

**PUBLIC FACILITIES ELEMENT**

**SANITARY SEWER, SOLID WASTE, DRAINAGE, POTABLE  
WATER AND NATURAL GROUNDWATER AQUIFER  
RECHARGE**



**CITY OF GROVELAND**

**LAKE COUNTY, FLORIDA**

**ADOPTED ON OCTOBER 18, 2010**

**PUBLIC FACILITIES ELEMENT  
TABLE OF CONTENTS**

A.	INTRODUCTION .....	1
1.	SCOPE OF THE ELEMENT.....	1
2.	ORGANIZATION OF THE ELEMENT.....	1
B.	SANITARY SEWER.....	2
1.	INTRODUCTION .....	2
2.	EXISTING CONDITIONS.....	2
3.	SOILS .....	4
4.	ANALYSIS.....	6
C.	SOLID WASTE.....	6
1.	INTRODUCTION .....	6
2.	EXISTING CONDITIONS.....	7
3.	ANALYSIS.....	8
D.	DRAINAGE.....	9
1.	INTRODUCTION .....	9
2.	EXISTING CONDITIONS.....	10
3.	ANALYSIS.....	11
E.	POTABLE WATER .....	11
1.	INTRODUCTION .....	11
2.	EXISTING CONDITIONS.....	11
3.	ANALYSIS.....	13
F.	NATURAL GROUNDWATER AQUIFER RECHARGE .....	14
1.	INTRODUCTION .....	14
2.	ANALYSIS.....	15
G.	GOALS, OBJECTIVES AND IMPLEMENTING POLICIES .....	16

**LIST OF TABLES**

TABLE 1: POPULATION PROJECTION BY AGE, 2008 - 2025 .....2

TABLE 2: WATER TREATMENT PLANTS CAPACITY AND CURRENT DEMAND.....3

TABLE 3: SOILS .....4

TABLE 4: SOLID WASTE LEVEL OF SERVICE PROJECTIONS, 2010 - 2025 .....8

TABLE 5: 302 FACILITIES IN GROVELAND .....9

TABLE 6: WATER TREATMENT PLANTS DESIGN AND STORAGE CAPACITIES .....12

TABLE 7: SJRWMD CONSUMPTIVE USE PERMIT MAXIMUM ANNUAL AND DAILY WITHDRAWALS, 2010.....12

## CHAPTER 4 PUBLIC FACILITIES ELEMENT

\*\*\*It is important to note that the old data and analysis from the *1992 Comprehensive Plan* is being superseded by new data and analysis presented below; however, the current Goals, Objectives, and Policies have been included in this *Element*. Chapter 4 – Potable Water Element, Chapter 5 - Sanitary Element, Chapter 6 – Solid Waste Element, Chapter 8 – Aquifer Recharge, and Chapter 9 – Stormwater Management Element have been renamed Chapter 4 – Public Facilities Element. This *Element* was updated accordingly to reflect the new planning period.

### A. INTRODUCTION

#### 1. SCOPE OF THE ELEMENT

This *Element* has been prepared to meet the requirements of the Local Government Comprehensive Planning and Land Development Regulation Act, Chapter 163, Florida Statutes (F.S.). In relevant part, the Act requires comprehensive plans to describe:

- 1) sanitary sewer, solid waste, drainage, potable water and aquifer recharge protection problems and needs;
- 2) ways to provide for future requirements; and
- 3) general facilities that will be required for solution of the problems and needs.

In addition, this *Element* was prepared in accordance with Chapter 9J-5, Florida Administrative Code (F.A.C.), “Minimum Criteria for Review of Local Government Comprehensive Plans and Determination of Compliance.”

#### 2. ORGANIZATION OF THE ELEMENT

This *Element* is divided into sections containing:

- 1) the applicable support documents, which are the technical reports summarizing the data and analysis on which the *Element* is based; and
- 2) the goals, objectives and policies for the *Element*, as adopted in the *Comprehensive Plan* for the City.

The support documents are presented as sub-elements for the different types of facilities in the *Element*. Each sub-element includes:

- 1) background information about relevant terms, concepts and regulatory provisions;
- 2) a survey of existing conditions; and
- 3) an assessment of existing and future needs and recommendations for meeting those needs.

Population estimates were derived from the *Future Land Use and Housing Elements* and are presented in Table 1 below.

**TABLE 1: POPULATION PROJECTION BY AGE, 2008 - 2025**

<b>Age Group</b>	<b>2008</b>	<b>2010</b>	<b>2015</b>	<b>2020</b>	<b>2025</b>
0-14 years old	1,527	1,571	1,938	2,325	2,620
15-24 years old	1,013	1,049	1,199	1,374	1,658
25-34 years old	864	912	1,117	1,291	1,378
35-44 years old	957	970	1,145	1,442	1,670
45-54 years old	1,081	1,167	1,398	1,583	1,837
55-64 years old	870	982	1,352	1,726	1,961
65-74 years old	496	533	812	1,197	1,566
75+ years old	398	428	556	745	1,092
<b>Total</b>	<b>7,206</b>	<b>7,612</b>	<b>9,517</b>	<b>11,683</b>	<b>13,782</b>

Source: Shimberg Center for Affordable Housing, University of Florida – May 2010.

**B. SANITARY SEWER**

**1. INTRODUCTION**

This section of the *Public Facilities Element* assesses the availability, demands, and needs of sanitary sewer system in Groveland. This section also presents an analysis of the soils found in Groveland as they correspond to the suitability to support the use of septic tanks in the City.

**2. EXISTING CONDITIONS**

The City owns and operates its central sanitary sewer system. The City’s sewer system consists of three wastewater treatment plants: Wastewater Treatment Facility #1; Green Valley Wastewater Treatment Facility #2; and the Sunshine Plant Wastewater Treatment Facility #3. Table 2 below shows the capacity and the current demand for the three treatment plants.

**TABLE 2: WATER TREATMENT PLANTS CAPACITY AND CURRENT DEMAND**

	<b>Wastewater Treatment Facility #1</b>	<b>Green Valley Plant Wastewater Treatment Facility #2</b>	<b>Sunshine Plant Wastewater Treatment Facility #3</b>
Capacity	1 MGD	.055 MDG	1 MGD
Avg. Gallons Per Day (GPD) in 2007	.209	.050 MGD	.138 MGD
Total Gallons Treated in 2007	76.298 MG	18.354 MG	50.363
Avg. GPD for First 7 Months of 2008	.307 MGD	.028 MGD	.144 MGD
Total Gallons for First 7 Months of 2008	65.36 MG	5.897 MG	30.634

Source: City of Groveland’s 2008-2009 Concurrency Report

The City has adopted sanitary sewer level of service standards of 250 gallons per day per equivalent residential unit (ERU). The City’s system is operating at the adopted level of service.

Within the City’s Utility Service Area, there are properties with individual septic tanks and drain fields. These septic tanks are permitted through the Lake County Health Department and they must provide service consistent with the adopted level of service standards and meet the guidelines established by the Lake County Health Department.

Effluent from septic tank systems is discharged to the drainfield where it is allowed to percolate into the soil. Soil permeability and depth to the water table are limiting factors on septic tank performance.

The *Federal Water Pollution Control Act* (PL 92-500) is the controlling national legislation relating to the provision of sanitary sewer service. The goal of this *Act* is the restoration and/or maintenance of the chemical, physical and biological integrity of the nation’s waters. The *Act* established the national policy of implementing area wide waste treatment and management programs to ensure adequate control of sources of pollutants.

The Florida Department of Health and Rehabilitation Services (DHRS) regulates septic tank and drainfield installation within the State. These requirements have been adopted by rule in Chapter 10D-6, F.A.C.

The Lake County Health Department regulates and approves septic systems within the City. A percolation test and studies of the soil are used to determine size, siting and type of individual systems.

No septic tanks, including those approved by the Florida Department of Environmental Protection, are permitted in Groveland unless the site is outside the City limits or located more than 500 feet from a sewer line, and the City agrees not to extend the line to the property. The City ensures that the following guidelines regarding septic tank locations are enforced during the development review process:

- 200 feet from sewage disposal system to any public water well;
- 75 feet from any sewage disposal system to any private water well;
- 75 feet from the high water line of any lake, canal, stream or other body of water. Lots created prior to 1972 require 50 feet from the high water line of any surface;
- 10 feet from any water main or service line installed below the ground;
- 5 feet from the property line and building foundations; and
- Septic tank inlet shall be within 15 feet of plumbing stub out.

Additionally, limitations are in effect relating to the size of the facilities to be constructed (i.e. number of bedrooms) including the projected volume of waste as compared to the size of the property upon which construction is to occur.

Currently, the City does not have a systematic monitoring of septic systems. System checks are done on a compliance basis.

### 3. SOILS

Soils are an important aspect in land development. The physical and chemical properties of soils restrict the intensity of development through limitations on road construction, landfill siting, septic tank operation, and building placement.

There are a variety of soil types in Groveland (see the City’s *Soils Map*). The general descriptions of the soils in the City are found below in Table 3 [9J-5.011(1)(f)(4), F.A.C.]. All upland soils are generally suitable for development for the use of septic tanks.

**TABLE 3: SOILS**

Map Unit Name	Hydric Soil	Drainage Class	Steel Corrosion	Concrete Corrosion	Acres
Anclote and Myakka Soils	Yes	Very Poorly Drained	High	Moderate	12.03
Apopka Sand, 0 to 5 Percent Slopes	No	Well Drained	Moderate	High	793.59
Apopka Sand, 5 to 12 Percent Slopes	No	Well Drained	Moderate	High	695.51
Arents	No	Somewhat Poorly Drained	Unranked	Unranked	245.67
Astatula Sand, 0 to 5 Percent Slopes	No	Excessively Drained	Low	High	13.17

Map Unit Name	Hydric Soil	Drainage Class	Steel Corrosion	Concrete Corrosion	Acres
Borrow Pits	Partially Hydric	Unranked	Unranked	Unranked	43.72
Brighton Muck, Depressional	Yes	Very Poorly Drained	High	High	69.15
Candler Sand, 0 to 5 Percent Slopes	No	Excessively Drained	Low	High	2,550.90
Candler Sand, 5 to 12 Percent Slopes	No	Excessively Drained	Low	High	1,642.52
Candler Sand, 12 to 40 Percent Slopes	No	Excessively Drained	Low	High	9.82
Ellzey Sand	Partially Hydric	Poorly Drained	High	High	71.71
Immokalee Sand	Partially Hydric	Poorly Drained	High	High	53.98
Kendrick Sand, 0 to 5 Percent Slopes	No	Well Drained	Moderate	High	129.19
Kendrick Sand, 5 to 8 Percent Slopes	No	Well Drained	Moderate	High	61.81
Kendrick Sand, Thin Surface	No	Well Drained	Moderate	High	49.74
Lake Sand, 0 to 5 Percent Slopes	No	Excessively Drained	Low	High	72.28
Lake Sand, 5 to 12 Percent Slopes	No	Excessively Drained	Low	High	2.94
Lochloosa Sand	No	Somewhat Poorly Drained	High	High	65.40
Myakka Sand	Partially Hydric	Poorly Drained	High	High	335.18
Ocoee Mucky Peat	Yes	Very Poorly Drained	High	High	1,508.68
Oklawaha Muck	Yes	Very Poorly Drained	High	Low	545.12
Ona Fine Sand	Partially Hydric	Poorly Drained	High	High	47.58
Orlando Fine Sand, 0 to 5 Percent Slopes	No	Well Drained	Low	High	11.08
Orsino sand	No	Moderately Well Drained	Low	Moderate	13.15
Paola Sand, 0 to 5 Percent Slopes	No	Excessively Drained	Low	High	39.88
Placid and Myakka Sands, Depressional	Yes	Very Poorly Drained	High	High	1,180.29
Placid Sand, Depressional	Yes	Very Poorly Drained	High	High	150.90
Pomello Sand, 0 to 5 Percent Slopes	No	Moderately Well Drained	Low	High	6.04
Pompano Sand	Partially Hydric	Poorly Drained	High	Moderate	42.45
Seffner Sand	Partially Hydric	Somewhat Poorly Drained	Low	Moderate	32.04
Sparr Sand, 0 to 5 Percent Slopes	No	Somewhat Poorly Drained	Moderate	High	162.79

Map Unit Name	Hydric Soil	Drainage Class	Steel Corrosion	Concrete Corrosion	Acres
Swamp	Yes	Very Poorly Drained	Unranked	Unranked	193.18
Tavares Sand, 0 to 5 Percent Slopes	No	Moderately Well Drained	Low	High	699.63
Water	Unranked	Unranked	Unranked	Unranked	1,526.68
Wauchula Sand	Partially Hydric	Poorly Drained	High	High	284.41

Notes: Drainage Class - Identifies the natural drainage conditions of the soil and refers to the frequency and duration of wet periods.  
 Concrete Corrosion - Susceptibility of concrete to corrosion when in contact with the soil.  
 Steel Corrosion - Susceptibility of uncoated steel to corrosion when in contact with the soil.

Source: U.S. Department of Agriculture, Natural Resources Conservation Service's Orange County Soils Geographic Information Systems database May 2010.

**4. ANALYSIS**

The City shall require all new development within 500 feet of a City central sanitary sewer line to connect to the system. At the time of development, if the development is not required to connect to the central sanitary sewer system, the City will require the developer to install dry lines for both sanitary and reclaimed and the associated lift stations and force mains. The City's wastewater system has sufficient capacity to meet the population demands during the short-range (2011-2015) and long-range (2025) planning periods. The City will continue to analyze the appropriateness and feasibility of wastewater treatment for future growth [9J-5.011(1)(f)(3), F.A.C.].

The soils in the City are generally suitable for septic tanks; however, the City requires existing septic tanks with drainfields that fail, that are within 500 feet of the City's sanitary sewer collection system and accessible by a legally recorded easement or rights-of-way, to connect to the City's sanitary sewer system. The City shall continue to prohibit septic tanks to be located in environmentally sensitive areas or within 200 feet of a public potable water well or within 75 feet of a private potable water well. The City shall also continue to enforce the water and sewer concurrency standards [9J-5.011(1)(f)(3), F.A.C.].

**C. SOLID WASTE**

**1. INTRODUCTION**

Solid waste is defined as "any garbage, refuse, sludge...and any other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from residential, industrial, commercial, mining, and agricultural operation, and from community activities". Hazardous waste is defined as "a solid waste, or combination of

solid waste which because of its quantity, concentration, or physical, chemical, or infectious attributes, may:

- (a) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness, or
- (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed" (U.S.C. 6903 (5)).

This section of the *Public Facilities Element* assesses the City's needs for solid waste disposal and the adequacy of the existing disposal method.

## **2. EXISTING CONDITIONS**

The City provides once per week refuse collection, once per week yard waste collection, once per week recyclables collection, and a bulk pick up upon request within 48 hours through a contract with a private hauler. The Lake County Solid Waste Management Phase I facility, which accepted Class I and III waste, has been closed in accordance with an order from the Florida Department of Environmental Protection. The 80-acre landfill had operated since the 1970s without a bottom liner, which is now required for landfills accepting Class I wastes. Phase II is made up of 3 cells in the northern part of the landfill: IIA, IIB, and IIC. Phase IIA has been designed to accommodate the ash residues from the resource recovery facility. Both IIB and IIC handle Class I waste. IIB is partially closed on the northeast side. Most of Lake County's Class I waste goes to the Resource Recovery Facility in Okahumpka. There is a separate disposal area for construction and demolition debris on the northwest side of the property.

The City will continue to dispose refuse at the County's incinerator facility. The County will deposit waste ash in an ash monofill south of the incinerator near the Sumter County Line.

Lake County maintains and operates 5 residential drop-off (RDO) facilities throughout the County and a Citizen Convenience Center at the Astatula Landfill where residents can self-haul their solid, hazardous, recycling materials and special wastes. Special wastes consist of used motor oil, furniture, waste tires, white goods, and electronic wastes. Each RDO handles different amounts and types of waste depending on its size and location. Collectively, they receive on average 3,000 tons per year. The Citizen Convenience Center at the Astatula Landfill is the closest RDO to the City.

Based on the City's *2008 – 2009 Annual Concurrency Report*, there are 2,773 solid waste customers in Groveland. With 12 months of data, the average amount of garbage generated each month was 234.19 pounds per month or 7.8 pounds per household per day.

The City’s population in 2009 was 7,409. With 2,773 solid waste customers, that would equate to 2.67 persons per household. (The 2000 Census estimated the number of persons per household in Groveland was 2.79) Using the 2.67 persons per household, and the average of 7.8 pounds of solid waste per customer per day, each person in the City generated an average of 2.92 pounds per day. The City’s adopted level of service for solid waste is a maximum of 6 pounds per person per day. So the current LOS of 2.92 pounds per day meets the City’s adopted concurrency standard.

The City shall continue to cooperate with the County to comply with the latest State regulations regarding the disposal of solid waste. The Public Works Manager is the City’s liaison with the County.

**3. ANALYSIS**

As previously noted, the solid waste generated in Groveland is currently meeting the adopted level of service standard of 6 pounds per person per day. As noted in Table 1 above, the City’s population is projected to increase to 13,782 by 2025. As a requirement of Rule 9J-5.011(1)(f), F.A.C., the City has assessed the projected solid waste needs based on the 2025 population projections.

The adopted solid waste level of service is 6 pounds per person per day. As such, the City would be able to generate 82,692 pounds a day of garbage in 2025 (see Table 4) and continue to meet the level of service. The City shall continue to monitor the adopted LOS standards through the annual concurrency review and identify and address all deficiencies during the planning period.

**TABLE 4: SOLID WASTE LEVEL OF SERVICE PROJECTIONS, 2010 - 2025**

<b>Year</b>	<b>Population</b>	<b>Adopted LOS Standard</b>	<b>Pounds per Year</b>	<b>Pounds per Day</b>
2010	7,612	6 pounds per person per day	16,670,280	45,672
2015	9,517	6 pounds per person per day	20,842,230	57,102
2020	11,683	6 pounds per person per day	25,585,770	70,098
2025	13,782	6 pounds per person per day	30,182,580	82,692

Sources: City of Groveland and B&H Consultants, Inc., May 2010.

Like all local governments in Lake County, Groveland uses the Lake County landfill for its solid waste needs. At the current time, the City has no plans to change its solid waste collection methods. The City shall continue to cooperate with the County on recycling efforts.

Hazardous wastes are corrosive, toxic, flammable, or reactive substances that may harm public health and the environment. Some examples of hazardous wastes are motor oil,

paints, pesticides, fluorescent light bulbs, and pool chemicals. Hazardous wastes are collected at the Household Chemical Collection Center, near the Phase II landfill, or at the residential drop-off facilities. The County also operates a mobile hazardous waste disposal unit. The 302 Facilities in the City are presented in Table 5 below. A detailed inventory of the facilities with small quantity generators in and/or adjacent to the City is available from the County.

**TABLE 5: 302 FACILITIES IN GROVELAND**

SERC ID	Facility Name
5967	City of Groveland – Sunshine Parkway WTP 3
6038	Silver Springs Citrus South
9553	City of Groveland – North Sampey Wells 3A and 5
9554	City of Groveland – Pomello Well 1
10204	Woodlands at Church Lake – WTP and WWTP
21888	City of Groveland – North Sampey WWTP
24838	International Sterilization Laboratory
31325	City of Groveland – Green Valley WWTP 2
32206	General Utilities – B RV Resort
34752	City of Groveland – Water Plant 5

Source: East Central Florida Local Emergency Planning Committee Hazardous Materials Emergency Response Plan 2008 Current Revision.

The City has no hazardous waste landfill or any hazardous waste management personnel. No system for household collection of such waste has yet been established; however as County regulations are formulated, the City will comply and citizens are urged to use County facilities and collection days.

**D. DRAINAGE**

**1. INTRODUCTION**

Drainage is the conveyance, treatment and attenuation of water generated from storm events. Drainage systems are designed to safely and efficiently manage stormwater to reduce the threat to human safety and property from flooding caused by stormwater. The adequacy and efficiency of a drainage system depends upon variables such as:

- system capacity,
- intensity and duration of a storm event,
- topography, and
- soil permeability, and level of the water table.

Drainage systems designed to accommodate stormwater from a rainfall event of average intensity and duration may be unable to accommodate stormwater generated by an exceptionally intense or long rainfall event. These variables, as well as physical limitations such as elevation and available land, and cost are considered in the planning of drainage systems.

This section addresses major natural drainage features, existing facilities and programs, and opportunities for stormwater management in Groveland.

**2. EXISTING CONDITIONS**

The City regulates and enforces stormwater drainage through its Land Development Regulations and the concurrency requirements of this *Comprehensive Plan*. The City has established the minimum drainage level of service standard for water quality as:

Facility Type	Pollution Abatement Treatment
Retention with Percolation or Detention with filtration	Runoff from first inch of rainfall or one-half inch of runoff if it has less than 50% impervious surface and less than 100 acres, whichever is greater
Detention without filtration or wet detention	The first inch of runoff from the site or 2.5 inches times the site’s impervious surface, whichever is greater

In addition, the City’s land development code requires that stormwater management systems be designed based on the 10 year, 24 hour storm at minimum, but must also address the effects of the 25 year, 24 hour storm.

Projects located within the Green Swamp Area of Critical State Concern and within the most effective recharge areas must retain three (3) inches of runoff from directly connected impervious areas within the project. Applicants may instead demonstrate that the post-development recharge will be equal to or greater than the pre-development recharge. Most effective recharge areas are those with soils classified by the Soil Conservation Service as Type “A” Hydrologic Soil Group. Directly connected impervious areas are those impervious areas which are connected to the surface water management system by a drainage improvement such as a ditch, storm sewer, paved channel, or other man-made conveyance. Stormwater that is retained must be infiltrated into the soil or evaporated such that the storage volume is recovered within 14 days following a storm event.

Stormwater drainage within the City is currently accommodated by both natural and man-made drainage features.

Level of service standards established in the *Comprehensive Plan* will continue to remain consistent with State statutes pertaining to the performance of drainage systems. The City ensures the provision of adequate stormwater drainage systems through the development review process. Permits are also required from all applicable State, Federal, and local agencies with regard to stormwater. No development is approved or is allowed to begin construction until all such permits are received by the City.

The stormwater regulations established in the City's Land Development Regulations are consistent with the applicable stormwater drainage requirements of the County, State, and Federal agencies. The drainage facilities within the City are operated (maintained) either by the City (older systems) or by Homeowners' Associations.

### **3. ANALYSIS**

The City requires that all new development provide evidence to show that level of service (LOS) ratings in stormwater conveyances serving the new development will not be degraded to an LOS lower than currently exists as a result of the new development's construction and stormwater runoff contribution.

The City shall continue to enforce the stormwater standards established in the City's Land Development Regulations and this *Comprehensive Plan*. Once the update of the Stormwater *Master Plan* is completed, projects will be included in the City's *Capital Improvements Program* as funds become available.

## **E. POTABLE WATER**

### **1. INTRODUCTION**

The source of Groveland's potable water is the Floridan Aquifer. The City's potable water system provides water for both residential and non-residential purposes, including fire-fighting demands.

This section presents the existing conditions and capacity of the water treatment, storage and distribution components in the system, calculates the current level of service, and uses it to determine future growth demand on the potable water system.

### **2. EXISTING CONDITIONS**

The City owns and operates a public water system comprised of five water treatment plants and associated water transmission and distribution pipes. The City's five water plants are grouped into two separate systems. The south system is comprised of water treatment plant (WTP) 1 and WTP 2 and the recently completed WTP 5. The north system is comprised of WTP 3 and WTP 4. The maximum design and storage capacities of the five water treatment plants in the City's water system are below in Table 6.

**TABLE 6: WATER TREATMENT PLANTS DESIGN AND STORAGE CAPACITIES**

<b>Water Treatment #</b>	<b>Design Capacity</b>	<b>Storage Capacity</b>
WTP 1 (Pomelo)	617,000 gallons per day (GPD)	50,000 gallon elevated storage tank
WTP 2 (Sampey)	1,440,000 GPD	250,000 gallon ground storage tank and 100,000 gallon elevated storage tank
WTP 3 (Sunshine)	1,084,000 GPD (2.7 million gallons per day of additional capacity planned within 2010-2012)	108,182 gallon ground storage tank and 10,000 gallon pressure tank
WTP 4 (Palisades)	1,152,000 GPD	15,000 gallon pressure tank
WTP 5	1,944,000 GPD	750,000 gallon ground storage tank

The St Johns River Water Management District issued Consumptive Use Permit (CUP) Number 2796 and CUP Number 2913 to the City. The WTP 1 (Pomelo), WTP 2 (Sampey), and WTP 5 fall under CUP 2796. The WTP 3 (Sunshine) and WTP 4 (Palisades) are covered under CUP 2913. The 2010 maximum daily and annual withdrawals permitted under each CUP below in Table 7.

**TABLE 7: SJRWMD CONSUMPTIVE USE PERMIT MAXIMUM ANNUAL AND DAILY WITHDRAWALS, 2008**

<b>Consumptive Use Permit (CUP)</b>	<b>Maximum Annual Withdrawal for 2010</b>	<b>Average Daily Withdrawal</b>
CUP 2796	558.26 million gallons	1.5 million gallons per day
CUP 2913	91.98 million gallons	.252 million gallons per day

Source: City of Groveland Utilities Department

On June 23, 2008, the Florida Department of Environmental Protection (FDEP) sent a letter to the City and notified the City that the maximum-day flow during April 2008 at WTP 1 of 685,861 gallons exceeded the plant’s permitted capacity of 617,000 gallons. The letter from FDEP also indicated that the total system (WTP 1 plus WTP 2) maximum-day flow may have exceeded 75% of the total permitted maximum-day operating capacity. The City addressed FDEP’s letter by preparing the Initial Source/Treatment/Storage Capacity Analysis Report dated September 25, 2009. An overview of the findings of this Report is featured in the Analysis section below.

The City’s Utility Department is responsible for ensuring the minimum line pressure is maintained or exceeded. Digital electronic pressure recording devices monitor and record pressure readings. In addition to these measures, electronic pressure monitors that display the distribution pressure 24-hours-per-day are located at the water production facilities.

The City is currently meeting the 50 pounds per square inch of average daily flow adopted level of service standard.

The City provides water to all residential and non-residential uses within the City limits as well as within its Utility Service Area (see the City's *Utility Service Area Map*). All development within the City is connected to the City's water system.

There are no private water treatment plants in the City. The City requires all new subdivision developments to tie into the City's water system.

### 3. ANALYSIS

Based on the City's 2009 Capacity Analysis Report, the combined existing maximum-day capacity of the three water treatment plants that serve the south system is greater than the projected maximum-day demand in 2020. Because this projected demand is less than the existing capacity, no additional or upgraded water treatment plant facilities are needed or recommended at this time.

The combined existing storage capacity provided by the storage facilities at WTP 1, WTP 2 and WTP 5 exceeds the projected total finished-water storage needed until 2017 and there is a shortfall in total finished-water storage capacity in the years from 2017 to 2020. This means that the City must plan to address this projected shortfall in total storage capacity in a timely manner, so that adequate storage capacity is available at all times during this period. The City has space available on the site of WTP 2 and WTP 5 for at least one additional ground storage tank at each site. It is recommended that the City plan to construct by mid-2016, additional storage capacity in the amount of at least 250,000 gallons. The City has already had preliminary work done to determine the suitability of soils at each location (WTP 2 and WTP 5) to support a tank and preliminary locations within each site have been proposed. The City will fund this additional storage capacity in its *Capital Improvement Budget* at the appropriate time to allow for permitting and construction. It is anticipated at this time, that permitting and final design would commence in 2014, with construction in 2015 so that the additional storage capacity would be available by mid-2016.

Overall, the City's potable water system is designed to accommodate future growth. With the revisions to the Consumptive Use Permit allotments and the installation of storage tanks at WTP 2 and WTP 5, there should be sufficient water capacity and storage for future growth as well. The City will continue to monitor and maintain the potable water services provided in the City's Utility Service Area during the planning period.

The City shall continue to enforce the guidelines established in the City's Cone of Influence and Wellhead Protection Areas. The City's Wellhead Protection Areas are featured on the City's *Existing Land Use Map* and *Future Land Use Map*.

The City shall continue to promote the following principles of xeriscape landscaping to be used for new developments or for new houses in older portions of the City:

- appropriate planning and design;
- use of soil amendments;
- efficient irrigation;
- practical turf areas;
- use of drought tolerant plants;
- use of mulches; and
- appropriate maintenance.

The City shall continue to work with Lake County and the St Johns River Water Management District to encourage water conservation through a combined program of public education and plumbing and irrigation system retrofits and refinements.

The City shall continue to enforce the standards established in the adopted *Water Conservation Ordinance* and *Landscaping Ordinance* as strategies to conserve water in the City's Utility Service Area.

## **F. NATURAL GROUNDWATER AQUIFER RECHARGE**

### **1. INTRODUCTION**

Recharge is a process whereby rainfall percolates downward through the soil to reach the underlying aquifers. Indicators which help to identify recharge areas are soil type, texture, slope, and land use. Water percolates more efficiently through soils with coarse texture than through clay and organic textured soils.

The slope and land use affect the length of time that water is retained. Therefore, these factors affect how much water will percolate or run off the surface. If land is covered by impervious surfaces such as buildings, parking lots and roads, then little recharge can occur. Lateral seepage must occur under these areas for any recharge function to exist. Recharge can be preserved either through land use intensity controls or design requirements for maintaining or improving recharge.

The geology in Lake County is similar to other areas in Central Florida. At the surface are deposits of sands. These sands grade to finer materials and contain more silts and clays with depth. These surficial deposits range in thickness from a few feet to hundreds of feet. Underlying the sands in most areas of the County is a confining bed of clay. These clays are generally considered a part of the Hawthorn formation. Below the clay are thick sequences of carbonate rocks - limestone, dolomitic limestones, and dolomite.

The St Johns River Water Management District has designated a large portion of Lake County as a "Priority Water Resource Caution Areas". These are areas where existing

and reasonably anticipated sources of water and conservation efforts may not be adequate (1) to supply water for all existing legal uses and reasonably anticipated future needs and (2) to sustain the water resources and related natural systems.

The Floridan aquifer is the principal source of drinking water for Lake County. Most of the water in the Floridan aquifer is derived from the County's average annual rainfall of approximately 48 inches. The County's annual recharge rate to the Floridan aquifer averages about 7 inches per year (in/yr). Recharge rates range from as high as 20-30 in/yr or greater on the Lake Wales and Mount Dora Ridges to 0 in/yr in the area along the St. Johns River and the Ocala National Forest. Additional recharge also occurs through drainage wells drilled into the Floridan aquifer to dispose of excess surface water in Ocala and western Orange County. Recharge to the surficial aquifer system, and consequently to the FAS, is augmented locally by artificial recharge - wastewater land application, rapid-infiltration basins, and septic systems. The recharge rate in Groveland and the surrounding area is 1 to 10 inches per year and the discharge rate is less than 1 inch per year.

## **2. Analysis**

The City enforces recharge provisions through the guidelines and standards established in this *Comprehensive Plan*.

The City shall continue to protect the groundwater and aquifer recharge by enforcing the standards established in the City's Cone of Influence and Wellhead Protection Areas. The City shall also continue to protect and conserve the groundwater by restricting development on environmentally sensitive lands.

The City's well drained sandy soils, lakes and ponds, wooded areas, and grassy yards contribute to water recharge. The larger residential lots also contribute to the water recharge in the area. The City's stormwater regulations have been identified and discussed earlier and contribute to recharge.

There are no known groundwater recharge problems in Groveland. The City shall continue to protect the quality of groundwater recharge through enforcing the City's Land Development Regulations. The quality of groundwater recharge shall also be protected by ensuring that all stormwater conveyances serving new development does not degrade the LOS lower than currently exists as a result of the new development's construction and stormwater runoff contribution.

The City's Land Development Regulations and the *Goals, Objectives* and *Policies* in this *Comprehensive Plan* are adequate measures focused on the protection of the ground water and aquifer recharge in the Groveland area.

## G. GOALS, OBJECTIVES AND IMPLEMENTING POLICIES

**GOAL 1:** Assure provision of sanitary sewer, solid waste, potable water, and drainage facilities and services that efficiently maximize capacity of existing facilities, promotes managed growth, protects public health and safety, and maintains environmental quality, with consideration to limited financial resources.

### GENERAL APPLICATIONS

**OBJECTIVE 1.1:** *Implement a Capital Improvement Schedule.* The City's *Five-Year Capital Improvement Schedule* established within the *Capital Improvements Element* shall adequately time improvement needs with available funding and location of development. This *Improvement Schedule* shall be consistent with public facility improvement needs identified within this *Comprehensive Plan*.

**Policy 1.1.1:** *Evaluation of Capital Improvement Schedule.* The City shall annually evaluate (during the annual concurrency review established in the *Capital Improvements Element*) the implementation of capital improvements proposed within the *Capital Improvement Program* and rank improvements according to priority of need.

**Policy 1.1.2:** *Criteria for Ranking and Evaluating Capital Improvements.* Proposed Capital Improvement Projects shall be evaluated and ranked according to the following priority level guidelines:

1. ***Indicated Need:*** Implementation is needed to:
  - Protect public health, safety, and environmentally sensitive natural resources;
  - Comply with State or Federal requirements to provide facilities and services;
  - Preserve or maximize the use of existing facilities; and
  - Improve efficiency of existing facilities.
2. ***Additional Facility Needs:*** Implementation is needed to:
  - Eliminate facility or capacity deficiencies for service provided to existing developed areas; and
  - Extend facilities and expand capacities in a manner consistent with the *Future Land Use Element* goals, objectives, and policies and the *Future Land Use Map*.

3. ***Adequate Funding:*** Adequate Funding for a project shall be available prior to its commencement, and project cost shall not cause accrued debt obligation to exceed beyond the limits of the City's debt capacity.

**Policy 1.1.3:** ***Deficiencies of Capital Improvements.*** In the event deficiencies should develop in the provision of public facilities, the City shall grant existing deficiencies priority among capital improvements scheduled within the *Capital Improvement Program*. The City shall issue no development permits for new development that will result in an increase in demand on deficient facilities.

## POTABLE WATER

**OBJECTIVE 1.2: *Potable Water Facilities.*** Annually evaluate the potable water infrastructure to maximize its use, correct deficiencies, and enhance the ability to increase capacity of the facilities in order to meet or exceed adopted LOS standards.

**Policy 1.2.1:** ***Maximizing the Use of Potable Water Treatment Facilities.*** The City shall maximize the use of the five potable water treatment facilities connected to the central water system.

**Policy 1.2.2:** ***Implementation of a Preventive Maintenance Program.*** The City shall maintain its potable water treatment facilities in optimum condition by the implementation of a preventive maintenance program.

**Policy 1.2.3:** ***Potable Water Level of Service.*** The City shall use the following Level of Service in its evaluation of future potable water infrastructure service:

250 gallons per day per equivalent residential unit (ERU). ERU totals are calculated by dividing the estimated population by 2.79 persons (2.79 persons per household was reported by the 2000 Census). Upon the completion of the 2010 Census data, the 2010 Census estimate for persons per household shall trump the 2000 Census estimate for persons per household.

This LOS shall be based on the average daily demand.

**Policy 1.2.4:** *Criteria for Central water System.* The City's central water system shall be based on the following:

1. Minimum storage capacity of the City water system shall be at least 25% of the maximum daily demand plus fire flow of 1,000 gallons per minute for 2 hours.
2. The potable water distribution system shall provide a minimum pressure of 50 pounds per square inch of average daily flow.

**Policy 1.2.5:** *Reviewing Water Fee Methodology and User Rates.* The City shall review the water fee methodology and use rates annually to insure adequate funding for treatment, storage and distribution facilities.

**Policy 1.2.6:** *Improvements and/or Additions to Potable Water Facilities.* All improvements and/or additions to potable water facilities to correct deficiencies shall be compatible and adequate to meet the adopted level of service standards. These improvements and/or additions to potable water facilities shall comply, at a minimum, with standards recognized and approved by the Florida Department of Environmental Protection.

**OBJECTIVE 1.3:** *Future Potable Water Facilities.* Ensure the supply and treatment of safe potable water during the short-range (2011-2015) and long-range (2025) planning periods to meet the adopted level of service standards.

**Policy 1.3.1:** *Meeting Future Demands Concurrent with Development.* Based upon the adopted level of service, the City shall plan for replacement, expansion and extension of potable water facilities to meet future demands concurrent with new development.

**Policy 1.3.2:** *Planning for Adequate Future Water Treatment Facilities.* The City shall plan for adequate future treatment facilities which, at a minimum, meet all Federal and State drinking water criteria.

**OBJECTIVE 1.4:** *Maximize use of Existing Facilities and Minimize Urban Sprawl.* Direct growth to areas either currently serviced by the water system or planned for growth to maximize the use of existing and planned facilities and to minimize urban sprawl.

**Policy 1.4.1:** *Providing Potable Water Services in the Utility Service Area.* The City shall be the provider of potable water service to residential and non-residential establishments within the City's Chapter 180 Utility Service Area.

- Policy 1.4.2:**        *Coordinating the Provision of Potable Water Services.* The City shall coordinate the provision of potable water service to all new development within its service area in accordance with the *Future Land Use Element* policies, land use allocations delineated on the *Future Land Use Map*, and the areas planned for development.
- Policy 1.4.3:**        *Criteria for Developments to Connect to the Potable Water System.* Within the City limits, all new development shall connect to the City's potable water system. When the existing potable water line is not located adjacent to the property, the City shall require the new development to extend the potable water system at the developer's expense to service subject property. Such provision shall be coordinated with City's planned expanded/new facilities in order to ensure that the adopted level of service is maintained.
- Policy 1.4.4:**        *Potable Water Connection Requirement for Development Located in the Utility Service Area.* In unincorporated areas within the City's adopted Chapter 180 Utility Service Area, new commercial and industrial development, and new residential developments of 50 homes or greater, within 500 feet of the City's existing water line shall connect to the City's potable water system at the developer's expense. Such provision shall be coordinated with City's planned expanded/new facilities in order to ensure that the adopted level of service is maintained.
- Policy 1.4.5:**        *Non-contiguous Properties and Provision of Potable Water.* The City shall allow properties that are within the Utility Service Area who currently want potable water, but are not contiguous to the City, to be served by the City's utilities as long as a signed agreement (covenant to annex) has been signed by the property owner stating that once such the property is contiguous then their land will be annexed into the City.
- Policy 1.4.6:**        *Availability of Adequate Water Supplies and Related Facilities.* The City shall consult with the St. Johns River Water Management District, prior to the approval of a building permit or its functional equivalent, to determine whether adequate water supplies and related facilities to serve new development will be available no later than the anticipated date of issuance by the City a certificate of occupancy or its functional equivalent.

**OBJECTIVE 1.5: *Consistency of the City's Water Supply Plan.*** Ensure consistency with the City's adopted *Water Supply Facilities Work Plan*, the *Comprehensive Plan*, and the St. Johns River Water Management District's *Water Supply Facilities Plan*.

**Policy 1.5.1:** *Adoption of Water Supply Work Plan.* The City hereby adopts by reference the goals, objectives, and policies in the City's *10-year Water Supply Facilities Work Plan (WSFWP) 2010-2020* to ensure that the adopted *Comprehensive Plan* is consistent with and compatible to the adopted *Work Plan*.

**Policy 1.5.2:** *Development of Efficient, Cost-effective, and Technically Feasible Water Sources.* In conjunction with the SJRWMD and other local governments, the City will seek the development of efficient, cost-effective and technically feasible water sources that will supplement future demands, without causing adverse impact to water quality, wetlands, and aquatic systems.

**Policy 1.5.3:** *Maximizing the use of Existing Potable Water Facilities.* The City will maximize the use of existing potable water facilities through the implementation of management techniques that can enhance a source of supply, sustain water resources and related natural systems, and/or optimize water supply yield. These techniques may include, but are not limited, to aquifer storage and recovery, reclaimed water, system interconnects, and water conservation.

**Policy 1.5.4:** *Designing and Implementing an Effective Water Supply Plan.* The City will participate in the implementation of the East Central Florida Water Supply Planning Initiative, updates of the SJRWMD's water supply assessments, and updates of the District's *Water Supply Plan (2005)*, to enable the City to design and implement an effective water supply plan.

**Policy 1.5.5:** *Level of Service Consistency.* The City's *WSFWP* shall be consistent with the Potable Water Level of Service standards as established in the *Comprehensive Plan*.

**Policy 1.5.6:** *Update of the City's Water Supply Facilities Work Plan.* The City shall coordinate with the St. Johns River Water Management District during updates to their *Regional Water Supply Plan*, to identify potentially feasible alternative water supply projects in the City. Within 18 months of the adoption of St. Johns River Water Management District's *Water Supply Plan*, the City shall complete updates of the appropriate elements and adopt related plan

amendments to address all of the 10-year water facilities supply work plan components of Chapter 163, F.S.

**Policy 1.5.7:** *Expansion and Upgrade of Facilities.* The City's *WSFWP* shall be used to coordinate and prioritize the expansion and upgrade of facilities needed to withdraw, treat, store, transmit, and distribute potable water to meet current and future needs. The City shall also prioritize the identification and utilization of alternate renewable sources of water to meet the projected increases in demand.

**Policy 1.5.8:** *Maintaining 5-year Capital Improvements Schedule.* The City shall maintain its *Five-year Schedule of Capital Improvements* to ensure the expansion and upgrade in capacity of water facilities in accordance with the City's *WSFWP*.

**Policy 1.5.9:** *Assessing SJRWMD's Water Supply Facilities Work Plan.* The City's *WSFWP (Work Plan)*, shall assess existing and projected water sources and needs for at least a 10-year planning period and consider the *Regional Water Supply Plan* of the St. Johns River Water Management District. The *Work Plan* shall identify traditional and alternative water supply sources that the City may use to meet existing and projected water demands. The alternative water supply projects in the *Work Plan* will be selected from the applicable District's *Regional Water Supply Plans* or otherwise proposed by the City.

**OBJECTIVE 1.6: Water Conservation.** Promote and expand the conservation and responsible use of the City's potable water.

**Policy 1.6.1:** *Requiring the use of Water Saving Devices.* The City's shall require the use of water saving devices in new or renovated building construction. The development review process shall include a review of development applications to assure such fixtures will be installed. No certificate of occupancy shall be issued unless such fixtures are in place concurrent with the deadlines established for water facilities within the City's *Concurrency Management System*.

**Policy 1.6.2:** *Native and Drought Tolerant Landscaping.* The City shall encourage the use of native and drought tolerant landscaping that incorporates the principles of design, appropriate plant selection, soil improvement, efficient irrigation, mulching, turf concentration, and proper maintenance.

- Policy 1.6.3:** *Water Reuse Program.* The City shall develop a water reuse program in association with improvements to the Sampey Road and Sunshine Parkway waste water treatment plants. The program will focus on providing reuse water where feasible to high volume water users and for landscape irrigation.
- Policy 1.6.4:** *Extension of the Reclaimed Water System.* The City shall require extension of the reclaimed water system into new residential and non-residential development where feasible.
- Policy 1.6.5:** *Water Meters.* The City shall continue to require the metering of all water to ensure accountability of water use and implement its Meter Replacement Program for small and medium size meters.
- Policy 1.6.6:** *Water Conservation Promoting Rate Structure.* The City shall continue to implement a water conservation promoting rate structure. Upon the completion of the Rate Structure Study, the city shall incorporate the findings in the corresponding elements of this *Comprehensive Plan*.
- Policy 1.6.7:** *Public Education Programs.* The City shall continue its public education programs on water conservation. At a minimum the program will include:
1. Sending conservation messages in utility bills;
  2. Encouraging employee ideas for the water conservation program;
  3. Providing water conservation signs in employee restrooms;
  4. Providing water conservation materials to schools;
  5. Encouraging residents to use sensors and controls such as rain shutoff sensors, soil moisture sensors, or evapotranspiration controllers for in-ground irrigation systems.
- Policy 1.6.8:** *Leak Detection and Repair Program.* The City shall conduct periodic water audits and implement a leak detection and repair program if the system losses and unaccounted for water utility uses exceed 10%.
- Policy 1.6.9:** *Establishing Less Sod and Irrigation Best Practices.* By December 2012, the City shall amend the Land Development Regulations to establish standards that encourage less sod and irrigation best practices.

**Policy 1.6.10:**        *Adopting a Reuse Water Master Plan.* By December 2012, the City shall adopt a master plan for the City to maximize the potential for reuse water.

**Policy 1.6.11:**        *Protection and Conservation of Water Supplies and Future Demand.* By December 2012, the City shall amend the Land Development Regulations to incorporate additional strategies to further the protection and conservation of potable water supplies and delay the future demand for alternative water supplies. Such strategies shall include, at minimum, the following programs or standards:

- Water wise principles and site design standards;
- Appropriate plant selection and location standards;
- Encouraging new residential, commercial, and mixed-use developments to incorporate programs such as Florida Water Star<sup>SM</sup>, ENERGY STAR, the Florida Green Building Coalition's Green Home and Development Standards, Florida Yards and Neighborhood Program, and the U.S. Green Building Council's LEED program that encourages water efficiency in household appliances, plumbing fixtures, irrigation systems, and landscapes;
- Promotion of Low Impact Development standards;
- Irrigation design and installation standards; and
- Establishing incentives for developments that incorporate strategies that promote the reduction in the use of water and the protection of the environment and natural resources.

**OBJECTIVE 1.7: Fire Protection.** Provide adequate delivery and distribution of potable water to meet fire protection demand within the City and the City's Utility Service Area.

**Policy 1.7.1:**        *Monitoring the Water System and Fire Protection Demands.* The City shall monitor, evaluate, repair and replace, as needed, the existing water delivery and distribution system to ensure the system can deliver needed gallon per minute flows to meet fire protection demands.

**Policy 1.7.2:**        *Water System and Fire Hydrant Mapping and Numbering.* The City shall maintain an active water system and fire hydrant mapping and numbering program.

**Policy 1.7.3:** *Fire Flow Testing of Hydrants.* The City's Fire Department shall continue to conduct fire flow testing of hydrants to ensure adequate system capacity.

**Policy 1.7.4:** *Fire Flow and Levels of Service.* Fire flow levels of service shall be based upon delivery of 1,000 gpm for 2 hours with a required residual pressure of twenty (20) psi.

## Solid Waste

**OBJECTIVE 1.8: *Solid Waste Disposal and Collection.*** Assure that adequate solid waste collection and disposal capacities are available to support demands generated by existing and new development concurrent with the issuance of a development permit or at the time service will be demanded.

**Policy 1.8.1:** *Solid Waste Level of Service.* The City's hereby adopts a minimum level of service standard for solid waste collection services of 6 pounds per day per resident.

**Policy 1.8.2:** *Private Collection Services.* The City shall continue to rely on private collection service to residential, commercial, and industrial land uses located within the City limits. At any time the private collection service does not have the capacity to provide service to new development, additional service shall be obtained through expanded franchise agreements with private waste management businesses.

**Policy 1.8.3:** *Availability of Full-service Pickup.* The City shall ensure, through its agreements with private providers, that full-service pickup shall be available within the City.

**Policy 1.8.4:** *Evaluating the Private Collection Services.* The City shall monitor and evaluate the private franchise system for residential, commercial, and industrial solid waste collection to ensure that the most efficient and cost effective service is being provided.

**Policy 1.8.5:** *Illegal Dump Sites.* The City shall endeavor to implement programs for the clean up of illegal dumpsites in a timely, efficient and environmentally sound manner.

**Policy 1.8.6:** *Disposal of Solid Waste.* The City shall continue to use Lake County landfills and the trash burning facility, or other County disposal facilities, through the year 2025 for final disposal of solid waste.

**Policy 1.8.7:**            *Coordinating Solid Waste Programs with Lake County.* The City shall coordinate with Lake County on an annual basis to:

- a.)     assure that Groveland is allocated a proportional share of capacity in County-operated land fills, or other disposal facilities;
- b.)     reduce solid waste disposal levels through recycling programs administered by the City and Lake County; and
- c.)     offer assistance to Lake County in the management of hazardous waste as pursuant to State regulations (403.7265, F.S.).

**Policy 1.8.8:**            *Concurrency Management System and Solid Waste.* The City shall monitor performance of solid waste collection services, available capacities, and compliance with levels of service through its *Concurrency Management System*.

**OBJECTIVE 1.9: *Recycling Programs.*** Reduce the volume of municipal solid waste by encouraging and promoting recycling programs.

**Policy 1.9.1:**            *Recyclable Collection Process.* The City shall continue to have a recyclable collection process in place for curbside pickup of newspapers, glass, plastics and aluminum.

**Policy 1.9.2:**            *Collection Process for Yard Waste.* The City shall continue to have a collection process in place for curbside pickup of yard waste.

**OBJECTIVE 1.10: *Illegal Dumping and Disposal.*** Implement and enhance programs to address potential problems of illegal dumping of both hazardous and non-hazardous waste materials.

**Policy 1.10.1:**            *Fines and Penalties for Illegal Dumping.* The City shall continue to implement specific fines and penalties for illegal dumping and related activities.

**Policy 1.10.2:**            *Monitoring Construction Sites and Vacant Lots.* The City shall monitor construction sites and vacant lots to prevent or abate illegal dumping activities prohibited by City ordinances.

**Policy 1.10.3:**            *Increasing Public Awareness.* The City shall increase public awareness through educational campaigns directed at the general

public and businesses regarding illegal dumping and proper disposal of non-hazardous and hazardous waste.

**Policy 1.10.4:** *Supporting Volunteer Clean-up Programs.* The City shall support volunteer clean-up programs and projects where feasible and appropriate.

**OBJECTIVE 1.11: *Disposal of Hazardous Waste.*** Coordinate with Lake County to monitor and control the disposal of hazardous waste.

**Policy 1.11.1:** *Proper Handling and Disposal of Hazardous Wastes.* The City shall continue to educate its citizens regarding the proper handling and disposal of hazardous wastes.

**Policy 1.11.2:** *Coordinating with Lake County and Providing Technical Assistance.* The City shall coordinate with Lake County in the placement of local hazardous waste collection centers and provide technical assistance on various issues pertaining to the management of hazardous waste according to State regulations. Technical assistance shall include the exchange of information regarding hazardous waste within the City.

## Sanitary Sewer

**OBJECTIVE 1.12: Existing Wastewater Treatment.** Identify and correct any existing deficiencies in the City's wastewater system, ensure that the minimum level of service for sanitary sewer is met, and provide a level of treatment that meets the water quality standards for effluent limitations established by Florida Department of Environmental Protection.

**Policy 1.12.1:** *Evaluating the Sewer System.* The City shall maintain a sewer system evaluation and survey program to identify those elements of the infrastructure in need of repair or replacement. The City shall, through an ongoing program, evaluate the age and condition of existing wastewater infrastructure to locate pipes, lift stations, force mains and other facilities to determine the end of their economic life and to project costs for their replacement.

**Policy 1.12.2:** *Wastewater Levels of Service.* The City shall provide wastewater service based upon the following Level of Service:

250 gallons per day per equivalent residential unit (ERU). ERU totals are calculated by dividing the estimated population by 2.79 persons (2.79 persons per household was reported by the 2000 Census). Upon the completion of the 2010 Census data, the 2010

Census estimate for persons per household shall trump the 2000 Census estimate for persons per household.

**Policy 1.12.3:** *Capacity of Force Mains and Lift Stations.* The capacity of the collection force mains and lift stations shall be based on the following peaking factors based upon the average design flow (ADF): flows to 0.050 MGD ADF use a 3.5 factor, flows 0.050 to 0.250 MGD ADF use a 3.0 factor, and flows above 0.250 MGD ADF use a factor of 2.5.

**OBJECTIVE 1.13: *Future Wastewater Treatment.*** Provide additional facilities and capacities to meet wastewater demands generated by future development.

**Policy 1.13.1:** *Expanding or Constructing New Facilities.* The City shall plan the construction of expanded or new sanitary sewer treatment facilities when capacity allocation of existing facilities is at seventy-five percent (75%) of available capacity, and should have improved or new facilities ready for operation when capacity allocation of existing facilities is at ninety percent (90%) of available capacity.

**Policy 1.13.2:** *Meeting the Population Demands.* Based on the requirements of Policy 1.13.1, the City shall ensure that sanitary sewer plants are expanded and/or new plants are constructed to provide for the projected population increase of the City between 2010 and 2025.

**Policy 1.13.3:** *Sewer Impact Fees and User Rates.* The City shall maintain adequate sanitary sewer impact fees and user rates to ensure funding for new treatment, collection, and effluent disposal systems.

**Policy 1.13.4:** *Review of Wastewater Rates.* The City shall have a yearly formal review of all wastewater rates. Rates should be modified, as required, to reflect the current and projected cost of materials, labor, and services.

**Policy 1.13.5:** *Monitoring the Availability of Funds.* The City shall monitor the availability of funds at the state and federal levels of government for the construction of wastewater facilities and, where applicable and practical, encourage wastewater planning consistent with the eligibility requirements of the funding program.

**OBJECTIVE 1.14: *Maximize Existing Facilities and Discourage Urban Sprawl.*** Maximize existing sanitary sewer facilities within the City’s Utility Service Area and promote compact efficient growth patterns.

**Policy 1.14.1:** *Sanitary System Connection Requirement.* The City shall require all new development within 500 feet of City central sanitary sewer line to connect to the system. At the time of development, if the development is not required to connect to the central sanitary sewer system, the City will require the developer to install dry lines for both sanitary and reclaimed and the associated lift stations and force mains. Such provision shall be coordinated with City’s planned expanded/new facilities in order to ensure that the adopted level of service is maintained.

**Policy 1.14.2:** *Non-contiguous Properties and Provision of Sanitary Sewer.* The City shall allow properties that are within the Utility Service Area who currently want sanitary sewer service, but are not contiguous to the City, to be served by the City’s utilities as long as a signed agreement (covenant to annex) has been signed by the property owner stating that once such the property is contiguous then their land will be annexed into the City.

**OBJECTIVE 1.15: *Reclaimed Wastewater.*** Develop and maintain a water reuse program in association with improvements to the Sampey Road and Sunshine Parkway Waste Water Treatment Plants.

**Policy 1.15.1:** *Requirement to Extend the City’s Reclaimed Water System.* The City shall require extension of the reclaimed water system into new residential and non-residential development where feasible.

**Policy 1.15.2:** *Conducting Informational and Educational Campaigns.* The City shall conduct informational and educational campaigns to encourage industrial/commercial customers within the City’s Utility Service Area to implement water conservation programs or use reclaimed water where practical and economically feasible.

**OBJECTIVE 1.16: *Septic Tanks.*** Mandate connection to the central sewer system when available for existing residences and non-residential establishments, which are served by septic systems and are deemed to be detrimental to the health, safety, and welfare of the general public.

**Policy 1.16.1:** *Defining the term Available.* “Available” shall mean within five-hundred (500) feet of a sanitary sewer collection system and accessible by a legally recorded easement or rights-of-way.

**Policy 1.16.2:** *Identifying Areas that Require Central Sewer Services.* By December 2012, the City shall identify those areas within the City's Utility Service Area, which are served by septic systems and prioritize areas requiring central sewer service based on soil suitability, density, and environmental concerns.

**Policy 1.16.3:** *Line Extensions and the Capital Improvements Schedule.* Prioritize and incorporate line extensions into the City's *Capital Improvements Schedule* to connect existing septic areas to the central sanitary sewer system. The City shall require the participation of the existing residents and/or developers in the cost of the sewer line extensions.

## Stormwater Management

**OBJECTIVE 1.17:** *Stormwater Facility Deficiencies and Functions of Natural Drainage Features.* To identify and correct stormwater facility deficiencies, maximize the use of existing facilities, and protect the functions of natural drainage features which serve the City.

**Policy 1.17.1:** *Correcting Identified Drainage Deficiencies.* Upon completion of the City's *Stormwater Master Plan* update, the City shall amend the *Comprehensive Plan* to include any recommended deficiencies or drainage improvements. Recommended improvements shall be added to the City's *5-year Schedule of Capital Improvements* as funds become available.

**Policy 1.17.2:** *Upgrading and Retrofitting Stormwater Facilities.* The City shall upgrade and retrofit stormwater facilities with roadway construction wherever feasible.

**Policy 1.17.3:** *Drainage Projects Review Criteria.* The City shall review drainage projects in accordance with the following priorities:

- (A) Those improvements which increase public safety and welfare;
- (B) Those improvements which reduce property damage associated with flooding;
- (C) Those improvements which maintain or improve the quality of water flowing into rivers, lakes, and wetlands;
- (D) Those improvements which preserve, restore, or enhance natural habitats and wetlands; and
- (E) Those improvements which reduce cost maintenance costs for the City.

**Policy 1.17.4:** *Minimum Drainage Level of Service – Water Quantity.* The City hereby adopts, for existing as well as new development, the following minimum stormwater drainage level of service standards for retention volume and design storm:

- a. Retention Volume – Complete retention of the post-development minus the pre- development run off occurring at the established design storm.
- b. Design Storm – The following interim level of service standards will be used until the *Comprehensive Plan* is amended to incorporate findings and recommendations of the *Storm Water Master Plan* update:

Facility Type	Design Storm
Canals, ditches, roadside swales, or culverts for stormwater external to the development	25 Year
Canals, ditches, roadside swales, or culverts for stormwater internal to the development	10 Year
Crossdrains	25 Year
Storm sewers	10 Year
Major Detention/Retention Structures <sup>1</sup>	For the Probable Maximum Precipitation as required by SJRWMD
Minor Detention/Retention Structures <sup>1</sup>	25 Year
Development occurring in the 100 year Flood Zone must elevate the first floor 18” above the 100 year Flood Elevation	

<sup>1</sup> Major/Minor Detention/Retention Structures are based on Hazard Classification for Dams and Impoundments as defined by the St. Johns River Water Management District.

**Policy 1.17.5:** *Minimum Drainage Level of Service – Water Quality.* The City hereby adopts, for existing as well as new development, the following minimum stormwater drainage level of service standards for pollution abatement treatment:

Facility Type	Pollution Abatement Treatment <sup>1</sup>
Retention with percolation or detention with filtration	Runoff from first inch of rainfall or one-half inch of runoff if it has less than 50% impervious surface and less than 100 acres, whichever is greater.
Detention without filtration or wet detention	The first inch of runoff from the site or 2.5 inches times the site’s impervious surface, whichever is greater.

<sup>1</sup> If the site’s runoff directly discharges to Class I, Class II, or Outstanding Florida Waters (OFW), then the Pollution Abatement Treatment Requirements shall be increased by an additional fifty percent (50%) more than described, an offline retention or off-line detention with filtration of the first inch of runoff shall be required. The City shall discourage the use of detention with filtration pollution abatement systems due to their high failure rate and costly maintenance; thus, the City shall allow detention with filtration only if detention without filtration cannot be used.

**OBJECTIVE 1.18: *Protecting Natural Drainage Features.*** Protect natural drainage features and ensure that future development utilizes stormwater management systems are compatible with State and local regulations.

**Policy 1.18.1:** *Stormwater Management Systems and SJRWMD’s Standards.* The City shall ensure that the stormwater management systems level of service standards for stormwater quantity and quality, at a minimum, meet or exceed the requirements of SJRWMD.

**Policy 1.18.2:** *Requirement for Development within the Green Swamp.* Projects located within the Green Swamp Area of Critical State Concern and within the Most Effective Recharge Areas must retain three inches of runoff from directly connected impervious areas within the project. Applicants may instead demonstrate that the post-development recharge will be equal to or greater than the pre-development recharge. Most Effective Recharge Areas are those areas with soils classified by the Soil Conservation Service as Type “A” Hydrologic Soil Group. Directly connected impervious areas

are those impervious areas which are connected to the surface water management system by a drainage improvement such as a ditch, storm sewer, paved channel, or other man-made conveyance. Stormwater that is retained must be infiltrated into the soil or evaporated such that the storage volume is recovered within 14 days following a storm event.

**Policy 1.18.3:** *Quality of Post-development Runoff.* The City shall ensure that the quality of post-development runoff from developments shall meet or exceed the receiving water quality criteria established in State law and other applicable surface water quality standards.

**OBJECTIVE 1.19: *Function and Integrity of Natural Hydrological Systems.*** Maintain the function and integrity of natural hydrological systems by minimizing development's impact on flood storage capacity and protecting and/or enhancing the function of existing wetlands and lakes.

**Policy 1.19.1:** *Incorporating Best Management Practices.* Upon completion of the Upper Ocklawaha River Basin Management Action Plan, the City shall amend the Land Development Regulations to incorporate the Best Management Practices, non-structural stormwater management strategies, and xeriscaping to manage stormwater and its environmental impacts.

**Policy 1.19.2:** *Restoring and Protecting the Water Quality.* To assist the Florida Department of Environmental Protection, the St. Johns River Water Management District, and the Lake County Water Authority in their efforts to restore and protect the water quality in the Upper Ocklawaha River Basin, the City shall:

- Promote the use of wet retention and dry retention stormwater ponds;
- Promote the use of Low Impact Developments;
- Actively seek funding for stormwater retrofit projects, which include activities ranging from the installation of baffle boxes to the creation of detention ponds; and
- Identify strategies to eliminate or reduce direct discharge to the lakes in the City.

**Policy 1.19.3:** *Maintaining Stormwater Management Facilities.* The City shall maintain its stormwater management facilities in such a manner that the impacts to natural systems shall be minimized.

- Policy 1.19.4:** *Private Stormwater Management Facilities.* The City shall require that all private stormwater management facilities be maintained in such a manner that the effectiveness for stormwater abatement and water quality improvement are maximized.

## Natural Groundwater Aquifer Recharge

**GOAL 2:** Protect and maintain groundwater aquifer high recharge areas.

**OBJECTIVE 2.1:** *Aquifer Recharge Protection.* Protect aquifer recharge areas to maintain suitable groundwater levels and to protect groundwater quality.

- Policy 2.1.1:** *Post-development Runoff Volumes.* The City shall protect groundwater resources by not allowing increases in post-development runoff volumes in areas that have a high potential for groundwater recharge (> 12 inches/year).

- Policy 2.1.2:** *Land Uses and Water Contamination.* The City shall prohibit land uses which have a high potential risk for water contamination in areas that have a high potential for groundwater recharge (> 12 inches/year).

- Policy 2.1.3:** *Wellhead Protection.* In order to protect the quality and quantity of Groveland's potable water supply, a wellfield protection zone shall be established within a radius distance of seventy five, two hundred, and five hundred feet from potable water wells. The following land uses are prohibited within these zones.

No new development shall be permitted within seventy-five feet from a well. Within a two-hundred foot radius distance, septic tanks, sanitary sewer facilities, or solid waste disposal facilities shall be prohibited.

Within a five hundred foot radius of a well, manufacturing uses shall be prohibited, including activities that require the storage, use, handling, production or transportation of restricted substances on the Florida Substance List, and agricultural chemicals, petroleum products, hazardous/toxic wastes, industrial chemicals, etc. In addition, wastewater treatment plants, percolation ponds, mining activities and similar activities are prohibited. Low density single family, commercial, retail and office land uses shall be allowed within the 500 foot zone for potable water wells.

- Policy 2.1.4:**            *Coordination with State and Federal Agencies.* The City shall continue to coordinate with Lake County, St Johns River Water Management District, and state and federal agencies to achieve regional aquifer recharge protection objectives.
- Policy 2.1.5:**            *SJRWMD’s Consumptive Use Permit and Groundwater Withdrawals.* The City shall coordinate with St Johns River Water Management District in its consumptive use permit applications to determine the extent to which groundwater withdrawals can be made without resulting in harm to the water resources and associated natural systems and shall manage its groundwater withdrawals in compliance with the conditions of its consumptive use permits to avoid such harm.
- Policy 2.1.6:**            *Reclaimed Water System.* The City’s reclaimed water system shall be used to provide re-use water for irrigation and to decrease potable water demand.
- Policy 2.1.7:**            *Requirement for Development within the Green Swamp.* Projects located within the Green Swamp Area of Critical State Concern and within the Most Effective Recharge Areas must retain three inches of runoff from directly connected impervious areas within the project. Applicants may instead demonstrate that the post-development recharge will be equal to or greater than the pre-development recharge. Most Effective Recharge Areas are those areas with soils classified by the Soil Conservation Service as Type “A” Hydrologic Soil Group. Directly connected impervious areas are those impervious areas which are connected to the surface water management system by a drainage improvement such as a ditch, storm sewer, paved channel, or other man-made conveyance. Stormwater that is retained must be infiltrated into the soil or evaporated such that the storage volume is recovered within 14 days following a storm event.