibration of all major water meters as necessary to eliminate unaccounted water.

Policy 1.2.3 Undertake a water meter replacement program to replace low registering water meters in use throughout the utility service area.

- Policy 1.2.4:** Adopt the water conservation plan approved by the Southwest Florida Water Management District (SWFWMD).
- Policy 1.2.5:** Coordinate with SWFWMD to enforce water restrictions. Coordinate with Polk County for enforcement of water restrictions in the unincorporated portions of the utility service area.
- Policy 1.2.6:** Periodically evaluate water rate structures to ensure that rates encourage conservation of potable water resources.
- Policy 1.2.7:** To reduce the amount of unaccounted water, periodically evaluate and test the potable water distribution system for leaks.
- Policy 1.2.8:** Hold public education workshops, at a minimum twice yearly, to educate residents on methods to conserve water.
- Policy 1.2.9:** As funding permits, provide free water conservation kits to residents and businesses.

Objective 1.3: The City shall identify and develop alternatives to traditional groundwater sources for the City's water needs.

- Policy 1.3.1:** Require agricultural wells to be abandoned and plugged upon conversion to urban development. Upon agreement with SWFWMD, allow transfer of the Consumptive Use Permit to the City.
- Policy 1.3.2:** Continue to expand and require connection to the reclaimed water systems with the goal of providing up to ~~3.0~~ 1.0 million gallons daily to users by ~~2015~~ 2020.
- Policy 1.3.3:** Seek out and apply for grants to expand the reclaimed water reuse system into older neighborhoods.
- Policy 1.3.4:** Study the feasibility of using surface water sources as secondary, back-up water supplies.
- Policy 1.3.5:** Study the feasibility of utilizing lower quality groundwater from the Lower Floridian Aquifer to supplement non-domestic water needs.

Objective 1.4: The City shall work with surrounding governments and SWFWMD to explore the development of regional water supply systems in order to meet future potable water needs.

- Policy 1.4.1:** The 2006 SWFWMD Regional Water Supply Plan is hereby adopted by reference.

Policy 1.4.2: Continue involvement with the Heartland Water Alliance (HWA).

Policy 1.4.3: Maintain inter-local agreements with surrounding public utility systems to inter-connect water systems for use in emergencies or times of extraordinary water demand.

Goal 2: Work towards reducing the amount of potable water used for irrigation and other non-domestic uses within the City.

Objective 2.1: The City shall reduce the amount of potable water used for irrigation by a minimum of ten percent (10%) by 2015.

Policy 2.1.1: To reduce public demand for potable water, the City shall require the reuse of reclaimed wastewater within its utility service area.

Policy 2.1.2: The City shall develop and implement Land Development Regulations (LDRs) requiring all development within its utility service area to connect to the City's reclaimed water system and/or install dry lines and connect to the City's potable water system until such time as reuse is available to the development.

Policy 2.1.3: When available, utilize reclaimed wastewater for irrigation of all public grounds and landscaped highway medians within the City.

Policy 2.1.4: Require the use of Florida friendly landscaping for all developments subject to the City's Landscape Ordinance.

Policy 2.1.5: When possible discourage homeowners associations from enacting deed restrictions precluding the use of Florida friendly landscaping by homeowners.

Policy 2.1.6: Phase out and eliminate the use of potable water irrigation meters for residential utility customers by 2015.

Policy 2.1.7: To prevent cross contamination of potable water supplies, require all private irrigation wells to be permitted by the Building Division.

Objective 2.2: The City shall work with large commercial and industrial water users to evaluate their water needs and sources.

Policy 2.2.1: Require high use commercial and industrial water users to prepare water conservation plans.

Policy 2.2.2: Periodically offer water efficiency audits to all water users within the City.

Goal 3: Reduce the impact of water usage on natural systems including area lakes, rivers, wetlands, and ground water systems.

Objective 3.1: Reduce, to the greatest extent possible, the effects of groundwater withdrawals on natural systems.

Policy 3.1.1: Study area lakes to determine whether groundwater withdrawals are resulting in abnormal fluctuations in historic or established desirable lake levels.

Policy 3.1.2: When locating new public water supply wells, ensure that the well's cone of influence will not adversely affect any lake or major wetland system.

Policy 3.1.3: By 2013, undertake a study of existing well sites to determine the feasibility of decommissioning wells negatively impacting adjacent lakes or major wetland systems.

Policy 3.1.4: When developing new water sources, take into account the recommendations contained in the 2010 Sustainable Water Resource Management Plan.

POTABLE WATER SUB-ELEMENT

Goals, Objectives, and Policies

GOAL ONE – Ensure that an safe and adequate supply of public potable water is available to meet the needs of the City’s potable water customers.

Objective 1.1: ~~Potable water facilities shall operate at the following Level of Service standards: Establish and maintain level of service standards for the provision of potable water to the City’s residents and utility customers.~~

(a.)

Policy 1.1.1: Average per capita daily consumption Level of Service is ~~147.5 gallons:~~ shall be as follows:-

<u>Year</u>	<u>Current</u>	<u>By 2012</u>	<u>By 2017</u>	<u>By 2025</u>
<u>Potable Water LOS (gallons/person/day)</u>	<u>147.5 gallons</u>	<u>125.0 gallons</u>	<u>120.0 gallons</u>	<u>110.0 gallons</u>

(b.)

Policy 1.1.2: Water system capacity design Level of Service is ~~250~~ 350 gallons per day per household housing unit for the purpose of establishing the basis for impact fees for all new development.

(c.)

Policy 1.1.3: Water distribution mains shall be a minimum of ~~six~~ eight (8) inches in diameter. A branch serving a fire hydrant shall be a minimum of six (6) inches in diameter.

(d.)

Policy 1.1.4: For increased system-wide reliability, all water service distribution systems shall be looped.

(e.)

Policy 1.1.5: Minimum fire flows per fire hydrant shall be as follows:

- Single Family: ~~500~~ gallons per minute
- Multi-family: ~~750~~ gallons per minute
- Commercial: ~~1,000~~ gallons per minute
- Industrial: ~~1,200~~ gallons per minute

<u>Use of Land</u>	<u>Minimum Fire Flows (gallons per minute)</u>
<u>Single-family</u>	<u>500</u>
<u>Multi-family less than 6 units/acre</u>	<u>500</u>
<u>Multi-family 6.0 or more units/acre</u>	<u>1,500</u>
<u>Commercial</u>	<u>1,500</u>
<u>Industrial</u>	<u>1,500</u>
<u>Institutional</u>	<u>1,500</u>

Policy 1.1.1: ~~The Level of Service standards shall be adopted by the City concurrent with the adoption of the Comprehensive Plan.~~

Objective 1.2: The City shall ~~supply~~ ensure sufficient water treatment plant and storage capacity to meet future demands prior to, or concurrent with, the impacts of development. [~~Measurable Target: Annual assessment of capacity/demand.~~]

Policy 1.2.1: ~~Complete construction of the Ridge Vocational and Technical School wells, by September 2000.~~ Maintain the City's Consumptive Water Use Permit for the withdrawal of groundwater from the aquifer. Ensure that the permit allows for the withdrawal of adequate quantities of water to meet projected population growth through 2025.

Policy 1.2.2: ~~Complete expansion of the 3rd Street wells and storage plant by September 1999.~~ Update and expand the City's water treatment plants and water storage facilities, as needed, to maintain the adopted water system level of service standards. Projects that are required to maintain adopted level of service standards, shall be planned for, and included, in the 5-year Schedule of Capital Improvements.

Policy 1.2.3: ~~Expand ground storage capacity at the Fairfax Plant by September 2000.~~ Coordinate the siting of new water treatment plants and wells with the adopted Future Land Use Map to ensure land use compatibility, environmental sensitivity, wellhead protection, and overall efficiency of the system.

Policy 1.2.4: Annually monitor water produced by the City's water treatment plants for compliance with standards contained in the Florida Safe Drinking Water Act (F.S. 403.850).

Policy 1.2.5: Continue to prioritize improvements to the potable water system based on the findings and recommendations of the 2007 Winter Haven Utility Master Plan. Periodically review, and update as necessary, the Master Plan to ensure it continues to reflect the needs of the City and the water system.

~~Objective 1.3: The City shall coordinate the extension of water lines and other facilities to meet future demand, prior to or concurrent with the impact of development. [Measurable Targets: Annual assessment of population, capital improvements budget]~~

~~Policy 1.3.1: Continue the system upgrade and looping program and undertake four major projects to be completed, by 2004.~~

~~Policy 1.3.2: Undertake a continuous fire hydrant installation program throughout the planning period.~~

~~Policy 1.3.3: Continue the practice of requiring all new development to construct and dedicate public water distribution facilities to the City.~~

Objective 1.4:

~~Objective 1.3: The City shall extend potable water service throughout the City Limits, and its Franchise Utility Service Area, to in a manner that enhances a compact urban growth pattern, in coordination with the Polk County Comprehensive Plan for Urban Development Areas. [Measurable Targets: Areas of the City where water expanded, maintain franchise agreement]~~

Policy 1.4.1:

~~Policy 1.3.1: All new development in the Winter Haven Franchise Utility Service Area should shall connect to the public potable water supply system abutting the Franchise Area, with no other public supply available.~~

~~Policy 1.3.2: Coordinate the extension of water lines and other facilities to meet future demand, prior to, or concurrent with the impact of development.~~

~~Policy 1.3.3: Require all new development to construct and dedicate public water distribution facilities to the City.~~

~~Policy 1.4.3:~~

~~Policy 1.3.4: Water service shall be extended at the same time as sewer service is extended, if public water is not already provided.~~

~~Policy 1.3.5: Undertake a continuous fire hydrant installation and maintenance program throughout the planning period.~~

Policy 1.4.2:

Policy 1.3.6:

Enter into an inter-local agreement with Polk County to coordinate all new development proposals in, or adjacent to, the Winter Haven Utility Franchise Service Area. Require the exchange of detailed information on each development proposal between Polk County's Planning and Utility Departments and the City's Planning Community Development and Public Works Utility Services Departments; in order to prevent development on of private, potable water systems.

Policy 1.3.7:

Coordinate the locations of water line extensions with the objectives and policies contained in the Future Land Use and Conservation Elements.

Policy 1.3.8:

Coordinate water line extensions within the unincorporated portion of the City's Utility Service Area with the Polk County Comprehensive Plan.

Policy 1.3.9:

To achieve economies of scale, coordinate water line rehabilitation and expansion projects with major roadway construction or resurfacing projects.

Policy 1.4.4:

Policy 1.3.10:

Maintain the Franchise Agreement with Polk County that establishes the geographic service area for the exclusive provision of water and sewer service.

Objective 1.5:

Objective 1.4: The City shall take direct actions to conserve potable water resources.

~~[Measurable targets: Annual assessment of supply, demand, consistency with water management district]~~

~~**Policy 1.5.1:**~~

~~The City shall continue to conduct a detailed study of the water supply available to the Winter Haven area.~~

Policy 1.5.2:

Policy 1.4.1:

Continue to enforce Building Code Regulations requiring the use of water conservation fixtures in all new development.

Policy 1.5.3:

Policy 1.4.2:

Undertake a systematic calibration of all major water meters as necessary to eliminate unaccounted water.

Policy 1.5.4:

Policy 1.4.3:

Adopt the conservation standards established by the Southwest Florida Water Management District (SWFWMD) and for the Highlands

Ridge Southern Water Use Caution Area for per capita, per day consumption. ~~Coordinating~~ Coordinate with SWFWMD on developing a ~~by January 2001~~, standardized per capita measurement with the appropriate adjustments and deductions.

~~Policy 1.5.5:~~

Policy 1.4.4:

Continue to coordinate with ~~Water Management District~~ SWFWMD to on the enforcement of water restrictions.

~~Policy 1.5.6:~~

Policy 1.4.5:

To reduce public demand for potable water, the City shall require the use of reclaimed wastewater for irrigation, within its utility service area, for all properties located within 500 feet of a reclaimed water line.

~~Policy 1.5.7:~~

Policy 1.4.6:

The City shall ~~develop~~ maintain and implement Land Development Regulations (LDRs) requiring all development within its utility service area to connect to the City's reclaimed water system and/or install dry lines and connect to the City's potable water system until such time as reuse is available to the development.

SANITARY SEWER SUB-ELEMENT

Goals, Objectives, and Policies

GOAL ONE: Ensure an adequate supply of sanitary sewer treatment capacity and facilities are available to meet the needs of the City's wastewater customers.

Objective 1.1: Sanitary sewer facilities shall operate at the Level of Service standard appropriate to efficient operation of the system and realistic provision of capacity to meet future demand. [~~Measurable Targets: Maximum LOS, annual assessment~~]

Policy 1.1.1: The Level of Service for sanitary sewer treatment shall be the per capita of Average Daily Flow, ~~established as follows:~~ of 130 gallons per person per day.

~~By 2001, and beyond: 130 gallons per person per day~~

~~**Policy 1.1.2:** The Level of Service standard shall be adopted by the City concurrent with the adoption of the Comprehensive Plan.~~

~~*Objective 1.2: The City shall supply sufficient sewer capacity to meet future demand prior to, or concurrent with, the impact of development. [~~Measurable Target: Annual assessment of capacity and demand~~]*~~

~~**Policy 1.2.1:** Complete construction of Wastewater Reuse Distribution lines to the Chain of Lakes Stadium, by 2001.~~

Policy 1.1.2: The City shall supply sufficient sanitary sewer capacity to meet future demand prior to, or concurrent with, the impact of development.

Policy 1.2.2:

Policy 1.1.3: Annually assess treatment capacity and population growth to be able to plan capital improvements to expand facilities. Projects that are required to maintain the adopted level of service standard shall be included in the 5-year Schedule of Capital Improvements.

Policy 1.1.4: Continue to prioritize improvements to the sanitary sewer collection system and wastewater treatment plants based on the findings and recommendations of the 2007 Winter Haven Utility Master Plan. Periodically review, and update as necessary, the Master Plan to ensure it continues to reflect the needs of the City, the sanitary system collection system, and wastewater treatment plants.

~~Objective 1.3: The City shall coordinate the extension of sewer lines and other facilities to meet future demand prior to, or concurrent with, the impact of development, especially in areas with soils unsuitable for septic tanks, within its jurisdiction.~~

~~[Measurable Targets: No septic tanks, # of capital system improvements, # of package plants connected]~~

~~Policy 1.3.1: All new development shall be connected to sanitary sewer.~~

~~Policy 1.3.2: Continue the practice of requiring all new development to construct and dedicate public sewer collection facilities to the City.~~

~~Policy 1.3.3: Continue the program of renovation, upgrading, and construction of lift stations and force with three major projects, to be completed, by Fiscal Year 2001-02. Evaluate and prioritize other lift station improvements and include in the five and ten-year capital improvements plan.~~

~~Policy 1.3.4: Continue to conduct engineering and cost feasibility analyses for extending sewer service to the seven package treatment plants identified in Table 4.3 in the EAR.~~

Objective 1.4:

~~Objective 1.2: The City shall extend sanitary sewer service throughout its jurisdiction the City Limits and Utility Service Area in a manner that, to enhances a compact urban growth pattern in coordination with the Polk County Comprehensive Plan for Urban Development Areas.~~

~~[Measurable Targets: Areas of City water/sewer expanded, maintain franchise agreement]~~

Policy 1.2.1: All new development shall be connected to sanitary sewer.

Policy 1.2.2: Continue the practice of requiring all new development to construct and dedicate public sewer collection facilities to the City.

Policy 1.4.1:

Policy 1.2.3: Maintain and enforce the existing ordinance requiring the connection to the public sewer system of all existing residences and businesses that have gravity sewer service available within 200 feet of the nearest property line.

Policy 1.4.2:

Policy 1.2.4: Extend water service at the same time sewer service is extended, if public water is not already provided.

Policy 1.4.3:

Policy 1.2.5:

Continue to coordinate the City's Franchise Agreement with Polk County that establishes the geographic service area for the provision of water and sewer service.

Policy 1.4.4:

Policy 1.2.6:

Coordinate all new development proposals adjacent to the Winter Haven Utility Service franchise area. Require the exchange of detailed information on each development proposal between Polk County's Planning and Utility Departments, and the City's Planning Community Development and Public Works Utility Services Departments, in order to prevent new development or from using private, potable water septic systems or package treatment plants.

Policy 1.2.7:

Coordinate the locations of sewer line extensions with the objectives and policies contained in the Future Land Use and Conservation Elements.

Policy 1.2.8:

To achieve economies of scale, coordinate sewer line rehabilitation and expansion projects with major roadway construction or resurfacing projects.

Objective 1.3: To reduce the potential for environmental damage to the City's lakes and other hydrologic features, limit the installation of new septic systems and work towards the connection of existing septic systems and package wastewater treatment plants to the City's sanitary sewer system.

Policy 1.3.1:

The City shall coordinate the extension of sewer lines and other facilities to meet future demand prior to, or concurrent with, the impact of development in areas with soils unsuitable for septic tanks.

Policy 1.3.2:

In conjunction with Polk County, seek grants to aid in connecting septic systems located in older, unincorporated neighborhoods within the City's Utility Service Area to the sanitary sewer system.

Policy 1.3.3:

Work with the owners/operators of package wastewater treatment plants that are located within the City's Utility Service Area on connection to the City's sanitary sewer system.

SOLID WASTE SUB-ELEMENT

Goals, Objectives, and Policies

GOAL ONE. Ensure the safe, and efficient collection of the City's solid waste, ~~and the reduction of solid waste generated by residents and businesses of the City.~~

~~Objective 1.1: Ensure that adequate capacity is reserved at the County landfill to meet the City's projected needs through 2010. [Measurable Target: Guarantee capacity with County]~~

Ensure that adequate trucks and manpower are allocated to for solid waste collection.

Policy 1.1.1: ~~Maintain the landfill capacity guarantee agreement with Polk County throughout the planning period.~~

Continue the solid waste collection vehicle replacement program. When financially and technically feasible, purchase the most fuel efficient, cleanest operating vehicles for the required job. Work towards a 20 percent improvement in fuel economy for the solid waste collection fleet by 2025.

Policy 1.1.2: ~~Maintain the agreement with the County to participate in all County solid waste reduction and recycling programs.~~

Periodically monitor population growth and service capability to determine if additional collection routes are required.

~~Objective 1.2: The solid waste generation Level of Service shall be managed to reduce disposal tonnage at the Polk County landfills. [Measurable Target: Annual assessment of LOS]~~

Ensure that solid waste collection operations are financially self sufficient.

Policy 1.2.1: ~~Solid waste generation shall be the following Level of Service: 4.5 pounds / person / day.~~

Annually monitor solid waste collection and disposal costs to ensure solid waste rates and other revenue sources continue to cover the cost of operations. Adjust fees or services as needed to ensure cost recovery.

Policy 1.2.2: ~~The City's Level of Service standard for collection of solid waste shall be a minimum of twice per week; and for yard trash, a minimum of once per week.~~

Periodically evaluate new solid waste collection and disposal technologies that may provide financial and environmental savings.

Policy 1.2.3: ~~The Levels of Service shall be adopted concurrent with the adoption of the Comprehensive Plan.~~

Work towards implementation of strategies contained in the 2010 Solid Waste Route Study. By 2015, implement two recommendations contained in the Study.

Objective 1.3: Institute programs to reduce the amount of solid waste disposed of in the County's landfill. ~~[Measurable Target: Implement recycling, separation measures, announcements to public]~~

Work towards the reduction of illegal litter and trash on vacant properties and public spaces.

Policy 1.3.1: ~~Continue to implement a program that provides for cardboard separation in containers for all commercial customers.~~

Enforce stringent, illegal dumping regulations.

Policy 1.3.2: ~~Continue to require the complete separation of horticultural materials curbside.~~

Continue to partner with Keep Winter Haven Clean and Beautiful and other organizations, on anti-litter campaigns and roadside litter clean-up programs.

Policy 1.3.3: ~~Implement a local public awareness program on recycling in support of Polk County's programs to reduce solid waste.~~

Continue to partner with and support lake clean-up programs such as Project EAGLE and the Lakes Education Action Drive's (LEAD) Lakes Appreciation Month that hold annual events to remove illegal litter and trash from the City's lakes.

~~**Objective 1.4:** Ensure that hazardous wastes are properly disposed of. [Measurable Target: Provide for hazardous waste disposal]~~

Policy 1.4.1: ~~Coordinate with the County to participate in an overall Countywide hazardous waste disposal program.~~

Policy 1.4.2: ~~Continue participating in all County and State Amnesty Program for the disposal of hazardous household waste.~~

GOAL TWO. Ensure the safe, and efficient collection disposal of the City's solid waste. generated by residents, visitors, and businesses of the City.

Objective 2.1: ~~Ensure that adequate trucks and manpower are allocated to solid waste collection.~~ [Measurable Target: ~~Implement collection program~~]

Ensure that adequate capacity is available at the County landfill to meet the City's projected needs through 2025.

Policy 2.1.1: ~~Continue the solid waste collection vehicle replacement program.~~

Guarantee landfill capacity with Polk County throughout the planning period.

Policy 2.1.2: ~~Annually monitor population growth and service capability to determine if an additional collection route is required.~~

Work with Polk County on solid waste reduction and recycling programs.

Policy 2.1.3: ~~Continue to enforce stringent, illegal dumping regulations.~~

Objective 2.2: The solid waste generation Level of Service shall be managed to reduce disposal tonnage at the Polk County landfills.

Policy 2.2.1: Solid waste generation shall be the following Level of Service: 4.5 pounds / person / day.

Policy 2.2.2: At a minimum, the City shall collect household garbage, recyclables, and horticultural/yard waste weekly.

Policy 2.2.3: Maintain a recycling participation rate of 40 percent of the City's solid waste customers. Work towards increasing the participation rate to 50 percent in 2015 and to 75 percent in 2020 and beyond.

Objective 2.3: Institute programs to reduce the amount of solid waste disposed of in the County's landfill.

- Policy 2.3.1:** Continue to implement a program that provides for cardboard separation in containers for all commercial customers where feasible.
- Policy 2.3.2:** Continue to require the complete separation of horticultural materials curbside.
- Policy 2.3.3:** Continue local public awareness campaigns on the benefits of recycling and in support of programs to reduce solid waste.
- Policy 2.3.4:** Maintain a curbside recycling program for all single-family and multi-family residences with curbside access in the City. Maintain centralized collection of recyclables for all larger multi-family residential areas.
- Policy 2.3.5:** Work towards increasing participation from commercial and industrial solid waste customers in recycling programs. By 2015, increase the commercial and industrial recycling rate by 20 percent, and by 2025, increase the rate by 40 percent.

Objective 2.4: Ensure the proper disposal of hazardous wastes.

- Policy 2.4.1:** Coordinate with Polk County to participate in an overall Countywide hazardous waste disposal program.
- Policy 2.4.2:** Continue participating in all County and State Amnesty Programs for the disposal of hazardous household waste.
- Policy 2.4.3:** Support and participate in programs that educate the public about hazardous materials and their proper disposal.
- Policy 2.4.4:** Maintain and enforce regulations pertaining to disposal of garbage and refuse, hazardous waste, and incinerators.
- Policy 2.4.5:** Coordinate the designation of collection sites for used oil and grease for the general public with other governmental agencies so that the materials may be properly disposed of.

DRAINAGE and AQUIFER RECHARGE **SUB-ELEMENT**

Goals, Objectives, and Policies

OVERALL INTENT: Manage and store stormwater to the benefit of the aquifer and the City's lakes and other hydrological features.

GOAL ONE: Manage stormwater run-off in a way that protects the City's natural hydrological systems, while at the same time, prevents Eliminate flooding problems.

Objective 1.1: Adopt the following Level of Service standards for new development or substantial modification of existing projects, ~~upon adoption of the Plan.~~ [Measurable Target: Implement LOS]

Policy 1.1.1: All development and redevelopment shall design all stormwater systems to, at a minimum, manage the effects of a 25-year, 24-hour storm event.

Policy 1.1.2: ~~In~~ For all development and redevelopment sites, the post-development stormwater runoff rate shall not be greater than the natural, pre-development runoff rate. Any difference in the pre and post volume of stormwater runoff shall be contained on site.

Policy 1.1.3: Any development ~~and~~ or redevelopment site, not having a positive outfall, will be required to retain a 100-year, 24-hour storm event.

Policy 1.1.4: Require all development and redevelopment, to construct on-site drainage stormwater systems and retention facilities that maintain water quality and promote aquifer recharge.

Objective 1.2: ~~Implement a special~~ Utilize the stormwater utility fee program to provide funding to reduce existing flooding problems, and construct facilities to accommodate future demand, to improve the quality of stormwater run-off, and to develop areas for the storage of stormwater. [Measurable Target: ~~Implement stormwater Management Plan]~~

Policy 1.2.1: Continue to implement the ~~City's Stormwater Utility Code,~~ including collect and utilize the stormwater utility fees and requirements for the use of and discharge maintenance and upgrades to the City's stormwater management system. Assign higher priorities to projects necessary to correct drainage deficiencies that result in the

flooding of structures, store stormwater for future supplies, and to projects designed to protect the water quality of the City's lakes.

Policy 1.2.2: ~~Continue to~~ Conduct all appraisals, property evaluations of purchase, engineering and design studies, acquisitions, construction, and other activities necessary for implementing the ~~City's stormwater management program~~ 2010 Water Resource Sustainability Plan, ~~programming priorities as part of the five-year CIP.~~

Policy 1.2.3: To facilitate the goal of creating a compact, pedestrian friendly downtown, work towards the development of regional stormwater management facilities (ie. retention basins and swales) that will improve water quality and increase aquifer recharge.

Policy 1.2.4: When technically and financially feasible, require that stormwater be percolated into the ground when any capital project requires work on the stormwater conveyance system.

Objective 1.3: Establish stormwater management regulations for new development in flood prone areas compatible with the Levels of Service that beneficially use stormwater for water supply and lake management. [Measurable Targets: Implement code, FEMA maps]

Policy 1.3.1: Continue to develop and enforce Land Development Regulations which define the standards and criteria for the construction of new drainage and stormwater treatment systems in new developments. Additionally, continue the practice of requiring these facilities to be privately owned and maintained.

Policy 1.3.2: ~~Continue to enforce and, as necessary, update the existing 1979 Stormwater Management Ordinance, to be consistent with the Comprehensive Plan. By 2014, revise and update the stormwater management regulations contained in the City's Land Development Regulations for consistency with the 2010 Water Resource Sustainability Plan and all state and federal standards governing surface water quantity and quality.~~

Policy 1.3.3: Continue to enforce and, as necessary, update the existing City's flood prevention and Control Ordinance land development regulations.; ~~to be consistent with the Comprehensive Plan and~~ utilize Ensure that the regulations remain consistent with Federal Emergency Management Agency (FEMA) data and maps.

Policy 1.3.4: Assign "Conservation" Future Land Use along existing natural drainage features and floodways to prevent encroachment from development. For minor drainage features and floodways the buffer shall be a minimum of 50 feet from the edge of the feature, and for major drainage features and floodways, including the Peace Creek and the Wahneta Farms Drainage Canals, the buffer shall be a minimum of 100 feet from the edge of the feature.

Objective 1.4: Maintain existing drainage stormwater conveyance facilities in efficient operating condition. [~~Measurable Target: Inspect and clean drainageways~~]

Policy 1.4.1: Maintain and replace, as needed, ~~vacuum cleaner type street sweepers and vacuum trucks~~ that to reduce the amount of pollutants and debris from the City's streets entering lakes and other water bodies. When purchasing new vehicles, seek out the most fuel efficient, technologically advanced, vehicles that are financially feasible, and capable of completing the job.

Policy 1.4.2: ~~Continue~~ Perform ongoing inspection and maintenance on the existing ~~drainage pipe~~ stormwater conveyance system.

Policy 1.4.3: Continue to enforce ordinances and regulations that prevent the movement of soil, yard waste, and debris into streets and alleys and ultimately the stormwater conveyance system.

Objective 1.5: Improve surface water quality. [~~Measurable Targets: Agreements with agencies, compliant development permits~~]

Policy 1.5.1: Coordinate all water improvement activities for the ~~Chain of Lakes City's lakes~~ with the Southwest Florida Water Management District, Lake Region Lakes Management District, and other appropriate agencies.

Policy 1.5.2: Development shall meet all current, applicable federal and state water quality standards (~~Rules 17-25 and 17-40, Florida Administrative Code~~).

Policy 1.5.3: Infill residential development within improved residential areas or subdivisions existing prior to the ~~adoption of this comprehensive plan~~ April, 1991, must ensure that its post-development stormwater runoff will not contribute pollutants which will cause the run-off from the entire improved area or subdivision to degrade receiving water bodies and their water quality.

Policy 1.5.4: By 2014, implement Land Development Regulations requiring the use of rain gardens, pocket wetlands, or similar stormwater catchment basins to capture and treat stormwater from rooftops, parking lots, and roadways.

Policy 1.5.5: Identify and complete three major lake water quality improvement projects by 2025. Prioritize projects that improve the water quality of Lake Lulu, Lake May, and Lake Shipp.

~~AQUIFER RECHARGE~~

~~SUB-ELEMENT~~

~~Goals, Objectives and Policies~~

GOAL ONE TWO: Protect the recharge capabilities of the aquifer to insure the future supply of water resources.

Objective 1.1: Protect all natural drainage features and groundwater recharge areas by establishing criteria to manage development. [Measurable—Target: Adopt/implement/enforce codes and standards]

Policy 1.1.1:

Policy 2.1.1:

Within wellhead protection areas, the following shall be prohibited: landfills; facilities for bulk storage, handling or processing of materials on the Florida substance list; activities that require the storage, use handling production or transportation of restricted substances, agricultural chemicals, petroleum products, hazardous toxic waste, medical waste or similar substances; feed lots or commercial animal facilities; mines; and excavation of waterways or drainage facilities which intersect the water table.

Policy 1.1.2:

Policy 2.1.2:

Protect aquifer recharge areas through the establishment of specific prohibitions, restrictions, standards and criteria for any existing or proposed wastewater system, which could potentially contaminate the water supply.

Policy 1.1.3:

Policy 2.1.3:

Enforce Land Development Regulations that require all development and redevelopment that adds additional impervious area, including building, roofs, paving, etc. to provide post

development groundwater recharge volume which shall be at least 80% of the estimated natural pre-improvement recharge volume.

Policy 1.1.4:

Policy 2.1.4:

~~Development regulations shall be adopted and/or amended by the City in accordance with Section 163.3202 (1), FS, to establish~~ Maintain performance standards land development regulations to protect areas of high recharge potential by addressing the following providing for:

- a. density limits;
- b. impervious-surface cover requirements;
- c. vegetation preservation;
- d. stormwater retention design consideration;
- e. control of point and non-point pollution of ground and surface waters (including, but not limited to, contact with sinkholes and the use of vegetative buffers and proper design of stormwater management systems); and
- f. water quality standards for waters discharged into the groundwater aquifer which ensures that new development and redevelopment within a "high recharge area" will not reduce the quality of the water discharged into the groundwater aquifer.

Policy 1.1.5:

Policy 2.1.5:

Hazardous waste handling and storage facilities to be located within high recharge areas shall meet all applicable federal and state requirements prior to or concurrent with issuance of any final development orders.

Policy 2.1.6:

Amend the Comprehensive Plan as needed to incorporate new data and analysis that supports goals, objectives and policies that define future actions to protect aquifer recharge areas and the supply of future groundwater resources.

Objective 2.2: Increase stormwater run-off capture and storage opportunities in order to improve the overall hydrologic function of the Peace Creek Watershed.

Policy 2.2.1:

Work with the Florida Department of Transportation and Polk County to incorporate water storage and conveyance features

identified in the *Sustainable Water Resource Management Plan* as part of all highway construction projects.

Policy 2.2.2: Work with the Florida Department of Transportation, Polk County, and other local governments to ensure that any wetland and floodplain mitigation occurs locally within the Peace Creek Watershed.

Policy 2.2.3: Continue to prioritize the development of nature or hydric parks within the City as a way to increase stormwater treatment and storage.

Policy 2.2.4: Develop Land Development Regulations that encourage new developments to utilize low-impact stormwater treatment methods to ensure stormwater is percolated into the ground as opposed to being treated in large ponds and discharged.

Objective 1.3: Increase aquifer recharge in the Upper Peace Creek Watershed.

Policy 2.3.1: Evaluate using treated reuse water to recharge the aquifer.

Policy 2.3.2: Carry out a comprehensive study to identify areas, such as along public streets and as part of public parking lots, for the development of rain gardens. Seek funding and grants to construct the identified rain gardens. By 2020, complete 20 rain garden projects within the City.

Policy 2.3.3: Implement public education campaigns to educate residential property owners on techniques, such as downspout rain gardens, pervious driveways, and swales, to reduce stormwater run-off and increase infiltration.