



LAKE COUNTY  
FLORIDA

**PUBLIC FACILITIES ELEMENT**  
**Data, Inventory & Analysis**  
**2030 Planning Horizon**



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## **SANITARY SEWER SUB-ELEMENT**

### **INTRODUCTION**

Lake County does not own, operate, or maintain any wastewater systems nor does Lake County have any water or sewer service areas. Municipal governments provide sanitary sewer and wastewater treatment within their jurisdictions and in adjacent areas that may be annexed as development in the county continues. Septic systems and private wastewater treatment plants (package plants) treat waste in unincorporated Lake County.

### **Reclaimed Water**

Florida's population boom in the past several decades has increased the demand for water. Naturally occurring groundwater has been used to meet most of the increasing use, but high-quality groundwater supplies are not sufficient to meet all future needs. It has also become more difficult to dispose of the increasing quantities of treated wastewater in an environmentally sound manner. Reusing reclaimed water—such as domestic (household) wastewater—addresses both of these problems.

Water reuse, or reclaimed water, has become an important component of water resource management in Florida. Florida has been recognized as the national leader (along with California) in water reuse (Water Reuse Program, 2006). Reclaimed water is defined by the Florida Department of Environmental Protection (FDEP) as water that is beneficially reused after being treated to at least secondary wastewater treatment standards by a domestic wastewater treatment plant (WWTP). Beneficial reuse is generally defined for water supply applications as reuse that replaces or offsets potable water uses. The SJRWMD typically seeks to achieve a water resource benefit with reclaimed water by:

- Using reclaimed water in place of higher quality water for uses that do not require higher quality, and;
- Using reclaimed water to augment water supply sources, typically by groundwater recharge (SJRWMD 2006)

Reclaimed water is commonly used to irrigate golf courses, residential landscapes, corporate grounds, agricultural fields, and sports fields. The nutrients in the water reduce the need for fertilizer. Reclaimed water can also be used for industrial heating and cooling, for car washes, and to replenish wetlands during times of drought. Using reclaimed water where it is appropriate leaves us with greater supplies of fresh, pure drinking water.

Using reclaimed provides a safe, environmentally responsible alternative to traditional wastewater disposal methods, and delays the need to develop additional drinking water supplies. In addition to these benefits, reclaimed water can offset the costs of wastewater treatment through its sale. The St. Johns River Water Management District requires water supply utilities to make reclaimed water available to potential users when it is economically, technically, and environmentally feasible.

A total of twenty-six (26) wastewater facilities in Lake County with a treatment capacity of 22.31 mgd are currently providing 100% of their 12.9 mgd flows for reuse applications. Of this reuse flow, 4.09 mgd (32%) is applied to aquifer recharge using Rapid Infiltration Basins (RIBs). Approximately 2.95 mgd (23%) of the reuse flow is classified as beneficial (residential irrigation, RI), golf course irrigation (GCI), and other public access areas (OPAA)). The remaining 5.83 mgd of flows are distributed to sprayfields (absorption fields, AF) or other crops (OC)

Table 1 below highlights the wastewater treatment facilities within the County with reuse capabilities. In addition to these facilities, several of the facilities are planned to be upgraded or expanded to increase the use of reclaimed wastewater water. For example, the City of Clermont requires reclaimed water distribution systems for all new subdivisions in the east service area. The City has plans to expand the reclaimed water transmission and distribution network in phases to serve these subdivisions. The City also has a project currently under design to combine the City's east and west service areas and direct all of the wastewater flow to the East Water Reclamation Facility (WRF). The planned capacity of the East WRF after the completion of the project will be 4.0 MGD. Reclaimed water storage tanks will also be constructed at the East WRF as part of the project.

The City of Mount Dora has significant plans for expansion of its system. A component of the City's Water Facilities Plan will include alternative water resources to supplement the reuse system such as stormwater and surface waters. Use of these resources will lessen the demand on the potable system.

The City of Umatilla conducted a feasibility study that concluded that they have the potential to provide reclaimed water. Currently, all effluent in Umatilla is routed to sprayfields and percolation ponds.

The City of Tavares currently send its reclaimed water to RIBs, however, it has designated a reuse area within the City south of Dead River Road. All new developments within the area are required to have reuse capabilities and will be required to use reuse for irrigation purposes beginning in 2008 or 2009. Currently, there are 964 residential units approved for reuse in the City. In addition to the reuse requirements for residential units, the St. John's River Water Management District (SJRWMD) is requiring the Baytree golf course, the city owned Woodlea Sports Complex, and the Tavares Cemetery to connect to reuse irrigation systems.



**Table 1: 2007 Lake County Wastewater Treatment Facilities with Reuse**

<b>Facility Name</b>	<b>Reuse Type</b>	<b>Capacity (mgd)</b>	<b>Flow (mgd)</b>
CLERBROOK RV RESORTS	BA	0.12	0.02
CLERMONT - EAST	HI	2.00	1.39
CLERMONT - WEST	BA	0.75	0.66
EUSTIS - EASTERN	BA	0.30	0.00
CITY OF EUSTIS	HI	2.40	1.04
GROVELAND	BA	0.25	0.21
LADY LAKE WWTF	BA	0.25	0.08
LAKE CORRECTIONAL INSTITUTION	BA	0.18	0.16
LAKE GROVES UTILITIES, STP	BA	0.50	0.36
LEESBURG/CANAL STREET WWTF	BA	3.50	2.00
LEESBURG/CANAL STREET WWTF	BA	3.00	0.90
MID-FLORIDA LAKES	BA	0.18	0.09
MOUNT DORA #1 WWTF	HI	1.50	0.63
MOUNT DORA #2 - JAMES SNELL	HI	1.25	0.27
OAK SPRINGS MHP	BA	0.15	0.03
PENNBROOKE WWTF	HI	0.18	0.09
PLANTATION @ LEESBURG	HI	0.37	0.15
SOUTHLAKE COMMUNITY	BA	1.15	0.68
ST. JOHNS - ASTOR PARK	BA	0.30	0.14
SUNSHINE PARKWAY	BA	0.42	0.14
UMATILLA	BA	0.30	0.14
VILLAGES	HI	1.64	1.08
WATER OAK ESTATES	BA	0.20	0.07
TAVARES/WOODLEA ROAD	BA	1.99	1.35
Source: FDEP Website 2010			

## **Wastewater Facilities**

Table 2 below lists the domestic wastewater treatment plants in Lake County and their service information. Table 3 lists service information for industrial wastewater treatment. Both tables are from the Florida Department of Environmental Protection (FDEP). Data gaps in the tables are due to no entries of the information in the FDEP database. Further information on these systems can be obtained by contacting their respective municipalities.

## **Planned Wastewater Facilities**

Lake County has no plans to build or operate any sewer system or wastewater treatment plants.

## **Septic Tanks**

Lake County estimates that it has 80,000 septic systems, including approximately 19,000 in the Wekiva River Protection Area. According to Lake County Department of Health, an average of 2,200 new systems are built each year and another 1,000 are repaired. Because Lake County has a relatively high elevation and dry soils, it provides many excellent locations for their use. Most marginal or poor soils in the county can be modified to safely accommodate septic systems as well.

Septic systems are estimated to have an average life expectancy of approximately 15 years (with a general range of 3 to 35 years depending on how the system is used), provided the systems are maintained properly. Failures occur when systems are not pumped every 3 to 5 years or when materials damaging to the system are disposed in it, such as powder detergent and grease. Septic tanks generally provide 100 gallons of waste containment per bedroom, or about 50 gallons per person. Failure of a septic system can result from exceeding this capacity planned figure. The Lake County Department of Health is currently planning seminars to educate the public on the proper use of septic systems.

Lake County considers a properly maintained septic system to be an appropriate solution to wastewater treatment in rural areas with low population densities. The major concern over septic systems is their growing prevalence in high-density suburban developments throughout the county. Soil studies are conducted on every parcel where the property owner has applied for a septic tank permit.

Municipal expansion is helping to alleviate this problem by extending sewer lines to suburban areas previously on septic. The expense of sewer connections is sometimes a deterrent for homeowners to move off septic systems, especially in poor communities or in hilly areas that require pumping stations. Some municipal governments, such as Clermont, Groveland, and Tavares, are requiring dry lines on new suburban homes for future connection to municipal sewer.

Soils that are septic tank suitable can be adversely affected by fill dirt, drainage, and steep hills. The Lake County Health Department now requests developers to notify them if any soil altering procedures are used during construction. Soil samples are needed after the final stages of construction to ensure accuracy.

Septic systems produce nutrients and organic matter that can pollute surface and ground water in the event of failure. However, all nutrient pollution in Lake County does not necessarily come from failed septic systems, but may come from green houses, road runoff, and lawn maintenance. Where nutrient pollution is a problem, environmental factors must be investigated to determine the source. The primary concern with septic system failure is the danger to public health from pathogens entering drinking water supplies. Lake County Department of Health considers a

failed septic system to be an emergency and will respond within 24 hours to treat the area with lime.

### Soil Suitability

Limitation ratings: There are three soil classification ratings that describe the relative suitability of soils to properly assimilate sewage effluent:

- Slightly limited—soil materials with favorable properties for the use of a drainfield.
- Moderately limited—soil materials that have properties moderately favorable for the use of a drainfield.
- Severely limited—soil materials that have one or more properties unsuitable for the use of a drainfield.

It is difficult to determine which soils will be suitable for the installation of septic tanks without onsite testing. Generally, different soils have characteristics that would or would not warrant septic tank usage. With drainage improvements, ranges in soil type, fill dirt, and other alterations of the terrain, a soil’s properties can be changed to accommodate septic tanks. Soil maps are too inaccurate to rely on exclusively.

### Package Plants

A package plant is a small, privately-owned and operated wastewater treatment plant that serves, on average, about 300 homes. Package plants can remove up to 95% of waste from sewage, compared to 99% from a public treatment facility and 85% for septic (these numbers vary depending on how the systems are used). Package plants should be considered a viable alternative to high-density septic systems and as an interim solution until public sewers are in place.

### Future Planning

The municipal service area boundaries overlap in some areas while other areas are unserved. This has prompted exploration of combined utility areas to better serve residents and future residents. Wastewater service to areas outside the municipal service boundaries would have to be served by regional wastewater facilities or by temporary treatment facilities. Because Lake County does not intend to own or operate any wastewater treatment facilities, these plans have not left the planning phase.

[The adopted minimum Level of Service for wastewater in the municipalities as of April, 2010 is:](#)

**Table 1A: 2010 Wastewater Minimum Municipal Level of Service**

<u>Municipality</u>	<u>Min. Sewer LOS (gpdpc)</u>
<a href="#">Lady Lake</a>	<a href="#">100</a>
<a href="#">Astatula (note 1)</a>	<a href="#">111</a>
<a href="#">Astatula</a>	<a href="#">111</a>
<a href="#">Clermont</a>	<a href="#">111</a>
<a href="#">Minneola</a>	<a href="#">111</a>
<a href="#">Tavares</a>	<a href="#">225</a>
<a href="#">Mascotte</a>	<a href="#">240</a>
<a href="#">Eustis</a>	<a href="#">250</a>

<u>Municipality</u>	<u>Min. Sewer LOS (gpdpc)</u>
<u>Groveland</u>	<u>250</u>
<u>Leesburg</u>	<u>251</u>
<u>Mt. Dora</u>	<u>300</u>
<u>Montverde</u>	<u>N/A</u>
<u>Howey</u>	<u>N/A</u>
<u>Umatilla</u>	<u>100</u>
<u>Fruitland Park</u>	<u>111</u>

gpdpc - gallons per day per capita

**NOTE 1:** Provides no central system for Water or Wastewater

**SOURCE:** Respective Municipal Comprehensive Plans, April 2010

**Table 2- Lake County Domestic Wastewater Treatment Facilities**

DOMESTIC WW FACILITY NAME	LOCATION	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)	DW CLASS
Fruitland Park Elem School	Fruitland Park	County	E.A. Stp With Reuse To Three 3) Percolation Ponds (5,000+ Sq. Ft.)	0.012	IIID
Seminole Springs Elementary School WWTF	Eustis	County	E/A Flow=Ization, Partial Denit, Tertiary Filtration Dis/Cl2tion To 2 Drainfields	0.009	IIID
Spring Creek Elem School	Paisley	County	E.A. Stp W/Surge/Filters/High Level Disinfection To 2 Drainfields	0.009	IIID
Umatilla, City of WWTF	Umatilla	Mun.	A.S. Stp W/Denit. & Tertiary Filters W/Effluent To 6 Percolation Ponds & 15.45 Ac Sprayfield	0.3	IC
Eustis, City of	Eustis	Mun.	Activated Sludge Plant With Tertiary Filtraton With Public Access Reuse And Backup Disposal At An Existing Percoalton Pond, And Composting Of Residuals	2.4	IVC
Mt Dora #1 WWTF	Mount Dora	Mun.	Oxidation Ditch Sewage Treatment Plant Effluent To Holding Ponds & Sprayfields	1.5	IB
Tavares/Woodlea Road WWTF	Tavares	Mun.	Carrousel Sewage Treatment Plant W/Effluent To Two Percolation Ponds	1.99	IIIC
Clermont/West WWTF #1	Clermont	Mun.	Contact Stabilization Sewage Treatment W Effl To Spray Irrigation	0.75	IIC
Groveland, City of WWTF	Groveland	Mun.	Oxidation Ditch Domestic Wwtp With Reuse To Sprayfield.	1	IIIC
Clermont - East	Clermont	Mun.	A 1.5 Mgd Aadf Oxidation Ditch With Filtration, To 24 Percolation Ponds And Public Access Reuse At The Kings Ridge Golf Course	1.5	IIC

DOMESTIC WW FACILITY NAME	LOCATION	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)	DW CLASS
Hickory Hollow Estates	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To Holding Pond And Sprayfield	0.02	IIID
Woodlands at Church Lake	Groveland	Pvt.	Extended Aeration Sewage Treatment Plant Reuse To 2 Perc Ponds Via Polishing Pond	0.086	IIIC
Shangri-La By The Lake	Leesburg	Pvt.	Step Aeration Stp W/Effluent To A Percolation Pond And A Sprayfield	0.05	IIC
Baywood Condominiums WWTF	Mount Dora	Pvt.	Extended Aeration Sewage Treatment Plant W/Reuse To Sprayfield Via Holding Pond	0.03	IIIC
Sunlake Estates WWTF	Grand Island	Pvt.	Contact Stabilation Wwtp W/Effluent To Two (2) Percolation Ponds	0.058	IIC
Meadows WWTF	Astatula	Pvt.	Extended Aeration Stp With Effluent To Perc/Evaporation Ponds & Spray Field	0.025	IIID
Water Oak Country Club Estates	Lady Lake	Pvt.	Extended Aeration Sewage Treatment PlantW/Filters Eff To 2 Sprayfields Via Pond	0.2	IIIC
Lake Griffin Isles MHP WWTF	Fruitland Park	Pvt.	E.A. Stp W/Surge Control & Sand Filerts Reuse W/Hld Pond To 2 Perc Ponds	0.07	IIIC
Waterwood Community WWTF	Yalaha	Pvt.	E.A. Stp W/Reuse To A Dual Cell 7 Day Holding/Polishing Pond Then Spraysite	0.028	IIIC
Summitt Chase Villas	Tavares	Pvt.	Extended Aeration Sewage Treatment Plant W/Surge, Effluent To Two Prec Ponds	0.054	IIIC
Midway Manor RV Park	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant Reuse To Holding Pond/0.6 Ac Sprayfield	0.01	IIID
Scottish Highlands WWTF	Leesburg	Pvt.	E.A. Stp W/Effluent To Three Cell Percolation Ponds	0.09	IIIC
Clerbrook RV Resorts	Clermont	Pvt.	E.A. Dual-Train Stp W/Surge Control Reuse To Polish/Pond- 2 Perc Ponds	0.12	IIIC
Lakeside Village MHP STP #1	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant Sand Filters/Reuse To Two (2) Perc Ponds	0.025	IIIC

DOMESTIC WW FACILITY NAME	LOCATION	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)	DW CLASS
B's RV Resort	Clermont	Pvt.	E.A. Stp With Tertiary Filtration And Reuse To 2 Percolation Ponds	0.035	IIIC
Wekiva Falls Resort	Sorrento	Pvt.	Extended Aeration Sewage Treatment Plant W/ Effluent To Two Percolation Ponds	0.099	IIIC
Fishermans Wharf Mh & RV Park	Fruitland Park	Pvt.	Extended Aeration Stp W/ Denitrification & Filters-Reuse To Dual Cell Drainfield	0.0099	IIID
Thousand Trails RV Park WWTF	Clermont	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To Three Percolation Ponds	0.099	IIIC
Lake Yale Estates WWTF	Leesburg	Pvt.	Extended Aeration Domestic Wwtp With Denitrification & Discharges To Three (3) Percolation Ponds, Total Wetted Area Of .23 Acres.	0.055	IIIC
Orange Lake MHC WWTF	Clermont	Pvt.	Extended Aeration Sewage Treatemnt Plant Effluent To Two Perc/Evaporation Ponds	0.05	IIIC
Lake North Apartments	Lady Lake	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To Hold Tank 2 Cell Pond	0.015	IIID
Plantation @ Leesburg	Leesburg	Pvt.	Conventional Activated Sludge Stp W/Flow Equ., Partial Denit., & Filtration W/Reuse To 2 Percolation Ponds And Golf Course	0.37	IC
Villages WWTF	Lady Lake	Pvt.	E.A./Anoxic Stp W/Filters-Reuse To 2 Golf Courses-2 Perc Ponds Backup And Wet Weather/Storage Holding Pond (@ Old #2 Wwtp Site)	1.64	IB
Church of God Youth & Retreat CTR (A K A Camp Moon)	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W Effluent To Drainfield	0.01	IIID
Palm Shores Mh & RV Park WWTF	Leesburg	Pvt.	E.A. Stp With Reuse To 7-Day Lined Holding Pond To A 1.8 Ac Sprayfield	0.02	IIID
Highlands MHP	Clermont	Pvt.	Extended Aeration Sewage Treatment Plant With Effluent To Perc/Pond	0.012	IIID
Ridgecrest RV Park WWTF	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W/Denitrification & Filters To Two (2) Percolation Ponds	0.04	IIIC
Central Florida Bible Camp WWTF, STP	Eustis	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To Drainfield	0.0099	IIID

DOMESTIC WW FACILITY NAME	LOCATION	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)	DW CLASS
Venetian Village S/D	Lake Jem	Pvt.	Extended Aeration Sewage Treatment Plant W Effluent To 1 Perc/Pond	0.036	IIIC
Pennbrooke WWTP	Leesburg	Pvt.	Extended Aeraton, 2 Filters, w/Effluent to 2 Percolation Ponds and Golf Course	0.18	IIIC
Mirror Lake Manor Apts WWTF	Fruitland Park	Pvt.	Extended Aeration Sewage Treatment Plant W/Reuse To 2 Percolation Ponds	0.009	IIID
Florida Baptist Encampment	Groveland	Pvt.	Extended Aeration Sewage Treatment Plant With Effluent To Perc/Evaporation Pond.	0.015	IIID
Grand Island MHP WWTF (FKA Chain O Lakes)	Grand Island	Pvt.	Extended Aeration Stp W/ Surge Control Effluent To 1 Perc/Evaporation Pond	0.035	IIIC
Lakeside Village STP #2	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W/Reuse Percolation Pond Or Stp #1	0.022	IIID
Lady Lake MHP	Lady Lake	Pvt.	E.A. Stp W/Surge Control. Effluent To A Percolation Pond	0.027	IIIC
Vacation Village Condo Assn	Clermont	Pvt.	Contact Stabilization Sewage Treatment Plant/Effl To Holding Pond & Sprayfield	0.05	IIC
Easter Seals Camp Challenge	Sorrento	Pvt.	Extended Aeration Sewage Treatment Plant With Reuse To Two(2) Drainfields	0.017	IIID
Harbor Oaks MHP	Fruitland Park	Pvt.	Extended Aeration Stp With Flow Equalization W/Effluent To Two Percolation Ponds.	0.035	IIIC
Bonfire MHP	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To 1.7 Ac Restricted Spray Site	0.032	IIIC
Brittany Estates	Leesburg	Pvt.	Contact Stabilization Sewage Treatment Plant With Reuse To 2 Perc Ponds	0.042	IIC
Floridian Gardens Resort & Spa Village WWTF (fka Pink Top)	Tavares	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To One Percolation Pond	0.0075	IIID
Lake Yale Baptist Assembly	Leesburg	Pvt.	E.A. Stp With Surge Control Effluent To A Percolation Pond	0.04	IIID
Griffwood MHP	Fruitland Park	Pvt.	Extended Aertion Sewage Treatment Plant With Effluent To A Percolation Pond	0.0075	IIID
Morgan's Mobile Home Park WWTF	Fruitland Park	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To A Single Cell Percolation Pond.	0.012	IIID



DOMESTIC WW FACILITY NAME	LOCATION	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)	DW CLASS
Frozen Grove	Howey In The Hills	Pvt.	Extended Aeration Sewage Treatment Plant With Effluent To 2 Percolation Ponds	0.095	IIIC
Kings Cove S/D	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant Effluent To 2 Perc/Evaporation Ponds	0.055	IIIC
Cypress Cove MHC WWTF	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant Surge/Effluent To Two (2) Perc Ponds	0.006	IIID
Leisure Meadows MHP WWTF	Weirsdale	Pvt.	Extended Aeration Sewage Treatment Plant W/ Effluent To 2 Perc Ponds	0.024	IIID
Recreation Plantation RV Park	Lady Lake	Pvt.	0.040 Mgd/E.A.,Or 0.085 Mgd/C.S. W/Effl To Two (2) Percolation Ponds	0.085	IIIC
Chloe WWTF	Mount Dora	Pvt.	Extended Aeration Domestic Wastewater Treatment Plant With Effluent To Single Cell Percolation Pond.	0.025	IIIC
Aca Academy	Fruitland Park	Pvt.	Extended Aeration Wastewater Treatment Facility With Chlorinated Effluent To An Approximately 5000 Sq. Ft. Percolation Pond.	0.014	IIID
Lakeview Terrace	Altoona	Pvt.	Extended Aeration DWW Treatment Plant consisting of aeration, secondary clarification, chlorination and aerobic digestion of residuals. R-001 (Raid Infiltration Basin Systems~RIBS) consists of Surge/ Reuse To Two(2) Percolation Ponds.	0.08	IIIC
Montverde Mobile Home S/D	Montverde	Pvt.	Contact Stabilization Stp W/ Surge Tank, Effluent To Denit Pond & Two Perc Ponds	0.08	IIIC
Valencia Terrace	Fruitland Park	Pvt.	Dual Train Extended Aeration Plant(S- 0.050/N-.030 Mgd) W/Effluent To 2 Percolation Ponds	0.08	IIIC
Deerhaven Campground WWTF	Paisley	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To One (1) Percolation Pond	0.025	IIIC
Harbor Hills	Lady Lake	Pvt.	Extended Air Stp With Surge Control W/Effluent To Two (2) Percolation Ponds	0.04	IIIC
Torchlite Mobile Home Park WWTF	Clermont	Pvt.	Extended Aeration Stp W/Surge Control W/Reuse To 2 Percolation Ponds	0.0075	IIID
Morningview WWTF	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To A Percolation Pond	0.02	IIID

DOMESTIC WW FACILITY NAME	LOCATION	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)	DW CLASS
Sunshine Mobile Home Park WWTF	Lady Lake	Pvt.	E.A. Stp W/Surge Control--Reuse To Two(2) Percolation Ponds	0.0125	IIID
Florida United Methodist Youth Conference	Fruitland Park	Pvt.	Coarse Screening, Followed By Biological Treatment, The Extended Aeration Mode Of The Activated Sludge Process, Followed By Secondary Clarification, Followed By Disinfection Using Chlorination, Then Discharge To Primary Subsurface Irrigation System With The Existing Percolation Ponds As Backup System. Residuals-Aerobic Digestion To Lime Stabilization And Land Applied.	0.07	IIC
Corley Island Mobile Manor	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W Surge Tank, Effluent To 2 Perc/Ponds	0.02	IIID
Oak Lane WWTF	Clermont	Pvt.	Extended Aeration Activated Sludge Wwtp With Effluent To Perc/Evaporation Pond (Total Wetted Area Of 3,000 Sq. Ft.)	0.007	IIID
Timber Village MHP	Groveland	Pvt.	Extended Aeration Sewage Treatment Plant W/ Effluent To 1 Percolation Pond	0.013	IIID
Molokai Mobile Home Park WWTF	Leesburg	Pvt.	Contact Stabilization Stp With Reuse To Two (2) Percolation Ponds	0.04	IIC
Tara Village	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W Effluent To 2 Perco/Evaporation Ponds	0.012	IIID
Camp Horizon	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W/ Effluent To A Percolation Pond	0.009	IIID
Blue Parrot	Lady Lake	Pvt.	Extended Aeration Sewage Treatment Plant W/ Effluent To Two Percolation Ponds	0.082	IIIC
Pine Lake Retreat Center	Groveland	Pvt.	Extended Aeration Sewage Treatment Plant With Reuse rate of 7.09"/WK to a Sprayfield approx. 0.4 acres. The spray field is located at latitude 28: 39:58 N, and longitude 81:54:05 W.	0.011	IIID
Montverde Academy	Montverde	Pvt.	Extended Aeration Sewage Treatment Plant Surge/Reuse To Two(2) Percolation Ponds	0.023	IIID
Oak Springs MHP	Sorrento	Pvt.	Contact Stabilization Sewage Treatment Plant W/ Effluent To 2 Percolation Ponds	0.15	IIC
Lake Groves WWTF	Clermont	Pvt.	Twin Ring Steel Stp's, 5-stage BNR, 2 Filters, Perc Ponds and Residential Reuse	1	IIC
Southlake Utilities WWTF	Clermont	Pvt.	Extended Aeration Sewage Treatment Plant W/ Effluent To Two (2) Percolation Ponds	1.15	IIIC
Camp La No Che	Paisley	Pvt.	Extended Aeration Sewage Treatment Plant W/ Effluent To Two (2) Percolation Ponds	0.026	IIIC

DOMESTIC WW FACILITY NAME	LOCATION	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)	DW CLASS
Fruitland Acres WWTF	Fruitland Park	Pvt.	Extended Aeration W/Filters W/Effluent To 2 Percolation Ponds	0.008	IIID
Holiday Travel Resort	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To Sprayfield Via Lined Holding Pond	0.095	IIIC
Woodlands Lutheran Camp	Montverde	Pvt.	Extended Aeration Stp With Surge Control W/Effluent To A Three (3) Cell Percolation Pond	0.02	IIID
Country Squire MHV	Paisley	Pvt.	Extended Aeration Sewage Treatment Plant Surge, Reuse To Two Percolation Ponds	0.024	IIIC
Holiday Haven	Astor	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To A Percolation Pond And A Sprayfield	0.025	IIIC
Sunshine Parkway WWTF	Minneola	Pvt.	Oxidation Ditch Sewage Treatment Plant Discharge To 3 Percolation Ponds	0.15	IIIC
Mid Florida Lakes	Leesburg	Pvt.	Extended Aeration Sewage Treatment Plant W/Effluent To Holding Pond & Sprayfield	0.18	IIIC
Fisherman's Cove Park WWTF	Tavares	Pvt.	Extended Aeration Domestic Wastewater Treatment Plant Consisting Of Flow Equalization, Aeration, Secondary Clarification, Chlorination, And Aerobic Digestion With A Rapid Rate Infiltration Basin System (Two Percolation Ponds).	0.04	IIIC
Lake Correctional Institution	Clermont	State	Extended Aeration Stp With Flow Equal W Hold Pond W/Reuse To A 15 Ac. Sprayfield	0.18	IIIC

Source: FDEP 2010

Domestic Wastewater (DW) Facility Class Descriptions:

**IA** AWT: flow  $\geq$  3 MGD

**IB** AWT: 0.5 MGD  $\leq$  flow  $<$  3 MGD

**IC** AWT: no flow  $<$  flow  $<$  0.5 MGD

**IIA** Act Slg/Cont Stab: flow  $\geq$  5 MGD

**IIB** Act Slg/Cont Stab: 1 MGD  $\leq$  flow  $<$  5 MGD

**IIC** Act Slg/Cont Stab: no flow  $<$  flow  $<$  1 MGD

**IIIA** Ext Air: flow  $\geq$  8 MGD

**IIIB** Ext Air: 2 MGD  $\leq$  flow  $<$  8 MGD

**IIIC** Ext Air: 0.025 MGD  $\leq$  flow  $<$  2 MGD

**IIID** Ext Air: no flow  $<$  flow  $<$  0.025 MGD

**IVA** Biofilm: flow  $\geq$  10 MGD

**IVB** Biofilm: 3 MGD  $\leq$  flow  $<$  10 MGD

**IVC** Biofilm: 0.025 MGD  $\leq$  flow  $<$  3 MGD

**IVD** Biofilm: no flow  $<$  flow  $<$  0.025 MGD

**Table 3 - Lake County Industrial Wastewater Treatment Facilities**

INDUSTRIAL FACILITY NAME	FAC TYPE	CITY	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)
C&C Pumping Service Facility	Industrial Wastewater Program	Groveland	Industrial Wastewater		0.01
Cemex - Okahumpka Ready Mix Plant	Industrial Wastewater Program	Okahumpka	Concrete Batch GP	Concrete Block & Ready Mix Truck Wash- Out Wastewater Disposal System	0.003
CEMEX- Clermont Ready Mix Plant	Industrial Wastewater Program	Clermont	Industrial Wastewater		
CEMEX Construction Materials Florida-474 Sand Mine	Industrial Wastewater Program	Clermont	Concrete Batch GP	Hydraulic Dredge Sand Mining Process Water Recycle System	15.6
CEMEX- Eustis Ready Mix Plant	Industrial Wastewater Program	Eustis	Concrete Batch GP	No Treatment Discharge To Gw Via Perc PoNds	0.0046
Cemex/Groveland Cbp	Industrial Wastewater Program	Groveland	Industrial Wastewater		
CEMEX-North Leesburg Ready Mix Plant	Industrial Wastewater Program	Leesburg	Concrete Batch GP	Recycle Of Water	0.053
Classic Car Wash III	Industrial Wastewater Program	Lady Lake	Concrete Batch GP		
Crothall Laundry Service	Industrial Wastewater Program	Clermont	Concrete Batch GP	Biological Trickling Filter & Tertiary Filter, Dual Perc Ponds	0.06

INDUSTRIAL FACILITY NAME	FAC TYPE	CITY	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)
Cutrale Citrus Sprayfield	Industrial Wastewater Program	Leesburg	Industrial Wastewater	Cooling Water Reused-No Discharge. Strong Waste 1' Settling To Sprayfield. Facility Has A No-Discharge/Discharge Permit For The Sprayfield	0.9
DOT Clay Sand Mine	Industrial Wastewater Program	Clermont	Industrial Wastewater		
Dura-Stress Concrete Products	Industrial Wastewater Program	Leesburg	Industrial Wastewater	Contaminated stormwater runoff from the production and curing areas will be provided settling in a 5.6 acre percolation pond	0.008
Dura-Stress Underground Inc	Industrial Wastewater Program	Leesburg	Industrial Wastewater	Wastewater is collected and treated in a 4 cell concrete pond next to the batching unit where solids are settled out; treated water is drawn from the fourth cell for reuse as hydration or dust suppression;	
E R Jahna - 474 North Sand Mine	Industrial Wastewater Program	Clermont	Industrial Wastewater	Settling And Return To Dredge Pit	
E R Jahna/Sr 474 Sand Mine	Industrial Wastewater Program	Clermont	Industrial Wastewater	Reuse Of Water To Filter Sand Over Screens And Return To Dredge Pit With No Off Site Discharge	11.5
Florida Building Materials-Sorrento	Industrial Wastewater Program	Sorrento	Industrial Wastewater	Concrete Batch Plant	
Florida Food Products/Sprayfield	Industrial Wastewater Program	Eustis	Industrial Wastewater	Strongwaste From Cleanup Activities - Ph Adj, Settling.	0.1
Florida Rock Ind - Astatula Mine	Industrial Wastewater Program	Astatula	Concrete Batch GP	Sand Mining Process Water With Disposal To Perc/Evaporation Ponds	6.18
Florida Rock Ind - Lake Sand Plant	Industrial Wastewater Program	Clermont	Industrial Wastewater	Settling & Percolation W/Water Disposal To Perc/Ponds	2.7

INDUSTRIAL FACILITY NAME	FAC TYPE	CITY	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)
Florida Rock Industries - Leesburg	Industrial Wastewater Program	Leesburg	Industrial Wastewater	Type I and Type II holding ponds	
Florida Rock Industries/Turnpike Sand Mine	Industrial Wastewater Program	Leesburg	Industrial Wastewater	None	
Florida Rock/Clermont Concrete Batch Plant	Industrial Wastewater Program	Clermont	Concrete Batch GP	Str:Settling And Reuse Wk:Settling And Discharge To Gw Via Perc	0.003
Florida's Natural Growers NPDES	Industrial Wastewater Program	Umatilla	Industrial Wastewater	Hydrosieve Screens/Detention Tanks For Strong Waste...No Treating Surface Disch	0.8
Hurley Peat Mine	Industrial Wastewater Program	Mount Dora	Concrete Batch GP	Land application system (G-001) consisting of a 4 bermed percolation areas, total of approx. 371.5 acres;	5.18
Hyponex Peat-Libby Road Mine	Industrial Wastewater Program	Groveland Vicinity	Industrial Wastewater		
Lake County Resource Recovery	Power Plant Wastewater Program	Okahumpka	Industrial Wastewater	Cooling Tower Blowdown From Solid Waste Incinerator;Settling And Perc Ponds	0.057
Mascotte Wash-A-Teria	Industrial Wastewater Program	Mascotte	Industrial Wastewater	Screening,Settling,Trickling Filter, To Gw Via Drainfield	0.008
Minneola Automotive Center	Industrial Wastewater Program	Minneola	Industrial Wastewater	No-Touch closed loop automobile carwash using water from city of Minneola. Operates using a continuous recirculation loop system.	
Natural Organic Products	Industrial Wastewater Program	Mount Dora	Industrial Wastewater	Wet air scrubber, Settling Tank, sand filter, Calcium Hypochlorite	0.001

INDUSTRIAL FACILITY NAME	FAC TYPE	CITY	TYPE	TREATMENT PROCESS SUMMARY	CAPACITY (MGD)
Niagara Bottling	Industrial Wastewater Program	Groveland	Industrial Wastewater		
Prestige AB Ready Mix/ O'Brien Road CBP	Industrial Wastewater Program	Howey In The Hills	Industrial Wastewater	The Type Ii Wastewater Is Generated By Washing Left Over Concrete Out Of The Batching Truck Drums At The Rate Of About 2500 Gpd. The Type Ii Wastewater Is Dumped Into The First Cell Of A Covered Four Cell, Concrete Treatment Structure. Settling As Treatment Is Provided In This Structure. Solids Are Reclaimed From The Structure Routinely To Preserve The Treatment Capacity. The Solids Are Allowed To Dry On An Adjoining Concrete Pad, Which Drains Back Into The Type Ii System. The System Also Has A Ribboning Out Pad, Which May Be Used To Reduce The Volume Of Solids Entering The Type Ii Treatment Cells. Each Of These Areas, The Draining Pad And The Ribboning Out Pad Are 50 By 60 Feet In Size.	0.0763
Prestige AB Ready Mix-Okahumpka CBP	Industrial Wastewater Program	Okahumpka	Industrial Wastewater		
Reliable Constructors Recycle System	Industrial Wastewater Program	Sorrento	Concrete Batch GP	Sump pit, foam blocker, sump pit, settling tank, effluent tank, Ozone	
Silver Springs Citrus/Sprayfields	Industrial Wastewater Program	Howey In The Hills	Concrete Batch GP		1
Sorrento Coin Laundry	Industrial Wastewater Program	Sorrento	Industrial Wastewater	Screening, Biological Nutrient Removal, Settling, Chlorination	0.0085
Tarmac - Center Sand Mine	Industrial Wastewater Program	Clermont	Industrial Wastewater	Sand Mining, Hydraulic Dredging Process Water Recycle System	7.56
Tarmac - Tavares Ready Mix & Block Plant	Industrial Wastewater Program	Tavares	Industrial Wastewater	Type 1 with overflow into a retention pond. Type 2 (washpit, 3 treatment cells, a surge pit, and a dry materials storage pad.	

Source: FDEP 2010





## **POTABLE WATER SUB-ELEMENT**

### **INTRODUCTION**

With the sole exception of a small water utility in Umatilla that the County is operating on an interim basis, Lake County does not own, operate, or maintain any potable water systems. All potable water systems within the County are maintained and operated by the municipalities, private entities, or individual water well systems. The County does, however, recognize the importance of water supply planning and therefore joined with the municipalities and formed the Lake County Water Alliance to develop a county-wide Water Supply Plan. The data in the Potable Water Sub-Element is taken from the Plan, unless otherwise noted.

Water Resource Associates (WRA) was selected by the Lake County Water Alliance (Alliance) to develop the "Lake County Water Supply Plan (Plan)" for its member governments. The Alliance is constituted of the following jurisdictions: the Cities of Clermont, Eustis, Fruitland Park, Groveland, Howey-In-The-Hills, Lady Lake, Leesburg, Mascotte, Minneola, Montverde, Mount Dora, Tavares and Umatilla. Originally, Lake County and Astatula were members of the Alliance but withdrew during the Plan process. The County rejoined the effort some time later. The City of Leesburg, acting as an administrative arm of the Alliance, contracted with WRA in May of 2006 to complete the Plan. The St. Johns River Water Management District (SJRWMD) provided funding to the Alliance for the study and has been an active participant in providing data to the study and review of work-product. The Alliance was dissolved in 2009 following attempts to revise the Interlocal agreement. Despite this, the County continues to actively participate in discussions with a utility working group established to support the Alliance. This group comprised of utility directors and consultants for the municipalities will continue to function.

### **Existing Permitted Water Use and Sources**

The SJRWMD regulates water use under Chapter 373, Florida Statutes (F.S). The Plan presents an examination of existing Consumptive Use Permits (CUPs) and associated data in Lake County. The assessment of existing permitted or allocated quantities is based upon estimates of what users anticipate to be their average daily demands over the permit duration at the time of application for the permit. It is not uncommon for population growth to be above or below anticipated populations when permit applications were submitted, so actual water use can exceed or fall short of existing permitted quantities. Pumpage data are presented in order to provide a general comparison between expected demand (allocated quantities) and actual demand. Allocated quantities were used later in estimating potential future groundwater availability.

Domestic self-supplied water use was not included in this analysis, as CUPs are not required for this use (although well construction is tracked by the SJRWMD). However, an analysis of demand associated with domestic self-supplied users will be presented later in the Plan along with existing and projected demand of other users in the County.

Specifically, the analysis of existing CUPs included an inventory of CUPs permitted for golf course irrigation, CUPs that include four (4)-inch wells, and CUPs permitted for 100,000 gallons per day (gpd) or greater. The analysis of these CUPs, including allocated quantities, spatial distribution, supply sources, use types, and pumpage data served to establish a baseline of existing permitted water use within the County and within the Alliance. The data was obtained from the SJRWMD.

While water allocated to golf course (recreational) water uses is substantially lower in comparison to other water use categories on a countywide basis, it is useful to identify and categorize the allocated sources of water for this water use. Identification of potential opportunities for reuse water supply is a critical component of the overall water strategy. To meet the needs of a growing population, the number of golf courses in the County is expected to grow over the years, and meeting these demands with reclaimed water would reduce stress on new groundwater supplies. Golf course CUPs (30 in

total) were identified from the SJRWMD Geographic Information Systems (GIS) database (SJRWMD 2006). Of the allocation quantities, approximately 2.70 mgd (18%) are irrigated with reclaimed water, with about 5.4 mgd (36%) irrigated with groundwater and 6.9 mgd (46%) by surface water.

**Table 4: Lake County Golf Course Water Allocations by Source**

Source	Golf Course CUPs Allocated Quantities (mgd)	Percent
Groundwater	5.43	36.1%
Surface water	6.92	46.0%
Reclaimed water	2.70	17.9%
<b>Total</b>	<b>15.1</b>	<b>100.0%</b>

Table 5 shows the total CUPs permitted for 100,000 gpd or greater. These permits are of primary interest due to the magnitude of withdrawals that could potentially impact groundwater and surface water supplies, water quality, environmental features and other legal water users. As previously stated, there is some overlap between 4-inch wells and golf course (recreational) permits within this data set. Approximately 96.1 mgd (59%) of allocated quantities for these permits are from groundwater sources, and 67.9 mgd (41%) are from surface water

CUPs permitted for 100,000 gpd or greater span all water use categories, including: public supply, agricultural irrigation self-supply, recreational self-supply, commercial/industrial/institutional self-supply, and power generation self-supply. Of the total currently permitted use for these CUPs, approximately 53.5 mgd (33%) is public supply, 74.0 mgd (45%) is commercial/industrial/institutional, 7.6 mgd (5%) is recreational, and 28.8 mgd (17%) is agricultural irrigation. There are no power generation CUPs in Lake County.

Of the 74 mgd for commercial/industrial/institutional, mining/dewatering surface water use is approximately 46 mgd. It should be noted that a majority of the water use associated with mining/dewatering is re-circulated and its use does not generally contribute to water resource limitations.

**Table 5: Lake County Water Allocations by Use Type for CUPs ≥ 100,000 GPD**

Use Type	Permitted Quantities (mgd)	Percent of Total
Agricultural	28.8	17.5%
Commercial/Industrial/Institutional	74.0	45.1%
Power Generation	0.0	0.0%
Public Supply	53.5	32.6%
Recreational	7.6	4.7%
<b>Total</b>	<b>163.9</b>	<b>100.0%</b>

NOTE: The quantities shown in the table do not include 0.8% public supply allocations attributed to small utilities (allocated for <0.1 mgd public supply use type) nor do they include reuse supplementation and surface water augmentation as those allocated quantities account for 1% of total permitted quantities.

## Current Permitted Capacity

CUPs in Lake County having allocated quantities of greater than or equal to 100,000 gpd were determined using the SJRWMD GIS database (SJRWMD 2006/2007). Additionally, SJRWMD staff provided data associated with CUP allocation quantities, issue dates, expiration dates, and water sources (Table 6). In cases where CUPs have multiple water sources, the allocated amount for each source is listed separately. For permits with different water sources and/or use types, the allocated amount for each source is listed separately. A separate column lists the total quantity allocated for all sources for those CUPs with multiple sources.

In addition to allocated quantities, SJRWMD provided all actual pumpage from 2000 to 2005 on a permit-by-permit basis. These quantities were not broken up by source or use type. On average, 100,000 gpd permit holders pumped 94.5 mgd (56.8%) of their allocated water from 2000 to 2005. Of the total 170 users, 29 pumped over 100% on average of their permitted quantities. This over-pumpage is being verified by SJRWMD to ensure accuracy and validity of the over-pumpage estimate. When over-pumping occurs, it can be because of drought year conditions or increases in population beyond what was anticipated at the time of allocation.

In addition to the water use described in Tables 4, 5, and 6, the SJRWMD estimated that 4-inch wells pumped an average of 32.59 mgd during the five-year period and were permitted for 48.31 mgd, a use rate of about 68 percent of permitted quantities. The use rate for golf courses is about 61 percent of permitted quantities. Finally, Domestic Self Supply (DSS) was estimated to be around 36.96 mgd in 2006. Permitting for DSS is not performed by SJRWMD; private individual wells are permitted through the Department of Health. Tables will be updated as new information is available.

**Table 6: Lake County Consumptive Use Permits > 100,000 gpd**

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgd) (2000-2005)	Total Permitted Amount (mgd)	Permit Amount by Source (mgd)	Water Usage Type	Water Source Name
88	Flowertree Nursery	6/6/07	68.45	87.23	87.23	Nursery (Misc.)	Floridan Aquifer
94	City of Leesburg Public Supply	07/10/04	2,100.07	3,332.70	1,416.20	Commercial/Industrial	Floridan Aquifer
					1,847.00	Household	Floridan Aquifer
					47.50	Urban landscape irrigation	Floridan Aquifer
					22.00	Water utility	Floridan Aquifer
100	Green Valley Country Club	9/16/07	129.63	137.22	137.22	Golf course	Surface/Reclaimed
271	Laviance	1/8/08	49.60	91.73	42.13	Freeze Protection	Floridan Aquifer
					49.60	Freeze Protection	Surface

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
279	Harbor Hills	04/12/07	359.37	333.82	151.84 181.98	Golf course Household	Lake Griffin Floridan Aquifer
282	Water Oak	04/19/10	81.60	106.24	90.20 1.90 10.60 2.90 0.64	Household Recreation area Unaccounted-for Urban landscape irrigation Water utility	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
286	Lake County	9/3/07	42.02	69.16	69.16	Freeze protection (Citrus)	Floridan Aquifer
1665	S. T. BROWN NURSERY	10/9/08	NR	48.79	48.79	Freeze protection (Citrus)	Ground
2387	474 Sand Mine	03/07/26	5,894.84	10,073.76	175.52 4,005.54 5,890.50 0.75 1.12 0.34	Mining Mining Mining Household Household Urban landscape irrigation	Floridan Aquifer Mine Pit Mine Pit Surficial Aquifer Floridan Aquifer Surficial Aquifer
2391	Florida Rock Industries Inc	11/08/20	3.31	2,839.06	10.00 2,828.76 0.30	Mining Mining Household	Floridan Aquifer dredge lake #2 Floridan Aquifer
2392	Southlake Utilities	01/30/07	377.31	919.80	919.80	Utility Supplied	Floridan Aquifer
2394	Lake Pretty	8/26/2018	48.73	120.61	120.61	Agricultural (Citrus)	Floridan Aquifer
2416	Oak Springs MHP	7/7/24	68.45	45.76	2.15 38.83 4.78	Commercial/Industrial Household Water utility	Floridan Aquifer Floridan Aquifer Floridan Aquifer
2419	Silver Springs Citrus	05/07/22	161.73	1,737.40	292.00 1,445.40	Commercial/Industrial Essential	Floridan Aquifer Floridan Aquifer
2433	Green Swamp Groves	04/16/21	24.74	115.78	93.62 22.16	Agricultural (Citrus) Freeze protection (Citrus)	Floridan Aquifer Floridan Aquifer
2436	Ridge Grove	2/18/23	14.40	46.73	46.73	Agricultural (Citrus)	Floridan Aquifer

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
2440	Merry Gro Farms	10/11/10	242.94	198.50	15.21 183.29	Freeze protection (Misc.) Nursery (Misc.)	Floridan Aquifer Floridan Aquifer
2445	Florida Food Products	11/10/18	33.10	233.71	233.71	Commercial/Industrial	Floridan Aquifer
2453	City of Mascotte		125.80	133.6	133.6	household/utility	Floridan Aquifer
2454	Sunlakes Estates	08/30/26	97.63	112.40	112.40	Household	Floridan Aquifer
2460	7L Howey-in-the-Hills	5/19/18	0.00	14.40	14.40	Agricultural (Citrus)	
2462	Villa City	4/23/21	31.22	69.13	69.13	Agricultural (Citrus)	Floridan Aquifer
2464	Citrus World	2/9/09	255.69	800	800	Agricultural (Citrus)	Surface
2475	Liner Source Inc	4/16/22	41.39	97.76	97.76	Nursery	Ground
2478	City of Clermont	09/10/22	1,268.35	2,692.97	775.26 1,917.71	Utility Supplied Utility Supplied	Floridan Aquifer Floridan Aquifer
2482	City of Fruitland Park	06/13/08	179.40	288.35	288.35	Household	Floridan Aquifer
2484	Links at Village Green	7/1/19	115.33	79.50	79.50	Golf course	Lake Diane
2485	Gorgeous Groves	04/15/23	8.57	83.25	77.77 5.30 0.18	Agricultural (Citrus) Agricultural (Pasture) Livestock	Floridan Aquifer Floridan Aquifer Floridan Aquifer
2487	Hlochee WMA - Riddick Trust Grove	04/23/21	0.00	121.50	93.62 27.88	Agricultural (Citrus) Freeze protection (Citrus)	Floridan Aquifer Floridan Aquifer
2489	Lake Fern Inc	11/9/18	40.00	75.4	75.4	Nursery	Ground
2492	MOUNT PLYMOUTH GOLF CLUB	10/27/20	78.5 *	95.70	95.70	Golf course	Floridan Aquifer
2502	Holloway Tree	02/24/19	33.21	149.30	149.30	Nursery (Misc.)	Floridan Aquifer
2504	Water Conserv II Reuse Facilities	09/13/15	119.96	700.10	568.70 131.40	Freeze protection (Citrus) Reuse Supplementation	Floridan Aquifer Floridan Aquifer
2527	Central Fla Nursery & Landscaping Inc.	9/23/22	47.12	65.64	65.64	Nursery	Ground
2531	Thousand Trails	8/2/26	35.81	54.75	54.75	Household	Ground

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
2537	Gissy Groves	7/25/23	15.37	43.61	43.61	Agricultural (Citrus)	Ground
2560	Dye/Cooper Block	3/24/23	15.95	53.59	53.59	Agricultural (Citrus)	Ground
2567	Loma Linda Corp	11/30/21	61.80	129.88	29.60 72.02 16.18 3.43 7.15 1.50	Agricultural (Citrus) Agricultural (Citrus) Agricultural (Misc.) Freeze protection (Citrus) Freeze protection (Citrus) Livestock	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
2571	Howey Block	5/31/21	29.00	59.19	59.19	Agricultural (Citrus)	Ground
2574	Hygrade Timber	7/3/06		46.00	46.00	Commercial/Industrial	Surface
2576	Location-3-40	4/23/19	24.37	37.38	37.38	Agricultural (Citrus)	Surface
2581	Marian Gardens	09/07/24	715.64	1,215.00	1,215.00	Nursery (Misc.)	Floridan Aquifer
2623	JOHN BECK	3/18/12	13.41	36.97	36.97	Agricultural (Citrus)	Ground
2629	Monarch Golf Club at Royal Highlands	07/24/06	644.71	106.71	106.71	Golf course	Floridan Aquifer
2631	Lust Farms	6/13/15	0.00	145.19	145.19	Nursery	Ground
2634	City of Eustis	3/13/12	1021.90	1,387.11	33.81 1,353.30	Urban landscape irrigation Household	Ground Ground
2640	Tuscanooga Lakes LLC	11/16/21	1.06	37.05	37.05	Agricultural (Citrus/Freeze Protection, Pasture)	Ground
2644	Silver Lakes/Western Shores	05/09/11	288.58	251.08	251.08	Utility Supplied	Floridan Aquifer
2646	Umatilla Municipal Water System	02/13/06	142.53	193.82	193.82	Household	Floridan Aquifer
2651	Serenby	8/27/22	2.96	72	72	Agricultural (Citrus/Freeze Protection,Nursery)	Ground
2653	Maguire 455	8/13/21	39.67	87.23	87.23	Agricultural (Citrus)	Ground
2655	Moon Lake	9/2/08	11.01	38.63	38.63		Surface

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
2662	Las Colinas	04/10/20	162.42 *	264.00	80.20 154.40 29.40	Golf course Golf course Household	Floridan Aquifer Lake #4 Floridan Aquifer
2664	Coleman Cline	10/12/21	41.48	163.25	125.78 37.47	Agricultural (Citrus) Freeze protection (Citrus)	Lake Harris Floridan Aquifer
2665	Drake Point	7/17/21	16.33	43.62	43.62	Agricultural (Citrus)	Surface
2670	L & E Grove	9/20/24	2.35	41.03	41.03	Agricultural (Citrus)	Ground
2671	Town of Montverde	2/8/09	125.25	127.91	127.91	Household	Ground
2672	Parker	3/24/25	0.52	76.15	76.15	Agricultural (Citrus)	Ground
2678	Oak Grove Fernery	11/16/21	0.00	37.0	37.0	Agricultural (Citrus)	Ground
2700	Lake Utility Services Inc.	04/12/11	604.67	1,378.24	73.00 1,112.89 53.66 138.70	Commercial/Industrial Household Urban landscape irrigation Water utility	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
2701	Kings Cove Subdivision	4/21/26	29.10	49.75	49.75	Household	Ground
2704	Greenacres Fernery & Citrus	7/18/21	48.19	37.49	37.49	Agricultural (Citrus/Nursery)	Ground
2714	Sunset Hill Groves Partnership	9/23/22	33.63	48.6	48.6	Agricultural	Ground
2716	Benjamin O Benham	3/24/08	10.93	74.3	74.3	Agricultural (sod)	Ground
2717	Pembroke Utilities Inc	09/14/25	101.76	165.72	7.67 136.15 10.95 10.95	Commercial/Industrial Household Urban landscape irrigation Water utility	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
2718	Plantation at Leesburg	08/13/22	71.93	573.41	8.60 383.04 31.54 131.88 18.35	Commercial/Industrial Household Unaccounted-for Urban landscape irrigation Water utility	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
2728	Record Buck Farms	11/30/21	24.49	87.12	87.12	Nursery	Ground
2729	Silver Lake Golf Course	5/15/11	62.86 *	59.73	59.73	Golf course	Ground
2742	Wekiva Falls Resort @ Mastodon Springs	5/12/24	NR	36.5	36.5	Commercial/industrial, household, recreational area, urban landscape irrigation, and fire protection.	Ground
2754	Pine Ridge Dairy Inc	11/16/20	289.54	69.54	69.54	Agricultural (livestock/pasture)	Ground
2757	Malibu Ferns	5/17/21	117.34	43.1	43.1	Nursery	Ground
2763	Senninger Irrigation	06/28/22	43.45	122.66	47.39 72.84 2.16 0.27	Commercial/Industrial Commercial/Industrial Essential Household	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
2765	City of Tavares Public Water Supply	10/07/10	641.90	1,077.11	193.88 753.98 75.40 32.31 21.54	Commercial/Industrial Household Unaccounted-for Urban landscape irrigation Water utility	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
2771	Lakeview Terrace	2/14/20	14.33	41.2	41.2	Household	Ground
2780	Clermont East Sand Mine	10/09/21	1,011.81	2,397.00	725.00 1,672.00	Mining Mining	Floridan Aquifer Mine Lake
2791	Eagles Landing	2/8/22	107.28	93.46	93.46	Agricultural (Citrus)	Ground
2793	Crothall Laundry Services	7/25/23	25.72	40.52	40.52	Industrial, Potable and Irrigation	Ground
2798	Pine Lakes	09/08/94	408.64	107.00	48.20 58.80	Freeze protection (Fern) Nursery (Fern)	Floridan Aquifer Floridan Aquifer
2810	Lake Griffin Isles	4/15/28	34.84	48.59	48.59	Public supply	Ground
2826	Twin Lakes	3/4/23	30.15	81.01	81.01	Agricultural (Citrus)	Ground



CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
2827	Crosland Britt	05/11/24	190.37	228.84	78.00 150.84	Nursery (Misc.) Nursery (Misc.)	Retention Ponds Floridan Aquifer
2834	Lake County Resource Recovery	09/19/23	100.84	125.00	125.00	Commercial/Industrial	Floridan Aquifer
2840	Woodland Heritage M.H.P.	7/10/23	19.90	35.89	2.66 33.23	Water utility Household	Ground Ground
2843	Crescendo Management Inc	3/8/09	11.19	90.5	90.5	Commercial/Industrial	Surface
2849	Clermont West Sand Mine	09/10/05	508.34	1,030.00	1,030.00	Dewatering	Perimeter Ditch
2850	Beck Grove	6/23/24	18.33	59.19	59.19	Agricultural (Citrus)	Ground
2852	Stone Mountain Nursery	3/6/23	37.31	81.62	81.62	Nursery	Ground
2860	Hawthorne at Leesburg	07/25/07	470.37	188.10	2.10 20.00 124.70 24.00 14.60 2.70	Commercial/Industrial Commercial/Industrial Household Recreation area Urban landscape irrigation Water utility	Floridan Aquifer Unnamed lake Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
2886	City of Minneola - Public Supply	02/09/10	388.77	916.15	916.15	Household	Floridan Aquifer
2888	Mid Florida Lakes	10/10/08	106.41	157.32	10.95 131.40 0.37 7.30 7.30	Commercial/Industrial Household Unaccounted-for Urban landscape irrigation Water utility	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
2898	Lake Correctional Institution	11/16/20	68.45	66.51	2.69 2.50 61.32	Agricultural (Misc.) Urban landscape irrigation Household	Ground Ground Ground
2921	Good Earth	10/05/20	4.64	105.10	47.30 57.80	Freeze protection (Fern) Nursery (Fern)	Floridan Aquifer Floridan Aquifer

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
2923	Dura-Stress Inc.	5/31/21	25.50	85.07	85.07	Commercial/industrial, household and urban landscape irrigation	Ground
2930	Fakih Grove	8/11/20	105.25	49.85	49.85	Agricultural (Citrus)	Ground
2939	Tuscanooga Lakes LLC	11/16/20	13.45	57.61	57.61	Agricultural (Citrus)	Ground
2941	Dockery Farms	11/15/20	5.60	102.20	4.80 95.09 1.43 0.88	Agricultural (Citrus) Agricultural (Pasture) Freeze protection (Citrus) Livestock	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
2955	Bryan Ferns	4/15/23	322.85	55.02	55.02	Nursery (Fern)	Ground
2958	Turnpike Sand Plant	3/8/25	0.00	3439.61	105.95 3,333.66	Commercial/Industrial Commercial/Industrial	Ground Surface
2959	Upton Downs	10/12/24	28.55	165.62	29.43 136.19	Household Household	Floridan Aquifer Onsite Lake
2978	IGOU	6/25/22	19.75	46.73	46.73	Agricultural (Citrus)	Ground
2983	Blackbear Golf Course	12/16/18	53.91	150.00	150.00	Golf course	Blackbear Lale
2991	Kings Ridge	5/8/27	886.05	522.62	261.78 260.84	Golf course Urban landscape irrigation	Surface Ground
3312	Long and Scott Farm	1/12/19	858.20	1919.37	50.00 1,869.37	Agricultural (Citrus) Household	Surface Ground
4486	Crabb Grove	5/31/26	4.54	49.85	49.85	Agricultural (Citrus)	Ground
4501	Banyan Construction	9/20/06	0.55	155.74	155.74	Agricultural (Citrus)	Ground
4517	OSGOOD GROVE	7/29/11	3.80	47.00	47.00	Agricultural (Citrus)	Ground
4535	Mt Dora Golf Assoc	4/26/25	9.06 *	40.00	40.00	Golf course	Surface
4536	Taylor Home Grove	11/1/06	7.38	36.74	36.74	Agricultural (Citrus/pasture/landscape /livestock)	Ground
4542	Journey Circle M Ranch	4/4/27	12.79	83.63	83.63	Agricultural (Citrus)	Ground

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
5709	Silver Springs Citrus	02/24/07	56.54	136.00	136.00	Commercial/Industrial	Floridan Aquifer
					21.94	Agricultural (Citrus)	Conserv 2
					127.24	Agricultural (Citrus)	Conserv 2
					7.60	Freeze protection (Citrus)	Conserv 2
5965	Groveland Inc.	01/18/20	0.00	194.68	37.90	Freeze protection (Citrus)	Conserv 2
6207	Cutrale Citrus Juices USA, Inc.	11/11/23	224.47	475.00	475.00	Commercial/Industrial	Floridan Aquifer
					240.07	Agricultural (Citrus)	CONSERV II
6254	Southern Lake Co Acreage	09/10/06	0.00	325.87	85.80	Freeze protection (Citrus)	Floridan Aquifer
					42.3	Golf course	Surface
6398	Clerbrook Resort	3/13/07	40.51	53.4	53.4	Household	Ground
6455	Pine Meadows Golf Course	12/2/18	43.81 *	91.6	91.6	Golf course	Ground
						Nursery (Fern)/freeze protection	Surface
6543	Morgan Lanier	2/24/2019	25.67	43.1	43.1		
						Irrigation/Freeze Protection (Citrus)	Ground
10377	Rowe Groves	8/11/20	13.55	40.51	40.51		
					32.72	Household	Ground
					1.90	Urban landscape irrigation	Ground
10846	Barrington Estates Wells s	8/14/11	30.82	37.96	3.34	Water utility	Ground
50048	Country Club of Mount Dora	11/01/11	139.20	134.23	134.23	Golf course	Floridan Aquifer
50049	Town of Lady Lake	07/11/26	167.31	250.78	250.78	Household	Floridan Aquifer
					109.70	Agricultural (Citrus)	Floridan Aquifer
50081	Chris Blanton	09/25/03	2.19	147.70	38.00	Freeze protection (Citrus)	Floridan Aquifer
						Agricultural (Citrus/livestock)	Ground
50113	Jeff Boykin	4/17/11	0.00	38.5	38.5		
					184.10	Household	Floridan Aquifer
50115	Pine Island PUD	06/10/08	6.70	370.95	186.85	Urban landscape irrigation	Floridan Aquifer
50128	Bartlett Groves	6/11/18	3.22	68.53	68.53	Agricultural (Citrus)	Ground
50145	Groveland Grove	8/10/24	7.89	52.97	52.97	Agricultural (Citrus)	Ground

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
50147	City of Mount Dora	12/13/25	947.34	1,291.37	116.22 1,007.27 38.74 129.14	Commercial/Industrial Household Unaccounted-for Urban landscape irrigation	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
50152	Wedgewood H.O.A., Inc	8/29/23	56.11	66.806	66.806		Ground
50159	Hi Acres Nursery	03/31/26	13.19	116.00	116.00	Nursery (Misc.)	Floridan Aquifer
50176	WFR Lake Jem	2/29/12	13.58	38.6	38.6	Nursery (Misc.)	Ground
50178	Astor-Astor Park Water Assoc.	05/07/13	108.05	133.50	133.50	Household	Floridan Aquifer
50183	Park Place	8/12/18	100.67	67.8	67.8	Irrigation	Ground
50186	Swiss Fairways	6/7/09	85.63	52.4 85.19	52.4 85.19	Golf course Golf course	Ground Surface
50207	Tulley Dura-Rock	10/11/16	28.57	61.32	61.32	Commercial/Industrial	Ground
50214	McKinnon Groves	3/13/18	3.33	39.08 73.87	39.08 73.87	Agricultural (Citrus) Agricultural (Citrus)	Ground Surface
50220	Jon's Nursery	02/10/13	566.66	215.20	3.00 2.20 210.00	Freeze protection (Fern) Household Nursery (Fern)	Wholly owned pond Floridan Aquifer Floridan Aquifer
50226	Simpson Fruit Co.	2/17/08	210.59	157.44	157.44	Agricultural (Citrus)	Ground
50238	Robert Hart	9/24/18	20.50	37.54	37.54	Agricultural (Citrus)	Ground
50239	Lake Trimbeay Groves	5/13/18	5.47	67.96	67.96	Nursery (Misc.)	Ground
50243	Hickory Point	6/7/19	315.29	62.00	62.00	Recreation area	Surface
50273	Lake Hermosa Village	2/22/21	26.35	66.05	66.05	Agricultural (Citrus)	Ground
50279	Village Center Community Development District	07/12/25	3,047.10	1,755.65	169.00 1,281.88 158.78 137.97 8.03	Commercial/Industrial Household Unaccounted-for Urban landscape irrigation Water utility	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Total Permitted Amount (mgly)	Permit Amount by Source (mgly)	Water Usage Type	Water Source Name
50280	VLS Irrigation	06/13/20	1,702.32	315.23	66.93 115.00 133.30	Golf course Golf course Golf course	Lined Ponds 6,6A,6B VCCDD WWTP Floridan Aquifer
50291	Home Grove	6/6/2018	21.98	43.6	43.6	Agricultural (Citrus)	Ground
50318	Lake Kirkland Nursery	03/07/20	13.04	195.95	84.02 25.02 39.11 47.80	Agricultural (Citrus) Freeze protection (Citrus) Nursery (Misc.) Nursery (Misc.)	Floridan Aquifer Kirkland Lake unnamed canal Floridan Aquifer
50334	Park At Wolf Branch Oaks	1/19/26	11.42	50.11	50.11	Public Supply/Irrigation	Ground
50598	Alan Bradley	9/24/18	0.00	48.33	48.33	Agricultural (Pasture/livestock)	Ground
50736	O'Brien 1-6	09/12/20	44.55	190.16	146.42 2.93 34.90 5.91	Agricultural (Citrus) Essential Freeze protection (Citrus) Urban landscape irrigation	Floridan Aquifer Floridan Aquifer Floridan Aquifer Floridan Aquifer
50807	Diamond Club	07/07/09	131.23 *	134.00	134.00	Golf course	Floridan Aquifer
62724	Fairways at Mt. Plymouth	4/28/10	18.17	37.86	37.86	Household	Ground
63398	Hudson Tree Farm	1/18/20	6.06	56.58	56.58	Nursery (Misc.)	Ground
64455	The Legends	01/08/05	531.37	329.08	170.41 158.67	Golf course Urban landscape irrigation	Pond Pond
65573	Hurley Peat Mine	11/16/20			84.00	Agricultural (Sod)	Apopka/Beauclair
65573	Hurley Peat Mine	11/16/20	38.21	760.00	676.00	Mining Dewatering	Ground
66695	Hancock Park	10/23/20	24.64	42.744	42.744	Urban landscape irrigation	Ground
81093	East Ridge High School	12/31/06	19.84	82.42	82.42	Landscape/Recreation irrigation	Ground
81906	Heathrow Country Estates	08/13/23	160.99	154.68	15.30 139.38	Golf course Golf course	Lake 3 Reclaimed

CUP #	CUP Name	Expiration Date	Avg. Actual Pumpage (mgy) (2000-2005)	Total Permitted Amount (mgy)	Permit Amount by Source (mgy)	Water Usage Type	Water Source Name
83231	Eagle Dunes Golf Club	06/28/22	172.86	115.86	0.76 2.30 112.80	Commercial/Industrial Essential Golf course	Floridan Aquifer Eustis Reclaimed Water Eustis Reclaimed Water
85182	Far Reach Ranch	12/18/23	7.19	71.54	71.54	Agricultural - blueberries	Surface
85195	Heathrow Country Estates	07/02/09	10.85	100.38	100.38	Household	Floridan Aquifer
86742	Hyponex Peat Mine	04/08/09	158.75	363.82	363.82	Mining Dewatering and Processing	Schoolhouse Pond
87418	Sleepy Hollow Recreation Facility	3/24/23	36.11	44.00	44.00	Irrigation (Recreational Turf)	Ground
88103	Pennbrooke Fairways	11/17/10	50.03	65.7	65.7	Golf course	Surface
91867	DOT Clay LLC	06/08/12	NR	936.00	936.00	Commercial/Industrial	Ditch Pond
93176	Lake Cogen	03/08/25	142.30	400.00	400.00	Commercial/Industrial	Floridan Aquifer
94701	Sugarloaf Mountain Development - Irrigation	12/13/25	NR	29.73	29.73	Golf course	Floridan Aquifer
95654	Water Oaks Golf Course	4/19/10	79.70	52.00	52.00	Golf course	Ground
100086	Clearwater Reserve	8/29/26	NR	58.72	58.72	Urban landscape irrigation	Ground
102732	Lakes of Mount Dora	05/22/08	NR	175.96	175.96	Urban landscape irrigation	Man-made Lakes
103264	Youth Camp Peat Mine	2/13/17	NR	998.4	998.4	Mining Dewatering	Surface
104559	Plantation Residents Golf Club Inc	8/13/22	258.04	89.63 89.63 89.65	89.63 89.63 89.65	Golf course Golf course Golf course	Ground Surface Surficial
105467	Cascades at Groveland	1/30/10	NR	82.00	82.00	Urban landscape irrigation	Ground
<b>TOTAL (million gallons per year)</b>			<b>33,039.65</b>	<b>60,724.78</b>			
<b>TOTAL (million gallons per day)</b>			<b>90.5</b>	<b>166.4</b>			

## Potable Water Demand

Potable water use was estimated as the product of the projected County population plus seasonal demand and average per capita daily demand coefficients. Based on the estimates of the consulting firm Post, Buckley, Schuh and Jernigan, per capita consumption was expected to decline through the year 2005. The 1986 SJRWMD per capita value of 189 gallons per day was proportionately reduced over 5 year increments to 150 gallons per day by 2005 as the County changes from an agricultural setting to an urban/suburban setting. Total average annual potable water demand is projected to reach more than 147 million gallons per day by the year 2025.

**Table 4 - Estimated 2025 Total Water Use from All Sources**

Use Category	1995			2005			2030			Percent Change 1995-2030
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	
Public Supply	22.22	0	22.22	40.05	0.31	40.36	83.39	0	83.39	275%
Domestic Self Supply	5.99	0	5.99	10.85	0	10.85	33.50	0	33.50	460%
Agriculture	43.91	7.06	50.97	28.85	5.16	34.01	12.78	3.88	16.66	-67%
Recreation	1.53	1.25	2.78	2.67	2.19	4.86	4.91	4.02	8.92	220%
Com/Ind/Inst	10.23	1.14	11.37	9.54	0	9.54	28.62	0	28.62	151.71%
<b>TOTAL</b>	<b>83.88</b>	<b>9.45</b>	<b>93.33</b>	<b>91.96</b>	<b>7.66</b>	<b>99.62</b>	<b>163.2</b>	<b>7.9</b>	<b>171.09</b>	<b>1039.71%</b>

Source: Water Supply Assessment 2008 Draft, St. Johns River Water Management District, Palatka, Florida, 2010.

NOTE: All quantities in million gallons per day (MGD).

[The potable water demand is served primarily by the municipal providers. As of April 2010 the municipal providers have adopted the following levels of service for Potable Water:](#)

**Table 7A: 2010 Minimum Municipal Level of Service for Water**

<u>Municipality</u>	<u>Min. Water (gpppd)</u>
<a href="#">Lady Lake</a>	<a href="#">160</a>
<a href="#">Astatula (note 1)</a>	<a href="#">125</a>
<a href="#">Astatula</a>	<a href="#">125</a>
<a href="#">Clermont</a>	<a href="#">210</a>
<a href="#">Minneola</a>	<a href="#">210</a>
<a href="#">Tavares</a>	<a href="#">325</a>
<a href="#">Mascotte</a>	<a href="#">105</a>
<a href="#">Eustis</a>	<a href="#">99</a>
<a href="#">Groveland</a>	<a href="#">250</a>

<u>Municipality</u>	<u>Min. Water (gpppd)</u>
<a href="#">Leesburg</a>	<a href="#">150</a>
<a href="#">Mt. Dora</a>	<a href="#">350</a>
<a href="#">Montverde</a>	<a href="#">126</a>
<a href="#">Howey</a>	<a href="#">485</a>
<a href="#">Umatilla</a>	<a href="#">115</a>
<a href="#">Fruitland Park</a>	<a href="#">137</a>

[gppdc](#) - gallons per day per person per day

**NOTE 1:** Provides no central system for Water or Wastewater

**SOURCE:** Respective Municipal Comprehensive Plans, April 2010

[The Public Water Service Area Boundaries for Lake County map, shows all municipal, public, or privately-owned suppliers. The map is placed in Appendix A of this document and was created by the GIS Department of SJRWMD.](#)

### Potable Domestic Water Wells

Lake County estimates that it has 35,000 to 40,000 wells, including both public and private. Since 1999, over 900 well permits have been issued each year. Family wells range in depth from 90 to 200 feet, while municipal wells range from 600 to 1,000 feet, with 800 feet being the average. All permitted potable water wells reach the Floridan aquifer, because the surficial aquifer is not considered safe to drink from.

EDB (ethylene dibromide) is a highly toxic contaminant, dangerous at concentrations of 200 parts per billion, that has reached the Floridan aquifer and many of the county's wells. It was applied by the State of Florida to treat a nematode infestation of citrus trees, caused by an unlicensed nursery, in the 1980's. Because EDB is a gas, it was expected to rise to the surface and diffuse through the air after being applied to the roots. Instead, the pesticide seeped into the earth and reached the aquifer. It is estimated that 90% of the EDB contamination is in south Lake County, with the remainder distributed around the county's golf courses. Protecting wells in contaminated areas can more than triple the cost of the well. The Florida Department of Environmental Protection (DEP) is extending centralized water to many of these areas to help mitigate the problem.

Lake County and the Florida DEP are working in concert to locate and eliminate hydrocarbon contamination in the county. Hydrocarbon contamination is a result of underground gasoline storage tanks from old gas stations leaking into the surrounding soil and groundwater. Usually the old gas station sites have long since been paved over and developed. Without historical knowledge of where most of these stations were, Lake County Environmental Services Staff depends on homeowner complaints about water quality to identify potential contamination sites. Once detected, Environmental Services and DEP determine the extent of the contamination, and DEP then handles the clean up.



## **Nitrate Pollution**

Nitrate Pollution is discussed in the Stormwater Sub-Element of the Public Facilities Element.

## **Water Conservation**

Lake County does not own or operate any utilities and therefore has no water conservation plan in place for these facilities. Lake County Building Services has low flow plumbing regulations, and Lake County Growth Management has landscaping regulations that encourage Florida Friendly landscaping. During 2009, Lake County adopted landscape irrigation restrictions that are consistent with SJRWMD rules in Florida Administrative Code and began enforcing these rules through code enforcement actions. The primary responsibility of protecting and conserving water resources, however, lies with the water management districts.

## **STORMWATER MANAGEMENT SUB-ELEMENT**

### **INTRODUCTION**

The purpose of this Element is to provide for necessary public facilities and services correlated to future land use projections. In 1997, Lake County initiated a stormwater program to prioritize basins and projects for stormwater quality retro-fits. Program development was in response to anticipated federal requirements and citizen concern about surface water quality degradation. The following list identifies the key elements of the program:

- Develop a stormwater management system database and information management system which will inventory, locate and describe existing stormwater management systems, hydrologic basins, and other related hydrologic parameters in Lake County.
- Evaluate existing stormwater management system maintenance conditions and practices.
- Analyze the capability of the existing stormwater system to provide stormwater quality treatment prior to discharge.
- Assess the magnitude of existing and anticipated future stormwater quality and quantity problems within the County and prioritize those problems relative to their need for attention.
- Evaluate alternative Best Management Practices to provide stormwater quality treatment where such treatment does not currently exist.
- Develop cost estimates and strategies to implement Best Management Practices.
- Develop a Stormwater Management System Capital Improvement Plan based on identified system improvement needs and a prioritized implementation schedule.
- Utilize the approved and adopted dedicated funding source, the stormwater Municipal Services Taxing Unit (MSTU), to fund basin evaluations and inventories, stormwater management system capital improvements (retro-fits), operations and maintenance and administration.

## **Basin Studies**

The Stormwater Section has been undertaking basin studies within the Upper Ocklawaha River Basin to work in tandem with the Group I TMDL process. The Stormwater Section has completed the Lake Griffin, Lake Apopka, Upper Palatlahaha Chain and Johns Lake basins to date.

Work is now completed in the Lake Eustis and Silver Lake, Lake Harris and Little Lake Harris as well as the Lake Dora Basins. Priority projects from the basins are in design. The Stormwater Section has also started the Lake Yale and the Lower Palatlahaha Chain which will conclude the Upper Ocklawaha Basin.

From the mentioned studies a number of water quality retrofits have been constructed. These include Mid Florida Lakes exfiltration system and the Lake Dora Ave CDS unit. In July '08 work was completed on the Elbert Street Stormwater Retrofit Project. This project consisted of over 200' of 24" French Drains, 2 control structures with weirs and 2 splash pools to allow percolation of stormwater prior to entering Lake Minnehaha. Several other projects will be forthcoming as they are in various stages of design and permitting.

### **Completed Basin Studies**

- Lake Eustis Nonpoint Source Loading & Management (NPSLM) Model
- Silver Lake Nonpoint Source Loading & Management (NPSLM) Model
- Lake Yale Basin Study
- Wolf Branch Study (2000)
- Island Pond/Lake Seneca Study (1997)
- Master Stormwater Management Plan for Lake Dora Basin (1997)
- Lake Lowery Surface Water Study
- Lake Griffin Study
- Drainage Evaluation and Basin Prioritization for the Upper Palatlahaha Chain of Lakes (May 2003)
- Harris Basin Study

### **Flood Studies**

- Astor Flood Study - Phase I
- Royal Trails Flood Study

### **Stormwater Improvements Projects**

- Lake Minnehaha Stormwater Improvement Study (Dec. 2004)
- Old Chisholm Trail
- Washington Avenue

## **Hydrologic Descriptions**

Lake County is approximately 1,172 square miles in size and includes a portion of the Ocala National Forest. Average rainfall is approximately 51 inches and much of the County provides recharge to the Floridan Aquifer, Florida's prime supply of potable water. The County lies on the central Florida hydrologic divide which causes discharge of surface and intercepted groundwater

to both the Atlantic Ocean and the Gulf of Mexico. Elevations range from near sea level along the St. Johns River to over 300 feet at Sugar Loaf Mountain.

The County is aptly named because of the presence of more than 1,300 lakes. Most of these lakes were created by erosion of underlying carbonaceous bedrock causing karst topography and sinkholes connecting surface waters to the aquifers. Two stream-to-sinkhole systems have been identified: Wolf Branch sink east of Mount Dora, and the Shocklee Heights area sink in the Ocala National Forest northeast of Lake Dora. Portions of the County contain considerable physical relief (e.g., Mount Dora Area) with well drained soils while other portions are flat and comprised of extensive wetlands (e.g., Little Everglades). Surface streams and rivers, such as the Ocklawaha and Withlacoochee Rivers convey surface and groundwater discharges out of the County on their way to the Atlantic Ocean and Gulf of Mexico, respectively. The Lake County Conservation and Groundwater Recharge Elements provide further details on conservation and groundwater aspects of the hydrology of Lake County.

The following paragraphs provide brief descriptions of the five major hydrologic basins in Lake County: Ocklawaha River, Withlacoochee River, Wekiva River, Kissimmee River, and the St. Johns River. These descriptions provide basic facts about location, size, and stream systems.

### ***Ocklawaha River***

Approximately 50 percent of the County lies within the Ocklawaha River Basin which extends from Polk County to the south and Marion County to the north. The contributing area within Lake County is approximately 582 square miles and the direction of flow is generally south to north. The Ocklawaha River discharges to the St. Johns River, north of Palatka. It also receives flows from portions of Orange and Lake Counties.

The Upper Ocklawaha River Basin, as found in Lake County, consists of the majority of major lakes, streams, and rivers in the County. The two main lake chains, the Palatlakaha and the Harris Chains (also referred to as the Apopka Chain) are divided by the Lake Wales Ridge. A series of streams and canals connect the Palatlakaha Chain, which extends from Lake Louisa in southern Lake County to Lake Harris where it connects to Lake Eustis via the Dead River. The most distant water source of the lakes in this chain is the eastern portion of Green Swamp, an Area of Critical State Concern.

The second principal lake chain, the Harris Chain, extends from Lake Apopka in Orange and Lake Counties through Lake Griffin. The major lakes of this chain are connected by canals or channelized waterways. In both lake chains, the flow is regulated by lock and dam structures. Several freshwater springs are located within the Upper Ocklawaha River Basin.

### ***Withlacoochee River***

Approximately 17 percent of the County lies within the Withlacoochee River Basin which extends from the northwestern part of the County adjacent to the Town of Lady Lake to the southwest in the area of the Green Swamp, which is a large wetland area that serves as the headwaters for several river systems. This basin within Lake County is approximately 201 square miles and the direction of flow is generally north to south. The river ultimately discharges into the Gulf of Mexico.

### ***Wekiva River***

Approximately 18 percent of the County lies within the Wekiva River Basin. Located in the northeastern part of the County, the basin extends from Lake Dorr southeasterly along Blackwater Creek to its confluence with the Wekiva River, near the Lake/Orange County border. At this point, the Wekiva River flows northeast joining the St. Johns River which discharges into the

Atlantic Ocean at Jacksonville, Florida. The basin area within Lake County is approximately 205 square miles.

### ***Kissimmee River***

Approximately 2 percent of the County lies within the Kissimmee River Basin. Located in the southeastern part of the County, the basin extends from Trout Lake to the Lake/Polk County border. The basin area within Lake County is approximately 21 square miles and generally flows north to south. The Kissimmee River flows south and ultimately discharges to Lake Okeechobee.

### ***St. Johns River***

Approximately 14 percent of the County flows directly into the St. Johns River. Located in the northeastern part of the County, the basin extends from the Alexander Springs in the Ocala National Forest to the Town of Astor adjacent to the river. The basin area within Lake County is approximately 166 square miles and generally flows south to north.

## **Data Types**

The following sections provide a summary of data types, how the data are used, and useful data obtained from various sources by data type for subsequent evaluations.

### ***Stage and Discharge***

An essential component of any water resources investigation is the availability of measured stages and/or discharges at selected points of interest. These are often used to establish base flows or normal conditions as well as predict extreme flood and/or drought event conditions. Typically, for a stormwater master plan, stages and/or discharges are used in conjunction with known rainfall amounts/distributions and other hydrologic/hydraulic conditions to calibrate and verify models. These calibrated and verified models can then be used in evaluations of present problem area solutions or future conditions planning. It is often desirable to acquire these data in at least hourly intervals such that relatively short term, yet potentially damaging, flood peaks can be predicted and planned for. These data are generally determined on a project site-specific basis or, if available, from the USGS or other websites and/or databases.

### ***Aerial Photography***

Aerial photographs aid stormwater evaluations in land use verification, basin delineations, hydraulic facility identification, calculation of overland flow lengths, floodplain storage encroachment, and survey requests. Lake County obtained updated aerial photography every four years prior to 2004. With intense growing occurring, this frequency was increased with updates occurring in 2006 and 2008. Although past aerial photographs were completed using varying resolutions, the 2008 aeriels were completed with 6-inch pixel resolution.

### ***Soils***

Soils data are used to evaluate stormwater runoff, infiltration, and recharge potential. Specifically, infiltration rates and total soil storage (related to curve number) are used in hydrologic models. Soil types and engineering characteristics, were obtained from soil survey reports produced by the Soil Conservation Service (SCS).

### ***Rainfall***

Rainfall data are used to generate the basis for stormwater evaluations. Data are generally characterized by amount (inches), intensity (inches per hour), frequency (years), and duration

(hours). Gages for which digital rainfall values were obtained are somewhat evenly distributed throughout Lake County.

### **Hydrologic Boundaries**

Hydrologic boundaries are needed to identify flow directions and schemes as well as contributing area acreages. Hydrologic boundaries for major basins (e.g., Oklawaha River) were derived from SJRWMD, SWFWMD, Lake County Water Authority and County estimates. Sub-basins, and smaller hydrologic units are delineated on basins being evaluated.

### **Topography**

Topographic data are needed to define hydrologic boundaries, overland flow slopes, channel slopes, and stage-area-storage relationships. Topographic data for the entire County came from the USGS on 1:24,000 (7.5 minute series quadrangles with 5-foot contours) and 1:100,000 scale maps (5-foot contours). The County has also completed contours of the county using light detection and ranging (LIDAR). These contours were completed and are available to one-foot elevation intervals for most areas of the County. Areas within the Green Swamp Area of Critical State Concern were completed at five-foot intervals.

### **Land Use**

Land use data are used to estimate imperviousness, runoff, and pollutant load potential in stormwater evaluations. Relative changes in land use are also used to identify areas of high growth for the establishment of priorities for study. Typically, existing land use represents land cover as of 1995.

### **Regional Aquifer Characteristics**

The Groundwater Recharge and Conservation Elements present various data on regional aquifer characteristics; however, it is important to correlate the following issues to surface and stormwater management:

Lake County contains extensive recharge areas for the Floridan Aquifer; therefore, recharge protection is essential for potable water supplies for the area. Discharges to groundwater via sinkholes in Karst areas and discharges via drain wells can adversely impact the quality of water supplies.

### **Stormwater Facilities and Survey**

A key component of Lake County's stormwater program is the location and characterization of all stormwater facilities/structures in the County. Facilities and structures are located via GPS and characterized as to type, size, material and condition. This information is then translated to GIS and added as a layer to the appropriate basin map. Ultimately, this information will be compiled into a database for maintenance and accounting purposes.

### **Stormwater Management Regulations**

This Section provides a description of the regulatory and intergovernmental framework, which influence the implementation of Lake County's stormwater management program.

### **United States Environmental Protection Agency**

The USEPA is ultimately responsible for the implementation of two (2) mandates of the Clean Water Act: National Pollutant Discharge Elimination System (NPDES) and Total Maximum Daily Load (TMDL).

### **Florida Department of Environmental Protection**

The FDEP oversees both the NPDES and TMDL programs in the state of Florida. These programs are described in brief as follows:

The NPDES is an unfunded federal mandate derived from the Clean Water Act. It requires entities which operate storm sewer systems (termed Municipal Separate Storm Sewer Systems or MS4s) to obtain permit coverage to operate those systems. Permit coverage requires the submission of a Notice of Intent (NOI) to use the permit. The NOI outlines the Best Management Practices (BMPs) an entity will employ, time frames to employment and quantitative goals to determine BMP success. Yearly progress reports to the permitting agency are used to track an entity's success. In the state of Florida, the permitting agency is the Department of Environmental Protection (FDEP).

Total Maximum Daily Load or TMDL is another Clean Water Act-federal mandate that the County, municipalities and other agencies are currently addressing. A TMDL is the scientifically derived maximum amount of a pollutant that can be assimilated by a water body without degrading its intended use. TMDLs have been established for the lakes, and some other surface waters, that comprise the portion of the Upper Ocklawaha River Basin (UORB) that exists within the County. TMDL establishment for these water bodies came about pursuant to their being designated as "Impaired" under the Impaired Waters Rule (IWR). County staff is actively involved in the evolving stakeholder process to develop a Basin Management Action Plan or BMAP as required by the TMDL process.

### **St. Johns River and Southwest Florida Water Management Districts**

The St Johns River Water Management District (SJRWMD) and the Southwest Florida Water Management District (SWFWMD) are responsible for groundwater and stormwater management under FAC Chapters 40C and 40D, respectively

### **Florida Department of Community Affairs**

The FDCA is the implementation agency for the State Comprehensive Plan (Chapter 187, Florida Statutes). Chapter 9J-5, FAC, outlines local comprehensive plan elements which are submitted to the FDCA after receiving comments from the local regional planning council (East Central Florida Regional Planning Council). The requirements of Chapter 9J-5 are met or exceeded by the water management district and/or county requirements. Therefore, compliance with SJRWMD, SWFWMD, and County regulations will ensure compliance with the local and state comprehensive plan requirements.

### **Lake County**

Lake County's stormwater management regulations are contained in Chapter 9 of the County's Land Development Regulations. Design Standards for new development are incorporated into the chapter. Future revisions of the section will include Low Impact Development principles and practices as well as a Best Management Practices manual.

## **WATER QUALITY**

Water quality data are needed to document adverse impacts to waterbodies/watercourses and flora/fauna. Stormwater generates non-point source pollutant loads, which can degrade water

quality. Traditionally, water quality data are collected in regular intervals (e.g., quarterly) to record ambient conditions in a given location.

The Lake County Department of Environmental Utilities, Water Quality Services Division, maintains an extensive network of water quality monitoring stations throughout the County. These lake and river stations are generally sampled on a quarterly basis. The water quality monitoring data represents ambient conditions in a given location. The majority of the nonpoint pollution loads discharged into Lake County lakes are associated with stormwater runoff.

The occurrence of stormwater runoff in a watershed is a random process; therefore, development of reliable storm event water quality data requires a more sophisticated sampling program design than ambient base flow water quality assessments. When storm events occur, especially in Lake County watersheds with short travel times, the peak loadings of pollutants in stormwater may occur before personnel are able to arrive at a site and begin manual sampling. For this reason, monitoring will be accomplished using automatic flow monitoring and water quality sampling instruments. Manual sampling has the advantages of lower costs, simplicity, and more flexibility. However, these advantages are more than outweighed by the potential for failure to obtain data when storm events occur. In general, a wet weather sampling program incorporating automatic monitoring equipment will have the best chance for success.

Lake County is establishing a storm event monitoring program, which will complement the County's existing ambient water quality monitoring programs. The storm event monitoring program will be used to document the effectiveness of the stormwater management plan in improving water quality in Lake County. The primary purpose of the stormwater monitoring program will be to provide baseline data and to evaluate future water quality trends (e.g., improving versus deteriorating conditions).

### **STORMWATER QUALITY RETRO-FIT PRIORITIZATION**

A multi-agency group comprised of staff from Lake County Departments of Public Works and Growth Management, the Lake County Water Authority (LCWA) and the St. Johns River Water Management District (SJRWMD) developed criteria for the prioritization of the basins within Lake County with regard to stormwater and drainage issues. These criteria were “drainage problems”, “flooding potential”, “pollution potential”, “receiving water body”, “natural wildlife” and “population”. All 252 watersheds within the County were assessed based on these criteria and a prioritization schedule for inventory and evaluation was established.

Stormwater management system inventories and drainage evaluations have and are being conducted in the County's watersheds generally according to the prioritization schedule. Inventories and evaluations have been completed in the basins of Lake Griffin, Lake Apopka, Lakes Louisa, Minnehaha and Minneola, and, in conjunction with Orange County, Johns Lake. Evaluations are underway in the Lake Eustis and Silver Lake Basin and the Lake Harris and Little Lake Harris basin. The inventories have entailed locating all stormwater structures via Global Positioning System (GPS), digitally photographing them and noting, at a minimum, type, size, condition and material(s) of the structures. Outfalls are located and identified as to whether structural (e.g. pipe, flume, etc.) or implied (e.g.: an area of sheetflow). GPS data is then translated into a Geographic Information System (GIS) format. The drainage evaluations require an assessment of the conveyance system and delineation of the contributing basin. Conveyance systems are assessed as to whether they are open or closed and whether or not they allow for any stormwater treatment. The contributing basins are delineated and assessed as to size, Directly Connected Impervious Area (DCIA) and current land use category or categories.

Data from the inventory and evaluation are used to model the potential pollutant load from each outfall within a basin. For the most part, published figures for DCIA and pollutant loading have been used for the specific contributing basin land use categories. The multi-agency group mentioned at the beginning of this section performs review of the modeling results. The modeling results are used to help prioritize outfalls for retro-fit conceptual design based on their pollutant loading potential of a target pollutant or pollutants. Thus far, the target pollutant has been phosphorus.

Conceptual retro-fit stormwater management system designs are developed for several of the top priority outfalls within a basin. The designs are reviewed for potential pollutant load reduction and other considerations which include availability of land for construction, aesthetics, educational opportunities, overall cost, cost per quantity of pollutant removed and future maintenance. Land availability may be a limiting factor in both design and ability to construct a project. Another consideration at this time is permitting. Discussions are held with the permitting agency(ies) to determine “feasibility” of the project from a permitting perspective and whether or what type of permit is required. After due consideration, the conceptual designs are prioritized and the highest priority subset of those are moved into an actual design phase.

### **EXISTING REGULATIONS AND PROGRAMS**

An analysis of the active Federal, State, and County stormwater management regulatory programs indicates that adequate standards and criteria will exist when the following occurs:

- The Basin Management Action Plan (BMAP) for the Upper Oklawaha River Basin is completed, adopted and implemented by all parties in the basin.
- Best Management Practices, structural and non-structural, are in place to achieve all TMDLs.
- The County, and other entities so covered, successfully administer the Minimum Control Measures stipulated in respective NPDES Phase II permits.
- State and local rules/design standards regarding stormwater management systems are adhered to and an emphasis is placed on long-term maintenance of the systems.
- Improvement to ambient surface water quality directly correlated to improved stormwater quality.

### **MAINTENANCE PRACTICES**

Proper operation and maintenance of stormwater management facilities, whether conveyance, treatment, attenuation or a combination thereof, are crucial to the continued function of the facilities. Maintenance practices are also usually specific to a given county or city.

Currently, County facilities are maintained on an as-needed basis as time and manpower allow. The problem with this approach is that silt, debris, and some harmful vegetation can accumulate to the point where a problem that could have been avoided occurs during a large storm.

A regular maintenance schedule is being established and budgeted. Structure/system information is being collected as part of the stormwater program basin evaluations and as part of maintenance schedule development. All information is being entered into a data base with a GIS component that will allow for a level of visualization of any system in the unincorporated County. Scheduled maintenance implemented on a regular basis, not only improves consistency of level of service, but also shows citizens that their stormwater fee and other ad valorem taxes are working for them.



## **EXISTING WATER QUALITY AND QUANTITY**

This section presents an evaluation of existing water quality and quantity issues within Lake County.

### **Water Quality**

A previous section made mention of two federal mandates: National Pollutant Discharge Elimination System (NPDES) and Total Maximum Daily Load (TMDL). These mandates are having major impacts on the County's management of stormwater. NPDES is a means by which certain activities associated with the operation of a Municipal Separate Storm Sewer System or MS4 are regulated. A MS4 can be defined as all the components that make up a storm sewer system including roads, swales, ditches, retention/detention ponds, culverts and the like. The TMDL process determines the "assimilative capacity" of a water body for a specific pollutant or pollutants. It also establishes an allocation for each pollutant from each contributing source. As mentioned, these mandates are derived from the Clean Water Act and are unfunded.

#### **NPDES**

Lake County's stormwater program was developed, in part, in anticipation of inclusion in Phase II of NPDES (Phase I has been in effect since the early 1990s for "larger" entities). The County's program has been addressing what are termed, "Minimum Control Measures" or MCMs that are the criteria for compliance with Phase II. The MCMs are: Public Education, Public Participation, Illicit Discharge Detection and Elimination, Construction Site Stormwater Runoff Control, Post-Construction Stormwater Management and Pollution Prevention/Good Housekeeping for Municipal Operations. Each MCM requires the implementation of Best Management Practices (BMPs). (An example BMP for Public Education might be a brochure on stormwater and its potential impacts included in a utility bill mailing.) In Florida, an entity that owns an MS4 must compile existing and proposed BMPs and submit a Notice of Intent or NOI to the Florida Department of Environmental Protection to use, in Lake County's case, a General Permit to operate the MS4. Initial permit coverage lasts for five years during which time all BMPs listed in the NOI must be implemented. Yearly progress reports must be submitted to FDEP with quantifiable results for each BMP implementation.

The Stormwater Section has completed the third NPDES annual report due to FDEP by March 2008. This report quantifies the activities the Stormwater Section has been participating in for year three (3) that represent the goals established for all Phase II MS4's by FDEP. These goals include public education and outreach, public involvement/participation, illicit discharge detection and elimination, construction site runoff control, post construction stormwater management in development and re-development and pollution prevention/good housekeeping for municipal operations.

The County's stormwater program has been addressing MCMs in ways including as follows:

- **Public Education:** The Lake County Department of Public Works supports, financially, the Watershed Action Volunteer (WAV) program of the St. Johns River Water Management District. The WAV coordinator and volunteers give presentations to school children and others throughout the County about stormwater and its potential effects on lakes and other water bodies. The principle tool used in these presentations is an Enviroscope brand landscape model. The Enviroscope model depicts various land uses within a landscape and allows one to demonstrate runoff scenarios throughout the landscape.

- **Public Participation:** Citizen Volunteers have participated, as WAVs and members of LakeWatch, in the County's surface water quality sampling program for several years. A new sampling component, prompted by the County's efforts to evaluate all its basins, is sampling individual stormwater outfalls. The purpose of sampling outfalls is to obtain basin-specific data to "fine tune" pollutant load modeling efforts and to provide baseline information. Remote samplers are employed at outfalls for contributing basins with homogeneous land uses. The samplers are maintained and samples are collected and transported to the County's Water Resources Laboratory by volunteers.
- Several stormwater retro-fit projects have been constructed and others being planned are located in residential areas. A potential issue of concern has been the increase in maintenance created by additional grates and inlets, etc., located in these generally heavily treed areas. The WAV coordinator is developing an "Adopt-a-Storm Drain" program where residents will help with maintenance by keeping grates and inlets clear of debris.
- **Illicit Discharge Detection and Elimination:** Language has been inserted in the Scope of Services which is used to solicit consulting firms to perform the basin inventories and evaluations. This language requires that dry weather flows be documented during efforts in the basin. Any dry weather flows will be investigated as to their source.
- **Construction Site Stormwater Runoff Control:** A number of Lake County staff including Construction Inspectors, Maintenance Area Supervisors and Code Enforcement personnel are "Qualified Stormwater Management Inspectors" through FDEP's "Stormwater, Erosion, and Sedimentation Control Inspector Training Program". Construction Inspectors are constantly in the field ensuring sediment and erosion control measures are being used correctly at all construction sites within their jurisdictions. Maintenance Area Supervisors ensure proper measures and techniques are employed on County road maintenance projects. Code Enforcement personnel generally respond to complaints from individuals with concerns over issues such as, for example, erosion and sedimentation from a vacant lot in a subdivision under construction.
- **Post-Construction Stormwater Management:** While reserving the right to comment, the County currently defers stormwater management system permitting to the appropriate Water Management District. The County will take advantage of District oversight and authority as a "Qualified Alternative Program" for this MCM.
- **Pollution Prevention/Good Housekeeping for Municipal Operations:** County Departments that may use potentially deleterious materials utilize required protocols for the handling of those materials. There are Standard Operating Procedures (SOPs) in place for petroleum storage and spill prevention. Handlers and applicators of pesticides are certified for their use.

### **TMDLS**

Addressing Total Maximum Daily Load or TMDL involves two main steps: developing a Basin Management Action Plan (BMAP) and allocating pollutant load reductions. A TMDL is a scientifically-established load or amount of a given pollutant that a water body can assimilate or "absorb" and not degrade below its intended use. The intended use in the case of water bodies in Lake County is generally described as "fishable and swimmable". Once the TMDL is established, the BMAP is developed and the TMDL is allocated among all contributing sources. Sources may be as obvious as an outfall pipe from a sewage treatment plant to a less obvious, non-point source as stormwater. All sources are taken into account and a margin of safety is factored into the allocation equation. Allocation is the assigning of a proportional amount of the TMDL to each contributing source. All sources may be required to reduce their contribution. In

other instances, there may be negotiations among sources whereby, for example, a source above its allocation may offer to compensate a source below its allocation for the latter's additional allowable load.

The BMAP will detail each source's TMDL allocation and include projects and activities to achieve the allocation. Since the TMDL process is meant to be iterative, a BMAP will also include strategies for monitoring, follow-up and plan revision. As mentioned above, negotiations may take place between sources or, more appropriately, stakeholders within a basin. The development of the BMAP will provide a forum for stakeholders to negotiate as well as cooperate and coordinate on the most effective means of achieving the TMDL. An important aspect of BMAP development is documenting existing plans and projects for each of the stakeholders. If the projects or plans are designed to reduce pollutant loads, they may be credited toward a stakeholder's TMDL allocation.

The stormwater section is an active participant in the TMDL process and is one of the many partners that worked on the Group I Upper Ocklawaha Basin Management Action Plan. This effort has been ongoing for over two years and the first BMAP in the state was adopted in August 2007. This document has been the collaborative effort of regulatory agencies, local government, the business communities and citizens among others. County staff worked closely with stakeholders from the municipalities, the FDEP, the St. Johns River Water Management District, the Florida Fish and Wildlife Conservation Commission, the Florida Department of Transportation and many others in the FDEP-facilitated process.

## **Water Quantity**

### **Levels of Service (LOS)**

Stormwater management has become a complex community issue. In the past, ditching and draining to convey stormwater away from development was the accepted practice and allowed access to much of Florida. Over the years, adverse impacts to fisheries, scenic areas, and wildlife habitats have altered accepted approaches to manage stormwater. Stormwater management now involves storage, conveyance, recharge, conservation, and treatment aspects along with proper timing, durations, levels of flooding, and nutrient releases for natural areas or wetlands to ensure a comprehensive management approach to what is a local, State, and Federal issue.

Lake County is similar in characteristics to other communities regarding stormwater service. Certain County, City, and private stormwater management systems provide inadequate flood protection of homes and streets and provide little or no treatment of the runoff prior to discharge to receiving waters. These conditions are due mainly to the historic "piece-meal approach" to stormwater management and the aging condition of existing infrastructure. Proper LOS decisions for water quantity (flooding) and water quality protection are essential for the implementing entity because they establish the intent of public and agency involvement and set the goals for the CIP.

### **Stormwater Management System Design Criteria**

The following minimum design storms, water quality treatment and recharge standards are being proposed for an update of Chapter 9 of the County's Land Development Regulations.

**Minimum Design Storm**

**Table 8 - Stormwater Minimum Design criteria**

FACILITY	FREQUENCY/DURATION
Bridges	50 year 24 hours
Principal Arterial bridges and Evacuation Routes	100 year 24 hours
Canals, Ditches, Swales or Culverts for Drainage External to the Development	25 Year 24 Hours
Canals, Ditches, Swales or Culverts for Drainage Internal to the Development	10 Year 24 Hours
Detention and Retention Basins Contributory to Land-locked areas with no Positive Outlet	25 Year 96 Hours
Detention/Retention Structures with a Positive Outlet.	25 Year 24 Hours Mean Annual Storm
Habitable Structures First Floor Elevation Must be, at a minimum, 18" above the 100-Year Flood Elevation	100 Year 24 Hours
Storm Sewers	10-Year Storm

- Design storm based on 24 hour minimum.
- Pollution abatement shall be accomplished by requiring stormwater management systems to retain or detain with filtration, the first one-half inch of run-off from developed sites, or the run-off generated from the first inch of rainfall on developed sites, whichever is greater.
- Lake County shall require a retention/detention system that limits peak discharge of a developed site to the discharge from the site in an undeveloped condition during a 24 hour/25 year frequency storm event.
- Lake County shall require, prior to development approval that projects receive appropriate permits from State agencies to comply with the rules and regulations for stormwater facility design, performance and discharge.
- Discharged stormwater run-off shall not degrade receiving surface water bodies below the minimum conditions as established by State water quality standards (17-302 and 17-40.420, FAC).

**Water Quality Treatment Standards**

Water Quality Treatment Pollution Abatement will be accomplished by:

Retention with percolation, or detention with filtration, of the greater of one half (1/2) inch of runoff from developed sites which consist of less than fifty nine percent (59%) impervious surface with drainage area less than 100 acres or runoff from the first one inch of rainfall (systems using detention with filtration will be limited to tributary areas of less than ten (10) acres);

Detention without filtration (wet detention) of the first inch of runoff or two and a half (2.5) inches times the impervious area, whichever is greater;

Providing an additional level of treatment equal to fifty percent (50%) more than described above and shall provide off-line retention or detention of the greater of one-half inch of runoff

from developed sites which consist of less than 100 acres or runoff from the first one (1) inch of rainfall for any areas that discharge to Class I, Class II, or Outstanding Florida Waters (OFW).

Providing for the same level of treatment as required above for Class I Waters for any areas that discharge to stream-to-sinkhole or to drainage wells directly connected to the Florida Aquifer.

Monitoring may be required by the County Manager or designee in any stormwater management system in order to provide assurance that the systems are functioning as designed and are not having adverse impacts on water quantity or quality of receiving waterbodies or water courses.

The County shall not permit the use of detention with filtration pollution abatement systems in new development due to their high failure rate and maintenance. Existing systems may be permitted for stormwater retrofit projects.

### **Recharge Standards**

Recharge in designated areas where the soils are compatible (Hydrologic Soils Group A as described by the USDA Soil Conservation Service) will be accomplished by providing for retention of three (3) inches of runoff from all directly connected impervious areas within a project site. As an alternative, developers may demonstrate that the post-development recharge capacity is equal to or greater than the pre-development recharge capacity.

### **Summary**

Non-point sources of pollution continue to be recognized as significant contributors to the pollutant loadings of lakes and other surface waters. Unlike point sources such as sewage treatment plants and certain industries which discharge through single or multiple pipes, non-point sources tend to be less defined in nature. Non-point sources may include aerial deposition, septic tank discharge and urban runoff. Urban runoff or stormwater has garnered much attention in recent years as a source of loading that can be addressed by entities in a number of ways and at reasonable costs. Source control, retro-fit and education are all methods being used to reduce the pollutant loading from stormwater.

Thus far, Lake County's stormwater program has been very successful with a number of accomplishments. The MSTU continues to provide a steady source of funding. Basins are being evaluated with an eye on improving stormwater quality. Projects are being designed and constructed. Easements are being donated by citizens in order to construct on private property. County staff is active in multi-agency efforts to address stormwater issues, including federal mandates. School children are learning firsthand about stormwater and its effects through the education component of the program. Citizens are volunteering to aid in water quality sampling and light, routine maintenance of new stormwater quality improvement systems.

Lake County's stormwater program is furthering efforts to improve the water quality of the lakes and other water bodies in the County. The goal is to help restore or maintain water quality so that residents, visitors and wildlife may enjoy the features for which the County is named.

**Table 9 - Lake County Stormwater Facilities**

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
1957 Holdings Incorporated Retail Center	Construction Stormwater GP	Leesburg	Privately Owned
24 in 26 in ML Upgrade at Sorrento Springs	Construction Stormwater GP	Eustis	Authority
441 Edwards Road	Construction Stormwater GP	Lady Lake	Privately Owned
84 Lumber Expansion	Construction Stormwater GP	Tavares	Privately Owned
AAA High School	Construction Stormwater GP	Clermont	Privately Owned
AAA Storage Facility	Construction Stormwater GP	Minneola	Privately Owned
Advanced Auto Parts	Construction Stormwater GP	Leesburg	Privately Owned
Advanced Auto Parts at Minneola	Construction Stormwater GP	Minneola	Privately Owned
Albertson's No. 44GT at Clermont	Construction Stormwater GP	Clermont	Privately Owned
Ambassador Cleaners Building Addition	Construction Stormwater GP	Clermont	Privately Owned
American Auto and Truck Salvage Inc.	Multi-Sector Stormwater GP	Fruitland Park	Privately Owned
Amsouth Bank – King's Ridge	Construction Stormwater GP	Clermont	Privately Owned
Amsouth Bank – Lady Lake	Construction Stormwater GP	Lady Lake	Privately Owned
Amsouth Bank – Lake Harris	Construction Stormwater GP	Leesburg	Privately Owned
Amsouth Bank Leesburg/ Summerville	Construction Stormwater GP	Leesburg	Privately Owned
Apopka-Beauclair Canal – Offline Nutrient	Construction Stormwater GP	Zellwood	Unknown
Apshawa View Subdivision	Construction Stormwater GP	Minneola	Privately Owned
Arlington Ridge – Phase 2	Construction Stormwater GP	Leesburg	Privately Owned
Arlington Ridge Phase I	Construction Stormwater GP	Leesburg	Privately Owned
Arlington Ridge 1-C	Construction Stormwater GP	Leesburg	Privately Owned
Arlington Ridge Maintenance Site	Construction Stormwater GP	Leesburg	Privately Owned
Ashely (Lot 2), Grand Highway & Hook Street	Construction Stormwater GP	Clermont	Privately Owned
Astor/ Astor Park Central Wastewater System, Phase 1	Construction Stormwater GP	Astor	Privately Owned
B&T Auto Parts	Multi-Sector Stormwater GP	Mascotte	Privately Owned
Bank of America Wal-Mart Super Center (US 27)	Construction Stormwater GP	Clermont	Privately Owned
Banquet Facility	Construction Stormwater GP	Clermont	Privately Owned
Barrington Estates	Construction Stormwater GP	Clermont	Privately Owned
Bates Avenue Project No 2009-08	Construction Stormwater GP	Eustis	Privately Owned
BB&T Bank	Construction Stormwater GP	Clermont	Privately Owned
Bella Collina East	Construction Stormwater GP	Montverde	Privately Owned
Bella Collina West	Construction Stormwater GP	Montverde	Privately Owned

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Berean Baptist Church	Construction Stormwater GP	Okahumpka	Privately Owned
Bridges Road	Construction Stormwater GP	Astatula	Privately Owned
Cagan Crossing KFC	Construction Stormwater GP	Clermont	Privately Owned
Canal Street Improvements	Construction Stormwater GP	Leesburg	Privately Owned
Captain Haynes Road	Construction Stormwater GP	Tavares	Privately Owned
Carver Heights Drainage Improvement	Construction Stormwater GP	Leesburg	Privately Owned
Cauthen Circle Renovation	Construction Stormwater GP	Leesburg	Privately Owned
Centerstate Bank	Construction Stormwater GP	Leesburg	Privately Owned
Centerstate Bank - Eustis	Construction Stormwater GP	Eustis	Privately Owned
CFT – Panda Express	Construction Stormwater GP	Mount Dora	Privately Owned
Chelsea Oaks Phases 3 and 4	Construction Stormwater GP	Tavares	Privately Owned
Chelsea Oaks Subdivision	Construction Stormwater GP	Tavares	Privately Owned
Chelsea's Run	Construction Stormwater GP	Fruitland Park	Privately Owned
Cherry Ridge	Construction Stormwater GP	Groveland	Privately Owned
Cherrybrook	Construction Stormwater GP	Groveland	Privately Owned
Cherrywood Subdivision	Construction Stormwater GP	Lady Lake	Privately Owned
Cherrywood Subdivision	Construction Stormwater GP	Lady Lake	Privately Owned
Chick-Fl-A, Mount Dora	Construction Stormwater GP	Mount Dora	Privately Owned
Chick-Fil-A, Clermont	Construction Stormwater GP	Clermont	Privately Owned
Chili's Grill & Bar	Construction Stormwater GP	Clermont	Privately Owned
Chili's Grill and Bar – Eustis, FL	Construction Stormwater GP	Eustis	Privately Owned
Choudhry Commercial Property	Construction Stormwater GP	Leesburg	Privately Owned
Christ United Methodist Church	Construction Stormwater GP	Leesburg	Privately Owned
Christian Home & Bible School Cottages	Construction Stormwater GP	Mount Dora	Privately Owned
Christopher C. Ford	Construction Stormwater GP	Groveland	Privately Owned
Circle K	Construction Stormwater GP	Leesburg	Unknown
Citrus Farms Estates	Construction Stormwater GP	Astatula	Privately Owned
Citrus Farms Estates Phase 2	Construction Stormwater GP	Astatula	Privately Owned
Citrus Highlands – Phase 2	Construction Stormwater GP	Clermont	Privately Owned
Citrus Highlands Phase II	Construction Stormwater GP	Clermont	Privately Owned
Citrus Ridge Library	Construction Stormwater GP	Clermont	Privately Owned
Citrus Ridge Library	Construction Stormwater GP	Clermont	Municipal
Citrus Tower Blvd. and Steve's Road	Construction Stormwater GP	Clermont	Privately Owned
City of Clermont	Stormwater MS4 Phase	Clermont	Municipal
City of Clermont Historic Village	Construction Stormwater GP	Clermont	Municipal

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
City of Eustis	Stormwater MS4 Phase	Eustis	Private
City of Groveland	Stormwater MS4 Phase	Groveland	Municipal
City of Minneola Water Reclamation Facility	Construction Stormwater GP	Minneola	Municipal
City of Tavares	Stormwater MS4 Phase	Tavares	Municipal
City of Umatilla Reclaimed Water Pump Station	Construction Stormwater GP	Umatilla	Municipal
Clearwater Reserve Subdivision	Construction Stormwater GP	Groveland	Privately Owned
Clermont Auto Mall	Construction Stormwater GP	Clermont	Privately Owned
Clermont Crossings at Lost Lake	Construction Stormwater GP	Clermont	Privately Owned
Clermont Fish and Wildlife	Construction Stormwater GP	Groveland	Privately Owned
Clermont Landing	Construction Stormwater GP	Clermont	Privately Owned
Clermont Value Place Hotel	Construction Stormwater GP	Clermont	Privately Owned
Clermont Westside Force Main	Construction Stormwater GP	Clermont	Unknown
College Station Center	Construction Stormwater GP	Clermont	Privately Owned
Commander Road Project- Dr Uche	Construction Stormwater GP	Leesburg	Unknown
County Line Road And Keene RD Paving Program	Construction Stormwater GP	Umatilla	Private
County Road 448a / Duda Road Intersection Improvement #2005-	Construction Stormwater GP	Mt Dora	Private
County Road 44A & Estes Road	Construction Stormwater GP	Eustis	County
Courtney Villages	Construction Stormwater GP	Lady Lake	Unknown
CR 437 Widening & Resurfacing (2004-05)	Construction Stormwater GP	Sorrento	Private
CR 565A Realignment	Construction Stormwater GP	Clermont	Unknown
Cr-25 Widening & Resurfacing Phase II (Project No. 2004)-03	Construction Stormwater GP	Lady Lake	Private
CR-33 - Landfill Facility LLC	Multi-Sector Stormwater GP	Groveland	Private
CR-439 & SR-44 Right Turn Lane	Construction Stormwater GP	Eustis	Unknown
CR-44 & Hicks Ditch Rd	Construction Stormwater GP	Eustis	County
CR-44 Turn Lanes & Shoulder Improvements Project	Construction Stormwater GP	Unincorporated	County
CR-452 & S Fish Camp Rd Intersection Improvements	Construction Stormwater GP	Eustis	Unknown
CR-48 Widening & Resurfacing	Construction Stormwater GP	Okahumpka	Private
Crestridge	Construction Stormwater GP	Groveland	Private
Crestridge at Leesburg Subdivision	Construction Stormwater GP	Leesburg	Private
Crestridge at Leesburg Subdivision	Construction Stormwater GP	Leesburg	Private
Crooked Lake Estates	Construction Stormwater GP	Eustis	Private



NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Crosspoint Presbyterian Church	Construction Stormwater GP	Minneola	Private
Crystal Lake	Construction Stormwater GP	Groveland	Private
Crystal Lake - Waterside Pointe	Construction Stormwater GP	Clermont	Private
Cutrale Citrus Juices USA Inc	Multi-Sector Stormwater GP	Leesburg	Private
CVS at Sorrento, Store No. 75616	Construction Stormwater GP	Sorrento	Private
Darian Estates	Construction Stormwater GP	Eustis	Private
Daycare Facility @ CR 455 and SR 50	Construction Stormwater GP	Clermont	Private
Dead River Road Stormwater Pond	Construction Stormwater GP	Tavares	Authority
Dee Auto Sales & Parts, Inc.	Multi-Sector Stormwater GP	Fruitland Park	Private
Deems Landing Subdivision	Construction Stormwater GP	Leesburg	Private
Diamond C Transport	Construction Stormwater GP	Leesburg	Private
Discount Tire Store	Construction Stormwater GP	Clermont	Private
Dollar General	Construction Stormwater GP	Umatilla	Private
Dollar General Leesburg	Construction Stormwater GP	Leesburg	Private
Domino's Florida Supply Chain Center	Multi-Sector Stormwater GP	Groveland	Private
Dr Blakes Office	Construction Stormwater GP	Tavares	Private
Drew Estates / Drew's Landing	Construction Stormwater GP	Clermont	Private
Drivetime - Leesburg	Construction Stormwater GP	Leesburg	Private
Duke's Lake Phase 3	Construction Stormwater GP	Mascotte	Private
Dwight's Road Dirt Road Paving Project	Construction Stormwater GP	Clermont	Municipal
Eagle Pines	Construction Stormwater GP	Groveland	Private
Eagle Pointe - Phase 1 - 4	Construction Stormwater GP	Groveland	Private
East Ridge High School Stadium Expansion	Construction Stormwater GP	Clermont	Unknown
East Side Water Reclamation Facility	Multi-Sector Stormwater GP	Clermont	Unknown
Ehler's Office Complex	Construction Stormwater GP	Town Of Lady Lake	Private
Emerald Pond Subdivision	Construction Stormwater GP	Leesburg	Private
Epic Center	Construction Stormwater GP	Clermont	Private
Estates at Blackbear	Construction Stormwater GP	Eustis	Private
Estes Rd & CR-44	Construction Stormwater GP	Eustis	Unknown
Etowah - Phase 1	Construction Stormwater GP	Tavares	Private
Eustis High School	Construction Stormwater GP	Eustis	Private
Executive Suzuki	Construction Stormwater GP	Leesburg	Private
Expansion of Sunshine Wastewater Treatment Plant #3	Construction Stormwater GP	Groveland	Private

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Extend Runway 31 Leesburg International Airport	Construction Stormwater GP	Leesburg	Private
Fairfield Inn	Construction Stormwater GP	Clermont	Private
Family Christian Center Classroom Addition	Construction Stormwater GP	Clermont	Private
Fast Food Restaurant	Construction Stormwater GP	Eustis	Private
FDOT Contract T-5046, SR 19	Construction Stormwater GP	Groveland To Howey-In-The-Hi	Private
FDOT Contract T-5103 SR19 Lake County	Construction Stormwater GP	Eustis	Private
FDOT FPN 24144-1-52-01	Construction Stormwater GP	Eustis	State
FDOT FPN 408638-1-52-01	Construction Stormwater GP	Okahumpka	Private
FedEx Express-LEEA	Multi-Sector Stormwater GP	Leesburg	Private
Fgt Replacement Project 17-2x to 17-3	Construction Stormwater GP	Mt Plymouth	Private
Fire Station - # 3	Construction Stormwater GP	Clermont	Municipal
First Baptist Church of Eustis	Construction Stormwater GP	Eustis	Private
First Baptist Church of Ferndale New Sanctuary	Construction Stormwater GP	Ferndale	Private
Florida Food Products Inc	Multi-Sector Stormwater GP	Eustis	Private
Floridas Natural - Umatilla	Multi-Sector Stormwater GP	Umatilla	Private
Fm: 407152 SPN: 11200	Construction Stormwater GP	Clermont	Private
Fountain Lake Trail	Construction Stormwater GP	Leesburg	Municipal
Fountain Lake Trail	Construction Stormwater GP	Leesburg	Municipal
Fox Chase Subdivision	Construction Stormwater GP	Clermont	Private
Foxborough Subdivision	Construction Stormwater GP	Tavares	Private
Frank Brown Park	Construction Stormwater GP	Mount Dora	Municipal
Fruitland Estates	Construction Stormwater GP	Fruitland Park	Private
Fruitland Park	Stormwater - MS4 Phase 2	Fruitland Park	Municipal
FUMC of Clermont Multipurpose Facility C	Construction Stormwater GP	Clermont	Private
Garrett Place 10 Sandy Lane Umitilla Florida	Construction Stormwater GP	Eustis	Private
Gator Harley Davidson Facility	Construction Stormwater GP	Leesburg	Private
Getford Road Drainage Improvements Project # LC-091	Construction Stormwater GP	Eustis	Unknown
Golden Corral Clermont	Construction Stormwater GP	Clermont	Private
Golfside Market Place	Construction Stormwater GP	Mount Dora	Private
Goodyear - Lady Lake	Construction Stormwater GP	Lady Lake	Private

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Grand Island Reserve	Construction Stormwater GP	Eustis	Private
Grand Island Ridge	Construction Stormwater GP	Eustis	Private
Gray Middle School	Construction Stormwater GP	Groveland	County
Greater Groves PUD - Lot 4 - Doctors Office	Construction Stormwater GP	Clermont	Private
Greater Hills Commercial Site	Construction Stormwater GP	Clermont	Private
Greater Hills Water Treatment Plant	Construction Stormwater GP	Clermont	Municipal
Greater Lakes	Construction Stormwater GP	Clermont	Private
Green Valley West	Construction Stormwater GP	Groveland	Private
Griffim Road Side Walk Project	Construction Stormwater GP	Leesburg	Private
Groveland Shoppes	Construction Stormwater GP	Groveland	Private
Groves At Baytree Phase 3	Construction Stormwater GP	Tavares	Private
Hamilton Gardens	Construction Stormwater GP	Sorrento	Private
Hamlets of Tavares	Construction Stormwater GP	Tavares	Private
Hammock Oaks Apartments	Construction Stormwater GP	Mount Dora	Private
Hampton Inn & Suites	Construction Stormwater GP	Leesburg	Unknown
Hampton Park	Construction Stormwater GP	Groveland	Private
Hancock Road Reclaimed Water Main	Construction Stormwater GP	Clermont	Unknown
Harbor Federal Bank	Construction Stormwater GP	Clermont	Private
Harbor Federal Bank	Construction Stormwater GP	Clermont	Private
Harbor Hills Softball Field	Construction Stormwater GP	Lady Lake	Private
Harris Bayou Project	Construction Stormwater GP	Leesburg	Private
Hartle Groves	Construction Stormwater GP	Clermont	Private
Hartwood Reserve Phase I Lots 154, 161, 162 Phase 2 lots 73	Construction Stormwater GP	Clermont	Private
Headquarter Honda	Construction Stormwater GP	Clermont	Private
Heathrow Country Estate Homes, Phase 1	Construction Stormwater GP	Sorrento	Private
Heritage Hills	Construction Stormwater GP	Clermont	Private
Heritage Hills, Phase 3	Construction Stormwater GP	Clermont	Private
Heritage Square - Phase I Modification	Construction Stormwater GP	Clermont	Private
Hess at Clermont	Construction Stormwater GP	Clermont	Private
Hess at Groveland	Construction Stormwater GP	Groveland	Private
Hibiscus Court Roadway Improvements	Construction Stormwater GP	Tavares	Unknown
Hidden Forest Townhomes	Construction Stormwater GP	Clermont	Private
Highland Oaks Phase I, III	Construction Stormwater GP	Minneola	Private

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Hillcrest at Lake Nettie	Construction Stormwater GP	Eustis	Private
Hillcrest At Lake Nettie	Construction Stormwater GP	Eustis	Private
Hilltop - Sorrento Special Assessment Dirt Rd Paving Project	Construction Stormwater GP	Sorrento	Private
Homewood Suites	Construction Stormwater GP	Lady Lake	Private
Hook Street	Construction Stormwater GP	Unincorporated	Private
Howard Fertilizer and Chemical Co., Inc.	Multi-Sector Stormwater GP	Groveland	Private
HOWCO Environmental Services Astor Facility	Multi-Sector Stormwater GP	Astor	Private
Hyponex Corporation	Multi-Sector Stormwater GP	Groveland	Private
Imagine Schools - South Lake Charter School	Construction Stormwater GP	Clermont	Private
Imagine Schools at Minneola	Construction Stormwater GP	Minneola	Private
Izzi Bath & Spa Warehouse	Construction Stormwater GP	Clermont	Private
Jimerico Office/Warehouse	Construction Stormwater GP	Groveland	Private
Johns Lake Road & Hancock Road Intersection Improvements	Construction Stormwater GP	Clermont	Private
Karst Southern Breeze Subdivision	Construction Stormwater GP	Minneola	Private
King's Ridge Professional Centre	Construction Stormwater GP	Clermont	Private
Kingshill Hospitality Inc	Construction Stormwater GP	Leesburg	Private
Kohl's Plaza	Construction Stormwater GP	Clermont	Private
Kristen Subdivision	Construction Stormwater GP	Leesburg	Private
Lady Lake	Stormwater - MS4 Phase 2	Lady Lake	Municipal
Lady Lake Auto Salvage	Multi-Sector Stormwater GP	Lady Lake	Private
Lady Lake Retail	Construction Stormwater GP	Lady Lake	Private
Lago Bonito Subdivision	Construction Stormwater GP	Groveland	Private
Lake Cogen Ltd	Multi-Sector Stormwater GP	Umatilla	Private
Lake County	Stormwater - MS4 Phase 2	Tavares	County
Lake County - CR-561 Shoulder Restoration	Construction Stormwater GP	Clermont	County
Lake County Central Park Lot 27	Construction Stormwater GP	Groveland	County
Lake County Citrus Sales - Fill Grading Project	Construction Stormwater GP	Leesburg	Private
Lake County Elementary School J	Construction Stormwater GP	Sorrento	County
Lake County Hauling	Multi-Sector Stormwater GP	Okahumpka	Private
Lake County High School BBB	Construction Stormwater GP	Clermont	County
Lake County Parking Garage & Office Building Center	Construction Stormwater GP	Tavares	County

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Lake Environmental Resources	Multi-Sector Stormwater GP	Clermont	Private
Lake Harris Cove	Construction Stormwater GP	Leesburg	Private
Lake Hermosa Church of God	Construction Stormwater GP	Lady Lake	Private
Lake Jackson Ridge	Construction Stormwater GP	Mascotte	Private
Lake Jackson Ridge	Construction Stormwater GP	Mascotte	Private
Lake Jackson Ridge	Construction Stormwater GP	Mascotte	Private
Lake Jem Fire Station	Construction Stormwater GP	Mount Dora	Municipal
Lake Kathryn Community	Construction Stormwater GP	Paisley	Private
Lake Kathryn Community Road Paving	Construction Stormwater GP	Paisley	Private
Lake Kathryn Phase VI	Construction Stormwater GP	Paisley	Private
Lake Louisa State Park Cabin Infrastructure Development	Construction Stormwater GP	Clermont	Private
Lake Louise Plaza	Construction Stormwater GP	Eustis	Private
Lake Myrtle Shores Subdivision	Construction Stormwater GP	Fruitland Park	Private
Lake Point Senior Apartments Limited Partnership	Construction Stormwater GP	Tavares	Private
Lake Street North Reconstruction	Construction Stormwater GP	Leesburg	Municipal
Lake View Distribution Center	Construction Stormwater GP	Groveland	Private
Lake View Estates	Construction Stormwater GP	Mascotte	Private
Lake Warehouse Tavares	Construction Stormwater GP	Tavares	Private
Lakes of Mount Dora	Construction Stormwater GP	Mt Dora	Private
Lakeshore Dr Intersection - Oswalt Rd Project#2008-06	Construction Stormwater GP	Clermont	Unknown
Lakeshore Drive - Phase III	Construction Stormwater GP	Tavares	Private
Lakeshore Drive & Harder Road Intersection Improvement	Construction Stormwater GP	Clermont	Unknown
Lakeshore Drive CR 452 Phase II	Construction Stormwater GP	Tavares	Private
Lakeside Pointe	Construction Stormwater GP	Leesburg	Private
Lakeview Crest Condominiums	Construction Stormwater GP	Tavares	Private
Lakewood Ranches Subdivision	Construction Stormwater GP	Eustis	Private
Landscape Rehabilitation - FDOT	Construction Stormwater GP	Clermont	State
Lane Park Ridge Ph I-A	Construction Stormwater GP	Tavares	Private
Langley Industrial Park	Construction Stormwater GP	Groveland	Private
Laurel Oaks Apartments	Construction Stormwater GP	Leesburg	Private
Leesburg	Stormwater - MS4 Phase 2	Leesburg	Municipal
Leesburg Commerce Park Phase I	Construction Stormwater GP	Leesburg	Private
Leesburg Commons	Construction Stormwater GP	Leesburg	Private

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Leesburg High School	Construction Stormwater GP	Leesburg	Private
Leesburg Medical Center	Construction Stormwater GP	Leesburg	Private
Leesburg Public Library	Construction Stormwater GP	Leesburg	Private
Leesburg Recreational Facility	Construction Stormwater GP	Leesburg	Private
Legacy of Leesburg - Unit 5, Phase Vi	Construction Stormwater GP	Leesburg	Private
Legacy of Lessburg-Unit 6 Phase 7	Construction Stormwater GP	Leesburg	Private
Legends Way - Phase 3	Construction Stormwater GP	Clermont	Private
Lester Coggins Trucking Inc	Multi-Sector Stormwater GP	Okahumpka	Private
Leware Real Estate Partners	Construction Stormwater GP	Leesburg	Private
Lighthouse Baptist Church - Building Addition	Construction Stormwater GP	Eustis	Private
Loch Leven Phase 1	Construction Stormwater GP	Mount Dora	Private
Lock Leven 230 Lots	Construction Stormwater GP	Mount Dora	Private
Long View Plaza	Construction Stormwater GP	Lady Lake	Private
Longhorn Steakhouse	Construction Stormwater GP	Lady Lake	Private
Lost Lake apartments	Construction Stormwater GP	Clermont	Private
Lost Lake Commercial (Tract J)	Construction Stormwater GP	Clermont	Private
Lost Lake Office Park	Construction Stormwater GP	Clermont	Private
Lost Lake Reserve	Construction Stormwater GP	Clermont	Private
Lost Lake Reserve Tract E	Construction Stormwater GP	Clermont	Private
Lowe's Home Improvement - Warehouse of Disney West	Construction Stormwater GP	Clermont	Private
Lyon's Business Park	Construction Stormwater GP	Minneola	Private
Magnolia Commons	Construction Stormwater GP	Clermont	Private
Magnolia Office Park	Construction Stormwater GP	Clermont	Private
Magnolia Park	Construction Stormwater GP	Leesburg	Private
Marian Gardens Tree Farm	Construction Stormwater GP	Groveland	Private
Matrix Lake County	Construction Stormwater GP	Groveland	Private
Max Hooks Road Improvement	Construction Stormwater GP	Clermont	Unknown
Mc Donald's - Four Corners	Construction Stormwater GP	Clermont	Private
Mcdonald Canal Shad Facility	Construction Stormwater GP	Mt Dora	Indian
Mclin Burnsed PA - New Office & Warehouse	Construction Stormwater GP	Leesburg	Private
Meadow Ridge	Construction Stormwater GP	Leesburg	Private
Middlesex Asphalt Plant	Multi-Sector Stormwater GP	Leesburg	Private
Millbrook Manor	Construction Stormwater GP	Unincorporated	Private

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Millholand Street Paving Project	Construction Stormwater GP	Clermont	Private
Milling & Resurfacing SR-19 from CR-445 to Sr-40 in Lake Co	Construction Stormwater GP	Altoona	State
Milling/Resurfacing/Pave Shoulders/Bridge Widening	Construction Stormwater GP	Mount Dora	Private
Minneola	Stormwater - MS4 Phase 2	Minneola	Municipal
Mobil Service Station RAS # 82488	Construction Stormwater GP	Clermont	Private
Monster Self-Storage	Construction Stormwater GP	Eustis	Private
Montclair Oaks Apartment Complex	Construction Stormwater GP	Leesburg	Private
Mount Dora	Stormwater - MS4 Phase 2	Mount Dora	Municipal
Mount Dora Apartments	Construction Stormwater GP	Mount Dora	Private
Mount Dora Surgery Center	Construction Stormwater GP	Mount Dora	Private
Mt. Dora High School	Construction Stormwater GP	Mount Dora	Private
Mt. Dora Middle School	Construction Stormwater GP	Mount Dora	County
Nine Oaks	Construction Stormwater GP	Lady Lake	Private
Nobles Clay Pit	Construction Stormwater GP	Leesburg	Private
Nobles Retail Center	Construction Stormwater GP	Leesburg	Private
North Babb Road - Dirt Road Paving Program	Construction Stormwater GP	Umatilla	Municipal
North East Landfill	Multi-Sector Stormwater GP	Lake Hamilton	Private
Nottingham at Legends	Construction Stormwater GP	Clermont	Private
Nottingham at Legends	Construction Stormwater GP	Clermont	Private
Oak Bend Subdivision	Construction Stormwater GP	Tavares	Private
Oakwood Smokehouse & Grill	Construction Stormwater GP	Eustis	Private
Ola View Estates	Construction Stormwater GP	Mt. Dora	Private
Orangetree Phase 5	Construction Stormwater GP	Unincorporated	Private
Osprey Cove	Construction Stormwater GP	Groveland	Private
Overlook At Lake Griffin	Construction Stormwater GP	Leesburg	Private
Paisley Fire Station	Construction Stormwater GP	Paisley	Private
Park Hill Phase 1	Construction Stormwater GP	Leesburg	Private
Park Hill Subdivision	Construction Stormwater GP	Leesburg	Private
Park Place Subdivision	Construction Stormwater GP	Leesburg	Private
Pear Park Road	Construction Stormwater GP	Leesburg	County
Pebble Creek Subdivision	Construction Stormwater GP	Eustis	Private
Perkins Restaurant	Construction Stormwater GP	Leesburg	Private
Phillips Buick-Pontiac-Gmc	Construction Stormwater GP	Fruitland Park	Private

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Piedmont Retail Center	Construction Stormwater GP	Eustis	Private
Pillar Cove	Construction Stormwater GP	Clermont	Private
Pillar Landing	Construction Stormwater GP	South Clermont	Private
Pillar Ridge	Construction Stormwater GP	Clermont	Private
Pine Bluff - Turkey Farm Rd	Construction Stormwater GP	Minneola	Unknown
Pine Forest Park	Construction Stormwater GP	Deland	Private
Pine Meadows Road	Construction Stormwater GP	Eustis	Private
Plantation Commercial - Ph 2	Construction Stormwater GP	Leesburg	Private
Plaza Collina	Construction Stormwater GP	Clermont	Private
Plaza Collina	Construction Stormwater GP	Clermont	Private
Plaza Lincoln- Mercury	Construction Stormwater GP	Leesburg	Private
Plymouth Creek Subdivision	Construction Stormwater GP	Sorrento	Private
Publix & Citrus Tower BLVD./Grand Highway	Construction Stormwater GP	Clermont	Private
Publix & Retail at Loch Leven Landings	Construction Stormwater GP	Mount Dora	Private
Quail Hollow	Construction Stormwater GP	Eustis	Private
RaceTrac	Construction Stormwater GP	Eustis	Private
RaceTrac	Construction Stormwater GP	Clermont	Private
RaceTrac - #796	Construction Stormwater GP	Mount Dora	Private
RaceTrac Station - #756	Construction Stormwater GP	Lady Lake	Private
RaceTrac Station No 768	Construction Stormwater GP	Groveland	Private
RaceTrac Station No. 750	Construction Stormwater GP	Leesburg	Private
Rcd Corporation	Multi-Sector Stormwater GP	Eustis	Private
Rec Warehouse Leesburg	Construction Stormwater GP	Leesburg	Private
Reddy Ice #345	Stormwater No Exposure Certification	Tavares	Private
Regency Hills - Phase I	Construction Stormwater GP	Clermont	Private
Regency Hills-Phase 2 & 3	Construction Stormwater GP	Clermont	Private
Reliant Family of Companies	Construction Stormwater GP	Groveland	Private
Reserve at Lake Elsie	Construction Stormwater GP	Tavares	Municipal
Reserve at Minneola	Construction Stormwater GP	Minneola	Private
Restor Warehouse	Construction Stormwater GP	Leesburg	Private
Resurface And Addition of Shoulders On SR 25 From Highland	Construction Stormwater GP	Deland	State
Resurface SR 25/500	Construction Stormwater GP	Leesburg	Private
Riverside Bank	Construction Stormwater GP	Lady Lake	Private



NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
RJ Builders	Construction Stormwater GP	Leesburg	Private
RK Industrial Park	Construction Stormwater GP	Groveland	Private
Rolling Acres	Construction Stormwater GP	Lady Lake	Private
Rolling Oaks Professional Park	Construction Stormwater GP	Lady Lake	Unknown
Ross Plumbing	Construction Stormwater GP	Leesburg	Private
Royal Equestrian Ranch Subdivision	Construction Stormwater GP	Unincorporated	Private
Royal Harbor Lighthouse Plaza	Construction Stormwater GP	Tavares	Private
Royal Harbor Phase 5	Construction Stormwater GP	Tavares	Private
S.N. Knight North,Area2,Lake Griffin & Yale Canal Levee Degr	Construction Stormwater GP	Near Leesburg	Private
Sa 94 Forest Dr, Hillcrest Dr, & Laurel Court	Construction Stormwater GP	Pine Lakes	Private
Sabal Palm Ventures	Construction Stormwater GP	Lady Lake	Private
Safe-T-Storage Facility	Construction Stormwater GP	Minneola	Private
Sampey Road Wastewater Facility	Multi-Sector Stormwater GP	Groveland	Municipal
Sam's Club at Tuscany Village	Construction Stormwater GP	Clermont	Private
Sam's Outparcel	Construction Stormwater GP	Lady Lake	Private
Sanders Grove	Construction Stormwater GP	Leesburg	Private
Savannah Oaks	Construction Stormwater GP	Fruitland Park	Private
Saw Mill Cove	Construction Stormwater GP	Clermont	Private
Sawgrass Bay	Construction Stormwater GP	Clermont	Private
Sawgrass Bay	Construction Stormwater GP	Clermont	Private
Sawgrass Bay - HB	Construction Stormwater GP	Clermont	Private
SECO Wire Storage Building	Construction Stormwater GP	Groveland	Private
Serenity Equestrian Estates	Construction Stormwater GP	Howey In The Hills	Unknown
Serenity Town Homes	Construction Stormwater GP	Clermont	Private
Shearwater Estates	Construction Stormwater GP	Mascotte	Private
Sherbrook - Site 25 & 26	Construction Stormwater GP	Clermont	Private
Sherwin-Williams Building	Construction Stormwater GP	Tavares	Private
Sherydan Glenn Suvdivision	Construction Stormwater GP	Lady Lake	Private
Site Development Plan for New Bank Facility	Construction Stormwater GP	Leesburg	Private
Site Improvements For Kohl's At Clermont	Construction Stormwater GP	Clermont	Private
Sleepy Hollow Road Realignment - Project #2006-12	Construction Stormwater GP	Leesburg	Unknown
Softball Facility for Eustis High School	Construction Stormwater GP	Eustis	Municipal

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Sorrento Estates	Construction Stormwater GP	Sorrento	Private
Sorrento Hills Pd	Construction Stormwater GP	Sorrento	Private
Sorrento Springs - Amenities Center	Construction Stormwater GP	Sorrento	Private
South Clermont Connector	Construction Stormwater GP	Clermont	Private
South Lake Animal League	Construction Stormwater GP	Groveland	Private
South Lake Charter Elementary School	Construction Stormwater GP	Clermont	Private
South Lake Family Health	Construction Stormwater GP	Groveland	Private
South Lake High School - Building Addition	Construction Stormwater GP	Groveland	Private
South Lake Hospital - Expansion Ph 2	Construction Stormwater GP	Clermont	Private
South Ridge	Construction Stormwater GP	Clermont	Private
Southwinds Cove	Construction Stormwater GP	Leesburg	Private
Spring Lake Cove	Construction Stormwater GP	Fruitland Park	Private
SR 19	Construction Stormwater GP	Eustis	Private
SR 19 Milling & Resurfacing from CR 48 to Lake Harris	Construction Stormwater GP	Howey In The Hills	Private
SR 500 ( US 441 ) Fr Eustis Dr to CR 44 B	Construction Stormwater GP	Mt Dora & Eustis	Private
SR 500 ( US 441 ) Fr W of Mills St to College RD	Construction Stormwater GP	Leesburg	Private
SR-25 - Milling & Resurfacing	Construction Stormwater GP	Leesburg	Unknown
SR-25 - US-27 [FDOT 238423]	Construction Stormwater GP	Clermont	State
Sr25 Slope Improvements At Lake Harris	Construction Stormwater GP	Leesburg	Private
SR-50 - W Colonial Dr- FNP 238429-4-52-01 & 238429-4-56-04	Construction Stormwater GP	Clermont	State
Staples at Oak Hill Commons	Construction Stormwater GP	Clermont	Unknown
Staples at Oak Hill Commons	Construction Stormwater GP	Clermont	Private
Starbucks Retail Center at Cagan Crossings	Construction Stormwater GP	Clermont	Private
Steve's Road Phase 3	Construction Stormwater GP	Clermont	Unknown
Sugar Hill Estates	Construction Stormwater GP	Grand Island	Private
Sullivan Ranch	Construction Stormwater GP	Mount Dora	Private
Summer Bay Apartments	Construction Stormwater GP	Clermont	Private
Summer Bay Condominiums	Construction Stormwater GP	Clermont	Private
Summerbrooke Phase 1	Construction Stormwater GP	Mount Dora	Municipal
Summit Greens Phase 2a	Construction Stormwater GP	Clermont	Private
Summit Greens Phase 2c	Construction Stormwater GP	Clermont	Private

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Sunburst Estates Stormwater Pond Refit	Construction Stormwater GP	Clermont	Private
Sundev Properties Retail Center	Construction Stormwater GP	Clermont	Private
SunNav ITS Incident Detection System	Construction Stormwater GP	Unincorporated	Private
Sunrise Lakes	Construction Stormwater GP	Clermont	Private
Sunrise Lakes PUD - Tract G - Retail	Construction Stormwater GP	Clermont	Private
Sunrise Ridge Subdivision	Construction Stormwater GP	Groveland	Private
Suntrust - East Clermont(Hancock Commons)	Construction Stormwater GP	Clermont	Private
Superior Concrete Bock Plant	Construction Stormwater GP	Sorrento	Private
Superior Plaza	Construction Stormwater GP	Lake	Private
Sweetlake Condos	Construction Stormwater GP	Tavares	Private
Target @ Clermont	Construction Stormwater GP	Clermont	Private
Tarmac America - Tavares Concrete Batch Plant	Construction Stormwater GP	Tavares	Private
Tavares Ace Hardware & Palm Tire Site	Construction Stormwater GP	Tavares	Private
Tavares Business Center	Construction Stormwater GP	Tavares	Private
Tavares Commerce Park	Construction Stormwater GP	Tavares	Private
Tavares High School Additions And Renovations	Construction Stormwater GP	Tavares	Private
Tavares Station	Construction Stormwater GP	Tavares	Private
The Arbours At Silver Lake	Construction Stormwater GP	Leesburg	Private
The Assisted Living Facility at Lexington Park	Construction Stormwater GP	Lady Lake	Private
The Club at Eustis Village	Construction Stormwater GP	Eustis	Private
The Cove At Lady Lake	Construction Stormwater GP	Lady Lake	Private
The Enclave at Big Pine Island	Construction Stormwater GP	Lady Lake	Private
The Fathers House Building Expansion	Construction Stormwater GP	Leesburg	Private
The Glen at Cagan Crossing	Construction Stormwater GP	Clermont	Private
The Glen Phase 1, 2, 3	Construction Stormwater GP	Fruitland Park	Private
The Grande at Lake Harris	Construction Stormwater GP	Leesburg	Private
The Home Depot - Lady Lake	Construction Stormwater GP	Lady Lake	Private
The Home Depot Lady Lake	Construction Stormwater GP	Tavares	Municipal
The Overlook At Lake Louisa	Construction Stormwater GP	Clermont	Private
The Overlook At Mount Dora	Construction Stormwater GP	Mount Dora	Private
The Pines At Lake Saunders	Construction Stormwater GP	Tavares	Private
The Reserve At Lake Elsie	Construction Stormwater GP	Tavares	Private
The Retreat Town Houses	Construction Stormwater GP	Clermont	Private

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
The Village Center	Construction Stormwater GP	Eustis	Private
Timber Village Industrial Park Sub - Lots 4, 5 & 6	Construction Stormwater GP	Groveland	Private
Timberlane - Phase 2 Lot 72-73, 78, 84-89, 99-103, 106-111	Construction Stormwater GP	Clermont	Private
Tire Kingdom	Construction Stormwater GP	Lady Lake	Private
Tire Kingdom - Four Corners	Construction Stormwater GP	Clermont	Private
TLC Surgery Center at Lady Lake	Construction Stormwater GP	Lady Lake	Private
Tool World Inc	Multi-Sector Stormwater GP	Eustis	Private
Town And Country Refuse	Multi-Sector Stormwater GP	Leesburg	Private
Town Center At Cagan Crossings	Construction Stormwater GP	Clermont	Private
Toyota of Clermont	Construction Stormwater GP	Clermont	Private
Tradd's Landing	Construction Stormwater GP	Clermont	Private
Tradd's Landing	Construction Stormwater GP	Clermont	Private
Tradd's Landing	Construction Stormwater GP	Clermont	Private
Tradd's Landing - Phase 3	Construction Stormwater GP	Clermont	Private
Trident Florida Trading LLC	Construction Stormwater GP	Tavares	Private
Trout Lake Twistee Treat	Construction Stormwater GP	Eustis	Unknown
Tucker's Machine and Steel Service Inc.	Multi-Sector Stormwater GP	Leesburg	Private
Tuffy Auto Service Center	Construction Stormwater GP	Clermont	Private
Tuscany Village	Construction Stormwater GP	Clermont	Private
Tuscany Village	Construction Stormwater GP	Clermont	Private
Twin Lake Park	Construction Stormwater GP	Leesburg	Private
U.S. 27 / S.R. 44b Development	Construction Stormwater GP	Leesburg	Private
Umatilla	Stormwater - MS4 Phase 2	Umatilla	Municipal
Umatilla Health Clinic	Construction Stormwater GP	Umatilla	Private
United Parcel Service Inc	Multi-Sector Stormwater GP	Leesburg	Private
United Southern Bank	Construction Stormwater GP	Astor	Private
Upson Down at Blackbear	Construction Stormwater GP	Eustis	Private
US Self Storage & Retail	Construction Stormwater GP	Eustis	Private
Vac-Tron Equipment LLC	Stormwater No Exposure Certification	Okahumpka	Unknown
Veranda Apt. S	Construction Stormwater GP	Mount Dora	Private
Verde Ridge	Construction Stormwater GP	Clermont	Private
Village Crossroads	Construction Stormwater GP	Lady Lake	Private
Villages at Blackbear	Construction Stormwater GP	Eustis	Private

NAME	FACILITY TYPE	CITY	OWNERSHIP TYPE
Vista Grande	Construction Stormwater GP	Unincorporated	Private
Wagner Construction New Office Building	Construction Stormwater GP	Leesburg	Private
Walgreens #12105 at Tavares Commons	Construction Stormwater GP	Tavares	Private
Walgreens #12317 at Groveland Shoppes	Construction Stormwater GP	Groveland	Private
Walgreens #12389 at Groveland Place	Construction Stormwater GP	Groveland	Private
Walker Station Equipment Company LLC	Stormwater No Exposure Certification	Tavares	Private
Walmart	Construction Stormwater GP	Clermont	Private
Water Oak Country Club Estates	Construction Stormwater GP	Lady Lake	Private
Waterfront Estates	Construction Stormwater GP	N/A	Private
Waterside	Construction Stormwater GP	Groveland	Private
Weber Ave Warehouses	Construction Stormwater GP	Leesburg	Private
West Side WRF EQ Basin Modifications	Construction Stormwater GP	Clermont	Unknown
West Star Fitness Center	Construction Stormwater GP	Clermont	Private
Weston Hills Phase III	Construction Stormwater GP	Unincorporated	Private
Whataburger--Clermont	Construction Stormwater GP	Clermont	Private
Wolf Branch Meadows	Construction Stormwater GP	Sorrento	Private
Wolf Creek Ridge	Construction Stormwater GP	Mt. Dora	Private
Woodcrest Center - Phase I	Construction Stormwater GP	Clermont	Private
Woodridge Commerce Center	Construction Stormwater GP	West Palm Beach	Private
Zebrowski Professional Center	Construction Stormwater GP	Fruitland Park	Private

Source: FDEP, 2010

**Table 10 - Lake County Basin Prioritization Based on Total Score**

	NAME	AREA	DRAINAGE PROBLEMS	FLOODING POTENTIAL	POLLUTION POTENTIAL	RECEIVING WATER BODY	NATURAL WILDLIFE	POP	TOTAL
G 1	Lake Griffin	32,492	7.5	10	10	6	7.5	1	42
L 29	Minnehaha and Whona Lakes	3,799	7.5	2	10	10	7.5	3	40
H 5	Clear, Myrtle, Smith Lakes	4,382	7.5	10	6	10	4.5	1	39
A 1	Lk. Dexter, Sand Hill Pond	27,696	7.5	10	6	6	7.5	1	38
K 1	Lake Harris	37,354	7.5	6	10	6	7.5	1	38
K 4		1,094	1.5	10	10	6	7.5	3	38
L 22		3,504	1.5	6	10	10	7.5	1	36

	NAME	AREA	DRAINAGE PROBLEMS	FLOODING POTENTIAL	POLLUTION POTENTIAL	RECEIVING WATER BODY	NATURAL WILDLIFE	POP	TOTAL
Q 1	Dychess and Hollywood Lakes	6,415	1.5	10	10	6	7.5	1	36
B 14	Lake Norris	10,102	4.5	10	2	10	7.5	1	35
I 1	Lake Dora, Lake Beauclaire	12,545	7.5	2	10	6	7.5	1	34
B 19	Ground Lake	5,565	1.5	10	2	10	7.5	1	32
B 6	Akron, Chain O Lakes, Blue, Ridge, Bear, Tracy, Manna Lakes, & Spot Pond	14,058	1.5	6	6	10	7.5	1	32
C 1	Lucie and Neighborhood Lakes	9,559	1.5	10	2	10	7.5	1	32
F 1	Lake Yale	14,980	1.5	6	10	6	7.5	1	32
H 1	Lake Eustis, Silver and Cook Lakes	16,775	1.5	6	10	6	7.5	1	32
I 10		1,356	7.5	2	10	6	1.5	5	32
J 1	Lake Apopka	21,496	1.5	6	10	6	7.5	1	32
K 5	Bug Spring and Lake Denham	3,211	1.5	6	10	6	7.5	1	32
K 9	Sop Pond	905	7.5	6	10	6	1.5	1	32
A 21	Jack, Wappin Lakes & Dead River	21,184	4.5	10	2	6	7.5	1	31
B 15	Lake Dalhousie	3,995	1.5	6	10	10	1.5	1	30
G 5	Unity Lake	3,014	1.5	2	10	6	7.5	3	30
G 9		691	7.5	2	10	6	1.5	3	30
I 2		2,500	7.5	2	10	6	1.5	3	30
K 17		2,611	7.5	6	2	6	7.5	1	30
L 32	Black, Olsen, and Stewart Lakes	3,208	1.5	6	10	10	1.5	1	30
B 13	Lake Murphy	3,526	4.5	10	2	10	1.5	1	29
F 3	Island, Owen, and Crescent Lakes	1,465	1.5	6	10	6	4.5	1	29
I 4		1,439	1.5	6	10	6	4.5	1	29
A 7	Heron, Mack, and East Lakes	491	1.5	10	2	6	7.5	1	28
B 16		1,285	1.5	6	2	10	7.5	1	28
B 17		2,488	1.5	6	2	10	7.5	1	28
B 18	Bay Lake	7,733	1.5	6	2	10	7.5	1	28
B 2	Lake Jordan & Owens Pond	4,659	1.5	6	2	10	7.5	1	28
B 21	Bear Pond & Mt. Plymouth Lakes	7,915	1.5	6	2	10	7.5	1	28
B 3		1,430	1.5	6	2	10	7.5	1	28
H 3		893	1.5	6	10	6	1.5	3	28
H 4		2,274	1.5	6	10	6	1.5	3	28
Q 2		468	1.5	10	6	6	1.5	3	28
Q 3		1,149	1.5	10	6	6	1.5	3	28
B 26	Island Pond	3,883	4.5	2	2	10	7.5	1	27

	NAME	AREA	DRAINAGE PROBLEMS	FLOODING POTENTIAL	POLLUTION POTENTIAL	RECEIVING WATER BODY	NATURAL WILDLIFE	POP	TOTAL
G 4		1,276	1.5	2	10	6	4.5	3	27
A 2	Lake Jordan & Owens Pond	1,523	1.5	10	6	6	1.5	1	26
B 1		9,637	1.5	10	2	10	1.5	1	26
B 12		1,169	1.5	10	2	10	1.5	1	26
G 6		1,418	1.5	6	10	6	1.5	1	26
H 11		1,225	1.5	6	10	6	1.5	1	26
H 2		460	1.5	6	10	6	1.5	1	26
I 7		1,844	1.5	6	10	6	1.5	1	26
K 10		1,187	1.5	6	10	6	1.5	1	26
K 2		1,657	1.5	6	10	6	1.5	1	26
K 7	Lake Melton	924	1.5	6	10	6	1.5	1	26
L 24	Lake Minneola	4,081	7.5	2	2	10	1.5	3	26
O 7		1,736	7.5	2	6	6	1.5	3	26
B 20		2,832	1.5	6	2	10	4.5	1	25
I 5		1,442	1.5	2	10	6	4.5	1	25
N 1		6,883	1.5	10	2	6	4.5	1	25
N 11		1,467	1.5	10	2	6	4.5	1	25
N 14		3,692	1.5	10	2	6	4.5	1	25
N 15		8,122	1.5	10	2	6	4.5	1	25
N 2	Gator Hole	7,838	1.5	10	2	6	4.5	1	25
N 4		962	1.5	10	2	6	4.5	1	25
N 6	Twin Lake, Mill Pond	5,790	1.5	10	2	6	4.5	1	25
B 11		1,605	7.5	2	2	10	1.5	1	24
B 23		2,377	1.5	2	2	10	7.5	1	24
B 24		1,079	1.5	2	2	10	7.5	1	24
B 4		3,346	1.5	2	2	10	7.5	1	24
G 3		2,563	1.5	2	10	6	1.5	3	24
I 3		1,278	1.5	2	10	6	1.5	3	24
J 2		3,412	1.5	2	6	6	7.5	1	24
J 4	Lake Florence	487	7.5	2	6	6	1.5	1	24
K 8	Birdseye Lake	574	7.5	6	2	6	1.5	1	24
L 23	Vision and Cherry Lakes	3,444	1.5	2	2	10	7.5	1	24
L 39	Louisa and Susan Lakes	6,631	1.5	2	2	10	7.5	1	24
L 45	Brantley Lake, Dudes Lake	1,998	1.5	6	2	6	7.5	1	24
L 53	Hammond And Dixie Lakes	1,679	1.5	6	2	6	7.5	1	24
M 3	Sawgrass Lake	4,057	1.5	6	2	6	7.5	1	24
O 1		2,716	1.5	6	6	6	1.5	3	24
P 11	Catherine, David, Dukes Lakes	2,151	7.5	6	2	6	1.5	1	24
P 13	Knight & Sunset Lakes	2,950	7.5	6	2	6	1.5	1	24
P 3		495	1.5	6	2	6	7.5	1	24
Q 4		35	1.5	10	6	3	1.5	1	23
A 11		3,950	1.5	10	2	6	1.5	1	22
A 14		882	1.5	10	2	6	1.5	1	22

	NAME	AREA	DRAINAGE PROBLEMS	FLOODING POTENTIAL	POLLUTION POTENTIAL	RECEIVING WATER BODY	NATURAL WILDLIFE	POP	TOTAL
A 20		2,129	1.5	10	2	6	1.5	1	22
A 5		899	1.5	10	2	6	1.5	1	22
A 8	Clearwater, Boyd Lakes	2,946	1.5	10	2	6	1.5	1	22
B 7	Heron, Mack, East Lakes	3,953	1.5	6	2	10	1.5	1	22
B 8	Lake Clearwater	1,770	1.5	6	2	10	1.5	1	22
B 9		2,577	1.5	6	2	10	1.5	1	22
F 4	S. Twin, N. Twin, and Cooley Lakes	930	1.5	2	10	6	1.5	1	22
F 5	East, Pearl, Gibson Lakes	1,231	1.5	2	10	6	1.5	1	22
F 6		1,589	1.5	2	10	6	1.5	1	22
G 7		2,144	1.5	2	10	6	1.5	1	22
G 8		321	1.5	2	10	6	1.5	1	22
H 10		1,209	1.5	2	10	6	1.5	1	22
H 6		3,152	1.5	2	10	6	1.5	1	22
H 7	El Dorado Lake	1,249	1.5	2	10	6	1.5	1	22
H 8		789	1.5	2	10	6	1.5	1	22
H 9		997	1.5	2	10	6	1.5	1	22
I 6		1,760	1.5	2	10	6	1.5	1	22
I 9	Lake Jem	2,213	1.5	10	2	6	1.5	1	22
J 11		861	1.5	2	2	6	7.5	3	22
J 5		612	1.5	6	6	6	1.5	1	22
J 6		687	1.5	6	6	6	1.5	1	22
J 7		1,096	1.5	2	2	6	7.5	3	22
K 11		2,147	1.5	2	10	6	1.5	1	22
K 3		444	1.5	2	10	6	1.5	1	22
K 6	Lake Idamere	579	1.5	2	10	6	1.5	1	22
L 11	Lake Nun	880	1.5	10	2	6	1.5	1	22
L 16	Honeycutt and Byrd Lake	1,447	1.5	10	2	6	1.5	1	22
L 17		603	1.5	10	2	6	1.5	1	22
L 25	Grassy Lake	1,250	1.5	2	2	6	7.5	3	22
L 26	Plum Lake	1,354	1.5	2	2	6	7.5	3	22
L 28		785	1.5	2	2	6	7.5	3	22
L 31	Summer Lake	1,226	1.5	2	10	6	1.5	1	22
L 36	Pretty Lake	2,370	1.5	10	2	6	1.5	1	22
L 50		6,162	1.5	10	2	6	1.5	1	22
L 54		6,492	1.5	10	2	6	1.5	1	22
N 10	Bay Lake	1,715	1.5	10	2	6	1.5	1	22
N 12		4,258	1.5	10	2	6	1.5	1	22
N 13	Erie lake	5,148	1.5	10	2	6	1.5	1	22
N 16		2,590	1.5	10	2	6	1.5	1	22
N 17		2,889	1.5	10	2	6	1.5	1	22
N 18		6,826	1.5	10	2	6	1.5	1	22
N 5		2,873	1.5	10	2	6	1.5	1	22
N 8	Big, Middle, Little Bear Lakes	4,185	1.5	10	2	6	1.5	1	22



	NAME	AREA	DRAINAGE PROBLEMS	FLOODING POTENTIAL	POLLUTION POTENTIAL	RECEIVING WATER BODY	NATURAL WILDLIFE	POP	TOTAL
N 9		2,798	1.5	10	2	6	1.5	1	22
P 1		3,132	1.5	10	2	6	1.5	1	22
P 6		2,818	1.5	10	2	6	1.5	1	22
B 27		577	1.5	2	2	10	4.5	1	21
N 3		4,822	1.5	6	2	6	4.5	1	21
P 2		1,629	4.5	6	2	6	1.5	1	21
K 18		1,957	1.5	2	2	6	7.5	1	20
L 30	Hiawatha and Palatlahaka Lakes	3,580	1.5	2	2	6	7.5	1	20
L 41	Flat Lakes	3,231	1.5	2	2	6	7.5	1	20
L 42		2,121	1.5	2	2	6	7.5	1	20
M 2	Lake Needham	815	1.5	2	2	6	7.5	1	20
L 27		1,161	1.5	2	2	6	4.5	3	19
A 12		2,224	1.5	6	2	6	1.5	1	18
A 13		1,632	1.5	6	2	6	1.5	1	18
A 15	Mud Pond	7,352	1.5	6	2	6	1.5	1	18
A 4	Grasshopper, Crooked, Gobbler Lakes	3,021	1.5	6	2	6	1.5	1	18
B 10	Lake Dorr	11,900	1.5	2	2	10	1.5	1	18
B 22		1,947	1.5	2	2	10	1.5	1	18
B 25	Lake Seneca	1,064	1.5	2	2	10	1.5	1	18
B 28	Sand Lake	3,708	1.5	2	2	10	1.5	1	18
B 29		1,860	1.5	2	2	10	1.5	1	18
B 30	Lake Amos	1,457	1.5	2	2	10	1.5	1	18
B 31		1,471	1.5	2	2	10	1.5	1	18
B 5	Crystal Lake	838	1.5	2	2	10	1.5	1	18
J 3		1,320	1.5	2	6	6	1.5	1	18
K 13	Montgomery Lake, Little Everglades	1,809	1.5	6	2	6	1.5	1	18
K 19		2,548	1.5	6	2	6	1.5	1	18
K 20	Mulehead Lake	3,488	1.5	6	2	6	1.5	1	18
L 10		1,096	1.5	6	2	6	1.5	1	18
L 13		895	1.5	6	2	6	1.5	1	18
L 14		2,760	1.5	6	2	6	1.5	1	18
L 15		576	1.5	6	2	6	1.5	1	18
L 20		2,054	1.5	6	2	6	1.5	1	18
L 21	Lake Arthur	3,042	1.5	6	2	6	1.5	1	18
L 33	Lake Wash	3,686	1.5	6	2	6	1.5	1	18
L 34		790	1.5	2	2	10	1.5	1	18
L 35	Pine Island lakes	2,161	1.5	6	2	6	1.5	1	18
L 37	Lake Giona	2,164	1.5	6	2	6	1.5	1	18
L 38	Saw Mill Lake	723	1.5	6	2	6	1.5	1	18
L 49		642	1.5	6	2	6	1.5	1	18
L 5	Dillie March Lake	2,276	1.5	6	2	6	1.5	1	18
L 51	Cypress, Oak Lakes	1,601	1.5	6	2	6	1.5	1	18
L 52		2,779	1.5	6	2	6	1.5	1	18

	NAME	AREA	DRAINAGE PROBLEMS	FLOODING POTENTIAL	POLLUTION POTENTIAL	RECEIVING WATER BODY	NATURAL WILDLIFE	POP	TOTAL
L 6		2,216	1.5	6	2	6	1.5	1	18
L 8		1,296	1.5	6	2	6	1.5	1	18
L 9	Thomas Lake	2,162	1.5	6	2	6	1.5	1	18
M 8		2,433	1.5	6	2	6	1.5	1	18
N 7	Myrtle Lake	2,162	1.5	6	2	6	1.5	1	18
P 10		1,012	1.5	6	2	6	1.5	1	18
P 12	Crescent Lake	2,242	1.5	6	2	6	1.5	1	18
P 14		1,381	1.5	6	2	6	1.5	1	18
P 4		826	1.5	6	2	6	1.5	1	18
P 5		1,141	1.5	6	2	6	1.5	1	18
P 7		844	1.5	6	2	6	1.5	1	18
P 8		2,383	1.5	6	2	6	1.5	1	18
R 1	Reed Hammond Pond	2,589	1.5	6	2	6	1.5	1	18
R 2	Wise Hammond Pond	2,330	1.5	6	2	6	1.5	1	18
A 6	Shimmerhorn Lake	1,197	4.5	2	2	6	1.5	1	17
L 2		1,283	1.5	6	1	6	1.5	1	17
D 1		1,819	1.5	2	2	6	1.5	3	16
D 2		3,325	1.5	2	2	6	1.5	3	16
D 3		1,204	1.5	2	2	6	1.5	3	16
E 1		2,100	1.5	2	2	6	1.5	3	16
E 2		466	1.5	2	2	6	1.5	3	16
E 5		863	1.5	2	2	6	1.5	3	16
E 6		34	1.5	2	2	6	1.5	3	16
G 2		782	1.5	2	2	6	1.5	3	16
J 10		1,261	1.5	2	2	2	7.5	1	16
J 13	Johns Lake	3,534	1.5	2	2	2	7.5	1	16
J 8		1,269	1.5	2	2	6	1.5	3	16
J 9		1,587	1.5	2	2	6	1.5	3	16
O 2		1,376	1.5	2	2	6	1.5	3	16
O 3	Lady Lake	664	1.5	2	2	6	1.5	3	16
O 4	Lake Ella	1,019	1.5	2	2	6	1.5	3	16
O 5	Spring Lake	1,036	1.5	2	2	6	1.5	3	16
O 6		275	1.5	2	2	6	1.5	3	16
L 18		952	1.5	6	2	3	1.5	1	15
L 55	Hidden Lake	1,152	1.5	3	2	6	1.5	1	15
A 10	Dillard & Sand Hill Ponds	2,497	1.5	2	2	6	1.5	1	14
A 16		2,611	1.5	2	2	6	1.5	1	14
A 19	Duck & Bunch Ground Ponds	6,040	1.5	2	2	6	1.5	1	14
A 3	Wildcat Lake	1,967	1.5	2	2	6	1.5	1	14
A 9	Sellers Lake	1,989	1.5	2	2	6	1.5	1	14
F 2	Holly, Ella, and Bay Lakes	2,792	1.5	2	2	6	1.5	1	14
I 8		546	1.5	2	2	6	1.5	1	14
J 12		1,973	1.5	2	2	6	1.5	1	14
J 14		183	1.5	2	2	6	1.5	1	14

	NAME	AREA	DRAINAGE PROBLEMS	FLOODING POTENTIAL	POLLUTION POTENTIAL	RECEIVING WATER BODY	NATURAL WILDLIFE	POP	TOTAL
K 12		863	1.5	2	2	6	1.5	1	14
K 14		1,819	1.5	2	2	6	1.5	1	14
K 15		1,169	1.5	2	2	6	1.5	1	14
K 16		2,805	1.5	2	2	6	1.5	1	14
K 21	Lake Arthur	841	1.5	2	2	6	1.5	1	14
K 22	Indianhouse Lake	1,634	1.5	2	2	6	1.5	1	14
K 23		2,077	1.5	2	2	6	1.5	1	14
K 24	Deacon, Sams, Schoolhouse, Shepher Lakes	3,927	1.5	2	2	6	1.5	1	14
K 25		953	1.5	2	2	6	1.5	1	14
K 26		902	1.5	2	2	6	1.5	1	14
K 27	Church Lake	1,114	1.5	2	2	6	1.5	1	14
L 1		2,376	1.5	2	2	6	1.5	1	14
L 12		108	1.5	2	2	6	1.5	1	14
L 19		771	1.5	2	2	6	1.5	1	14
L 3		950	1.5	2	2	6	1.5	1	14
L 4	Pumpkin & Twin Lakes	1,134	1.5	2	2	6	1.5	1	14
L 40		1,422	1.5	2	2	6	1.5	1	14
L 43		1,459	1.5	2	2	6	1.5	1	14
L 44		490	1.5	2	2	6	1.5	1	14
L 46		903	1.5	2	2	6	1.5	1	14
L 47	Lake Nellie	1,840	1.5	2	2	6	1.5	1	14
L 48	Kirkland Lake	710	1.5	2	2	6	1.5	1	14
L 56	Turkey Lake	860	1.5	2	2	6	1.5	1	14
L 7	Lake Bright	449	1.5	2	2	6	1.5	1	14
M 1		677	1.5	2	2	6	1.5	1	14
M 10	Crooked Lake	835	1.5	2	2	6	1.5	1	14
M 4	Pike and Island Lakes	1,246	1.5	2	2	6	1.5	1	14
M 5	Trout Lake	954	1.5	2	2	6	1.5	1	14
M 6		405	1.5	2	2	6	1.5	1	14
M 7		778	1.5	2	2	6	1.5	1	14
M 9	Mancock Lake	1,461	1.5	2	2	6	1.5	1	14
P 9	Big Bear Lake	1,918	1.5	2	2	6	1.5	1	14
R 3	Cool Spring Pond	291	1.5	2	2	6	1.5	1	14
E 3		2,585	1.5	2	2	2	1.5	3	12
E 4	Gator Lake	645	1.5	2	2	2	1.5	3	12
A 17		2,590	1.5	2	2	2	1.5	1	10
A 18		2,981	1.5	2	2	2	1.5	1	10

Source: Lake County Public Works Engineering Division, Stormwater Section

## **SOLID WASTE SUB-ELEMENT**

### **INTRODUCTION**

Proper management of solid and hazardous waste is essential to the quality of life enjoyed by Lake County residents. The purpose of this sub-element is to identify the facilities and management programs that the County will require in order to properly manage its solid and hazardous wastes through the year 2030.

### **Solid Waste Collection**

Lake County has instituted mandatory waste collection to discourage the illegal dumping and burning of solid wastes in the unincorporated area of the County. Residents have solid waste collection available to them from a County franchised hauler. Several cities have their own solid waste collection. Residential collection includes household garbage, yard waste, appliances, and furniture.

### **Active Landfills**

Most of Lake County's Class I waste goes to the Resource Recovery Facility in Okahumpka. Lake County operates a Class I landfill at the Central Facility in Astatula that receives the Class I solid waste that is not processed at the Resource Recovery Facility and residual incinerator ash from the Resource Recovery Facility...

There is a separate disposal area for construction and demolition debris on the northwest side of the property.

Early in 2009, the County completed construction of the initial cells of the Phase III landfill at the Central Facility.

The Phase III MSW Cell is designed to hold **1.5 million cubic yards of solid waste**. Assuming an average density of 1,200 lbs/cubic yard, this will provide Lake County with **900,000 tons** of MSW disposal capacity.

The Phase III Ash Cell is designed to hold **247,000 cubic yards of ash residue**. Assuming an average density of 2,500 lbs/cubic yard, this will provide Lake County with **308,750 tons** of incinerator ash disposal capacity.

Together, these two initial Central Phase III Landfill Cells will provide a combined disposal capacity of **1,747,000 million cubic yards (or 1,208,750 tons)**. Additional land is available and permitted through an FDEP Environmental Resource Permit. The completed build out of Phase III will eventually provide Lake County with a total of **11,500,000 cubic yards** of waste disposal capacity which should be sufficient to provide landfill disposal capacity beyond 2030.

### **Residential Drop-Off Facilities**

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. The locations of the sites are listed in Table 11.

**Table 11 - Residential Drop-Off Locations**

<b>SITE</b>	<b>ADDRESS</b>	<b>LOCATION</b>
Citizen Convenience Center	13130 County Landfill Rd.	Astatula
RDO #1	54721 Astor Transfer Rd.	Astor
RDO #2	10435 Loghouse Transfer Station Rd.	Clermont
RDO #3	1200 Jackson St.	Lady Lake
RDO #4	25014 Rancho Lane	Paisley
RDO #5	32520 SR 44	Pine Lakes (Deland)

Source: Lake County Solid Waste, 2010

### **Lake County Resource Recovery Facility**

The Lake County Resource Recovery Facility, or Waste-to-Energy (WTE) facility, converts an average of 165,000 tons per year of solid waste into electricity by incineration and sells it to Progress Energy. Revenues from energy sales provide revenue for the Landfill Enterprises Fund, the operating fund for Lake County's Solid Waste Solid Waste Management System.

Lake County is obligated by its operations contract with Covanta Lake to deliver 163,000 tons of waste to the facility annually.

The Agreement with Covanta Energy expires in 2014. After the expiration date, the County may or may not continue to deliver its solid waste to the Resource Recovery Facility.

### **Recycling Program**

In September 1989, the Lake County Board of County Commissioners approved a recycling plan to reduce waste volumes. The current program includes residential curbside collection or drop-off at all of the RDO's. Lake County recycles about 24% of its solid waste each year.

### **Waste Tires and White Goods**

Neither whole tires nor white goods (appliances such as refrigerators, washers, and stoves) may be disposed of in landfills. Lake County disposes of waste tires at an incinerator permitted for tire incineration and a Class III landfill. Freon is removed from applicable white goods at the Astatula landfill and a recycling contractor recycles them for their steel. The freon is recycled separately.

### **Hazardous Waste**

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, or at the RDO's.

It is anticipated that the Central Phase III Landfill Cells Phase 1, will be completed and available for use in the beginning of 2009.

The Central Phase III MSW Cell was designed to hold **1.5 million cubic yards of waste**. Assuming an average density of 1,200 lbs/cubic yard, this will provide Lake County with **900,000 tons** of MSW disposal capacity.

The Central Phase III Ash Cell was designed to hold **247,000 cubic yards of ash residue**. Assuming an average density of 2,500 lbs/cubic yard, this will provide Lake County with **308,750 tons** of incinerator ash disposal capacity.

Together, these two initial Central Phase III Landfill Cells will provide a combined disposal capacity of **1,747,000 million cubic yards (or 1,208,750 tons)** of waste once FDEP authorizes these cells to be placed into service. Additional land is available and permitted through an FDEP Environmental Resource Permit. The completed build out of the Central Phase III will eventually provide Lake County with a total of **11,500,000 cubic yards** of waste disposal capacity.

In 2004, when the Central Phase III Landfill Facility design began, the target was for disposal capacity through 2025. Based on population projections at that time, the Phase III design was adequate to reach 2025. In the last 16 years, we have landfilled less than 1,000,000 cubic yards.

## **GROUNDWATER RECHARGE SUB-ELEMENT**

### **INTRODUCTION**

#### **Hydrogeology**

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. A table showing these geologic units along with several hydrogeologic cross sections from the USGS WRI Report 02-4207 is included below.

The following definitions related to this discussion are summarized or paraphrased from the Dictionary of Geological Terms. In some cases, additional information has been added to the definition from the various USGS publications referenced below.

Ground water is the water found below land surface in the zone of saturation. (It is not moisture present in unsaturated soil.)

An aquifer is a formation that contains ground water that can conduct ground water and yield economically significant quantities of water to wells and springs.

A surficial aquifer or water table aquifer is an aquifer where the ground water is at atmospheric pressure, i.e. not confined.

A confining unit is a formation that does not readily conduct water and/or is less permeable than the aquifers above or below it. When a confining unit is above an aquifer, recharge to or discharge from that aquifer is restricted by the confining layer.

Recharge is the process of adding water to the zone of saturation. Recharge is commonly described in inches per year. Recharge can be influenced by development. Changing the rate of stormwater runoff and building impervious surfaces, such as roads, parking lots, and buildings, can alter both the rate and volume of recharge and reduce the area available for rainfall percolation. The quality of the water being recharged can also be influenced by development.

Permeability is the capacity of a formation or soil for transmitting water.

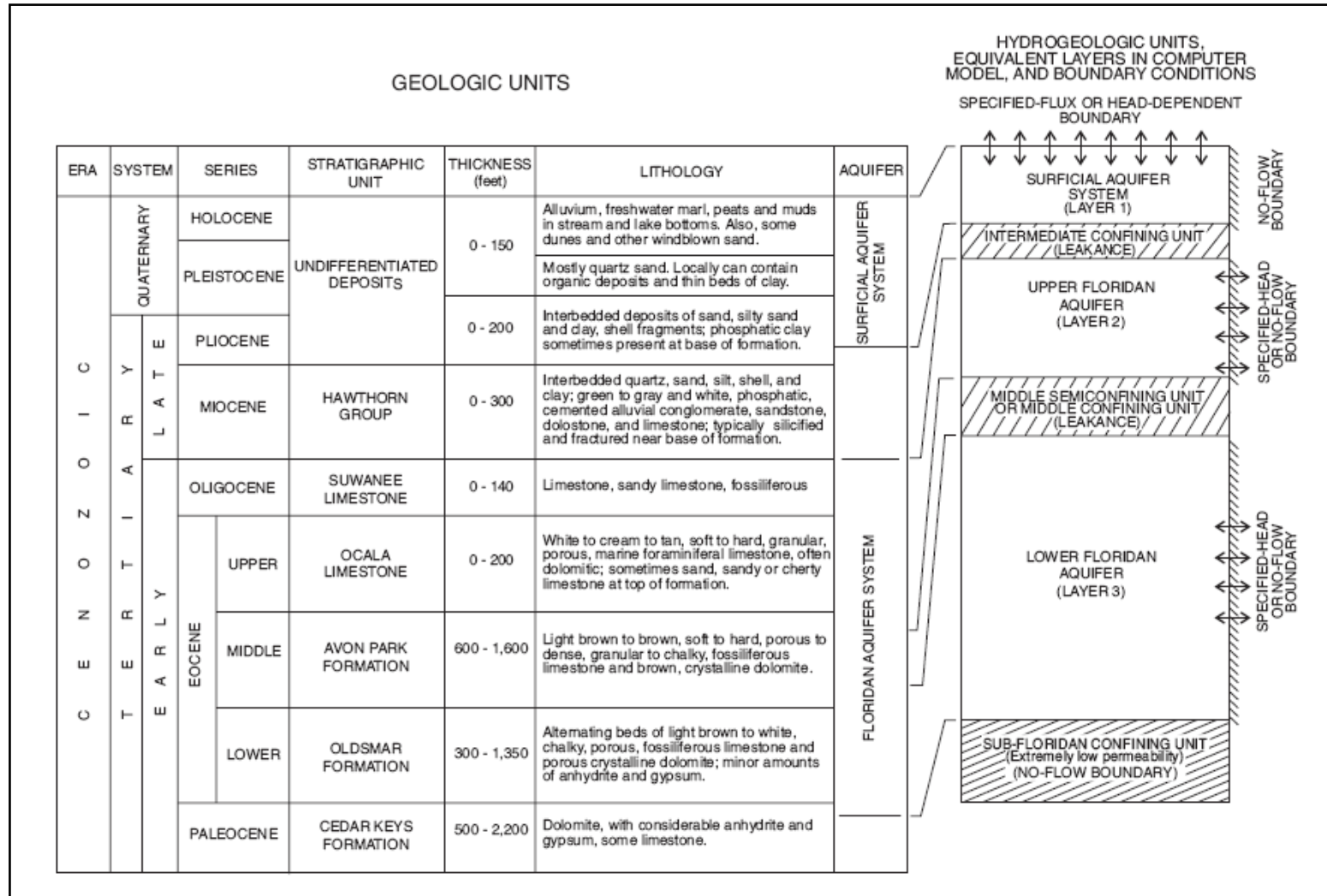
A permeable formation allows water to move through it at an appreciable rate. The rate of recharge to an aquifer varies by location depending on geology (permeability) and climate (rainfall and evapotranspiration).

Discharge is water leaving an aquifer. It may be natural, such as seepage into lakes and streams, spring flow, uptake by plants, evaporation from the soil; or artificial, such as water withdrawals from wells. It can also be upward, downward or laterally to another aquifer.





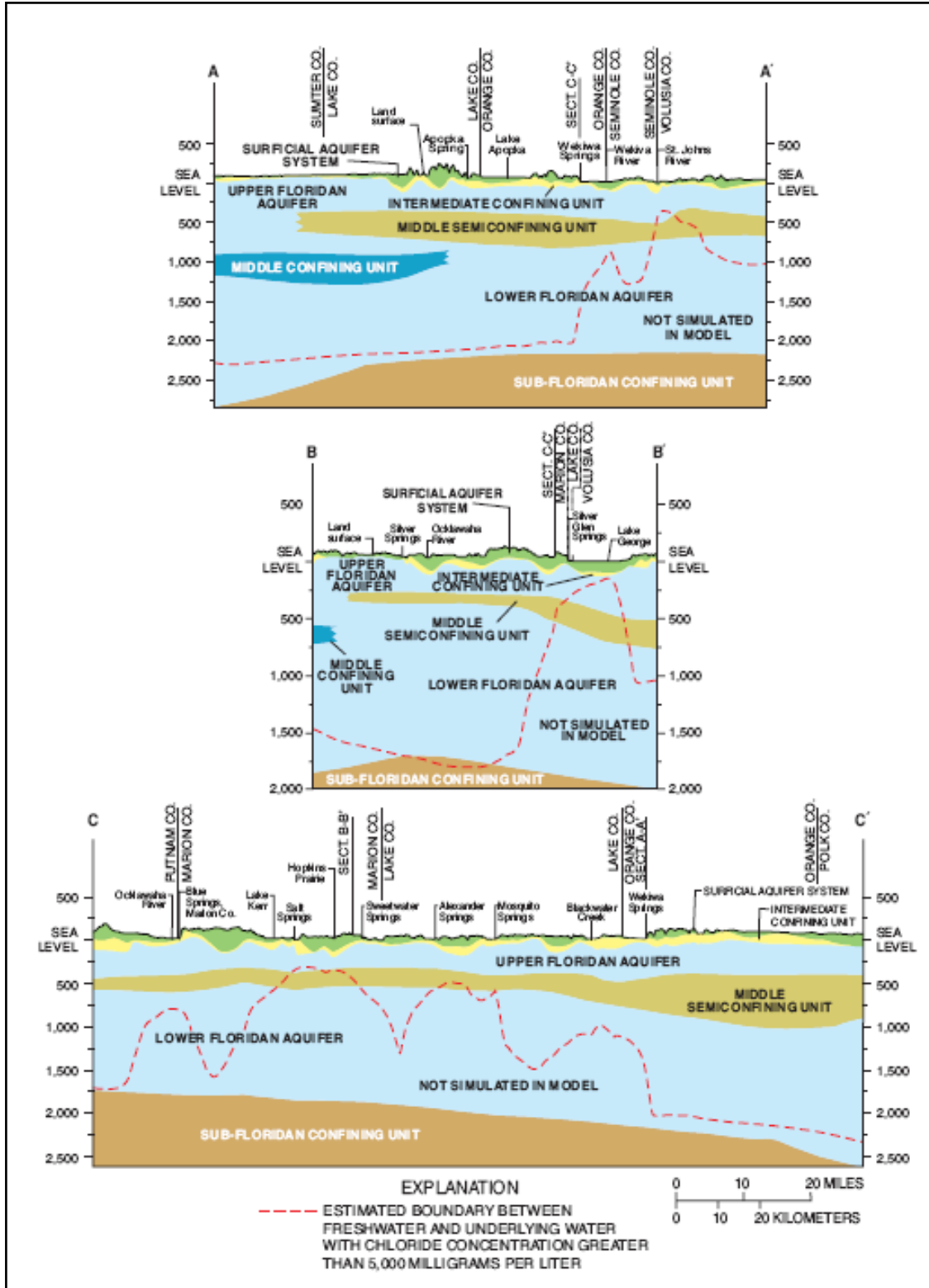
Figure 1 – Generalized Geologic Units and Hydrogeologic Units



Geologic units, hydrogeologic units and equivalent layers and boundary conditions used in the ground-water flow model. From Figure 8 USGS WRI 02-4207



Figure 2 - Hydrogeologic Cross Sections Showing Aquifers in Lake County from Figure 16 USGS WRI 02-4207



## **Priority Water Resource Caution Areas**

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 five constraints established for identifying PWRCAs are impacts to native vegetation, primarily wetlands; impacts to minimum flows and levels, primarily spring flows; impacts to groundwater quality in terms of increased saltwater intrusion; impacts to existing legal users; and failure to identify a source of supply for future development.

## **Aquifer Characteristics**

There are two aquifers of general interest in Lake County: the clastic unit in the surficial deposits and the carbonate unit.

The surficial or water table aquifer consists of the surficial sands, silts and clays. In much of Lake County it is underlain by the clay confining unit. The surficial aquifer system (SAS) generally is more permeable at the surface becoming less permeable with depth. In some areas there may be discontinuous beds of silty and or clayey sands that divide the surficial aquifer into sub-units or create a perched water table. In much of the county it is at least partially separated hydraulically from the underlying carbonate aquifer by the confining unit made up of less permeable silts, clayey sands, sandy clays and clay beds. The SAS has little potential as a major source of ground water compared to the Floridan aquifer. The surficial aquifer acts as a reservoir, collecting and storing rainfall, and is generally only tapped by very small-capacity wells. It does not have the capacity to deliver public water demands for centralized systems. It primarily serves as a filter bed and reservoir for storing precipitation that eventually recharges the underlying Florida aquifer system.

Below the surficial aquifer are the Hawthorne formation clays of the confining unit. These clays are present in most of the county and separate the surficial aquifer from the Floridan aquifer. While they retard the downward movement of water, in many areas the clays are breached by karst activity are discontinuous. This allows water to move more freely between aquifers. Along the part western portion of Lake County the confining unit tends to be thinner or absent and the limestones close to the surface.

The Floridan aquifer system (FAS) is contained within the limestones and dolomites of the carbonate unit below the deep clays. The Floridan aquifer underlies all of Lake County and is the principal source of the water used in Lake County. It is composed of thick sequences of carbonate rocks (limestone, dolomitic limestones, and dolomite) of Eocene to Oligocene age that are generally high in permeability and hydraulically connected to each other in varying degrees. The FAS has two major water-bearing zones; the Upper Floridan and Lower Floridan zones. These zones are separated by a lower permeability limestone, dolomite and anhydrite formation. The Lower Floridan zone has been utilized for many years in Orange County as it is less subject to contamination due to depth. Currently almost all of the ground water pumped in Lake County comes from the Upper Floridan and the potential for utilizing the lower Florida aquifer is just beginning to be explored. The Lower Floridan wells in Orange County are 1100 to 1400 feet deep.

Because of the confining unit between the Floridan and surficial aquifer limits the vertical transmission of water, water in the Floridan is under pressure. When tapped by a tightly cased well the ground water in the Floridan rises above the top of the aquifer that contains it. The level

to which the water rises is the potentiometric or pot surface. The potentiometric surface in the Upper Floridan aquifer is mapped by the US Geological survey in May and September of each year. These maps provide a tool to view the effects of climate, pumping, recharge and other factor that influence the water in the aquifer. Water levels in the FAS respond to seasonal variations in rainfall on a regional scale and to pumping on a local scale. Generally, the potentiometric surface of the FAS is lowest during May or June, the end of the dry season. It is highest in September or October, the end of the rainy season. Widely spaced surface contours on the potentiometric maps can indicate highly transmissive areas. In contrast, closely spaced contours can indicate low transmissivity areas. Where the confining unit is absent, the surficial and Floridan aquifer are connected and unconfined.

### **Ground Water Recharge and Discharge**

The surficial aquifer system (SAS) is recharged by rainfall. Recharge is augmented locally by artificial recharge, wastewater or reuse water land application, rapid-infiltration basins, and septic systems.

In areas where the water level in the surficial aquifer is higher than the potentiometric surface of the Floridan aquifer, the Floridan aquifer system (FAS) is recharged by the SAS. These areas include much of the county. There are also two locations where the FAS receives direct recharge from surface runoff through sinkholes. These areas are Shockley Heights in the Ocala National Forest and Wolf Sink just east of Mt. Dora.

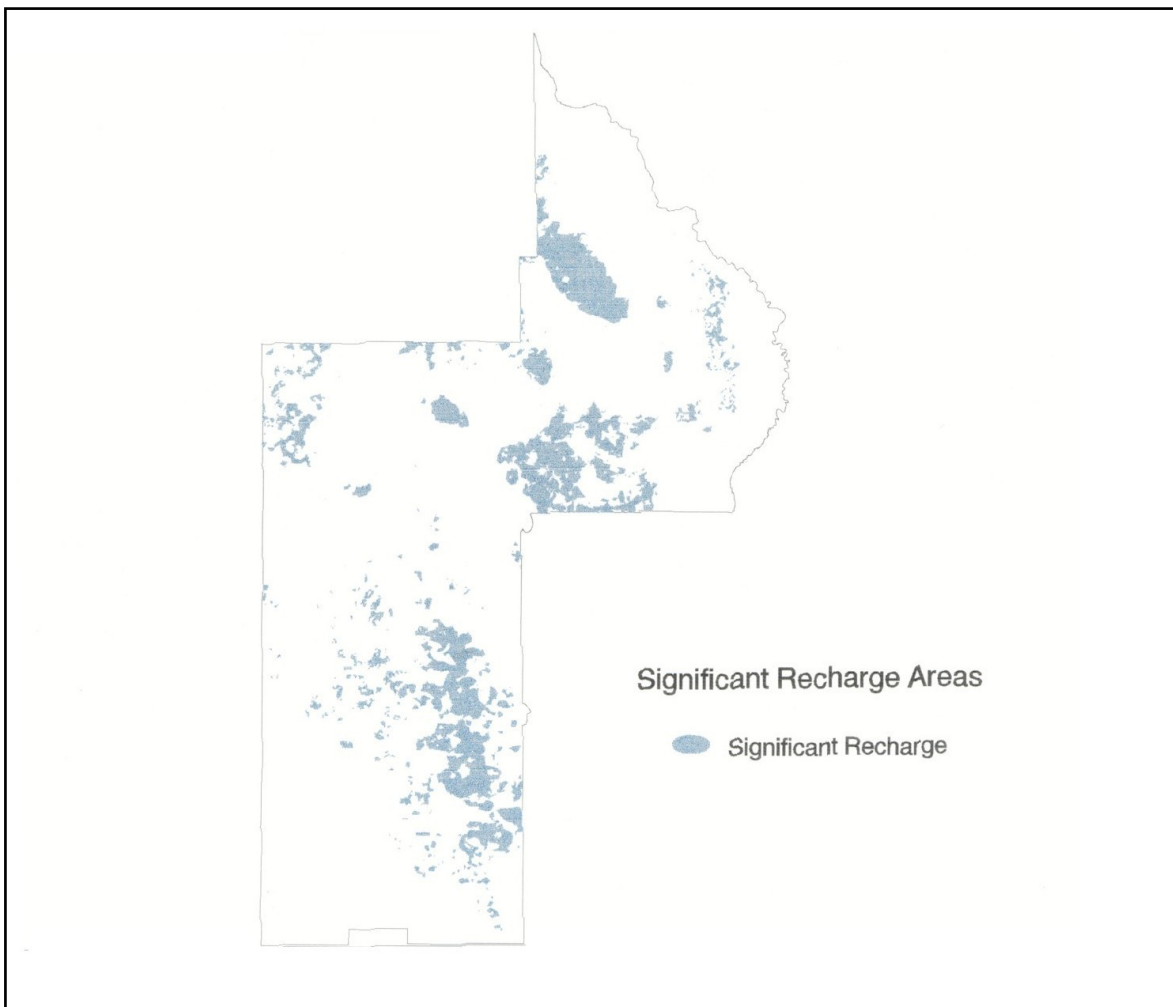
The rate of recharge varies with the vertical hydraulic conductivity, thickness of the SAS and the confining unit, and the downward gradient. The annual recharge rate to the FAS averages about 7 inches per year (in/yr) in Lake County (Knochenmus and Hughes, 1976). Recharge rates range from as high as 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 (O'Reilly, 1998; Murray and Halford, 1996). Less than 1 in/yr of lateral ground-water inflow is estimated to enter the FAS in Lake County from Polk County (Knochenmus and Hughes, 1976). An indeterminate amount of additional lateral ground-water inflow enters the FAS in the Ocala National Forest from western Marion. Additional recharge also occurs through drainage wells drilled into the FAS to dispose of excess surface water in Ocala and western Orange County. Recharge to the SAS, and consequently to the FAS, is augmented locally by artificial recharge, wastewater land application, rapid-infiltration basins, and septic systems. The City of Orlando (Orange County) joint reuse project, Conserv II alone puts an average of 35 million gallons of highly treated wastewater daily back into the aquifer.

Discharge from the FAS to the SAS occurs where the potentiometric surface of the FAS is higher than the water table of the SAS. In some areas, the potentiometric surface of the FAS is above land surface. Wells that tap the FAS in these areas are known as flowing artesian wells. Discharge from the FAS in Lake County, the Ocala National Forest, and vicinity generally occurs through numerous springs, and as diffuse ground-water discharge along the St. Johns River, Wekiva River, the south shore of Lake Harris, and the western shore of Lake Apopka. Spring flow from the FAS in the study area for 1998 was estimated at nearly 1,300 Mgal/d (6 in/yr), of which 236 Mgal/d (4.3 in/yr) was from Lake County.

The ground water in the FAS in the southern half of Lake County moves east into Orange County. A decrease in ground water recharge or an increase in ground water withdrawals from Lake County will decrease available ground water in counties to the east. Conversely an increase in pumpage or a reduction of recharge in the eastern counties will decrease available ground water in Lake County and potentially lower level in the Clermont chain of lakes.

The St. Johns River Water Management District prepared a report and map showing Significant Recharge Areas in Lake County. This map was prepared using GIS mapping the rapid soil permeabilities grid overlaid on the grid of areas with recharge rates greater than 13 in/yr. Those areas having both rapid soil permeabilities and high recharge rates were identified as “significant” recharge areas. This map is used primarily to implement voluntary tax assessment programs (Bluebelt Act) that protect high-water recharge areas. There have been no properties enrolled under the Bluebelt Act. The objections have been the expense to the property owner to obtain the tax break and the more beneficial agricultural exemption is generally available for qualifying parcels.

**Figure 3 – Significant Recharge Areas in Lake County**



### **Ground Water Contamination**

USGS studies indicate that the surficial aquifer system and Upper Floridan aquifer are susceptible to surface contamination and that rapid ground water recharge can allow the aquifer to be susceptible to surface contamination. They also determined that “ground-water quality in central Florida is affected by land-use practices, such as the urbanization of karstic terrain with accompanying stormwater disposal through drainage wells, citrus cultivation with accompanying application of large quantities of fertilizers and pesticides, and mining and processing of

phosphate ores into fertilizers... Leachate from fertilizers and pesticides ... are most likely to affect the surficial aquifer system. Although water from the surficial aquifer system is not used extensively as a source of public water supply, it does ultimately recharge the Floridan aquifer system.”

The USGS also indicates that water quality of the Upper Floridan aquifer appears to be affected by land use. The maximum nitrate concentration in samples from wells in the Ocala national Forest is only 0.20 mg/L. These are the results of the pristine forested land use in the Forest area. In contrast, nitrate concentrations were greater than 1.0 mg/L in 24 percent of the samples from wells in Lake County outside the Forest. They conclude that these nitrate concentrations in the Upper Floridan aquifer appear to be related to land use.

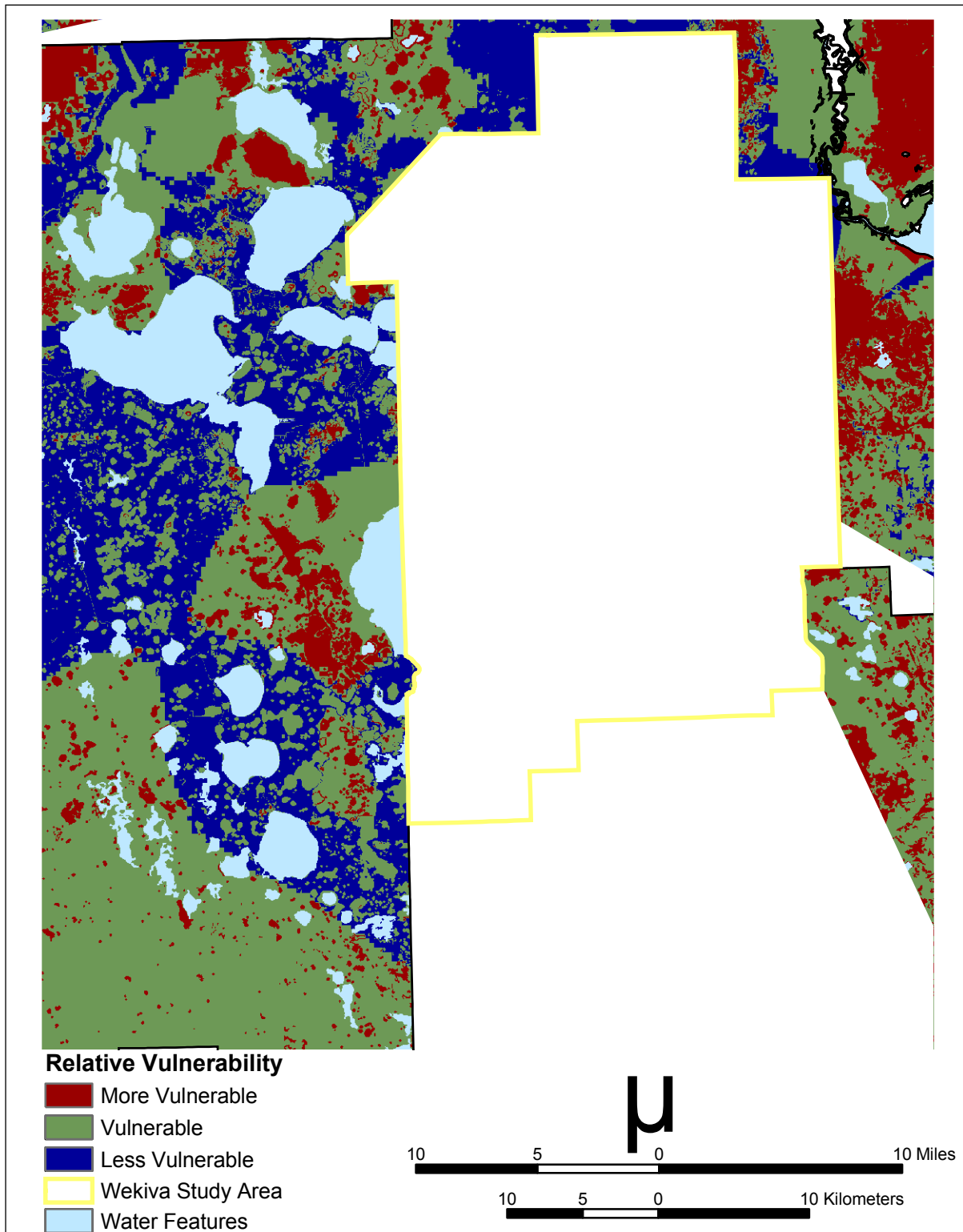
A nematicide (Ethylene dibromide or EDB) applied to groves years ago has also found its way into the Upper Floridan aquifer. Both nitrate and EDB concentrations have been detected in excess of the primary drinking water standards in many potable wells. Because nitrate and EDB can remain in ground water for many years, elevated concentrations do not necessarily indicate the effects of present land use.

In areas along the St. Johns and Wekiva Rivers in east Lake County, sodium-chloride is found in high concentrations in ground water. This is not the result of land use activities but rather from relic sea water remaining from when the Florida Peninsula was covered by the sea in the geologic past. Developing a potable water supply from ground water is problematic in these areas.

### **Aquifer Vulnerability**

The Florida Geological Survey (FGS) has prepared two studies showing the vulnerability of the Floridan aquifer to surface contamination. One study is specific to the Wekiva Study area while the other one was state-wide. While the Wekiva Aquifer Vulnerability Assessment (WAVA) map (shown below) does not cover the entire county and the state-wide map was completed to a broad scale, both maps show that the much of the Floridan aquifer within Lake County is “vulnerable” or “more vulnerable” to contamination. The FGS has adopted a definition of aquifer vulnerability as “the tendency or likelihood for contaminants to reach the top of the specified aquifer system after introduction at land surface based on existing knowledge of natural hydrogeologic conditions.”

Figure 4 – Wekiva Study Area Aquifer Vulnerability Areas (WAVA)



Relative vulnerability predicted by the WAVA model showing more vulnerable, vulnerable and less vulnerable areas of the FAS. Figure 15 from FGS RI-104.



If there are pollutant sources in these vulnerable areas that are not managed properly, those pollutants could result in contamination of the aquifer. Sources of potential contamination could include but not be limited to municipal wastewater treatment plants, private wastewater treatment plants (package plants), stormwater ponds, landfills, pollutant storage tanks, fertilizers and herbicides, improper disposal of hazardous wastes and various point source pollutant discharges to surface waters. Once an aquifer is contaminated, the logistics of clean up are often expensive and ineffective, both in the short and long term.

The USGS states: "Present and (or) past land uses in parts of Lake County could have affected the ground water quality as indicated by elevated concentrations of nitrate. Further studies to better quantify the effects of land use on ground water quality, particularly with respect to the rapid urbanization of parts of the study area would be beneficial."

The Floridan Geological Survey study indicates that relative vulnerability zones identified in the WAVA model may be applied to facilitate designation of "protection zones" by regulatory agencies. These "protection zones," however, would likely include other physical and chemical (i.e., water quality) factors affecting the hydrologic system, including ground-water flow rates and patterns and proximity to impacted areas. Their reports provide specific recommendation for restrictions on development within the different zones. A Lake County-specific aquifer vulnerability map would be required to implement their recommendations.

References used for the GROUNDWATER RECHARGE SUB-ELEMENT include

- 1 - USGS Water-Resources Investigation Report 02-4207, Hydrogeology and Simulated Effects of Ground-Water Withdrawals from the Floridan Aquifer System in lake County and in the Ocala National Forest and Vicinity, North-Central Florida, L. Knowles, Jr., A. M O'Reilly and J. C. Adamski, 2002.
- 2 - Technical Report for the Lake County Astatula Solid Waste Management Facility Period of July 2001 – June 2003, May 2003, Walter D. Wood, PG.
- 3 - USGS Hydrology of Lake County, Florida, Water Resources Investigation 76-72, D. D. Knochenmus and G. H. Hughes, 1976.
- 4 – Ground Water Quality of the Surficial Aquifer System and the Upper Floridan Aquifer, Ocala National Forest and Lake County, Florida, 1990-99, USGS Water Resource Investigations Report 01-4008, J. C. Adamski and L Knowles, Jr., 2001.
- 5 – Analysis of Nonpoint-Source Ground-Water Contamination in Relation to Land Use: Assessment of Nonpoint-Source Contamination in Central Florida, USGS Water-Supply Paper 2381, E. R. German, 1996.
- 6 - Wekiva Aquifer Vulnerability Assessment, Florida Geological Survey Report of Investigation 104, J. R. Cichon, A. E. Baker, A. R. Wood, and J. D. Arthur, 2005.
- 7 - Designation of Significant Groundwater Recharge Areas (Draft), Don Boniol, P.G., SJRWMD, undated.
- 8 – Dictionary of Geological Terms, Third Edition, American Geological Institute, 1984.
- 9 - Water Resource Atlas, SJRWMD, 2003.



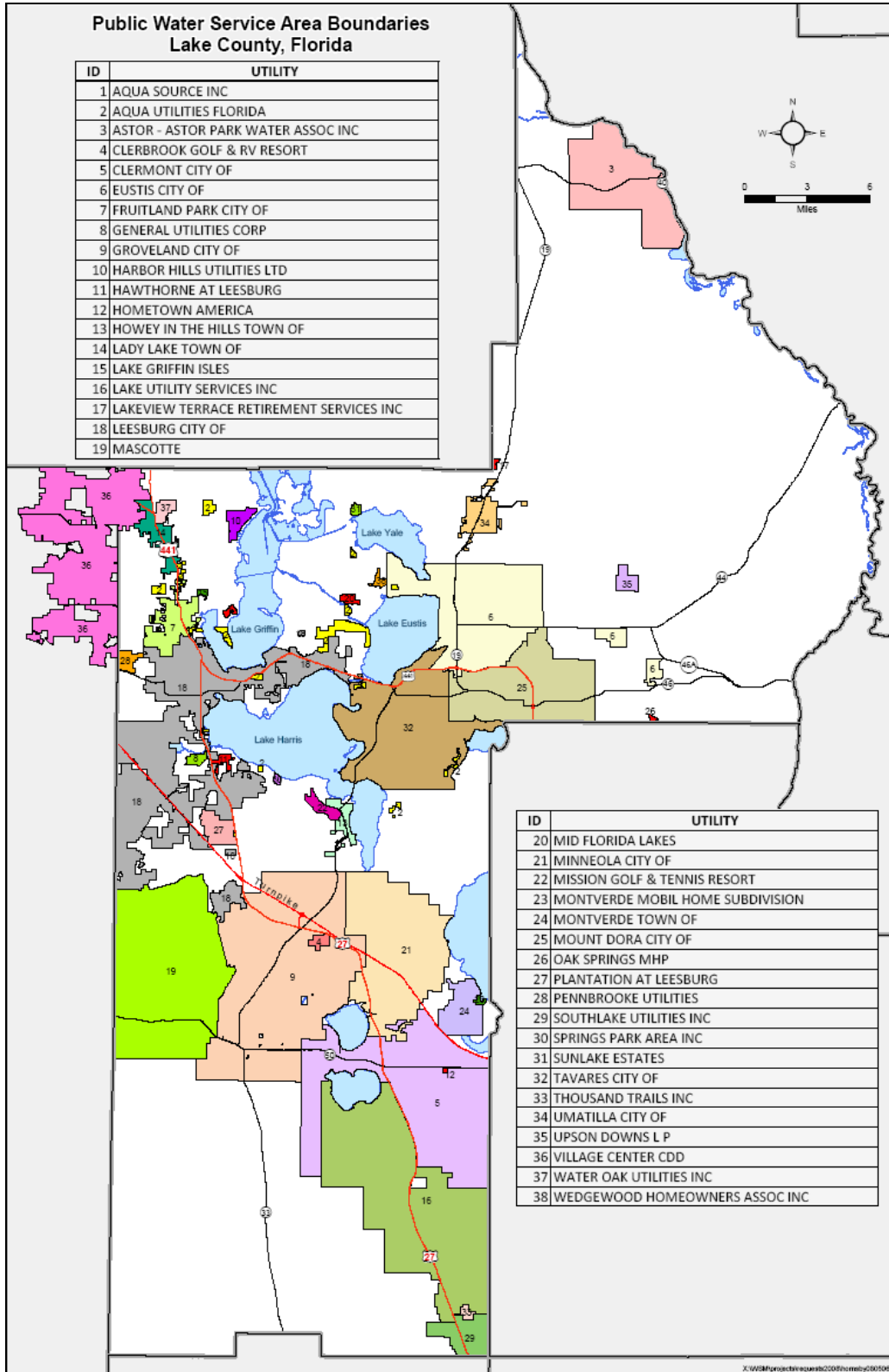
**APPENDIX A**

**MAPS**

**PUBLIC WATER SERVICE AREA BOUNDARIES MAP**



## PUBLIC WATER SERVICE AREA BOUNDARIES MAP



Source: Created by the GIS Department of SJRWMD.