

Lake County Water Supply Plan

Technical Memorandum #2

July 2007

FINAL

Chapter 1 - Existing Water Use and Sources

Chapter 2 - Potential Future Sources of Water

Chapter 3 - Identification of Readily Available Regional Alternative Water
Supply Development Projects

Chapter 4 - Readily Available Reuse Projects

Prepared by



Lake County Water Supply Plan

1.0 Existing Water Use and Sources

Task 3 of the Lake County Water Supply Plan (Plan) – Data Collection, Compilation and Reduction – is an examination of existing Consumptive Use Permits (CUPs) and associated data in Lake County. Specifically, the analysis includes an inventory and analysis 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. An analysis of these CUPs, including allocated quantities, spatial distribution, supply sources, use types, and pumpage data serve to establish a baseline of existing permitted water use within the County and within the Lake County Water Alliance (Alliance). Data used to complete Task 3 were obtained from the St. Johns River Water Management District (SJRWMD).

Tech Memo 2 does not address actual water demand for the County, but rather is an assessment of permitted or allocated quantities. These quantities are estimates of what users anticipate to be their average daily demands over the permit duration at the time of application for the permit. However, it is not uncommon for population growth to be above or below populations anticipated when permit applications were submitted, so water use can exceed or fall short of existing permitted quantities. In addition, permittees and the SJRWMD use various methods to arrive at allocation quantities. Pumpage data was obtained and are presented in the sections that follow in order to provide a general comparison between expected demand (allocated quantities) and actual demand.

Domestic self-supplied water use is not included in this analysis, as CUPs are not required for this use. However, an analysis of demand associated with domestic self-supplied users will be presented later in the study along with existing and projected demand of other users in the County.

1.1 Golf Course CUPs

The Alliance identified golf course water use as a useful analysis for the Plan. 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.

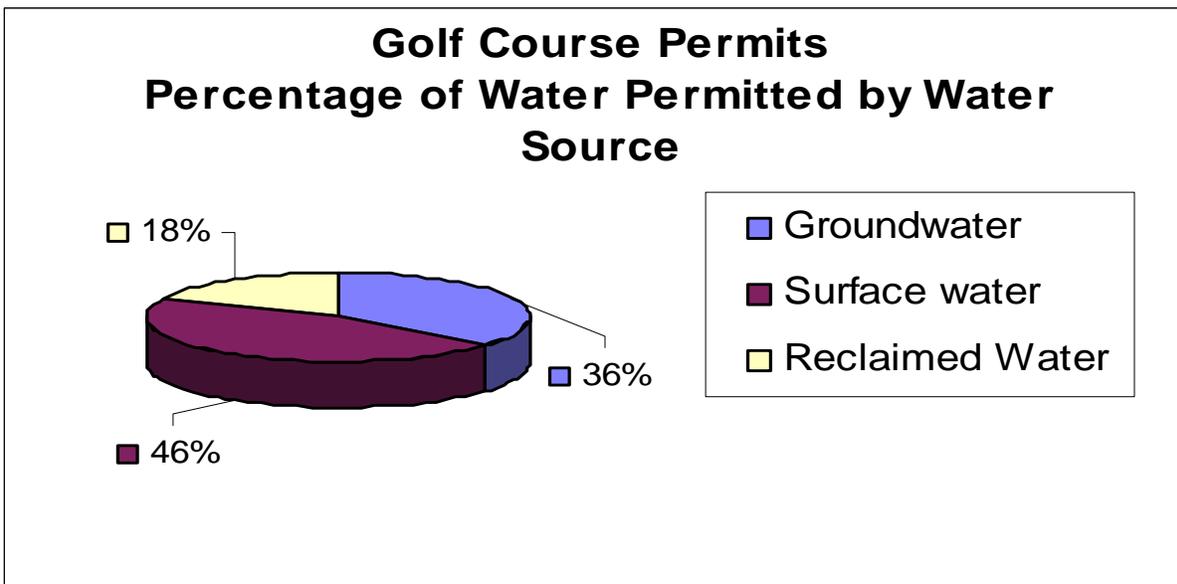
Identification of potential opportunities for reuse water augmentation using reclaimed water is a critical component of the overall water strategy. To meet the needs of a growing population, the number of golf courses in the County is expected to grow in number over the years, and meeting these demands with reuse water would reduce stress on new potable water 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 surfacewater (Table 1-1, Figure 1-1).

Table 1-1 – Lake County Golf Course CUP 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%
Total	15.1	100.0%

Figure 1-1 – Lake County Golf Course CUP Allocations by Source



The location of permitted golf course CUPs are mapped and shown on Figures 1-2 through Figure 1-5. SJRWMD staff provided all golf courses CUP allocated quantities, issue dates, expiration dates, and water source information (SJRWMD 2006/2007). Table 1-2 is a tabulation of golf course CUP data. In cases where golf course permits have multiple independent water sources, the allocated amount for each source is listed separately. A separate column lists the total quantity allocated from all sources for the permit.

In addition to allocated quantities, actual pumpage data was supplied by the SJRWMD for the years 2002 through 2005, with a few exceptions as noted on Table 1-2. In general, having an accurate comparison between pumpage trends and allocated quantities will indicate permittees that may need to increase or decrease their existing allocation quantities. These quantities are presented as an average over this time period and serve as a useful tool for comparing the allocation quantities to actual withdrawals made by permittees. On average, golf course permit holders used 100% of their allocated water from 2002 to 2005, or about 15.1 mgd.

1.2 Permitted 4-inch wells

CUPs that include wells of a four (4)–inch casing diameter (4” wells) were also specified by the Alliance for investigation. For reasons specified in the following discussion, there is some overlap between these CUPs, golf course CUPs and CUPs equal to or greater than 100,000 gpd. In addition, CUPs analyzed under this category often include six (6) – inch wells (6” wells) or larger.

Allocations for 4” wells are not permitted unless they meet permitting threshold criteria. That is, unless a well is capable of withdrawing 1 million gallons per day (mgd), or is permitted to withdraw 100,000 gpd or more, a permit is not required. Usually, a single 4” well does not “trip” the permitting threshold unless supplemented by a surfacewater source. However, if the following conditions are met, a user must permit a 4” well:

- If a user has multiple wells including a 4” well, it must be permitted regardless of withdrawal quantity.
- If multiple 4” wells together are permitted to withdraw greater than 100,000 gpd, a CUP is required.

Data on CUPs that include at least one 4” well were collected from the SJRWMD GIS database (SJRWMD 2006). 4” well CUPs span water use categories, including public supply (household use and residential landscape irrigation), agricultural (including freeze protection, livestock, and nursery applications), recreational (golf course irrigation and common areas), commercial/industrial (operations that are not self-supplied), and mining/dewatering.

For CUPs that include 4” wells, allocated quantities, CUP issue dates, CUP expiration dates, and water source information was provided by SJRWMD staff (SJRWMD 2006). For permits having multiple independent water sources and/or use types, the allocated amount for each source is itemized (Table 1-3). A separate column lists the total allocated amount from all sources for the permit. See Figures 1-6 to 1-9 for locations of these CUPs within Lake County.

Since the SJRWMD does not provide allocated data by well, no analysis on water source, use type or pumpage would be representative of data directly associated with 4” wells. The location of 4” wells may be available through SJRWMD well construction permits. If available, this information will be included in the final Plan as an Appendix.

1.3 CUPs permitted for 100,000 gpd or Greater

CUPs allocated for 100,000 gallons per day (gpd) or greater are also included in the CUP analysis for this Technical Memorandum. These CUPs were identified, tabulated, and depicted spatially. These CUPs contain wells that are typically six (6) – inches (in.) in diameter or greater. All uses over 100,000 gpd must be permitted through a CUP, as this quantity is one of the permitting thresholds. These permits are of interest due to 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 in. 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 (Table 1-4, Figure 1-10).

Table 1-4 – Lake County Allocations for CUPs permitted for $\geq 100,000$ gpd

Source	CUPs $\geq 100,000$ gpd Allocated Quantities (mgd)	Percent
Groundwater	96.07	58.6%
Surface water	67.9	41.4%
Total*	164.0	100.0%

*Does not include 0.8% public supply allocations attributed to small utilities (allocated for <0.1 mgd public supply use type).

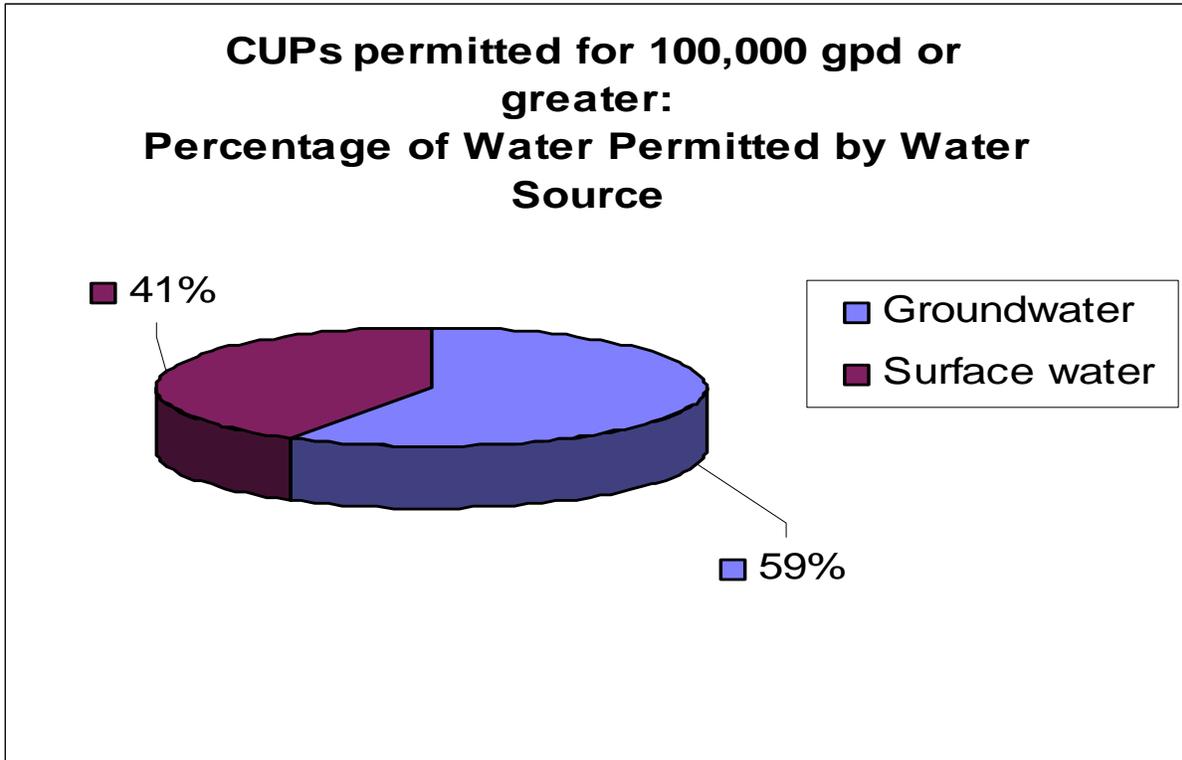


Figure 1-10 Lake County Allocations for CUPs permitted for $\geq 100,000$ gpd

These CUPs span all the 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 (Table 1-5, Figure 1-11). There are no power generation CUPs in Lake County.

Of the 74 mgd for commercial/industrial/institutional, mining/dewatering surface water use is approximately 50 mgd.

Table 1-5 – Allocations by Use Type for CUPs permitted for $\geq 100,000$ gpd

Use Type	CUPs $\geq 100,000$ gpd Permitted Quantities (mgd)	Relative Percent
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%
Total	163.9	100.0%

1. Does not include 0.8% public supply allocations attributed to small utilities that (allocated for <0.1 mgd public supply use type).
2. Does not include reuse supplementation and surface water augmentation as these allocated quantities account for 1% of total allocated quantities.

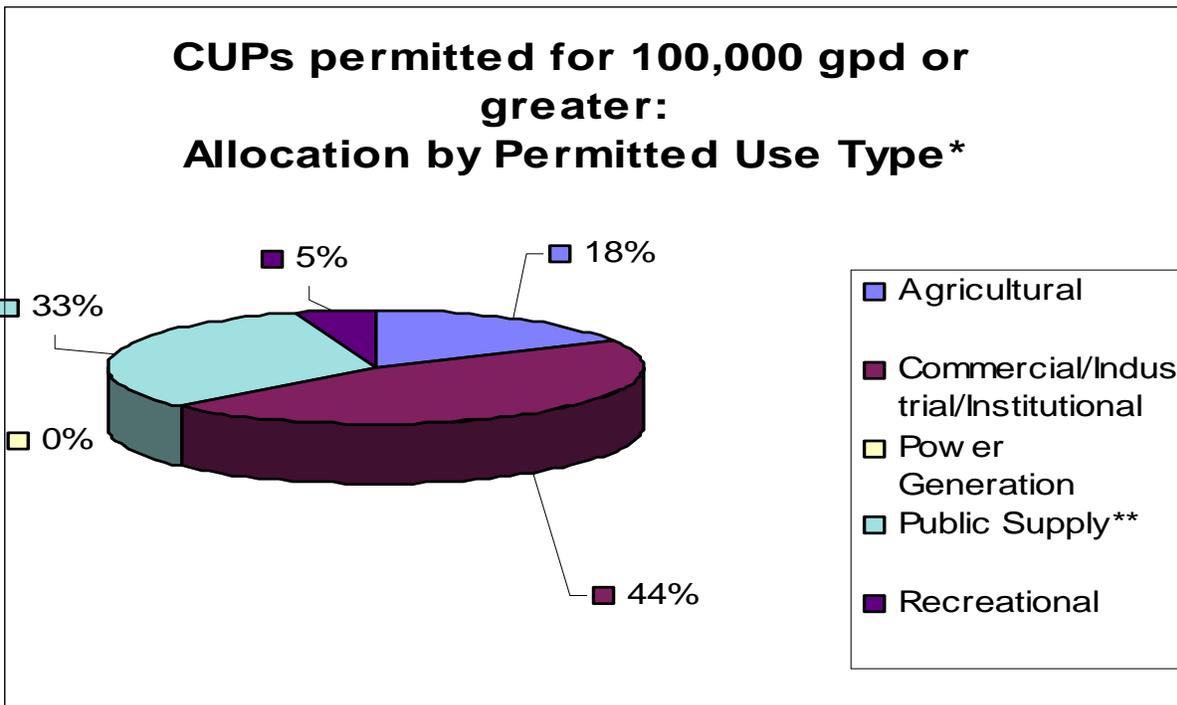


Figure-1-11 – Allocations by Use Type for CUPs permitted for $\geq 100,000$ gpd¹

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). See Figures 1-12 to 1-18 for locations of these CUPs. Additionally, SJRWMD staff provided data associated with CUP allocation quantities, issue dates, expiration dates, and water

sources (Table 1-6). 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 overpumpage is being verified by SJRWMD to ensure accuracy and validity of the overpumpage estimate. When overpumping occurs, it can be because of drought year conditions or increases in population beyond what was anticipated at the time of allocation.

Table 1-2 Golf Course CUPs Tabulation

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgd) (2002-2005)	Permit Amount (mgd)	Water Source	Revision Number
100	Green Valley Country Club	09/16/97	09/16/07	82.24		Floridan Aquifer	2
100	Green Valley Country Club	09/16/97	09/16/07	47.40	137.22	Surface/Reclaimed Water	2
279	Harbor Hills	04/12/05	04/12/07	131.1 *	150.94	Lake Griffin	6
2484	Links at Village Green	07/01/99	07/01/19	42.18	48.78	Lake Diane	3
2492	MOUNT PLYMOUTH GOLF CLUB	10/27/00	10/27/20	78.59	95.7	Floridan Aquifer	3
2629	Monarch Golf Club at Royal Highlands	12/16/02	07/24/06		106.71	Floridan Aquifer	5
2629	Monarch Golf Club at Royal Highlands	12/16/02	07/24/06	151.16	106.71	Storm Water	5
2662	Las Colinas	04/11/00	04/10/20		80.2	Floridan Aquifer	8
2662	Las Colinas	04/11/00	04/10/20	162.42	154.4	Surface/Reclaimed Water	8
2729	Silver Lake Golf Course	06/06/06	05/15/11	62.86	59.73	Floridan Aquifer	5
2843	Bella Vista Golf & Yacht Club Inc	03/08/04	03/08/09	37.9 *	90.5	Lake Harris	4
2900	Hillcrest Country Club	05/08/07	06/13/07	73.5 *	133.81	Floridan Aquifer	6
2983	Blackbear Golf Course	12/16/98	12/16/18	66.51	150.00	Blackbear Lale	4
2991	King Ridge	05/08/07		387.45 *	332.92	Floridan Aquifer	
2991	King Ridge	05/08/07		307.56 *	351.98	SW	4
2991	King Ridge	05/08/07		491.48 *	499.98	Reclaimed	
4535	Mt Dora Golf Assoc	09/14/06	04/26/25	2.95 *	7.30	Floridan Aquifer	2
4535	Mt Dora Golf Assoc	09/14/06	04/26/25	6.11 *	40.00	Reclaimed	
6320	Deer Island Country Club	08/01/01	08/01/21	98.28	126.04	PUMPS 1 & 2	5
6398	Clerbrook Resort	03/13/02	03/13/07		AUG	Floridan Aquifer	5
6398	Clerbrook Resort	03/13/02	03/13/07	31.34	42.3	Surface Water	5
6455	Pine Meadows Golf Club	12/02/98	12/02/18	43.81	91.6	Floridan Aquifer	3
50048	Country Club of Mount Dora	12/01/06	11/01/11	103.48	134.23	Floridan Aquifer	4
50135	Palisades Golf Course	03/12/02	08/11/18		AUG	Floridan Aquifer	9
50135	Palisades Golf Course	03/12/02	08/11/18	115.65 *	300.00	Lake Minneola and Spring Lake	9
50186	Swiss Fairways	07/17/02	06/07/09	42.52	52.4	Floridan Aquifer	3
50186	Swiss Fairways	07/17/02	06/07/09	74.66	85.19	Golf Course Pond	3
50280	VLS Irrigation	08/09/05	10/10/20	195.40	169.8	Floridan Aquifer	7
50280	VLS Irrigation	08/09/05	10/10/20	427.37	164.3	Lined Ponds 11,11A	7
50280	VLS Irrigation	08/09/05	10/10/20	372.90	115.00	Reclaimed	7
50807	Diamond Club	07/07/04	07/07/09	131.23 *	134.00	Floridan Aquifer	2

Data Source: St.Johns River Water Management District; GIS Development; "Consumptive Use Permit Well"; Downloaded May 2007
 ftp://sjr.state.fl.us/disk/regulatory/cupdata/cupstations.zip

Table 1-2 Golf Course CUPs Tabulation

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgy) (2002-2005)	Permit Amount (mgy)	Water Source	Revision Number
50807	Diamond Club			143.81 *	None	Surface Water	
63048	Stonybrook West Golf Course	07/09/02	07/09/22	69.88	12.6	Floridan Aquifer	3
63048	Stonybrook West Golf Course	07/09/02	07/09/22	88.47	126.1	Reclaimed Water	3
63669	Sunset Landing	06/14/00	06/14/20		3.58	Floridan Aquifer	1
63669	Sunset Landing	06/14/00	06/14/20	1.1 *	7.85	Surface Water	1
64455	The Legends	03/12/02	06/15/18	437.80	329.08	Floridan Aquifer	7
64455	The Legends	03/12/02	06/15/18	312.92	329.08	Surface Water	
65616	The Lakes	07/30/01	07/30/06	49.93	71	Floridan Aquifer AUG	1
65616	The Lakes	07/30/01	07/30/06	67.20	78.97	Surface Water	1
81906	Heathrow Country Estates	08/13/03	08/13/23		15.3	Floridan Aquifer	1
81906	Heathrow Country Estates	08/13/03	08/13/23	102 *	93.2	City of Eustis	1
83231	Eagle Dunes Golf Club	06/10/04	06/28/22	0.00	18.54	Floridan Aquifer	3
83231	Eagle Dunes Golf Club	06/10/04	06/28/22	117.66 *	112.8	City of Eustis Reclaimed Water System	3
88103	Pennbrooke Fairways Golf Course	02/18/05	11/17/10		10.95	Floridan Aquifer AUG	2
88103	Pennbrooke Fairways Golf Course	02/18/05	11/17/10	26.22 *	65.7	Storm Water	2
94701	Sugarloaf Mountain Development - Irrigation	12/13/05	12/13/25		0	City of Minneola WWTF	1
94701	Sugarloaf Mountain Development - Irrigation	12/13/05	12/13/25		0	Lined Pond	1
94701	Sugarloaf Mountain Development - Irrigation	12/13/05	12/13/25	-	29.73	Floridan Aquifer	1
95654	Water Oaks Golf Course	04/19/05	04/19/10		0	Reclaimed Water	1
95654	Water Oaks Golf Course	04/19/05	04/19/10	69.53 *	52.00	Floridan Aquifer	1
104559	Plantation Residents Golf Club Inc	03/27/06	08/13/22	226.10	268.91	Surface Water / Reclaimed	1
					987.08	Reclaimed Water	
					1982.6887	Floridan Aquifer	
					2525.2113	Surface Water	
TOTALS				3,335.42	5495		

Average Actual Pumpage based on reported four year annual pumpage records

* Average values based on less than 4 years data record

Table 1-3 4 - Inch Well CUPs Tabulation*

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Permit Amount by Source (mgly)	Total Permitted Amount (mgly)	Water Usage Type	Water Source Official Name	Revision Number		
289	Harbor Oaks	01/19/06	11/11/25	16.30	19.98	22.76	Household	Floridan Aquifer	5		
289	Harbor Oaks	01/19/06	11/11/25		0.50		Urban landscape irrigation	Floridan Aquifer	5		
289	Harbor Oaks	01/19/06	11/11/25		2.28		Water utility	Floridan Aquifer	5		
971	Troy Masters	10/30/98	10/30/18	22.58	79.30	127.92	Agricultural (Misc.)	Floridan Aquifer	5		
971	Troy Masters	10/30/98	10/30/18		48.30		Agricultural (Potatoes)	Floridan Aquifer	5		
971	Troy Masters	10/30/98	10/30/18		0.32		Commercial and industrial process	Floridan Aquifer	5		
1669	SERVICE ICE COMPANY	08/29/06	06/09/26	25.31	44.00	44.00	Commercial and industrial process	Floridan Aquifer	2		
2387	474 Sand Mine	03/07/06	03/07/26	5,894.84	0.00	9,898.24	Mining	Mine Pit	10		
2387	474 Sand Mine	03/07/06	03/07/26		0.00		Mining	Surficial Aquifer	10		
2387	474 Sand Mine	03/07/06	03/07/26		175.52		Mining	Floridan Aquifer	10		
2387	474 Sand Mine	03/07/06	03/07/26		4,005.54		Mining	Mine Pit	10		
2387	474 Sand Mine	03/07/06	03/07/26		5,890.50		Mining	Mine Pit	10		
2387	474 Sand Mine	03/07/06	03/07/26		0.00		Household	Mine Pit	10		
2387	474 Sand Mine	03/07/06	03/07/26		0.75		Household	Surficial Aquifer	10		
2387	474 Sand Mine	03/07/06	03/07/26		1.12		Household	Floridan Aquifer	10		
2387	474 Sand Mine	03/07/06	03/07/26		0.00		Urban landscape irrigation	Floridan Aquifer	10		
2387	474 Sand Mine	03/07/06	03/07/26		0.00		Urban landscape irrigation	Mine Pit	10		
2387	474 Sand Mine	03/07/06	03/07/26		0.34		Urban landscape irrigation	Surficial Aquifer	10		
2391	Florida Rock Industries Inc	03/07/06	11/08/20		3.31		10.00	1,424.68	Mining	Floridan Aquifer	9
2391	Florida Rock Industries Inc	03/07/06	11/08/20				1,414.38		Mining	dredge lake #3	9
2391	Florida Rock Industries Inc	03/07/06	11/08/20				0.00		Household	dredge lake #3	9
2391	Florida Rock Industries Inc	03/07/06	11/08/20				0.30		Household	Floridan Aquifer	9
2403	Winn Dixie Scout Reservation	04/28/99	04/28/19	5.86	7.30	7.30	Household	Floridan Aquifer	4		
2410	Live Oaks Ranch & Nursery	05/14/02	05/14/22	21.29	13.58	16.65	Agricultural (Pasture)	Floridan Aquifer	3		
2410	Live Oaks Ranch & Nursery	05/14/02	05/14/22		0.22		Livestock	Floridan Aquifer	3		
2410	Live Oaks Ranch & Nursery	05/14/02	05/14/22		2.85		Nursery (Misc.)	Floridan Aquifer	3		
2436	Ridge Grove	02/18/03	02/18/23	14.40	36.01	46.73	Agricultural (Citrus)	Floridan Aquifer	3		
2436	Ridge Grove	02/18/03	02/18/23		10.72		Freeze protection (Citrus)	Floridan Aquifer	3		
2440	Merry Gro Farms	10/11/05	10/11/10	242.94	15.21	198.50	Freeze protection (Misc.)	Floridan Aquifer	6		
2440	Merry Gro Farms	10/11/05	10/11/10		183.29		Nursery (Misc.)	Floridan Aquifer	6		
2454	Sunlakes Estates	09/19/06	08/30/26	97.63	57.70	57.70	Household	Floridan Aquifer	3		
2492	MOUNT PLYMOUTH GOLF CLUB	10/27/00	10/27/20	127.96	95.70	95.70	Golf course	Floridan Aquifer	3		
2580	Hartle Groves	09/04/01	09/04/21	0.00	8.23	8.36	Agricultural (Citrus)	Floridan Aquifer	3		
2580	Hartle Groves	09/04/01	09/04/21		0.13		Livestock	Floridan Aquifer	3		
2589	Fiddlers Green	01/13/00	01/13/20	none reported	0.29	1.03	Essential	Floridan Aquifer	3		
2589	Fiddlers Green	01/13/00	01/13/20		0.66		Household	Floridan Aquifer	3		
2589	Fiddlers Green	01/13/00	01/13/20		0.09		Livestock	Floridan Aquifer	3		
2594	Cherry Lake Tree Farm, Inc.	06/13/06	06/13/26		0.00		Agricultural (Citrus)	Floridan Aquifer	12		
2594	Cherry Lake Tree Farm, Inc.	06/13/06	06/13/26	941.64	0.00	0.00	Freeze protection (Citrus)	Floridan Aquifer	12		
2594	Cherry Lake Tree Farm, Inc.	06/13/06	06/13/26		0.00		Nursery (Misc.)	Floridan Aquifer	12		
2637	Carl Smith	03/04/03	03/04/23		9.60		Agricultural (Citrus)	Floridan Aquifer	4		
2637	Carl Smith	03/04/03	03/04/23	0.60	2.86	12.50	Freeze protection (Citrus)	Floridan Aquifer	4		
2637	Carl Smith	03/04/03	03/04/23		0.04		Livestock	Floridan Aquifer	4		
2650	Cassia Fern	11/22/00	11/22/20		2.67		18.60	18.60	Nursery (Fern)	Owens Pond	3
2668	Robert Sullivan	10/10/03	10/10/23	0.19	4.75	4.75	Urban landscape irrigation	Floridan Aquifer	5		

Table 1-3 4 - Inch Well CUPs Tabulation*

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Permit Amount by Source (mgly)	Total Permitted Amount (mgly)	Water Usage Type	Water Source Official Name	Revision Number
2688	Heritage	01/19/06	01/19/26	9.91	11.95	11.95	Nursery (Misc.)	Floridan Aquifer	5
2700	Lake Utility Services Inc.	04/11/06	04/12/11	604.67	73.00	1,378.24	Commercial and industrial process	Floridan Aquifer	23
2700	Lake Utility Services Inc.	04/11/06	04/12/11		1,112.89		Household	Floridan Aquifer	23
2700	Lake Utility Services Inc.	04/11/06	04/12/11		53.66		Urban landscape irrigation	Floridan Aquifer	23
2700	Lake Utility Services Inc.	04/11/06	04/12/11		138.70		Water utility	Floridan Aquifer	23
2704	Greenacres Fernery & Citrus	07/18/01	07/18/21	48.19	3.60	24.75	Agricultural (Citrus)	Floridan Aquifer	10
2704	Greenacres Fernery & Citrus	07/18/01	07/18/21		5.07		Freeze protection (Fern)	Floridan Aquifer	10
2704	Greenacres Fernery & Citrus	07/18/01	07/18/21		16.08		Nursery (Fern)	Floridan Aquifer	10
2706	Floral Trace	08/13/01	08/13/21		4.00		Nursery (Misc.)	Floridan Aquifer	3
2706	Floral Trace	08/13/01	08/13/21	0.61	3.70	7.70	Urban landscape irrigation	Floridan Aquifer	3
2716	Benjamin O Benham	03/24/03	03/02/20	11.00	73.20	74.30	Agricultural (Misc.)	Floridan Aquifer	5
2716	Benjamin O Benham	03/24/03	03/02/20		1.10		Livestock	Floridan Aquifer	5
2753	May and Whitaker	08/11/00	06/21/21	0.07	0.00	13.61	Livestock	unnamed lagoon	4
2753	May and Whitaker	08/11/00	06/21/21		13.61		Livestock	Floridan Aquifer	4
2754	Pine Ridge Dairy Inc	11/16/00	11/16/20	289.54	14.79	69.54	Agricultural (Pasture)	Floridan Aquifer	4
2754	Pine Ridge Dairy Inc	11/16/00	11/16/20		54.75		Livestock	Floridan Aquifer	4
2758	Florida Made Door	03/30/00	03/30/20		1.44		Essential	Floridan Aquifer	3
2758	Florida Made Door	03/30/00	03/30/20		0.00		Household	Floridan Aquifer	3
2758	Florida Made Door	03/30/00	03/30/20	1.62	1.42	2.86	Urban landscape irrigation	Floridan Aquifer	3
2763	Senninger Irrigation	06/28/02	06/28/22	43.45	72.84	75.27	Commercial and industrial process	Floridan Aquifer	3
2763	Senninger Irrigation	06/28/02	06/28/22		2.16		Essential	Floridan Aquifer	3
2763	Senninger Irrigation	06/28/02	06/28/22		0.27		Household	Floridan Aquifer	3
2766	Pastime Fernery, Inc.	12/03/02	12/03/22		7.20		Agricultural (Citrus)	Floridan Aquifer	5
2766	Pastime Fernery, Inc.	12/03/02	12/03/22	none reported	2.14	17.40	Freeze protection (Citrus)	Floridan Aquifer	5
2766	Pastime Fernery, Inc.	12/03/02	12/03/22		1.93		Freeze protection (Fern)	Floridan Aquifer	5
2766	Pastime Fernery, Inc.	12/03/02	12/03/22		6.13		Nursery (Fern)	Floridan Aquifer	5
2774	Jack Strickland	10/12/01	10/12/21		10.80		Agricultural (Citrus)	Floridan Aquifer	3
2774	Jack Strickland	10/12/01	10/12/21	5.66	3.22	14.11	Freeze protection (Citrus)	Floridan Aquifer	3
2774	Jack Strickland	10/12/01	10/12/21		0.09		Livestock	Floridan Aquifer	3
2776	Classic Manufacturing Inc	10/23/00	10/23/20		0.90		2.16	2.16	Essential
2782	Raintree Harbor	02/16/98	02/16/08	19.40	0.92	19.61	Essential	Floridan Aquifer	4
2782	Raintree Harbor	02/16/98	02/16/08		16.46		Household	Floridan Aquifer	4
2782	Raintree Harbor	02/16/98	02/16/08		2.23		Urban landscape irrigation	Floridan Aquifer	4
2790	Simpson Training Center	09/04/01	09/04/21		1.44		Essential	Floridan Aquifer	3
2790	Simpson Training Center	09/04/01	09/04/21	29.50	0.90	2.79	Household	Floridan Aquifer	3
2790	Simpson Training Center	09/04/01	09/04/21		0.45		Livestock	Floridan Aquifer	3
2794	MOORMAN GROVE	01/09/96	01/09/03		14.40		Agricultural (Citrus)	Floridan Aquifer	2
2794	MOORMAN GROVE	01/09/96	01/09/03	none reported	4.29	19.13	Freeze protection (Citrus)	Floridan Aquifer	2
2794	MOORMAN GROVE	01/09/96	01/09/03		0.44		Household	Floridan Aquifer	2
2810	Lake Griffin Isles	04/15/03	04/15/08		34.84		43.71	48.59	Household
2810	Lake Griffin Isles	04/15/03	04/15/08	4.86		Unaccounted-for	Floridan Aquifer		3
2810	Lake Griffin Isles	04/15/03	04/15/08	0.02		Urban landscape irrigation	Floridan Aquifer		3
2816	Clermont Ready-Mixed Concrete Plant	03/10/03	03/10/23	11.96		Commercial and industrial process	Floridan Aquifer		3
2816	Clermont Ready-Mixed Concrete Plant	03/10/03	03/10/23	4.12	0.04	12.00	Household	Floridan Aquifer	3

Table 1-3 4 - Inch Well CUPs Tabulation*

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Permit Amount by Source (mgly)	Total Permitted Amount (mgly)	Water Usage Type	Water Source Official Name	Revision Number
2817	Lakeridge	12/02/97	12/02/07	28.41	23.50	26.26	Agricultural (Misc.)	Floridan Aquifer	3
2817	Lakeridge	12/02/97	12/02/07		0.86		Essential	Floridan Aquifer	3
2817	Lakeridge	12/02/97	12/02/07		1.90		Urban landscape irrigation	Floridan Aquifer	3
2823	Seminole Springs Elementary	07/01/03	07/01/23	10.66	2.82	11.40	Household	Floridan Aquifer	4
2823	Seminole Springs Elementary	07/01/03	07/01/23		8.58		Urban landscape irrigation	Floridan Aquifer	4
2827	Crosland Britt	05/11/04	05/11/24	190.37	0.00	228.84	Nursery (Misc.)	Mount Dora James P. Snell WWTP	6
2827	Crosland Britt	05/11/04	05/11/24		78.00		Nursery (Misc.)	Stormwater	6
2827	Crosland Britt	05/11/04	05/11/24		150.84		Nursery (Misc.)	Floridan Aquifer	6
2849	Clermont West Sand Mine	09/10/02	09/10/05		0.00		Dewatering	Artificial Pond	3
2849	Clermont West Sand Mine	09/10/02	09/10/05	508.34	0.00	1,030.00	Dewatering	Floridan Aquifer	3
2849	Clermont West Sand Mine	09/10/02	09/10/05		1,030.00		Dewatering	Perimeter Ditch	3
2852	Stone Mountain Nursery	03/06/03	03/06/23		19.20		Agricultural (Citrus)	Floridan Aquifer	5
2852	Stone Mountain Nursery	03/06/03	03/06/23	33.85	5.72	81.62	Freeze protection (Citrus)	Floridan Aquifer	5
2852	Stone Mountain Nursery	03/06/03	03/06/23		56.70		Nursery (Misc.)	Floridan Aquifer	5
2855	CAMILLA GROVE	03/05/97	03/05/12		10.00		Agricultural (Citrus)	Lake Erie	2
2855	CAMILLA GROVE	03/05/97	03/05/12	8.34	5.72	15.72	Freeze protection (Citrus)	Lake Erie	2
2859	GOOD SHEPHERD FARMS	02/19/97	02/19/07	22.13	11.40	11.40	Nursery (Fern)	Floridan Aquifer	2
2860	Hawthorne at Leesburg	06/13/06	07/25/07	470.37	20.00	186.00	Commercial and industrial process	unnamed lake	4
2860	Hawthorne at Leesburg	06/13/06	07/25/07		124.70		Household	Floridan Aquifer	4
2860	Hawthorne at Leesburg	06/13/06	07/25/07		24.00		Recreation area	Floridan Aquifer	4
2860	Hawthorne at Leesburg	06/13/06	07/25/07		14.60		Urban landscape irrigation	Floridan Aquifer	4
2860	Hawthorne at Leesburg	06/13/06	07/25/07		2.70		Water utility	Floridan Aquifer	4
2863	BONFIRE COOP	09/16/97	09/16/12		4.32		Dewatering	Lake Tammi	3
2863	BONFIRE COOP	09/16/97	09/16/12	18.38	20.08	28.94	Household	Floridan Aquifer	3
2863	BONFIRE COOP	09/16/97	09/16/12		4.54		Urban landscape irrigation	Floridan Aquifer	3
2867	Country Squire	06/15/05	05/12/15		6.43		10.13	10.13	Household
2888	Mid Florida Lakes	10/10/03	10/10/08	106.41	10.95	157.32	Commercial and industrial process	Floridan Aquifer	3
2888	Mid Florida Lakes	10/10/03	10/10/08		131.40		Household	Floridan Aquifer	3
2888	Mid Florida Lakes	10/10/03	10/10/08		0.37		Unaccounted-for	Floridan Aquifer	3
2888	Mid Florida Lakes	10/10/03	10/10/08		7.30		Urban landscape irrigation	Floridan Aquifer	3
2888	Mid Florida Lakes	10/10/03	10/10/08		7.30		Water utility	Floridan Aquifer	3
2894	United Methodist Church Camp	11/05/99	11/05/19	15.80	33.84	36.19	Household	Floridan Aquifer	2
2894	United Methodist Church Camp	11/05/99	11/05/19		2.35		Urban landscape irrigation	Floridan Aquifer	2
2918	Mahon's Citrus Nursery	04/11/95	04/11/02	none reported	15.23	19.22	Agricultural (Citrus)	Mud Lake	2
2918	Mahon's Citrus Nursery	04/11/95	04/11/02		3.99		Freeze protection (Citrus)	Mud Lake	2
2923	Dura-Stress Inc.	05/31/01	05/31/21		80.25		Commercial and industrial process	Floridan Aquifer	2
2923	Dura-Stress Inc.	05/31/01	05/31/21	25.50	1.82	85.07	Household	Floridan Aquifer	2
2923	Dura-Stress Inc.	05/31/01	05/31/21		3.00		Urban landscape irrigation	Floridan Aquifer	2
2933	Grass Roots Nurseries, Inc.	03/03/00	03/03/20	21.31	3.00	23.30	Freeze protection (Misc.)	Floridan Aquifer	2
2933	Grass Roots Nurseries, Inc.	03/03/00	03/03/20		20.30		Nursery (Misc.)	Floridan Aquifer	2
2944	Williams Grove	01/19/06	11/14/25	1.76	5.76	7.48	Agricultural (Citrus)	Floridan Aquifer	3
2944	Williams Grove	01/19/06	11/14/25		1.72		Freeze protection (Citrus)	Floridan Aquifer	3
2946	C & C Peat Mine	10/11/05	10/11/11		377.00		Dewatering	surficial aquifer	3
2946	C & C Peat Mine	10/11/05	10/11/11	379.19	0.00	377.00	Household	surficial aquifer	3

Table 1-3 4 - Inch Well CUPs Tabulation*

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Permit Amount by Source (mgly)	Total Permitted Amount (mgly)	Water Usage Type	Water Source Official Name	Revision Number
2950	Sand Hill Ferns	05/17/01	05/17/21	8.90	6.70	15.00	Freeze protection (Fern)	Unnamed Pond	2
2950	Sand Hill Ferns	05/17/01	05/17/21		8.30		Nursery (Fern)	Unnamed Pond	2
2955	Bryan Ferns	04/15/03	04/15/23	320.57	4.80	55.02	Agricultural (Citrus)	Floridan Aquifer	6
2955	Bryan Ferns	04/15/03	04/15/23		0.00		Freeze protection (Citrus)	unnamed pond	6
2955	Bryan Ferns	04/15/03	04/15/23		12.04		Freeze protection (Fern)	Floridan Aquifer	6
2955	Bryan Ferns	04/15/03	04/15/23		38.18		Nursery (Fern)	Floridan Aquifer	6
2958	Turnpike Sand Plant	09/12/06	03/08/25		0.00		Commercial and industrial process	Floridan Aquifer	2
2958	Turnpike Sand Plant	09/12/06	03/08/25	0.00	0.16	0.16	Household	Floridan Aquifer	2
2959	Upson Downs	10/12/04	10/12/24	28.55	29.43	165.62	Household	Floridan Aquifer	4
2959	Upson Downs	10/12/04	10/12/24		136.19		Household	Onsite Lake	4
2973	The Lakes of Lady Lake	11/21/05	09/26/15	42.26	12.94	12.94	Household	Floridan Aquifer	5
2974	Sargent Grove	08/27/02	08/27/22	19.07	0.00	24.92	Agricultural (Citrus)	Floridan Aquifer	3
2974	Sargent Grove	08/27/02	08/27/22		24.87		Agricultural (Pasture)	Floridan Aquifer	3
2974	Sargent Grove	08/27/02	08/27/22		0.00		Freeze protection (Citrus)	Floridan Aquifer	3
2974	Sargent Grove	08/27/02	08/27/22		0.05		Livestock	Floridan Aquifer	3
2977	Wilkinson Auction	05/14/02	05/14/22		1.73		Essential	Floridan Aquifer	2
2977	Wilkinson Auction	05/14/02	05/14/22	0.31	Household	Floridan Aquifer	2		
2977	Wilkinson Auction	05/14/02	05/14/22	none reported	1.47	3.51	Urban landscape irrigation	Floridan Aquifer	2
2984	Whitney Baptist Church	09/23/02	09/23/22	2.09	0.72	0.75	Essential	Floridan Aquifer	2
2984	Whitney Baptist Church	09/23/02	09/23/22		0.03		Household	Floridan Aquifer	2
2992	Oak Haven Strawberries	09/22/03	09/22/23	3.64	3.17	4.50	Agricultural (Misc.)	Floridan Aquifer	2
2992	Oak Haven Strawberries	09/22/03	09/22/23		1.33		Freeze protection (Misc.)	Floridan Aquifer	2
3123	Harbor View Elementary	09/03/99	09/03/19	4.73	4.80	6.40	Household	Floridan Aquifer	2
3123	Harbor View Elementary	09/03/99	09/03/19		1.60		Urban landscape irrigation	Floridan Aquifer	2
4483	Givens Farm	11/01/96	11/01/06	0.04	13.84	13.84	Livestock	UNKNOWN (REMOVE)	3
4505	BECSEK GROVE	07/03/96	07/03/06	0.68	0.95	0.95	Urban landscape irrigation	Retention Pond	2
4522	Lester Coggins Trucking Inc	10/23/06	08/03/26	0.72	0.18	3.10	Commercial and industrial process	Floridan Aquifer	2
4522	Lester Coggins Trucking Inc	10/23/06	08/03/26		2.92		Household	Floridan Aquifer	2
4522	Lester Coggins Trucking Inc	10/23/06	08/03/26		0.00		Urban landscape irrigation	Floridan Aquifer	2
4533	Goney's Nursery	06/16/04	06/16/24		4.75		Freeze protection (Misc.)	Floridan Aquifer	4
4533	Goney's Nursery	06/16/04	06/16/24	6.28	14.40	19.15	Nursery (Misc.)	Floridan Aquifer	4
6292	Leesburg Plant	09/07/99	09/07/19	10.12	4.15	16.64	Commercial and industrial process	Floridan Aquifer	4
6292	Leesburg Plant	09/07/99	09/07/19		12.49		Urban landscape irrigation	Floridan Aquifer	4
6398	Clerbrook Resort	03/13/02	03/13/07	30.22	53.40	53.40	Household	Floridan Aquifer	5
10377	Rowe Groves	08/11/00	08/11/20	13.55	31.21	40.51	Agricultural (Citrus)	Floridan Aquifer	6
10377	Rowe Groves	08/11/00	08/11/20		9.30		Freeze protection (Citrus)	Floridan Aquifer	6
10846	Barrington Estates Wells	08/14/06	05/23/22	30.82	17.82	20.70	Household	Floridan Aquifer	6
10846	Barrington Estates Wells	08/14/06	05/23/22		1.04		Urban landscape irrigation	Floridan Aquifer	6
10846	Barrington Estates Wells	08/14/06	05/23/22		1.84		Water utility	Floridan Aquifer	6
11146	Groveland Estates	11/30/01	11/09/18		29.33		Urban landscape irrigation	Floridan Aquifer	4
11146	Groveland Estates	11/30/01	11/09/18	10.55	29.33	29.33	Urban landscape irrigation	Lake Lucy	4
50109	RL Ferns	12/05/97	12/04/12	5.21	10.14	22.52	Freeze protection (Fern)	Lake Yale	5
50109	RL Ferns	12/05/97	12/04/12		12.38		Nursery (Fern)	Floridan Aquifer	5

Table 1-3 4 - Inch Well CUPs Tabulation*

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgly) (2000-2005)	Permit Amount by Source (mgly)	Total Permitted Amount (mgly)	Water Usage Type	Water Source Official Name	Revision Number
50113	SMP Ranch	04/17/01	04/17/11	0.00	28.00	38.50	Agricultural (Citrus)	Floridan Aquifer	4
50113	SMP Ranch	04/17/01	04/17/11		9.30		Freeze protection (Citrus)	Floridan Aquifer	4
50113	SMP Ranch	04/17/01	04/17/11		1.20		Livestock	Floridan Aquifer	4
50115	Pine Island PUD	06/10/03	06/10/08	6.70	0.00	370.95	Household	Pine Lake	12
50115	Pine Island PUD	06/10/03	06/10/08		184.10		Household	Floridan Aquifer	12
50115	Pine Island PUD	06/10/03	06/10/08		186.85		Urban landscape irrigation	Floridan Aquifer	12
50135	Palisades Golf Course	03/12/02	08/11/18	118.10	0.00	0.00	Golf course	Floridan Aquifer	9
50135	Palisades Golf Course	03/12/02	08/11/18		0.00		Golf course	Lake Minneola	9
50135	Palisades Golf Course	03/12/02	08/11/18		0.00		Golf course	Spring Lake	9
50207	Tulley Dura-Rock	10/11/06	10/11/16	28.57	36.79	36.79	Commercial and industrial process	Floridan Aquifer	3
50220	Jon's Nursery	02/10/98	02/10/13	566.66	3.00	215.20	Freeze protection (Fern)	Wholly owned pond	6
50220	Jon's Nursery	02/10/98	02/10/13		2.20		Household	Floridan Aquifer	6
50220	Jon's Nursery	02/10/98	02/10/13		210.00		Nursery (Fern)	Floridan Aquifer	6
50277	Spring Creek Elementary	06/11/98	06/11/08	2.66	0.28	17.54	Agricultural (Misc.)	Floridan Aquifer	2
50277	Spring Creek Elementary	06/11/98	06/11/08		5.00		Household	Floridan Aquifer	2
50277	Spring Creek Elementary	06/11/98	06/11/08		0.26		Livestock	Floridan Aquifer	2
50277	Spring Creek Elementary	06/11/98	06/11/08		12.00		Urban landscape irrigation	Floridan Aquifer	2
50318	Lake Kirkland Nursery	03/07/00	03/07/20		13.04		84.02	156.84	Agricultural (Citrus)
50318	Lake Kirkland Nursery	03/07/00	03/07/20	25.02		Freeze protection (Citrus)	Kirkland Lake		4
50318	Lake Kirkland Nursery	03/07/00	03/07/20	47.80		Nursery (Misc.)	Floridan Aquifer		4
50334	Park At Wolf Branch Oaks	03/14/06	01/19/26	37.05		Household	Floridan Aquifer		2
50334	Park At Wolf Branch Oaks	03/14/06	01/19/26	0.36		Unaccounted-for	Floridan Aquifer		2
50334	Park At Wolf Branch Oaks	03/14/06	01/19/26	11.42	11.97	50.11	Urban landscape irrigation	Floridan Aquifer	2
50334	Park At Wolf Branch Oaks	03/14/06	01/19/26		0.73		Water utility	Floridan Aquifer	2
50720	Astatula Elementary School	01/21/99	01/21/19	1.21	3.12	4.44	Household	Floridan Aquifer	1
50720	Astatula Elementary School	01/21/99	01/21/19		1.32		Urban landscape irrigation	Floridan Aquifer	1
62666	Round Lake Elementary	12/07/99	12/07/19	7.94	0.99	13.65	Household	Floridan Aquifer	1
62666	Round Lake Elementary	12/07/99	12/07/19		12.66		Urban landscape irrigation	Floridan Aquifer	1
64152	CSR Rinker Leesburg	06/20/00	06/20/20	210.44	14.60	14.60	Commercial and industrial process	Floridan Aquifer	1
65277	Reier Enterprises	11/16/00	11/16/20	2.21	0.86	7.78	Essential	Lake Gibson	1
65277	Reier Enterprises	11/16/00	11/16/20		1.90		Freeze protection (Fern)	Lake Gibson	1
65277	Reier Enterprises	11/16/00	11/16/20		5.02		Nursery (Fern)	Lake Gibson	1
81093	East Ridge High School	12/31/01	12/31/06	19.84	82.42	82.42	Urban landscape irrigation	Floridan Aquifer	1
TOTALS				11,895.04	17,633.11				

Data Source: St. Johns River Water Management District; GIS Development; "Consumptive Use Permit Well"; downloaded June 2006;
<ftp://sjr.state.fl.us/disk1/regulatory/cupdata/cupstations.zip>

*CUPs that include at least one 4 - inch well

Table 1-6 Consumptive Use Permits \geq 100,000 gpd Tabulation

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgd) (2000-2005)	Permit Amount by Source (mgd)	Total Permitted Amount (mgd)	Water Usage Type	Water Source Name
88	Flowertree Nursery	6/6/1997	6/6/2007	68.45	87.23	87.23	Nursery (Misc.)	Floridan Aquifer
94	City of Leesburg Public Supply	06/10/03	07/10/04	2,100.07	1,416.20	3,332.70	Commercial/Industrial	Floridan Aquifer
94	City of Leesburg Public Supply	06/10/03	07/10/04		1,847.00		Household	Floridan Aquifer
94	City of Leesburg Public Supply	06/10/03	07/10/04		47.50		Urban landscape irrigation	Floridan Aquifer
94	City of Leesburg Public Supply	06/10/03	07/10/04		22.00		Water utility	Floridan Aquifer
100	Green Valley Country Club	9/16/1997	9/16/2007		129.63		137.22	137.22
271	Laviance	9/6/2006	1/8/2008	49.60	42.13	91.73	Freeze Protection	Floridan Aquifer
271	Laviance	9/6/2006	1/8/2008		49.60		Freeze Protection	Surface
279	Harbor Hills	04/12/05	04/12/07	359.37	151.84	333.82	Golf course	Lake Griffin
279	Harbor Hills	04/12/05	04/12/07		181.98		Household	Floridan Aquifer
282	Water Oak	04/19/05	04/19/10		90.20		Household	Floridan Aquifer
282	Water Oak	04/19/05	04/19/10		1.90		Recreation area	Floridan Aquifer
282	Water Oak	04/19/05	04/19/10		10.60		Unaccounted-for	Floridan Aquifer
282	Water Oak	04/19/05	04/19/10	81.60	2.90	106.24	Urban landscape irrigation	Floridan Aquifer
282	Water Oak	04/19/05	04/19/10		0.64		Water utility	Floridan Aquifer
286	Lake County	11/18/2005	9/3/2007		42.02		69.16	69.16
1665	S. T. BROWN NURSERY	10/9/1998	10/9/2008	none reported	48.79	48.79	Freeze protection (Citrus)	Ground
2387	474 Sand Mine	03/07/06	03/07/26	5,894.84	175.52	10,073.76	Mining	Floridan Aquifer
2387	474 Sand Mine	03/07/06	03/07/26		4,005.54		Mining	Mine Pit
2387	474 Sand Mine	03/07/06	03/07/26		5,890.50		Mining	Mine Pit
2387	474 Sand Mine	03/07/06	03/07/26		0.75		Household	Surficial Aquifer
2387	474 Sand Mine	03/07/06	03/07/26		1.12		Household	Floridan Aquifer
2387	474 Sand Mine	03/07/06	03/07/26		0.34		Urban landscape irrigation	Surficial Aquifer
2391	Florida Rock Industries Inc	03/07/06	11/08/20		10.00		Mining	Floridan Aquifer
2391	Florida Rock Industries Inc	03/07/06	11/08/20	2,828.76	Mining	dredge lake #2		
2391	Florida Rock Industries Inc	03/07/06	11/08/20	3.31	0.30	2,839.06	Household	Floridan Aquifer
2392	Southlake Utilities	01/30/04	01/30/07	377.31	919.80	919.80	Utility Supplied	Floridan Aquifer
2394	Lake Pretty	12/4/2006	8/26/2018	48.73	120.61	120.61	Agricultural (Citrus)	Floridan Aquifer
2416	Oak Springs MHP	7/7/2004	7/7/2024	68.45	2.15	45.76	Commercial/Industrial	Floridan Aquifer
2416	Oak Springs MHP	7/7/2004	7/7/2024		38.83		Household	Floridan Aquifer
2416	Oak Springs MHP	7/7/2004	7/7/2024		4.78		Water utility	Floridan Aquifer
2419	Silver Springs Citrus	05/07/02	05/07/22	161.73	292.00	1,737.40	Commercial/Industrial	Floridan Aquifer
2419	Silver Springs Citrus	05/07/02	05/07/22		1,445.40		Essential	Floridan Aquifer
2433	Green Swamp Groves	04/16/01	04/16/21	24.74	93.62	115.78	Agricultural (Citrus)	Floridan Aquifer
2433	Green Swamp Groves	04/16/01	04/16/21		22.16		Freeze protection (Citrus)	Floridan Aquifer
2436	Ridge Grove	2/18/2003	2/18/2023		14.40		46.73	46.73
2440	Merry Gro Farms	10/11/05	10/11/10	242.94	15.21	198.50	Freeze protection (Misc.)	Floridan Aquifer
2440	Merry Gro Farms	10/11/05	10/11/10		183.29		Nursery (Misc.)	Floridan Aquifer

Table 1-6 Consumptive Use Permits \geq 100,000 gpd Tabulation

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgd) (2000-2005)	Permit Amount by Source (mgd)	Total Permitted Amount (mgd)	Water Usage Type	Water Source Name
2445	Florida Food Products	11/10/1998	11/10/2018	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	09/19/06	08/30/26	97.63	112.40	112.40	Household	Floridan Aquifer
2460	7L Howey-in-the-Hills	2/3/2006	5/19/2018	0.00	14.40	14.40	Agricultural (Citrus)	
2462	Villa City	4/23/2001	4/23/2021	31.22	69.13	69.13	Agricultural (Citrus)	Floridan Aquifer
2464	Citrus World	3/25/2004	2/9/2009	255.69	800	800	Agricultural (Citrus)	Surface
2475	Liner Source Inc	4/16/2002	4/16/2022	41.39	97.76	97.76	Nursery	Ground
2478	City of Clermont	09/10/02	09/10/22		775.26		Utility Supplied	Floridan Aquifer
2478	City of Clermont	09/10/02	09/10/22	1,268.35	1,917.71	2,692.97	Utility Supplied	Floridan Aquifer
2482	City of Fruitland Park	06/13/06	06/13/08	179.40	288.35	288.35	Household	Floridan Aquifer
2484	Links at Village Green	7/1/1999	7/1/2019	115.33	79.50	79.50	Golf course	Lake Diane
2485	Gorgeous Groves	04/15/03	04/15/23		77.77		Agricultural (Citrus)	Floridan Aquifer
2485	Gorgeous Groves	04/15/03	04/15/23		5.30		Agricultural (Pasture)	Floridan Aquifer
2485	Gorgeous Groves	04/15/03	04/15/23	8.57	0.18	83.25	Livestock	Floridan Aquifer
2487	Hlochee WMA - Riddick Trust Grove	04/23/01	04/23/21		93.62		Agricultural (Citrus)	Floridan Aquifer
2487	Hlochee WMA - Riddick Trust Grove	04/23/01	04/23/21	0.00	27.88	121.50	Freeze protection (Citrus)	Floridan Aquifer
2489	Lake Fern Inc	11/9/1998	11/9/2018	40.00	75.4	75.4	Nursery	Ground
2492	MOUNT PLYMOUTH GOLF CLUB	10/27/2000	10/27/2020	78.5 *	95.70	95.70	Golf course	Floridan Aquifer
2502	Holloway Tree	02/24/99	02/24/19	33.21	149.30	149.30	Nursery (Misc.)	Floridan Aquifer
2504	Water Conserv II Reuse Facilities	09/13/05	09/13/15		568.70		Freeze protection (Citrus)	Floridan Aquifer
2504	Water Conserv II Reuse Facilities	09/13/05	09/13/15	119.96	131.40	700.10	Reuse Supplementation	Floridan Aquifer
2527	Central Fla Nursery & Landscaping Inc.	9/23/2002	9/23/2022	47.12	65.64	65.64	Nursery	Ground
2531	Thousand Trails	8/2/2006	8/2/2026	35.81	54.75	54.75	Household	Ground
2537	Gissy Groves	7/25/2003	7/25/2023	15.37	43.61	43.61	Agricultural (Citrus)	Ground
2560	Dye/Cooper Block	3/24/2003	3/24/2023	15.95	53.59	53.59	Agricultural (Citrus)	Ground
2567	Loma Linda Corp	11/30/01	11/30/21		29.60		Agricultural (Citrus)	Floridan Aquifer
2567	Loma Linda Corp	11/30/01	11/30/21		72.02		Agricultural (Citrus)	Floridan Aquifer
2567	Loma Linda Corp	11/30/01	11/30/21		16.18		Agricultural (Misc.)	Floridan Aquifer
2567	Loma Linda Corp	11/30/01	11/30/21		3.43		Freeze protection (Citrus)	Floridan Aquifer
2567	Loma Linda Corp	11/30/01	11/30/21		7.15		Freeze protection (Citrus)	Floridan Aquifer
2567	Loma Linda Corp	11/30/01	11/30/21	61.80	1.50	129.88	Livestock	Floridan Aquifer
2571	Howey Block	5/31/2001	5/31/2021	29.00	59.19	59.19	Agricultural (Citrus)	Ground
2574	Hygrade Timber	8/1/2003	7/3/2006		46.00	46.00	Commercial/Industrial	Surface
2576	Location-3-40	4/23/1999	4/23/2019	24.37	37.38	37.38	Agricultural (Citrus)	Surface
2581	Marian Gardens	09/07/04	09/07/24	715.64	1,215.00	1,215.00	Nursery (Misc.)	Floridan Aquifer
2623	JOHN BECK	3/18/1997	3/18/2012	13.41	36.97	36.97	Agricultural (Citrus)	Ground
2629	Monarch Golf Club at Royal Highlands	12/16/02	07/24/06	644.71	106.71	106.71	Golf course	Floridan Aquifer
2631	Lust Farms	12/29/2005	6/13/2015	0.00	145.19	145.19	Nursery	Ground

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CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgd) (2000-2005)	Permit Amount by Source (mgd)	Total Permitted Amount (mgd)	Water Usage Type	Water Source Name
2632	Aqua Utilities Florida - Valencia Terr	11/30/2006	8/11/2020	28.32	41.08	41.08	Household	Ground
2634	City of Eustis	3/13/2007	3/13/2012	1021.90	33.81	1,387.11	Urban landscape irrigation	Ground
2634	City of Eustis	3/13/2007	3/13/2012		1,353.30		Household	Ground
2640	Tuscanooga Lakes LLC	10/31/2005	11/16/2021	1.06	37.05	37.05	Agricultural (Citrus/Freeze Protection, Pasture)	Ground
2644	Silver Lakes/Western Shores	05/09/06	05/09/11	288.58	251.08	251.08	Utility Supplied	Floridan Aquifer
2646	Umatilla Municipal Water System	09/11/01	02/13/06	142.53	193.82	193.82	Household	Floridan Aquifer
2651	Serenby	12/21/2006	8/27/2022	2.96	72	72	Agricultural (Citrus/Freeze Protection, Nursery)	Ground
2653	Maguire 455	8/13/2001	8/13/2021	39.67	87.23	87.23	Agricultural (Citrus)	Ground
2655	Moon Lake	9/2/1998	9/2/2008	11.01	38.63	38.63		Surface
2662	Las Colinas	04/11/00	04/10/20	162.42 *	80.20	264.00	Golf course	Floridan Aquifer
2662	Las Colinas	04/11/00	04/10/20		154.40		Golf course	Lake #4
2662	Las Colinas	04/11/00	04/10/20		29.40		Household	Floridan Aquifer
2664	Coleman Cline	10/12/01	10/12/21	41.48	125.78	163.25	Agricultural (Citrus)	Lake Harris
2664	Coleman Cline	10/12/01	10/12/21		37.47		Freeze protection (Citrus)	Floridan Aquifer
2665	Drake Point	7/17/2001	7/17/2021	16.33	43.62	43.62	Agricultural (Citrus)	Surface
2670	L & E Grove	9/20/2004	9/20/2024	2.35	41.03	41.03	Agricultural (Citrus)	Ground
2671	Town of Montverde	2/8/2007	2/8/2009	125.25	127.91	127.91	Household	Ground
2672	Parker	6/15/2005	3/24/2025	0.52	76.15	76.15	Agricultural (Citrus)	Ground
2678	Oak Grove Fernery	11/16/2001	11/16/2021	0.00	37.0	37.0	Agricultural (Citrus)	Ground
2700	Lake Utility Services Inc.	04/11/06	04/12/11	604.67	73.00	1,378.24	Commercial/Industrial	Floridan Aquifer
2700	Lake Utility Services Inc.	04/11/06	04/12/11		1,112.89		Household	Floridan Aquifer
2700	Lake Utility Services Inc.	04/11/06	04/12/11		53.66		Urban landscape irrigation	Floridan Aquifer
2700	Lake Utility Services Inc.	04/11/06	04/12/11		138.70		Water utility	Floridan Aquifer
2701	Kings Cove Subdivision	4/21/2006	4/21/2026		29.10		49.75	49.75
2704	Greenacres Fernery & Citrus	7/18/2001	7/18/2021	48.19	37.49	37.49	Agricultural (Citrus/Nursery)	Ground
2714	Sunset Hill Groves Partnership	9/23/2002	9/23/2022	33.63	48.6	48.6	Agricultural	Ground
2716	Benjamin O Benham	6/22/2004	3/24/2008	10.93	74.3	74.3	Agricultural (sod)	Ground
2717	Pennbrooke Utilities Inc	09/14/05	09/14/25	101.76	7.67	165.72	Commercial/Industrial	Floridan Aquifer
2717	Pennbrooke Utilities Inc	09/14/05	09/14/25		136.15		Household	Floridan Aquifer
2717	Pennbrooke Utilities Inc	09/14/05	09/14/25		10.95		Urban landscape irrigation	Floridan Aquifer
2717	Pennbrooke Utilities Inc	09/14/05	09/14/25		10.95		Water utility	Floridan Aquifer
2718	Plantation at Leesburg	04/08/03	08/13/22		8.60		Commercial/Industrial	Floridan Aquifer
2718	Plantation at Leesburg	04/08/03	08/13/22		383.04		Household	Floridan Aquifer

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2718	Plantation at Leesburg	04/08/03	08/13/22	71.93	31.54	573.41	Unaccounted-for	Floridan Aquifer
2718	Plantation at Leesburg	04/08/03	08/13/22		131.88		Urban landscape irrigation	Floridan Aquifer
2718	Plantation at Leesburg	04/08/03	08/13/22		18.35		Water utility	Floridan Aquifer
2728	Record Buck Farms	6/4/2002	11/30/2021	24.49	87.12	87.12	Nursery	Ground
2729	Silver Lake Golf Course	6/6/2006	5/15/2011	62.86 *	59.73	59.73	Golf course	Ground
2742	Wekiva Falls Resort @ Mastodon Springs	5/12/2004	5/12/2024	none reported	36.5	36.5	Commercial/Industrial, household, recreational area, urban landscape irrigation, and fire protection.	Ground
2754	Pine Ridge Dairy Inc	11/16/2000	11/16/2020	289.54	69.54	69.54	Agricultural (livestock/pasture)	Ground
2757	Malibu Ferns	5/17/2001	5/17/2021	117.34	43.1	43.1	Nursery	Ground
2763	Senninger Irrigation	06/28/02	06/28/22	43.45	47.39	122.66	Commercial/Industrial	Floridan Aquifer
2763	Senninger Irrigation	06/28/02	06/28/22		72.84		Commercial/Industrial	Floridan Aquifer
2763	Senninger Irrigation	06/28/02	06/28/22		2.16		Essential	Floridan Aquifer
2763	Senninger Irrigation	06/28/02	06/28/22		0.27		Household	Floridan Aquifer
2765	City of Tavares Public Water Supply	02/08/05	10/07/10		193.88		Commercial/Industrial	Floridan Aquifer
2765	City of Tavares Public Water Supply	02/08/05	10/07/10	753.98	Household	Floridan Aquifer		
2765	City of Tavares Public Water Supply	02/08/05	10/07/10	75.40	Unaccounted-for	Floridan Aquifer		
2765	City of Tavares Public Water Supply	02/08/05	10/07/10	32.31	Urban landscape irrigation	Floridan Aquifer		
2765	City of Tavares Public Water Supply	02/08/05	10/07/10	641.90	21.54	1,077.11	Water utility	Floridan Aquifer
2771	Lakeview Terrace	12/8/2005	2/14/2020	14.33	41.2	41.2	Household	Ground
2780	Clermont East Sand Mine	10/09/01	10/09/21	1,011.81	725.00	2,397.00	Mining	Floridan Aquifer
2780	Clermont East Sand Mine	10/09/01	10/09/21		1,672.00		Mining	Mine Lake
2791	Eagles Landing	11/18/2005	2/8/2022	107.28	93.46	93.46	Agricultural (Citrus)	Ground
2793	Crothall Laundry Services	4/29/2004	7/25/2023	25.72	40.52	40.52	Industrial, Potable and Irrigation	Ground
2798	Pine Lakes	09/08/87	09/08/94	408.64	48.20	107.00	Freeze protection (Fern)	Floridan Aquifer
2798	Pine Lakes	09/08/87	09/08/94		58.80		Nursery (Fern)	Floridan Aquifer
2810	Lake Griffin Isles	4/15/2003	4/15/2008	34.84	48.59	48.59	Public supply	Ground
2826	Twin Lakes	3/4/2003	3/4/2023	30.15	81.01	81.01	Agricultural (Citrus)	Ground
2827	Crosland Britt	05/11/04	05/11/24	190.37	78.00	228.84	Nursery (Misc.)	Retention Ponds
2827	Crosland Britt	05/11/04	05/11/24		150.84		Nursery (Misc.)	Floridan Aquifer
2834	Lake County Resource Recovery	09/19/03	09/19/23	100.84	125.00	125.00	Commercial/Industrial	Floridan Aquifer
2840	Woodland Heritage M.H.P.	4/28/2004	7/10/2023	19.90	2.66	35.89	Water utility	Ground
2840	Woodland Heritage M.H.P.	4/28/2004	7/10/2023		33.23		Household	Ground
2843	Crescendo Management Inc	7/26/2006	3/8/2009		11.19		90.5	90.5

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2849	Clermont West Sand Mine	09/10/02	09/10/05	508.34	1,030.00	1,030.00	Dewatering	Perimeter Ditch
2850	Beck Grove	6/23/2004	6/23/2024	18.33	59.19	59.19	Agricultural (Citrus)	Ground
2852	Stone Mountain Nursery	3/6/2003	3/6/2023	37.31	81.62	81.62	Nursery	Ground
2860	Hawthorne at Leesburg	06/13/06	07/25/07	470.37	2.10	188.10	Commercial/Industrial	Floridan Aquifer
2860	Hawthorne at Leesburg	06/13/06	07/25/07		20.00		Commercial/Industrial	unnamed lake
2860	Hawthorne at Leesburg	06/13/06	07/25/07		124.70		Household	Floridan Aquifer
2860	Hawthorne at Leesburg	06/13/06	07/25/07		24.00		Recreation area	Floridan Aquifer
2860	Hawthorne at Leesburg	06/13/06	07/25/07		14.60		Urban landscape irrigation	Floridan Aquifer
2860	Hawthorne at Leesburg	06/13/06	07/25/07		2.70		Water utility	Floridan Aquifer
2886	City of Minneola - Public Supply	09/22/05	02/09/10	388.77	916.15	916.15	Household	Floridan Aquifer
2888	Mid Florida Lakes	10/10/03	10/10/08	106.41	10.95	157.32	Commercial/Industrial	Floridan Aquifer
2888	Mid Florida Lakes	10/10/03	10/10/08		131.40		Household	Floridan Aquifer
2888	Mid Florida Lakes	10/10/03	10/10/08		0.37		Unaccounted-for	Floridan Aquifer
2888	Mid Florida Lakes	10/10/03	10/10/08		7.30		Urban landscape irrigation	Floridan Aquifer
2888	Mid Florida Lakes	10/10/03	10/10/08		7.30		Water utility	Floridan Aquifer
2898	Lake Correctional Institution	11/16/2000	11/16/2020		68.45		2.69	66.51
2898	Lake Correctional Institution	11/16/2000	11/16/2020	2.50		Urban landscape irrigation	Ground	
2898	Lake Correctional Institution	11/16/2000	11/16/2020	61.32		Household	Ground	
2921	Good Earth	10/05/00	10/05/20	4.64	47.30	105.10	Freeze protection (Fern)	Floridan Aquifer
2921	Good Earth	10/05/00	10/05/20		57.80		Nursery (Fern)	Floridan Aquifer
2923	Dura-Stress Inc.	5/31/2001	5/31/2021	25.50	85.07	85.07	Commercial/industrial, household and urban landscape irrigation	Ground
2930	Fakih Grove	8/11/2000	8/11/2020	105.25	49.85	49.85	Agricultural (Citrus)	Ground
2939	Tuscanooga Lakes LLC	10/31/2005	11/16/2020	13.45	57.61	57.61	Agricultural (Citrus)	Ground
2941	Dockery Farms	11/15/00	11/15/20	5.60	4.80	102.20	Agricultural (Citrus)	Floridan Aquifer
2941	Dockery Farms	11/15/00	11/15/20		95.09		Agricultural (Pasture)	Floridan Aquifer
2941	Dockery Farms	11/15/00	11/15/20		1.43		Freeze protection (Citrus)	Floridan Aquifer
2941	Dockery Farms	11/15/00	11/15/20		0.88		Livestock	Floridan Aquifer
2955	Bryan Ferns	4/15/2003	4/15/2023	322.85	55.02	55.02	Nursery (Fern)	Ground
2958	Turnpike Sand Plant	9/12/2006	3/8/2025	0.00	105.95	3439.61	Commercial/Industrial	Ground
2958	Turnpike Sand Plant	9/12/2006	3/8/2025		3333.66		Commercial/Industrial	Surface
2959	Upson Downs	10/12/04	10/12/24	28.55	29.43	165.62	Household	Floridan Aquifer
2959	Upson Downs	10/12/04	10/12/24		136.19		Household	Onsite Lake
2978	IGOU	6/25/2002	6/25/2022		19.75		46.73	46.73
2983	Blackbear Golf Course	12/16/98	12/16/18	53.91	150.00	150.00	Golf course	Blackbear Lale
2991	Kings Ridge	5/8/2007	5/8/2027		261.78		Golf course	Surface

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2991	Kings Ridge	5/8/2007	5/8/2027	886.05	260.84	522.62	Urban landscape irrigation	Ground
3312	Long and Scott Farm	1/12/1999	1/12/2019	858.20	50.00	50.00	Agricultural (Citrus)	Surface
3312	Long and Scott Farm	1/12/1999	1/12/2019		1869.37	1919.37	Household	Ground
4486	Crabb Grove	6/6/2006	5/31/2026	4.54	49.85	49.85	Agricultural (Citrus)	Ground
4501	Banyan Construction	11/21/2005	9/20/2006	0.55	155.74	155.74	Agricultural (Citrus)	Ground
4517	OSGOOD GROVE	7/29/1996	7/29/2011	3.80	47.00	47.00	Agricultural (Citrus)	Ground
4535	Mt Dora Golf Assoc	9/14/2006	4/26/2025	9.06 *	40.00	40.00	Golf course	Surface
4536	Taylor Home Grove	11/1/1996	11/1/2006	7.38	36.74	36.74	Agricultural (Citrus/pasture/landscape/livestock)	Ground
4542	Journey Circle M Ranch	4/4/2007	4/4/2027	12.79	83.63	83.63	Agricultural (Citrus)	Ground
5709	Silver Springs Citrus	02/24/04	02/24/07	56.54	136.00	136.00	Commercial/Industrial	Floridan Aquifer
5965	Groveland Inc.	01/18/00	01/18/20	0.00	21.94	194.68	Agricultural (Citrus)	Conserv 2
5965	Groveland Inc.	01/18/00	01/18/20		127.24		Agricultural (Citrus)	Conserv 2
5965	Groveland Inc.	01/18/00	01/18/20		7.60		Freeze protection (Citrus)	Conserv 2
5965	Groveland Inc.	01/18/00	01/18/20		37.90		Freeze protection (Citrus)	Conserv 2
6207	Cutrale Citrus Juices USA, Inc.	11/11/03	11/11/23		224.47		475.00	475.00
6254	Southern Lake Co Acreage	09/10/96	09/10/06	0.00	240.07	325.87	Agricultural (Citrus)	CONSERV II
6254	Southern Lake Co Acreage	09/10/96	09/10/06		85.80		Freeze protection (Citrus)	Floridan Aquifer
6398	Clerbrook Resort	3/13/2002	3/13/2007	40.51	42.3	53.4	Golf course	Surface
6398	Clerbrook Resort	3/13/2002	3/13/2007		53.4		Household	Ground
6455	Pine Meadows Golf Course	12/2/1998	12/2/2018		43.81 *		91.6	91.6
6543	Morgan Lanier	2/24/1999	2/24/2019	25.67	43.1	43.1	Nursery (Fern)/freeze protection	Surface
10377	Rowe Groves	8/11/2000	8/11/2020	13.55	40.51	40.51	Irrigation/Freeze Protection (Citrus)	Ground
10846	Barrington Estates Wells	8/14/2006	8/14/2011	30.82	32.72	37.96	Household	Ground
10846	Barrington Estates Wells	8/14/2006	8/14/2011		1.90		Urban landscape irrigation	Ground
10846	Barrington Estates Wells	8/14/2006	8/14/2011		3.34		Water utility	Ground
50048	Country Club of Mount Dora	12/01/06	11/01/11		139.20		134.23	134.23
50049	Town of Lady Lake	07/11/06	07/11/26	167.31	250.78	250.78	Household	Floridan Aquifer
50081	Chris Blanton	09/25/98	09/25/03	2.19	109.70	147.70	Agricultural (Citrus)	Floridan Aquifer
50081	Chris Blanton	09/25/98	09/25/03		38.00		Freeze protection (Citrus)	Floridan Aquifer
50113	Jeff Boykin	12/1/2006	4/17/2011	0.00	38.5	38.5	Agricultural (Citrus/livestock)	Ground
50115	Pine Island PUD	06/10/03	06/10/08	6.70	184.10	370.95	Household	Floridan Aquifer
50115	Pine Island PUD	06/10/03	06/10/08		186.85		Urban landscape irrigation	Floridan Aquifer
50128	Bartlett Groves	6/11/1998	6/11/2018	3.22	68.53	68.53	Agricultural (Citrus)	Ground

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50145	Groveland Grove	8/10/2004	8/10/2024	7.89	52.97	52.97	Agricultural (Citrus)	Ground
50147	City of Mount Dora	12/13/05	12/13/25	947.34	116.22	1,291.37	Commercial/Industrial	Floridan Aquifer
50147	City of Mount Dora	12/13/05	12/13/25		1,007.27		Household	Floridan Aquifer
50147	City of Mount Dora	12/13/05	12/13/25		38.74		Unaccounted-for	Floridan Aquifer
50147	City of Mount Dora	12/13/05	12/13/25		129.14		Urban landscape irrigation	Floridan Aquifer
50152	Wedgewood Homeowners Ass., Inc	8/29/2003	8/29/2023		56.11		66.806	66.806
50159	Hi Acres Nursery	06/06/06	03/31/26	13.19	116.00	116.00	Nursery (Misc.)	Floridan Aquifer
50176	WFR Lake Jem	12/30/1997	2/29/2012	13.58	38.6	38.6	Nursery (Misc.)	Ground
50178	Astor-Astor Park Water Assoc.	05/07/98	05/07/13	108.05	133.50	133.50	Household	Floridan Aquifer
50183	Park Place	8/10/2004	8/12/2018	100.67	67.8	67.8	Irrigation	Ground
50186	Swiss Fairways	7/17/2002	6/7/2009	85.63	52.4	52.4	Golf course	Ground
50186	Swiss Fairways	7/17/2002	6/7/2009		85.19	85.19	Golf course	Surface
50207	Tulley Dura-Rock	10/11/2006	10/11/2016	28.57	61.32	61.32	Commercial/Industrial	Ground
50214	McKinnon Groves	3/13/1998	3/13/2018	3.33	39.08	39.08	Agricultural (Citrus)	Ground
50214	McKinnon Groves	3/13/1998	3/13/2018		73.87	73.87	Agricultural (Citrus)	Surface
50220	Jon's Nursery	02/10/98	02/10/13	566.66	3.00	215.20	Freeze protection (Fern)	Wholly owned pond
50220	Jon's Nursery	02/10/98	02/10/13		2.20		Household	Floridan Aquifer
50220	Jon's Nursery	02/10/98	02/10/13		210.00		Nursery (Fern)	Floridan Aquifer
50226	Simpson Fruit Co.	2/17/1998	2/17/2008		210.59		157.44	157.44
50238	Robert Hart	9/24/1998	9/24/2018	20.50	37.54	37.54	Agricultural (Citrus)	Ground
50239	Lake Trimbey Groves	5/13/1998	5/13/2018	5.47	67.96	67.96	Nursery (Misc.)	Ground
50243	Hickory Point	6/7/1999	6/7/2019	315.29	62.00	62.00	Recreation area	Surface
50273	Lake Hermosa Village	5/4/2005	2/22/2021	26.35	66.05	66.05	Agricultural (Citrus)	Ground
50279	Village Center Community Development District	07/12/05	07/12/25	3,047.10	169.00	1,755.65	Commercial/Industrial	Floridan Aquifer
50279	Village Center Community Development District	07/12/05	07/12/25		1,281.88		Household	Floridan Aquifer
50279	Village Center Community Development District	07/12/05	07/12/25		158.78		Unaccounted-for	Floridan Aquifer
50279	Village Center Community Development District	07/12/05	07/12/25		137.97		Urban landscape irrigation	Floridan Aquifer
50279	Village Center Community Development District	07/12/05	07/12/25		8.03		Water utility	Floridan Aquifer
50280	VLS Irrigation	08/09/05	06/13/20		1,702.32		66.93	315.23
50280	VLS Irrigation	08/09/05	06/13/20	115.00		Golf course	VCCDD WWTP	
50280	VLS Irrigation	08/09/05	06/13/20	133.30		Golf course	Floridan Aquifer	
50291	Home Grove	6/6/1998	6/6/2018	21.98	43.6	43.6	Agricultural (Citrus)	Ground
50318	Lake Kirkland Nursery	03/07/00	03/07/20		84.02		Agricultural (Citrus)	Floridan Aquifer

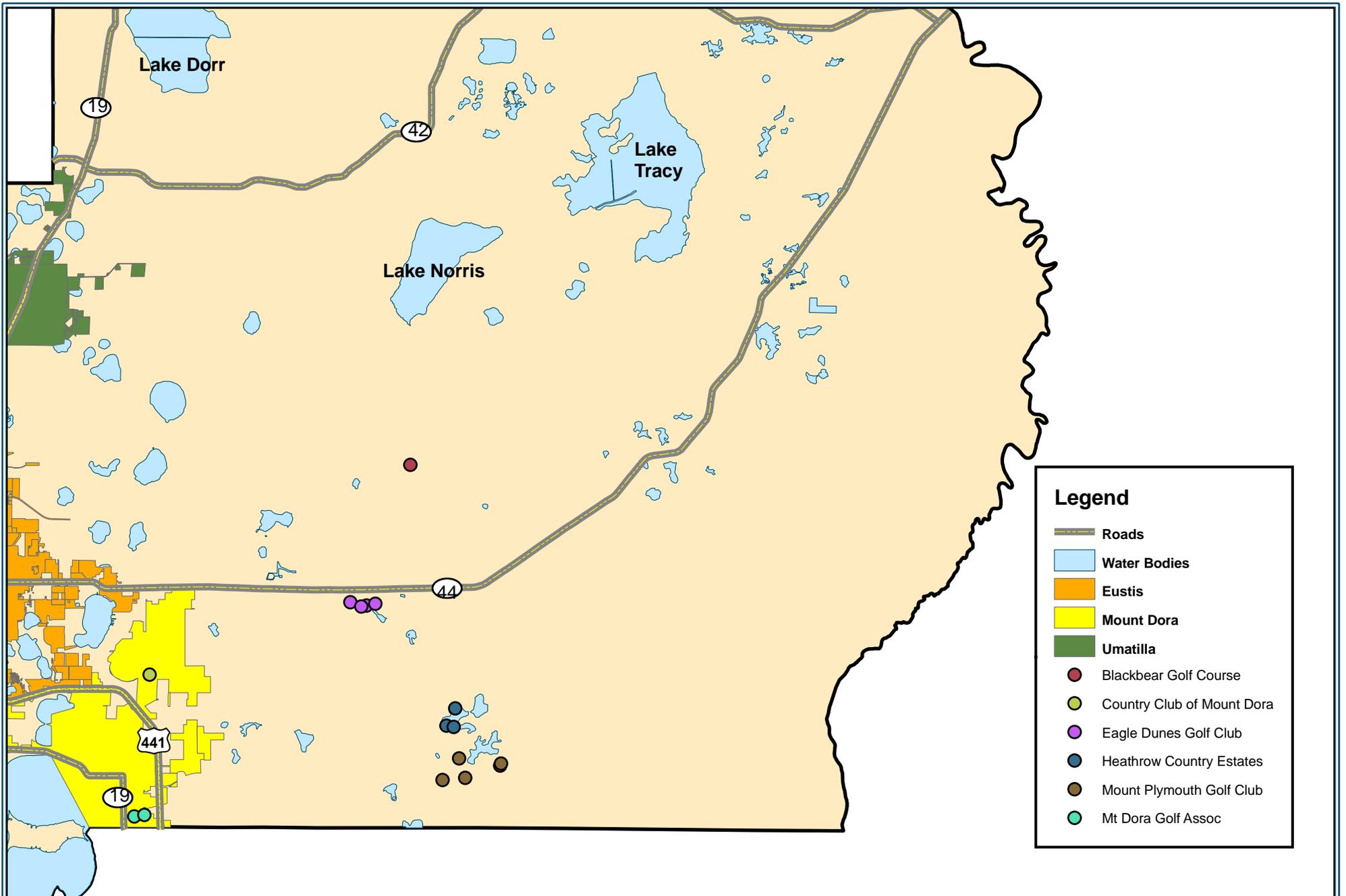
Table 1-6 Consumptive Use Permits \geq 100,000 gpd Tabulation

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgd) (2000-2005)	Permit Amount by Source (mgd)	Total Permitted Amount (mgd)	Water Usage Type	Water Source Name
50318	Lake Kirkland Nursery	03/07/00	03/07/20	13.04	25.02	195.95	Freeze protection (Citrus)	Kirkland Lake
50318	Lake Kirkland Nursery	03/07/00	03/07/20		39.11		Nursery (Misc.)	unnamed canal
50318	Lake Kirkland Nursery	03/07/00	03/07/20		47.80		Nursery (Misc.)	Floridan Aquifer
50334	Park At Wolf Branch Oaks	3/14/2006	1/19/2026	11.42	50.11	50.11	Public Supply/Irrigation	Ground
50598	Alan Bradley	9/24/1998	9/24/2018	0.00	48.33	48.33	Agricultural (Pasture/livestock)	Ground
50736	O'Brien 1-6	09/12/00	09/12/20	44.55	146.42	190.16	Agricultural (Citrus)	Floridan Aquifer
50736	O'Brien 1-6	09/12/00	09/12/20		2.93		Essential	Floridan Aquifer
50736	O'Brien 1-6	09/12/00	09/12/20		34.90		Freeze protection (Citrus)	Floridan Aquifer
50736	O'Brien 1-6	09/12/00	09/12/20		5.91		Urban landscape irrigation	Floridan Aquifer
50807	Diamond Club	07/07/04	07/07/09	131.23 *	134.00	134.00	Golf course	Floridan Aquifer
62724	Fairways at Mt. Plymouth	10/4/2005	4/28/2010	18.17	37.86	37.86	Household	Ground
63398	Hudson Tree Farm	1/18/2000	1/18/2020	6.06	56.58	56.58	Nursery (Misc.)	Ground
64455	The Legends	03/12/02	01/08/05	531.37	170.41	329.08	Golf course	Pond
64455	The Legends	03/12/02	01/08/05		158.67		Urban landscape irrigation	Pond
65573	Hurley Peat Mine	04/11/06	11/16/20	38.21	84.00	760.00	Agricultural (Sod)	Apopka/Beauclair
65573	Hurley Peat Mine	04/11/06	11/16/20		676.00		Mining Dewatering	Ground
66695	Hancock Park	10/23/2000	10/23/2020	24.64	42.744	42.744	Urban landscape irrigation	Ground
81093	East Ridge High School	12/31/2001	12/31/2006	19.84	82.42	82.42	Landscape/Recreation irrigation	Ground
81906	Heathrow Country Estates	08/13/03	08/13/23	160.99	15.30	154.68	Golf course	Lake 3
81906	Heathrow Country Estates	08/13/03	08/13/23		139.38		Golf course	Reclaimed
83231	Eagle Dunes Golf Club	06/10/04	06/28/22		0.76		Commercial/Industrial	Floridan Aquifer
83231	Eagle Dunes Golf Club	06/10/04	06/28/22	172.86	2.30	115.86	Essential	City of Eustis Reclaimed Water System
83231	Eagle Dunes Golf Club	06/10/04	06/28/22		112.80		Golf course	City of Eustis Reclaimed Water System
85182	Far Reach Ranch	12/18/2003	12/18/2023	7.19	71.54	71.54	Agricultural - blueberries	Surface
85195	Heathrow Country Estates	07/02/03	07/02/09	10.85	100.38	100.38	Household	Floridan Aquifer
86742	Hyponex Peat Mine	07/12/05	04/08/09	158.75	363.82	363.82	Mining Dewatering and Processing	Schoolhouse Pond
87418	Sleepy Hollow Recreation Facility	5/12/2003	3/24/2023	36.11	44.00	44.00	Irrigation (Recreational Turf)	Ground
88103	Pennbrooke Fairways	2/18/2005	11/17/2010	50.03	65.7	65.7	Golf course	Surface
91867	DOT Clay LLC	06/07/05	06/08/12	none reported	936.00	936.00	Commercial/Industrial	Ditch Pond
93176	Lake Cogen	03/08/05	03/08/25	142.30	400.00	400.00	Commercial/Industrial	Floridan Aquifer
94701	Sugarloaf Mountain Development - Irrigation	12/13/05	12/13/25	none reported	29.73	29.73	Golf course	Floridan Aquifer

Table 1-6 Consumptive Use Permits \geq 100,000 gpd Tabulation

CUP #	CUP Name	Issue Date	Expiration Date	Avg. Actual Pumpage (mgd) (2000-2005)	Permit Amount by Source (mgd)	Total Permitted Amount (mgd)	Water Usage Type	Water Source Name
95654	Water Oaks Golf Course	4/19/2005	4/19/2010	79.70	52.00	52.00	Golf course	Ground
100086	Clearwater Reserve	10/23/2006	8/29/2026	none reported	58.72	58.72	Urban landscape irrigation	Ground
102732	Lakes of Mount Dora	06/06/06	05/22/08	none reported	175.96	175.96	Urban landscape irrigation	Man-made Lakes
103264	Youth Camp Peat Mine	2/13/2007	2/13/2017	none reported	998.4	998.4	Mining Dewatering	Surface
104559	Plantation Residents Golf Club Inc	3/27/2006	8/13/2022	258.04	89.63	89.63	Golf course	Ground
104559	Plantation Residents Golf Club Inc	3/27/2006	8/13/2022		89.63	89.63	Golf course	Surface
104559	Plantation Residents Golf Club Inc	3/27/2006	8/13/2022		89.65	89.65	Golf course	Surficial
105467	Cascades at Groveland	1/25/2007	1/30/2010	none reported	82.00	82.00	Urban landscape irrigation	Ground
TOTALS				33,039.65	60,724.78			

* Average values based on less than 6 year record



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Figure 1-2 Northeastern Lake County Golf Course Consumptive Use Permits

ORIGINAL DATE: 05-04-07

REVISION DATE: none

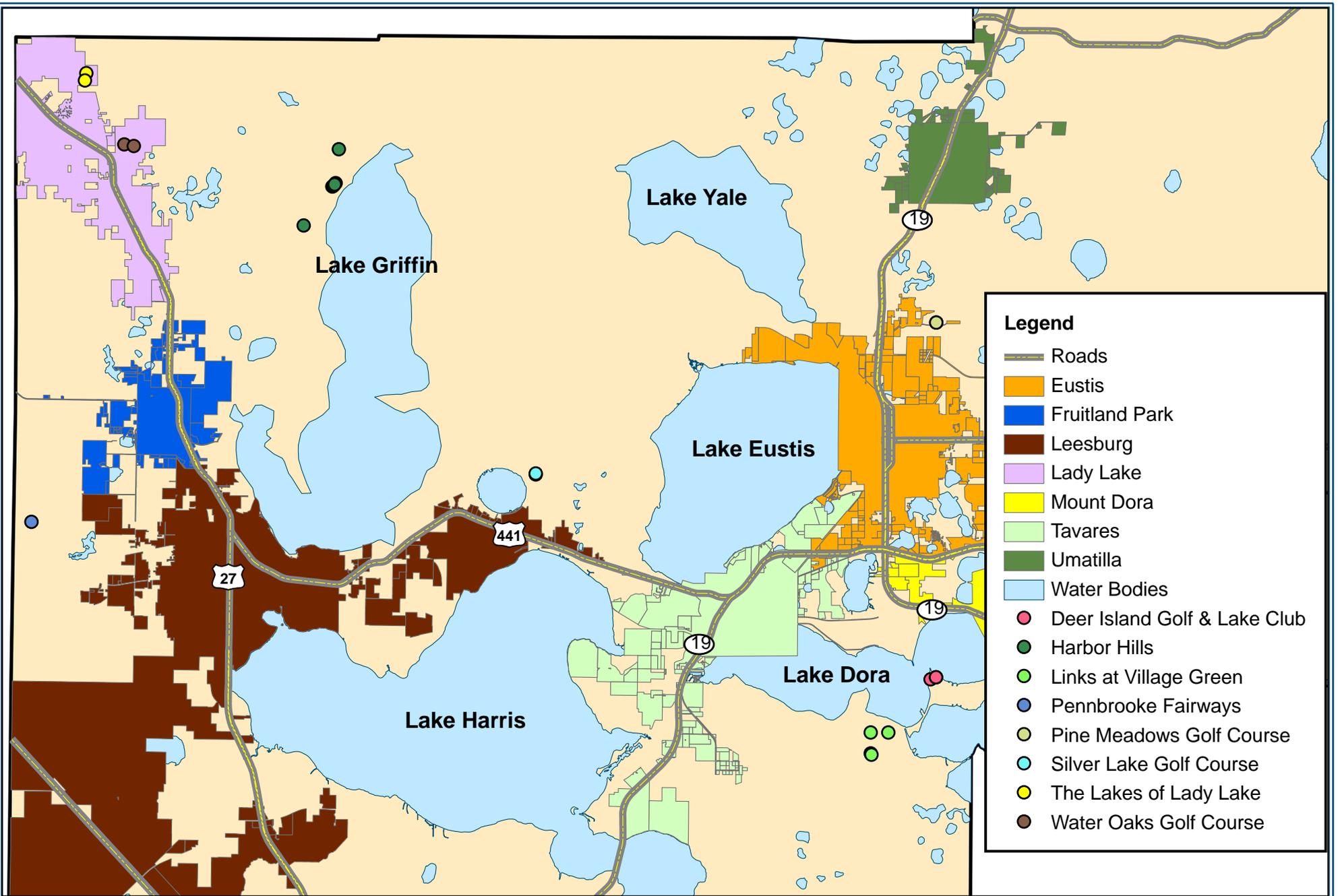
JOB NUMBER: 0407

FILE NAME: 0407_Golf Course CUPs...

GIS OPERATOR: DR



1 Inch = 2.5 Miles



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Figure 1-3 Northern Lake County Golf Course Consumptive Use Permits

ORIGINAL DATE: 05-04-07

REVISION DATE: none

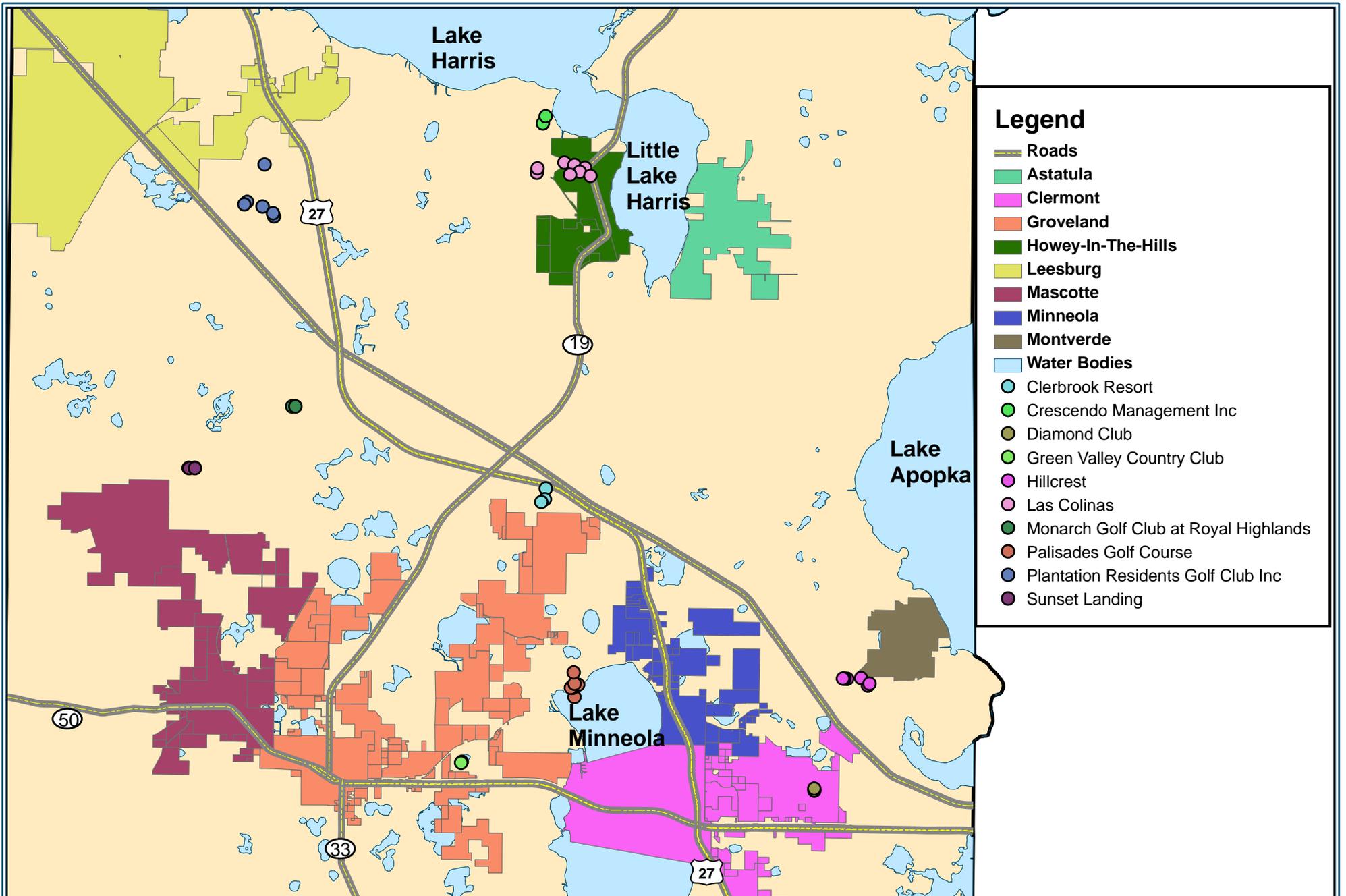
JOB NUMBER: 0407

FILE NAME: 0407_Gof Course Cups...

GIS OPERATOR: DR



1 Inch = 2.5 Miles



Legend

- Roads
- Astatula
- Clermont
- Groveland
- Howey-In-The-Hills
- Leesburg
- Mascotte
- Minneola
- Montverde
- Water Bodies
- Clerbrook Resort
- Crescendo Management Inc
- Diamond Club
- Green Valley Country Club
- Hillcrest
- Las Colinas
- Monarch Golf Club at Royal Highlands
- Palisades Golf Course
- Plantation Residents Golf Club Inc
- Sunset Landing



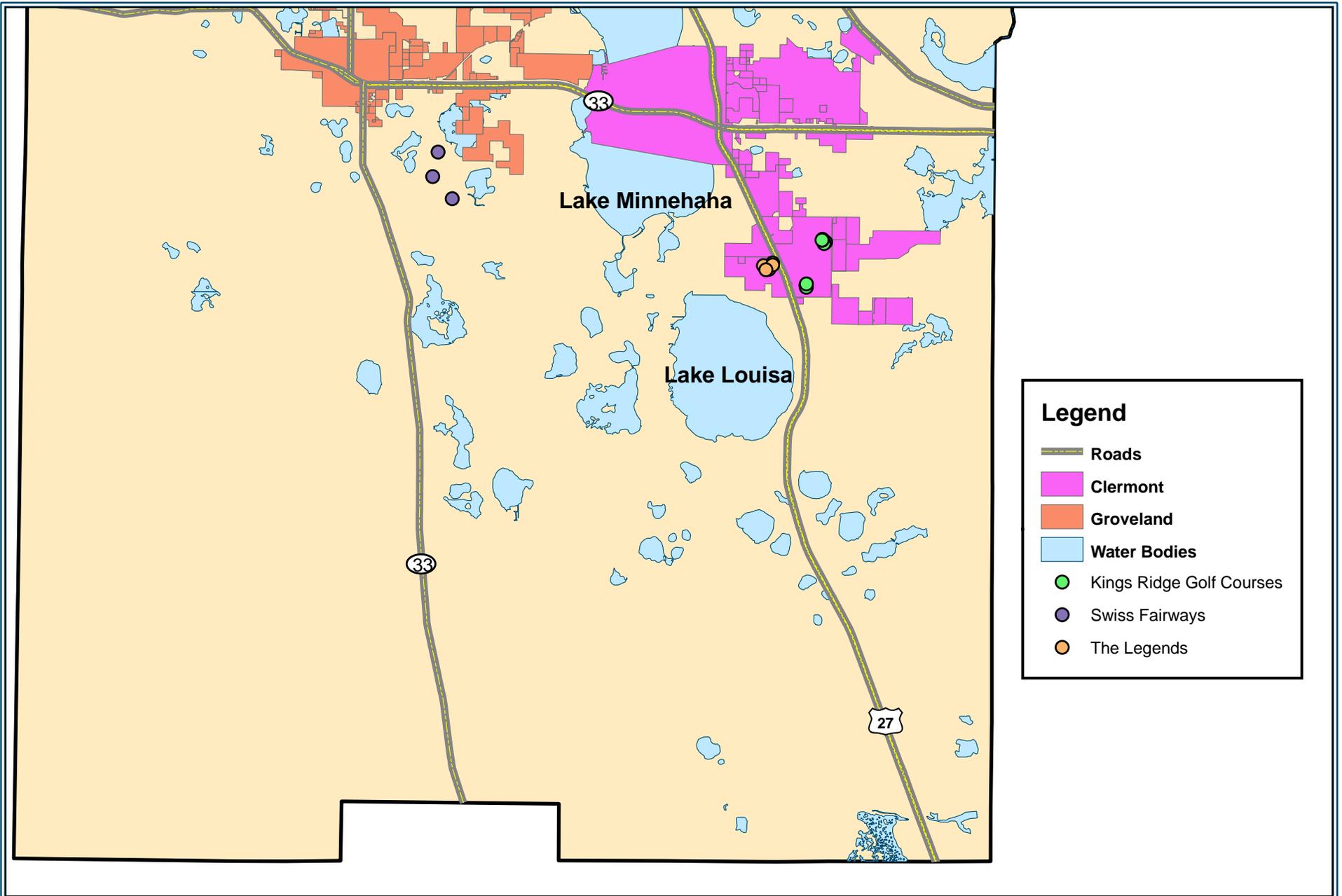
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Figure 1-4
Central Lake County
Golf Course Consumptive Use Permits

ORIGINAL DATE: 05-04-07
 REVISION DATE: none
 JOB NUMBER: 0407
 FILE NAME: 0404_Golf Course CUPs...
 GIS OPERATOR: DR

1 Inch = 2.5 Miles



Legend

-  Roads
-  Clermont
-  Groveland
-  Water Bodies
-  Kings Ridge Golf Courses
-  Swiss Fairways
-  The Legends



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Figure 1-5
Southern Lake County
Golf Course Consumptive Use Permits

ORIGINAL DATE: 05-04-07

REVISION DATE: none

JOB NUMBER: 0407

FILE NAME: 0407_Golf Course CUPs...

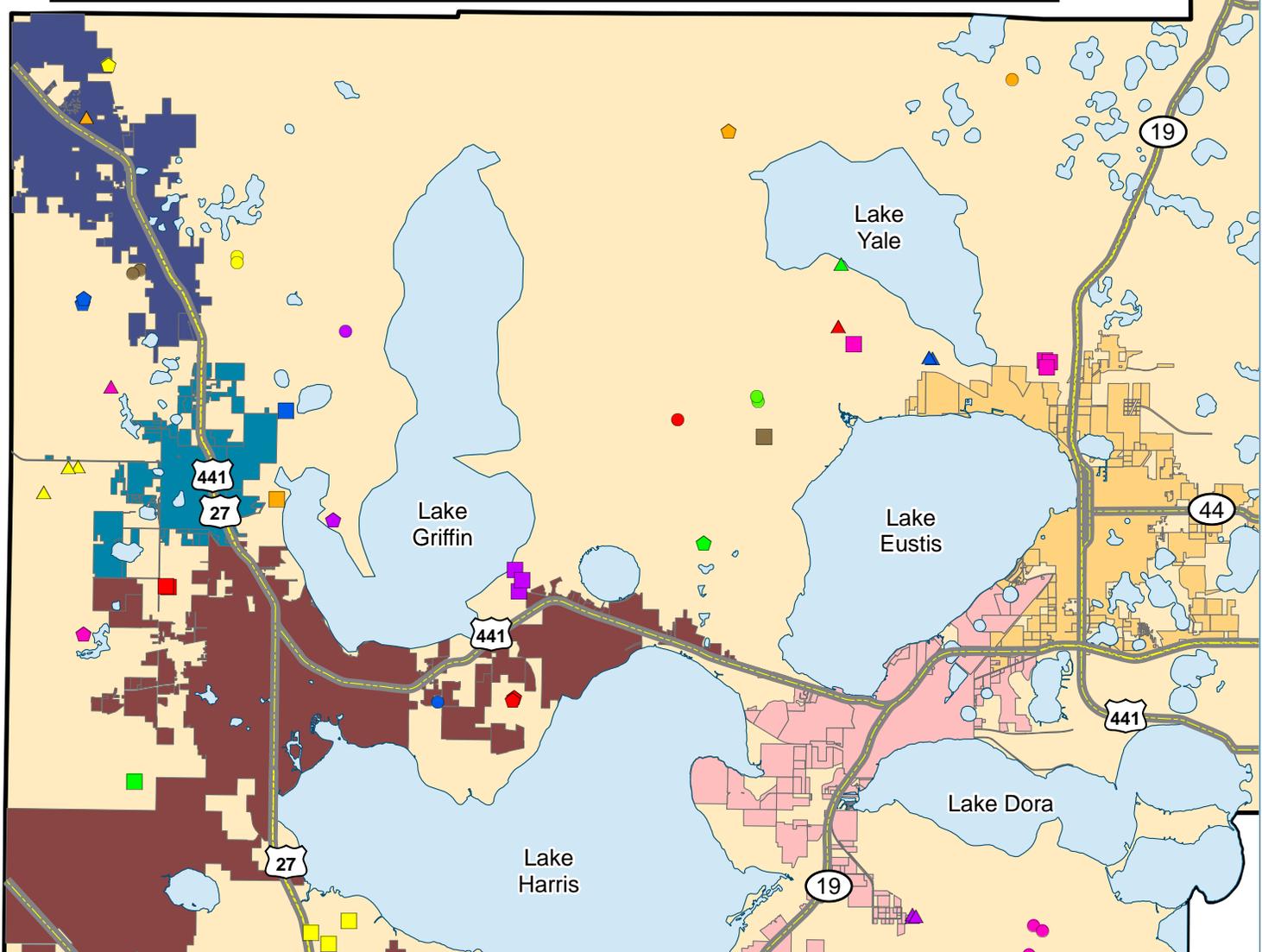
GIS OPERATOR: DR

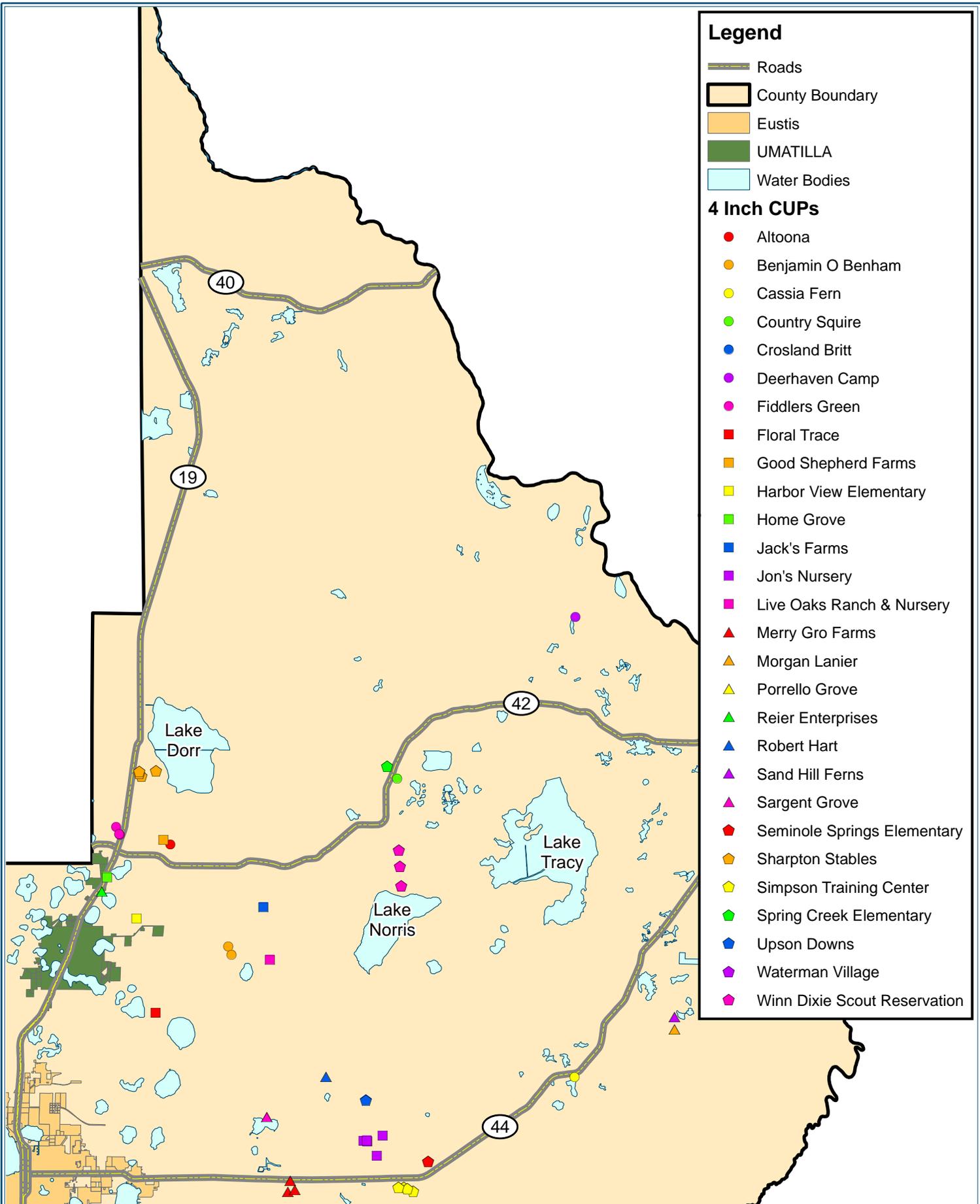


1 Inch = 2.5 Miles

Legend

- | | | |
|---|--|--|
|  Roads |  Givens Farm |  Service Ice Company |
|  County Boundary |  Goney's Nursery |  Snook Flower Farm |
|  Water Bodies |  Grass Roots Nurseries, Inc. |  Sun Valley Nursery |
|  Eustis |  Harbor Oaks |  Sunlakes Estates |
|  Fruitland Park |  Hawthorne at Leesburg |  The Lakes of Lady Lake |
|  Lady Lake |  Ja-Mar Farms |  Treadway Elementary |
|  Leesburg |  Lake Griffin Isles |  Urico Golf Course |
|  Tavares |  Leesburg Plant |  United Methodist Church Camp |
| 4 Inch CUPs | | |
|  Bonfire Coop |  Mid Florida Lakes |  Whitney Baptist Church |
|  Bryan Ferns |  Mowery | |
|  Carl Smith |  North Lake Presbyterian Church | |
|  Dura-Stress Inc. |  Pine Ridge Dairy Inc | |
|  Evergreen Ferneries |  RL Ferns | |
|  Fisherman's Wharf |  Raintree Harbor | |





- Legend**
- Roads
 - County Boundary
 - Eustis
 - UMATILLA
 - Water Bodies
- 4 Inch CUPs**
- Altoona
 - Benjamin O Benham
 - Cassia Fern
 - Country Squire
 - Crosland Britt
 - Deerhaven Camp
 - Fiddlers Green
 - Floral Trace
 - Good Shepherd Farms
 - Harbor View Elementary
 - Home Grove
 - Jack's Farms
 - Jon's Nursery
 - Live Oaks Ranch & Nursery
 - Merry Gro Farms
 - Morgan Lanier
 - Porrello Grove
 - Reier Enterprises
 - Robert Hart
 - Sand Hill Ferns
 - Sargent Grove
 - Seminole Springs Elementary
 - Sharpton Stables
 - Simpson Training Center
 - Spring Creek Elementary
 - Upson Downs
 - Waterman Village
 - Winn Dixie Scout Reservation



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Figure 1-7
Northeastern Lake County 4-Inch Wells
Consumptive Use Permits

ORIGINAL DATE: 04-27-07

REVISION DATE: NA

JOB NUMBER: 0407

FILE NAME: 0407_4 Inch CUPs NE...

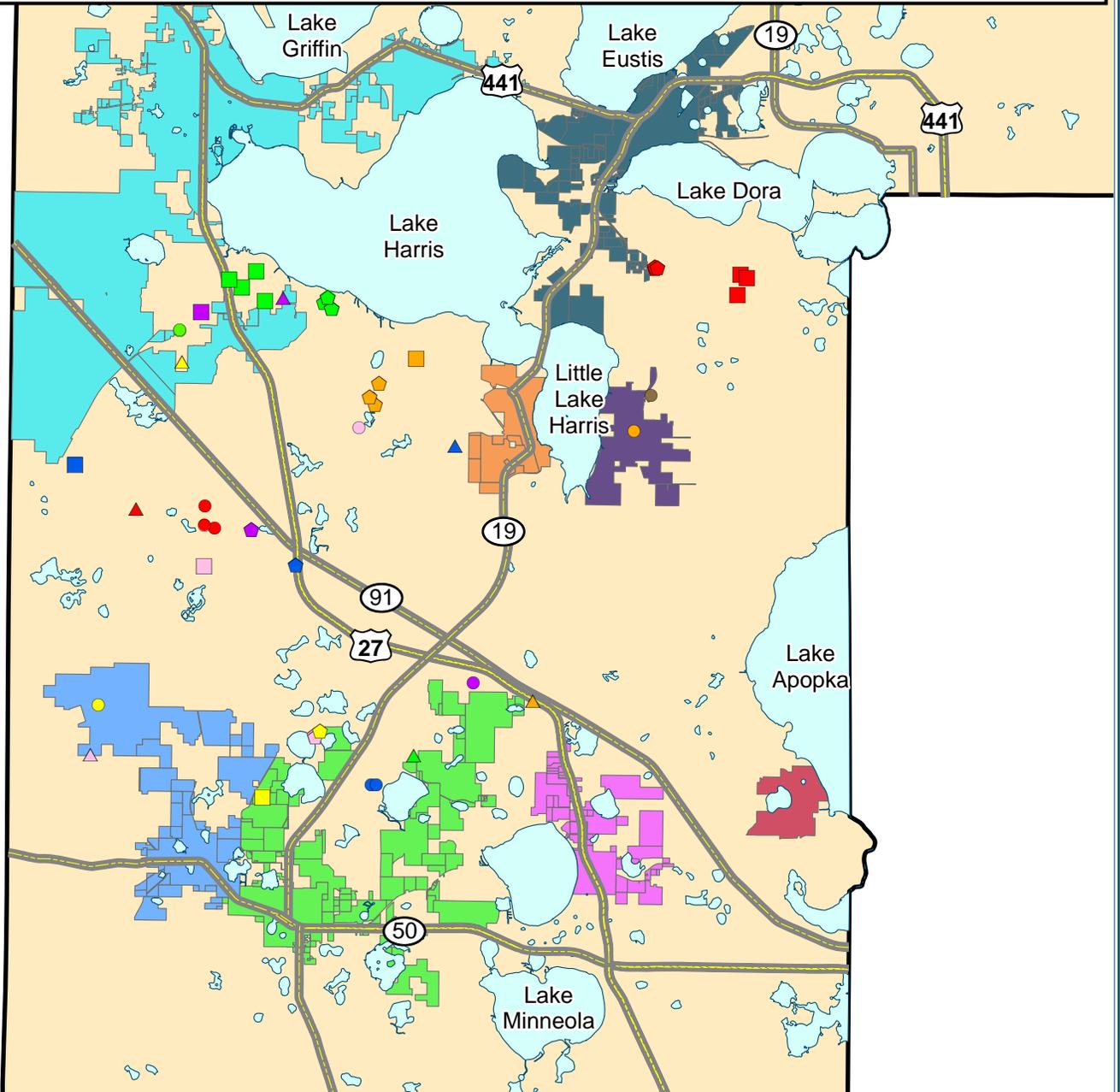
GIS OPERATOR: DFB



1 Inch = 3 Miles

Legend

- | | | | |
|--------------------|-----------------------------|-----------------------------|------------------------|
| Roads | A H Whitmore Foundation | Hawthorne at Leesburg | Service Ice Company |
| County Boundary | Astatula Elementary School | Hi-Acres Cattle & Hay | Serenity Farms |
| ASTATULA | C & C Peat Mine | Holiday Foliage | Sherman McGregor |
| GROVELAND | CSR Rinker Leesburg | J.E. Odom Citrus Nursery | Stone Mountain Nursery |
| HOWEY-IN-THE-HILLS | Cherry Lake Tree Farm, Inc. | Jack Strickland | The 27th Green Nursery |
| LEESBURG | Clerbrook Resort | Lakeridge | Turnpike Sand Plant |
| MASCOTTE | Daniel Weeks Citrus | Lester Coggins Trucking Inc | Williams Grove |
| MINNEOLA | Florida Made Door | Mantione Grove | |
| MONTVERDE | Givens Farm | Mid Florida Ferns | |
| TAVARES | Greenacres Fernery & Citrus | Pastime Fernery, Inc. | |
| Water Bodies | Groveland Estates | Ridge Grove | |



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Figure 1-8
 Central Lake County 4-Inch Wells
 Consumptive Use Permits

ORIGINAL DATE: 04-27-07

REVISION DATE: NA

JOB NUMBER: 0407

FILE NAME: 0407_4 Inch CUPs Centr...

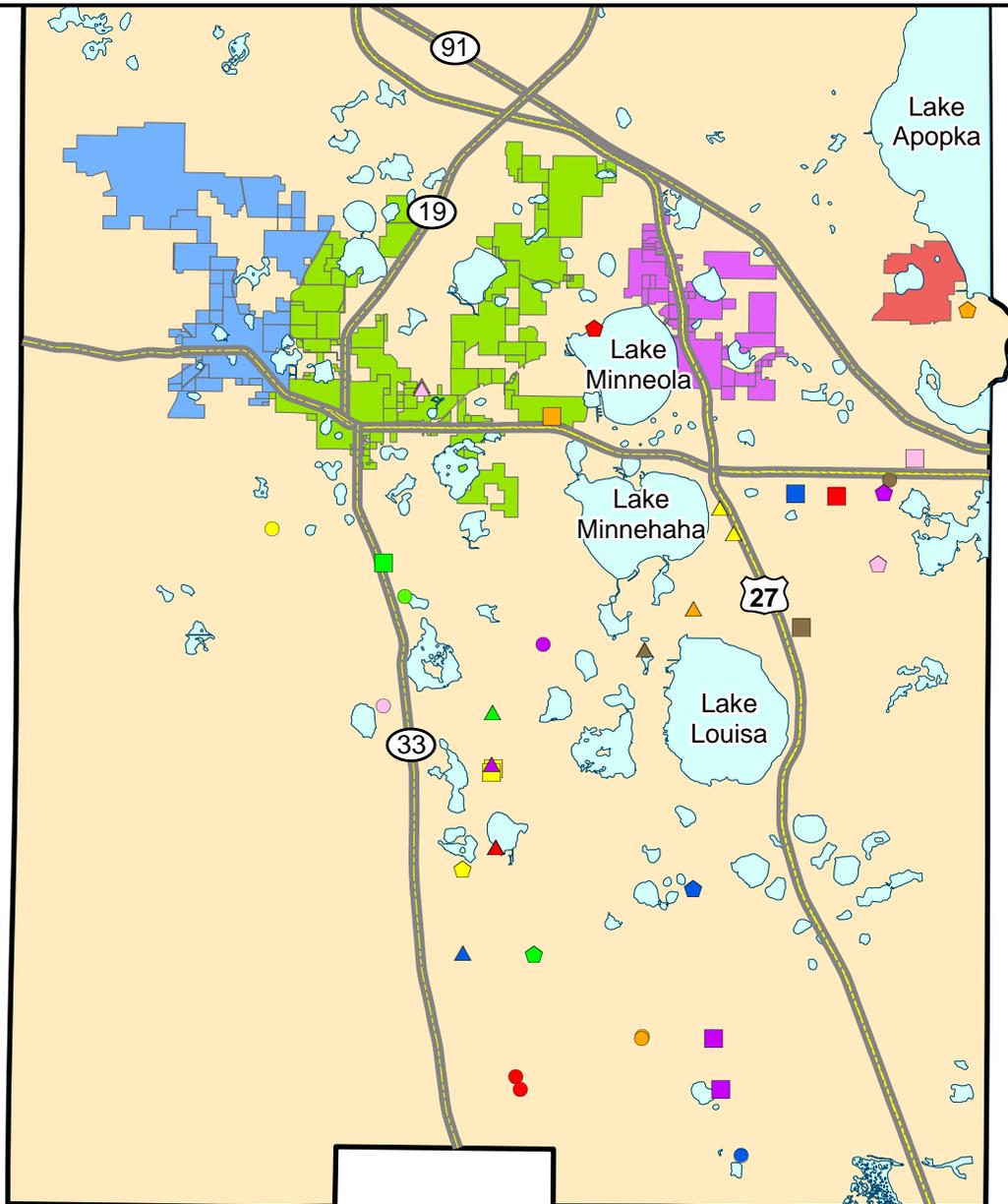
GIS OPERATOR: DFB



1 Inch = 3.5 Miles

Legend

- | | | | |
|-----------------|----------------------------------|-----------------------------|-----------------------|
| Roads | 4 Inch CUPs | Du Frene Grove | Mohan Sawh |
| County Boundary | 474 Independent | East Ridge High School | Oswalt Road |
| GROVELAND | 474 Sand Mine | Florida Rock Industries Inc | Palisades Golf Course |
| MASCOTTE | All American Nursery | Hartle Groves | Pine Island PUD |
| MINNEOLA | Becsek Grove | Kings Ridge | Rowe Groves |
| MONTVERDE | Blackhawk, PH 1 | Lake Kirkland Nursery | SMP Ranch |
| Water Bodies | Barrington Estates Wells | Lake Nona Trans. Center | Senninger Grove |
| | Camilla Grove | Lake Utility Services Inc. | Senninger Irrigation |
| | Classic Manufacturing Inc | Lynn Matthew Bishop | Tulley Dura-Rock |
| | Clermont Ready-Mixed Conc. Plant | Moorman Grove | |
| | Clermont West Sand Mine | Mahon's Citrus Nursery | |
| | Diane Fischer | | |



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Figure 1-9 Southern Lake County 4-Inch Wells Consumptive Use Permits

ORIGINAL DATE: 04-27-07

REVISION DATE: NA

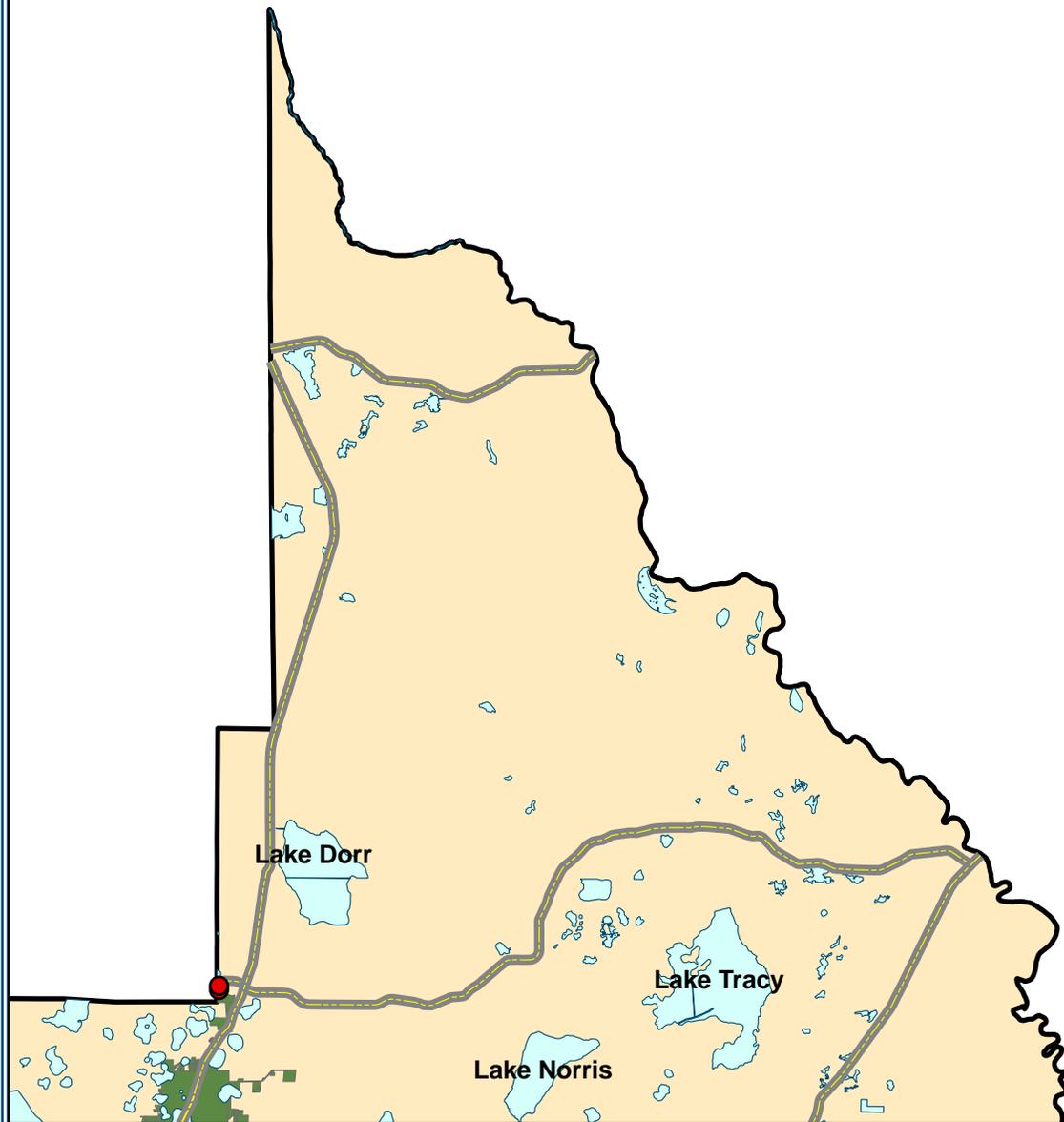
JOB NUMBER: 0407

FILE NAME: 0407_4 Inch CUPs S.mxd

GIS OPERATOR: DFB



1 Inch = 3.5 Miles



Legend

-  Roads
-  Water Bodies
-  County Boundary
-  See Other Sections
-  Lakeview Terrace

Map Key



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Figure 1-12 100,000 GPD Consumptive Use Permits

ORIGINAL DATE: 05-09-07

REVISION DATE: none

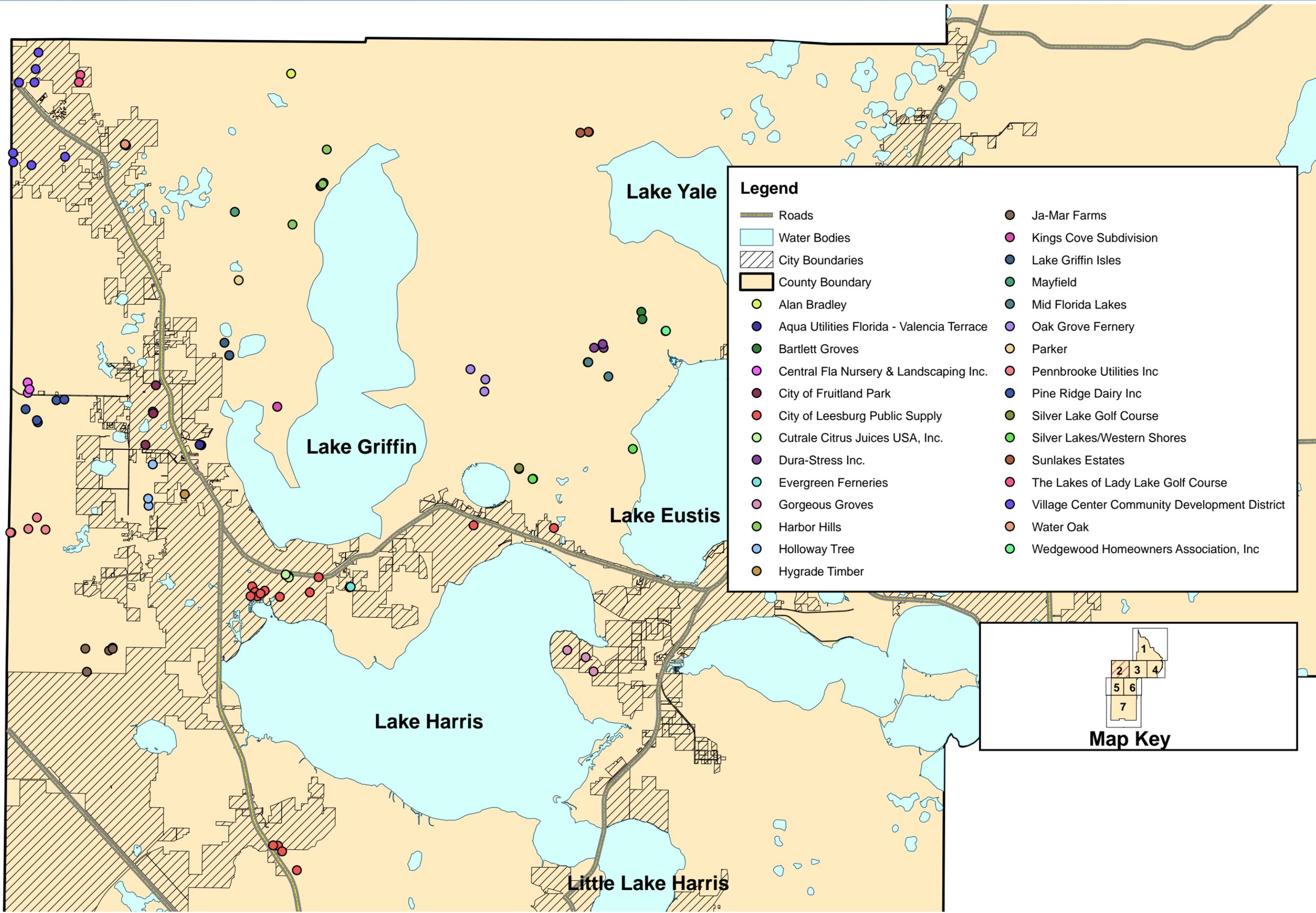
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FILE NAME: 0407_10000CUPs...mxd

GIS OPERATOR: DR

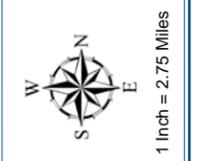
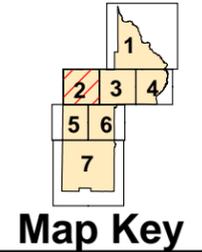


1 Inch = 4 Miles



Legend

- Roads
- Water Bodies
- City Boundaries
- County Boundary
- Ja-Mar Farms
- Kings Cove Subdivision
- Lake Griffin Isles
- Mayfield
- Alan Bradley
- Aqua Utilities Florida - Valencia Terrace
- Bartlett Groves
- Central Fla Nursery & Landscaping Inc.
- City of Fruitland Park
- City of Leesburg Public Supply
- Cutrale Citrus Juices USA, Inc.
- Dura-Stress Inc.
- Evergreen Ferneries
- Gorgeous Groves
- Harbor Hills
- Holloway Tree
- Hygrade Timber
- Oak Grove Fernery
- Parker
- Pennbrooke Utilities Inc
- Pine Ridge Dairy Inc
- Silver Lake Golf Course
- Silver Lakes/Western Shores
- Sunlakes Estates
- The Lakes of Lady Lake Golf Course
- Village Center Community Development District
- Water Oak
- Wedgewood Homeowners Association, Inc

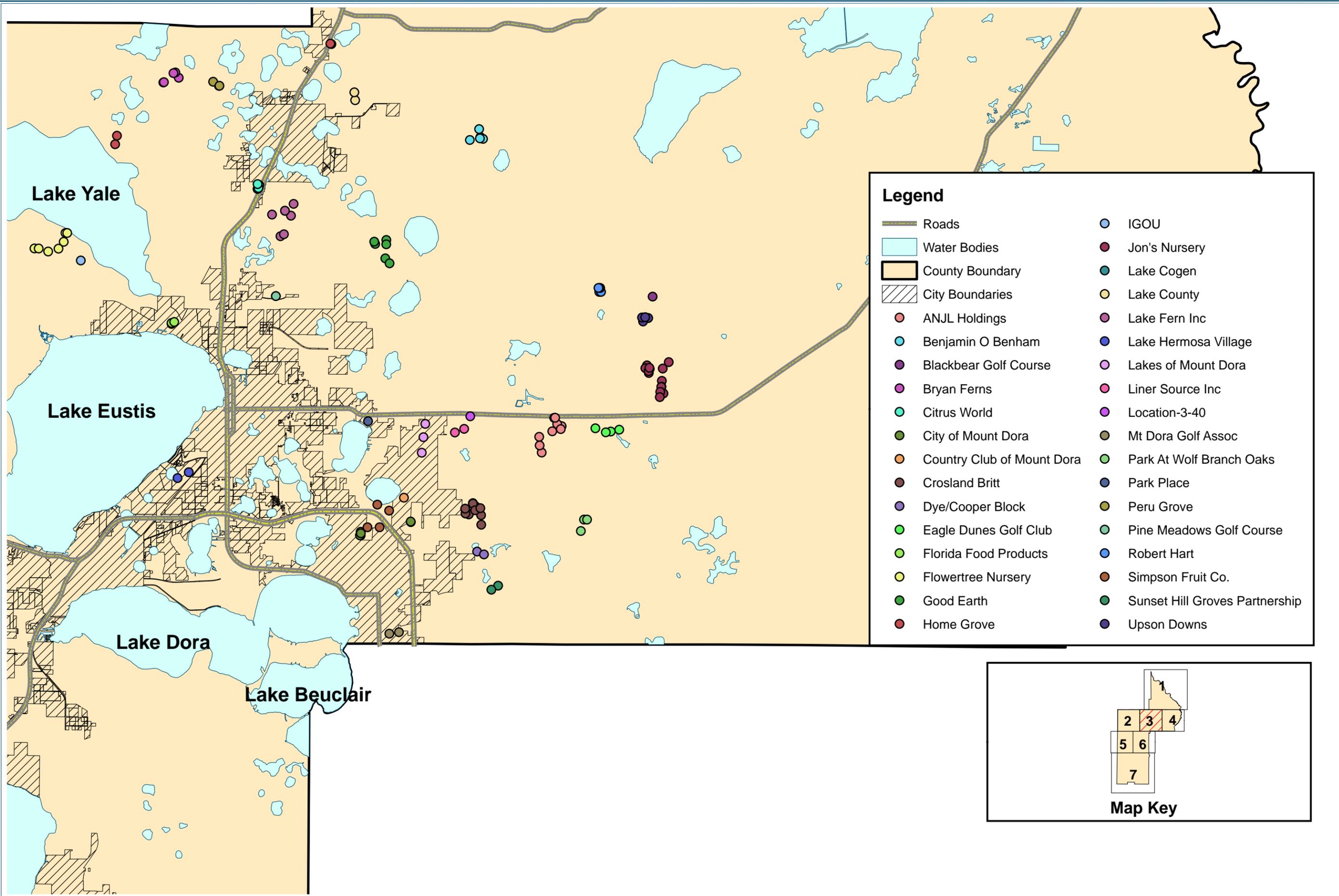


ORIGINAL DATE: 05-24-07
 REVISION DATE: NA
 JOB NUMBER: 0407
 FILE NAME: 0407_1000CUPs...mxd
 GIS OPERATOR: DR

PROJECT: 0407 - Lake County Water Supply Plan Development
Figure 1-13
100,000 GPD
Consumptive Use Permits

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Legend

Roads	IGOU
Water Bodies	Jon's Nursery
County Boundary	Lake Cogen
City Boundaries	Lake County
ANJL Holdings	Lake Fern Inc
Benjamin O Benham	Lake Hermosa Village
Blackbear Golf Course	Lakes of Mount Dora
Bryan Ferns	Liner Source Inc
Citrus World	Location-3-40
City of Mount Dora	Mt Dora Golf Assoc
Country Club of Mount Dora	Park At Wolf Branch Oaks
Crosland Britt	Park Place
Dye/Cooper Block	Peru Grove
Eagle Dunes Golf Club	Pine Meadows Golf Course
Florida Food Products	Robert Hart
Flowertree Nursery	Simpson Fruit Co.
Good Earth	Sunset Hill Groves Partnership
Home Grove	Upson Downs

Map Key

PROJECT: 0407 - Lake County Water Supply Plan Development

Figure 1-14
100,000 GPD
Consumptive Use Permits

ORIGINAL DATE: 05-24-07

REVISION DATE: NA

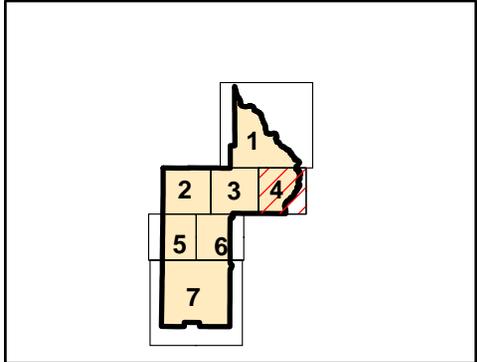
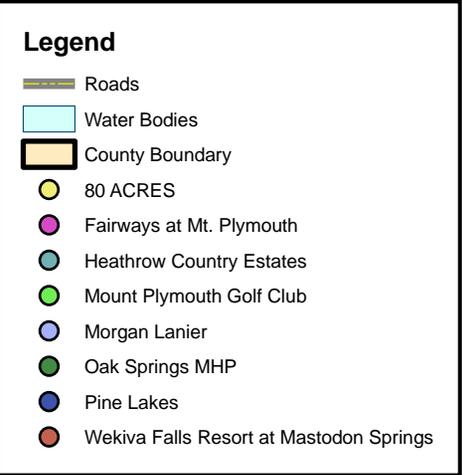
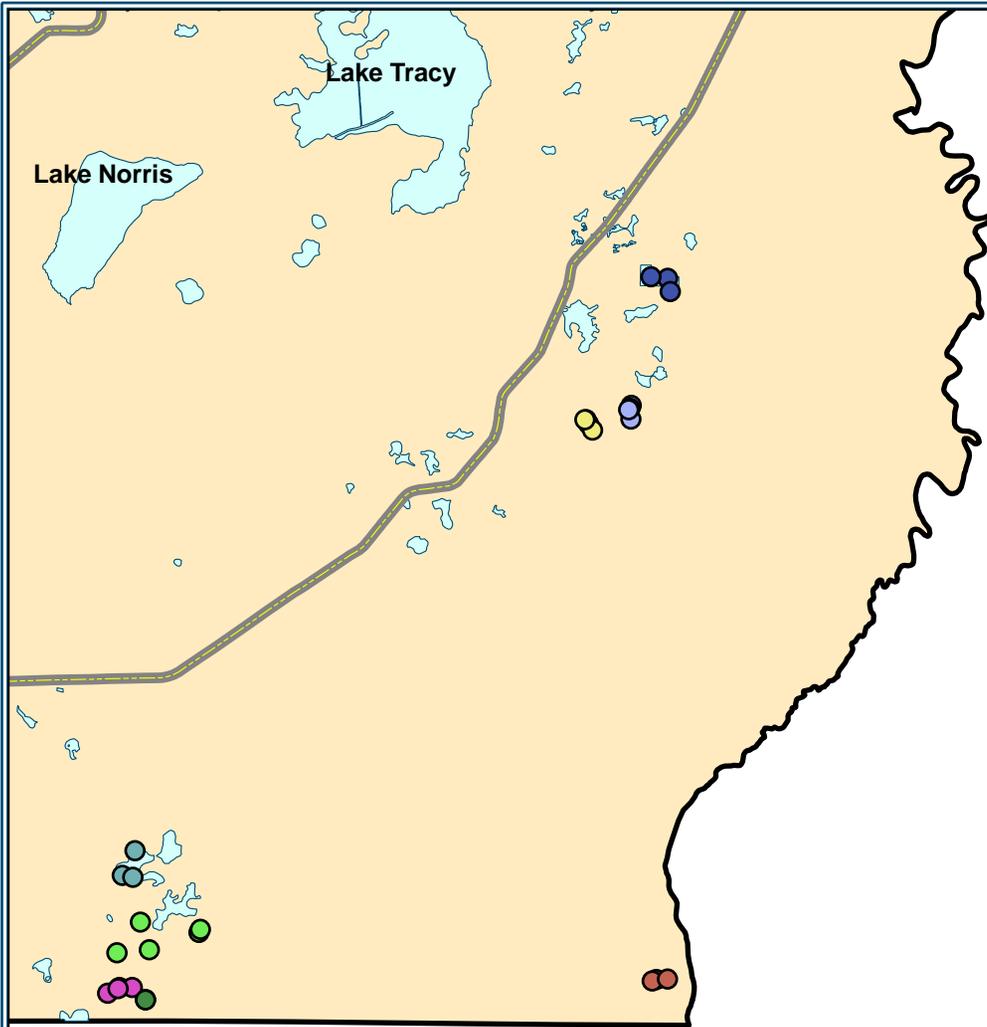
JOB NUMBER: 0407

FILE NAME: 0407_1000CUPS...mxd

GIS OPERATOR: DR

1 Inch = 2.75 Miles

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Figure 1-15
100,000 GPD
Consumptive Use Permits

ORIGINAL DATE: 05-09-07

REVISION DATE: none

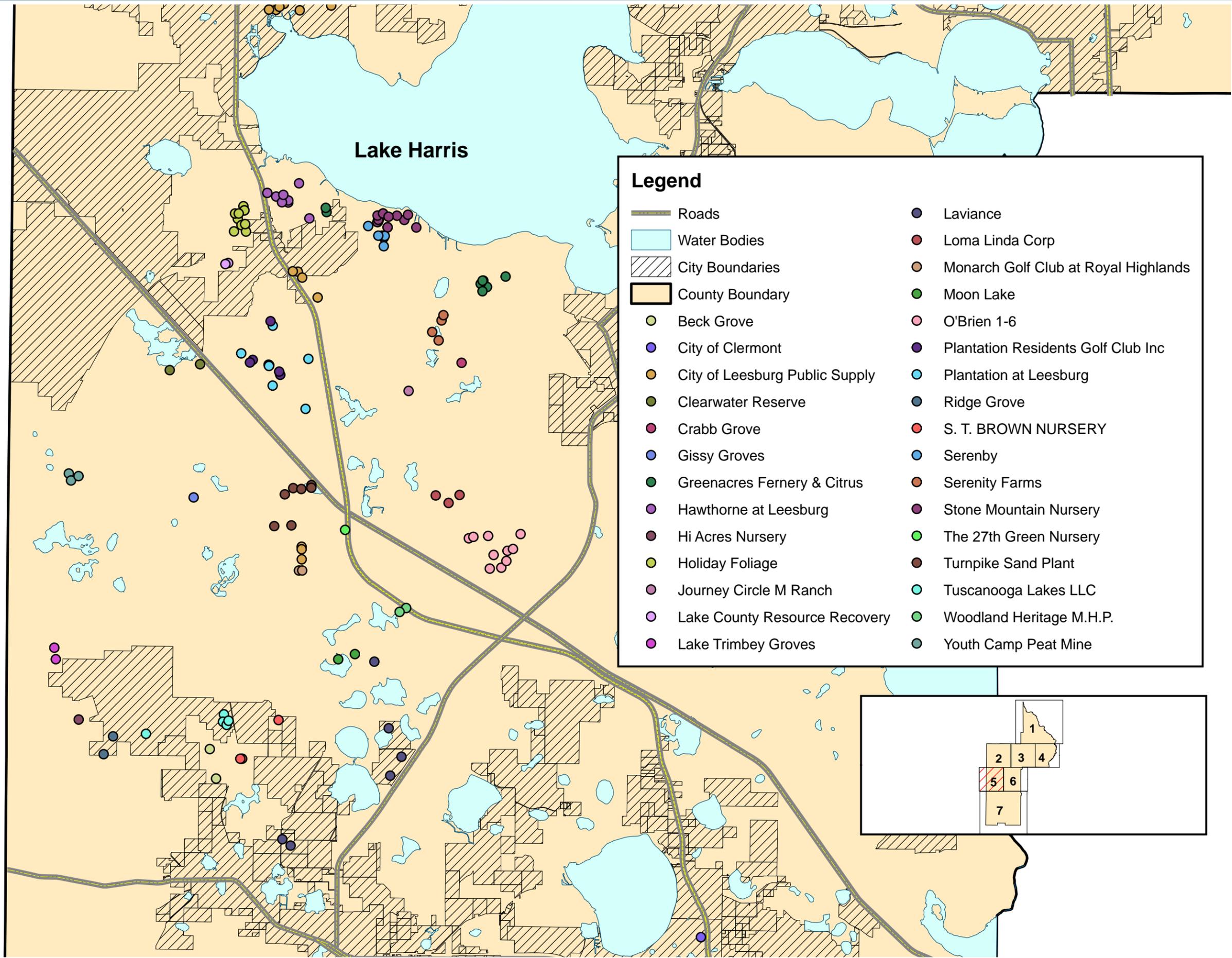
JOB NUMBER: 0407

FILE NAME: 0407_10000CUPs...mxd

GIS OPERATOR: DR



1 Inch = 2.5 Miles



- Legend**
- Roads
 - Water Bodies
 - City Boundaries
 - County Boundary
 - Beck Grove
 - City of Clermont
 - City of Leesburg Public Supply
 - Clearwater Reserve
 - Crabb Grove
 - Gissy Groves
 - Greenacres Fernery & Citrus
 - Hawthorne at Leesburg
 - Hi Acres Nursery
 - Holiday Foliage
 - Journey Circle M Ranch
 - Lake County Resource Recovery
 - Lake Trimbe Groves
 - Laviance
 - Loma Linda Corp
 - Monarch Golf Club at Royal Highlands
 - Moon Lake
 - O'Brien 1-6
 - Plantation Residents Golf Club Inc
 - Plantation at Leesburg
 - Ridge Grove
 - S. T. BROWN NURSERY
 - Serenby
 - Serenity Farms
 - Stone Mountain Nursery
 - The 27th Green Nursery
 - Turnpike Sand Plant
 - Tuscanoga Lakes LLC
 - Woodland Heritage M.H.P.
 - Youth Camp Peat Mine

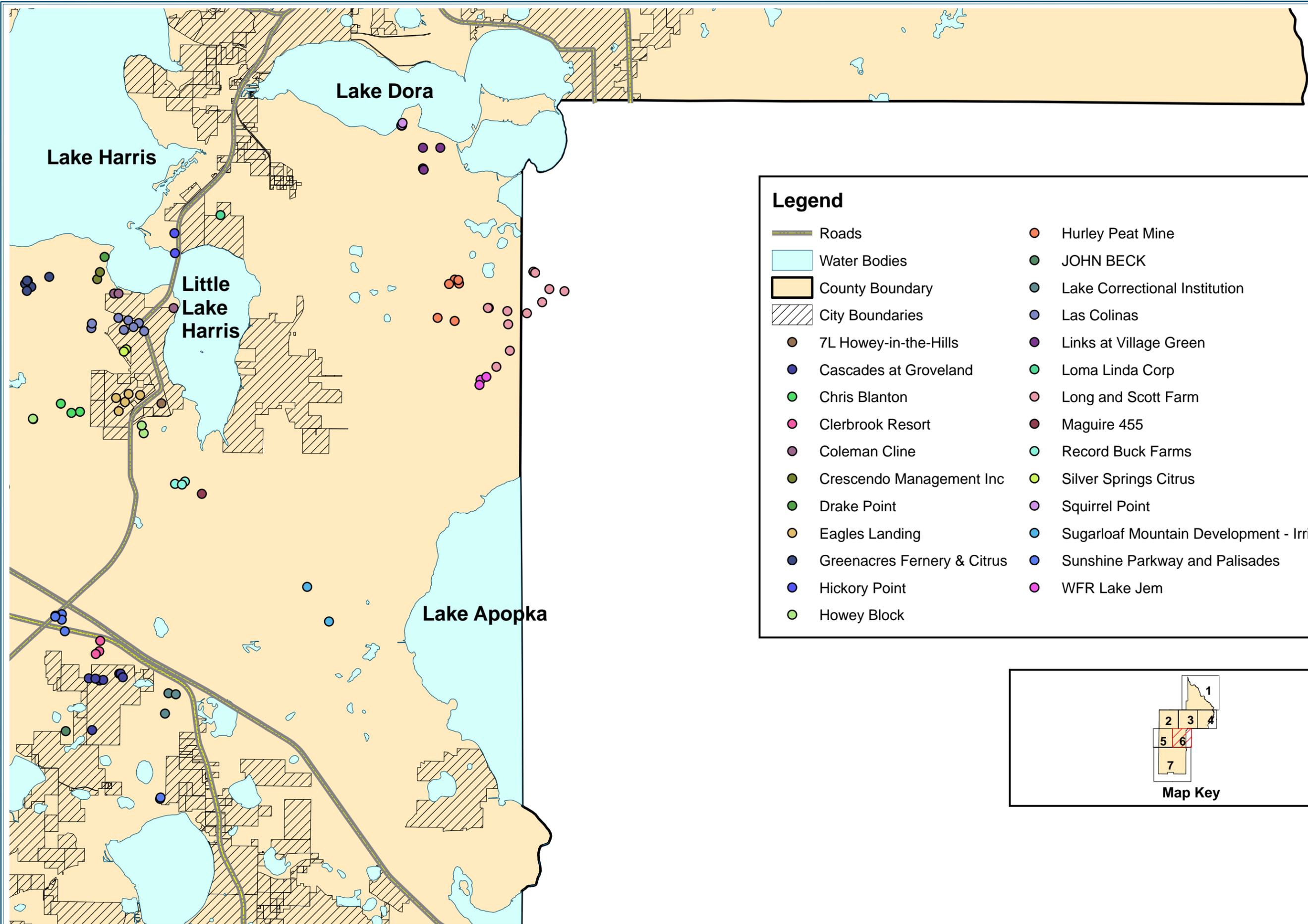


ORIGINAL DATE: 05-24-07
 REVISION DATE: NA
 JOB NUMBER: 0407
 FILE NAME: 0407_1000CUPS...mxd
 DR

PROJECT: 0407 - Lake County Water Supply Plan Development
Figure 1-16
100,000 GPD
Consumptive Use Permits

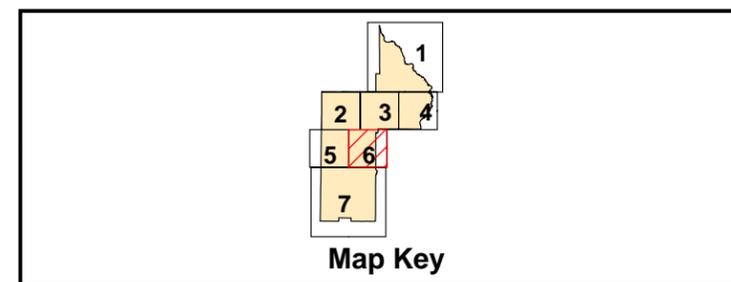
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 Fax: 813-265-6610
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Legend

- | | |
|-----------------------------|---|
| Roads | Hurley Peat Mine |
| Water Bodies | JOHN BECK |
| County Boundary | Lake Correctional Institution |
| City Boundaries | Las Colinas |
| 7L Howey-in-the-Hills | Links at Village Green |
| Cascades at Groveland | Loma Linda Corp |
| Chris Blanton | Long and Scott Farm |
| Clerbrook Resort | Maguire 455 |
| Coleman Cline | Record Buck Farms |
| Crescendo Management Inc | Silver Springs Citrus |
| Drake Point | Squirrel Point |
| Eagles Landing | Sugarloaf Mountain Development - Irrigation |
| Greenacres Fernery & Citrus | Sunshine Parkway and Palisades |
| Hickory Point | WFR Lake Jem |
| Howey Block | |

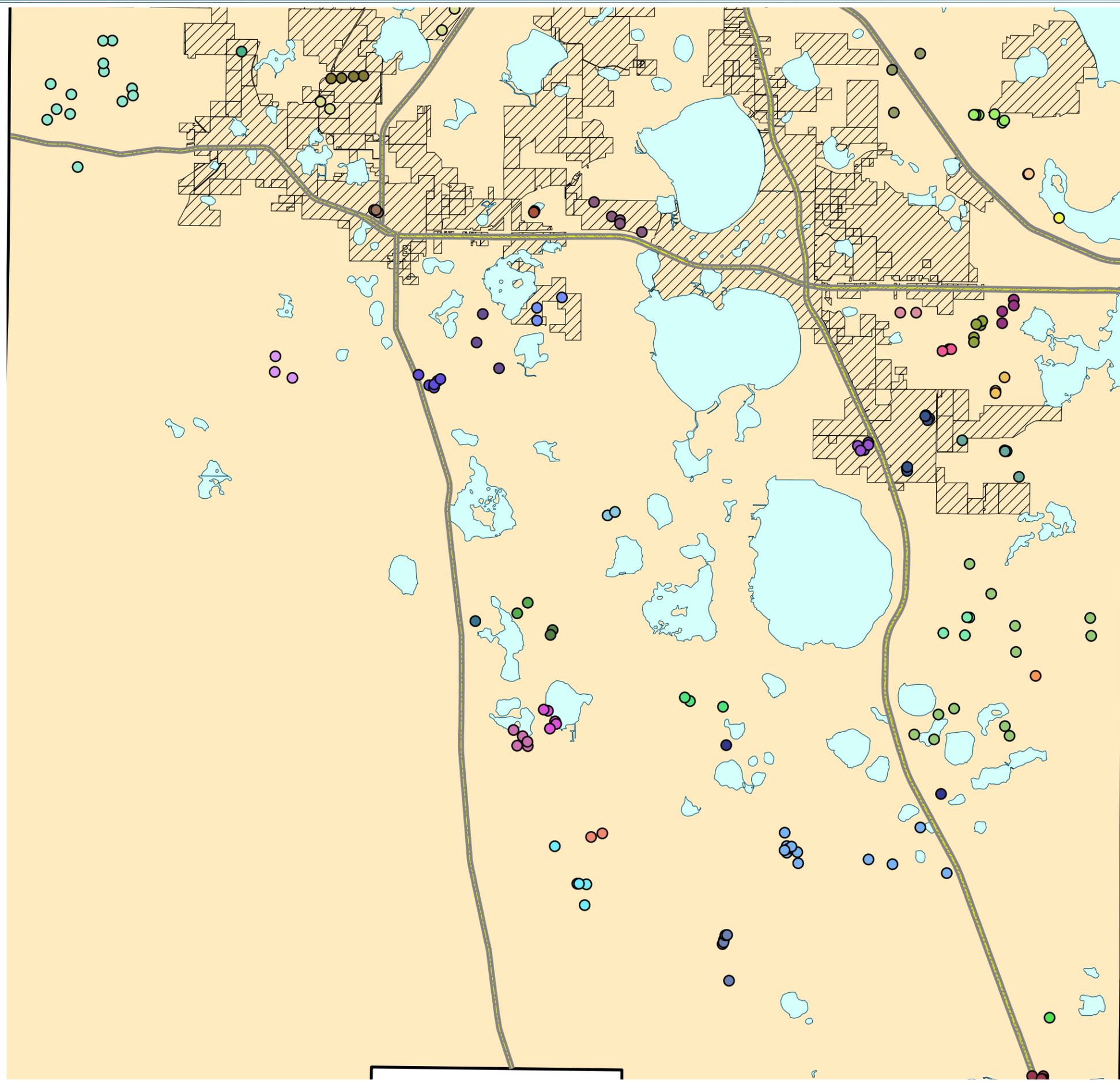


ORIGINAL DATE: 05-24-07
 REVISION DATE: NA
 JOB NUMBER: 0407
 FILE NAME: 0407_1000CUPs..mxd
 GIS OPERATOR: DR

PROJECT: 0407 - Lake County Water Supply Plan Development
Figure 1-17
100,000 GPD
Consumptive Use Permits

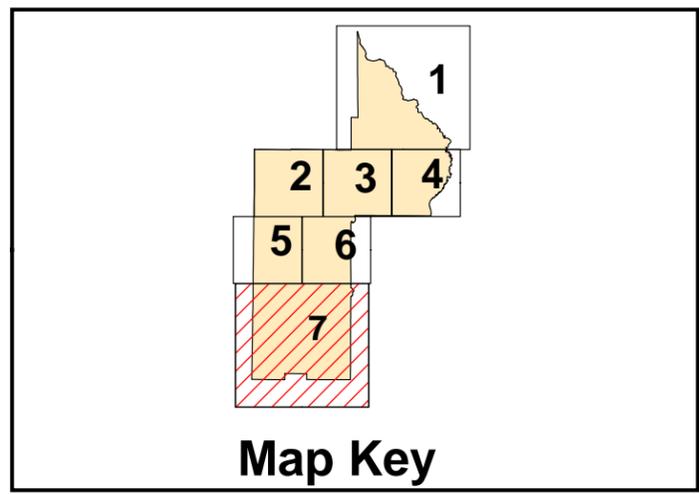
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Legend

Roads	Independent North Sand Mine
Water Bodies	Jeff Boykin
City Boundaries	Kings Ridge Golf Courses
County Boundary	Lake Kirkland Nursery
474 Sand Mine	Lake Pretty
Banyan Construction	Laviance
Barrington Estates Wells	Lust Farms
Center Sand Mine	Marian Gardens
Clermont East Sand Mine	Pine Needle
Clermont West Sand Mine	Rowe Groves
Crothall Laundry Services	Senninger Irrigation
DIANE FISCHER	Silver Springs Citrus
Dockery Farms	Southern Lake Co Acreage
East Ridge High School	Southlake Utilities
Fakih Grove	Spring of Life Spring Water
Gourd Neck Springs	Swiss Fairways
Green Swamp Groves	The Legends
Green Valley Country Club	Thousand Trails
Groveland Grove	Tulley Dura-Rock
Groveland Inc.	Twin Lakes
Hillcrest PUD	ValleyCrest Landscape
Hlochee WMA - Riddick Trust Grove	Villa City



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PROJECT: 0407 - Lake County Water Supply Plan Development
Figure 1-18
100,000 GPD
Consumptive Use Permits

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2.0 Potential Future Sources of Water

Chapter 1.0 characterized the existing CUP allocation quantities and the sources of water utilized. Fresh groundwater, a traditional water source, is currently the main source of supply in the County (see Chapter 1.0 for approximate %), and surface water also provides significant quantities of water.

This Chapter characterizes both traditional and alternative future sources that may be viable to meet future demands throughout the County. These potential future sources include surface water, fresh groundwater, and brackish groundwater.

Alternative water supplies are defined in Chapter 373.019, Florida Statutes, as:

“salt water; brackish surface and groundwater; surface water captured predominately during wet-weather flows; sources made available through the addition of new storage capacity for surface or groundwater, water that has been reclaimed after one or more public supply, municipal, industrial, commercial, or agricultural uses; the downstream augmentation of water bodies with reclaimed water; stormwater; and any other water supply source that is designated as nontraditional for a water supply planning region in the applicable regional water supply plan”

Relative to water supplies proximate to Lake County, surface water, reclaimed water, and brackish groundwater are considered alternative water supplies in the statute.

No other water supply sources have been designated as alternative by SJRWMD in the SJRWMD’s DWSP 2005. Projects using these alternative water supplies are expected to compete successfully for external funding, particularly when developed by regional partnerships or multi-jurisdictional water supply entities.

Conservation is considered a demand management technique, as it reduces reliance on new water sources (SJRWMD 2006).

SJRWMD anticipates limiting withdrawals of groundwater in the region which will necessitate the development of alternative sources for Lake County water users.

2.1 Lake County Hydrogeology and Physiography

Lake County falls within the Middle St. Johns (MSJ) groundwater basin, except for the southeastern portion of the County, which is within the Upper St. Johns groundwater basin (Figure 2-1). A ground water basin is characterized by a ground water flow system that encompasses recharge areas and the associated discharge areas. The MSJ ground water basin is one of five ground water basins in the SJRWMD. The MSJ ground water basin is located almost entirely within Lake, Seminole, Marion, and northern Orange counties (SJRWMD 1990).

The MSJ groundwater basin is characterized by karst topography (an irregular, pitted land surface formed by the dissolution of limestone), valleys, and ridges. The abundance of surface water features in Lake County can be attributed to these features. Karst topography is characterized by high relief, circular lakes, sinkholes, and caves at land surface. The two major ridges within the MSJ groundwater basin extend across Lake County. The ridge areas are characterized by deep lakes, low water tables, and subsurface drainage. Lake Wales Ridge, the higher of the two, with elevations of 200 to 300 ft National Geodetic Vertical Datum (NGVD), is the most prominent physiographic feature in the basin (Figure 2-2), and is located predominantly in Lake County. The second ridge, Mount Dora Ridge, is predominantly located in Marion, Lake, and Orange counties. Both ridges parallel the Atlantic coastline, implying a coastal origin (SJRWMD 1990). Three aquifers are present in Lake County: the surficial; intermediate; and the Floridan aquifer systems.

The surficial aquifer is composed of sands, shells, and some clays. It varies in thickness throughout the County, and is directly replenished by rainfall. Flow in the surficial aquifer usually follows the topography of the land. In the MSJ groundwater basin, the surficial aquifer is an important source of water for domestic self-supply wells and for small-scale irrigation (SJRWMD 1990). Land use, vegetation, topography and local rainfall affect recharge to the surficial aquifer.

The intermediate aquifer lies between the surficial and Floridan aquifers, and occurs sporadically throughout the MSJ basin and Lake County. It is composed of clays, sand, shell, and limestone, and is usually found within the confining unit above the Floridan aquifer. This aquifer is present at 60-100 feet (ft) below the surficial aquifer, and can be a source of potable water where the Floridan aquifer contains lower or marginal water quality (SJRWMD 1990).

The Floridan aquifer in the SJRWMD is generally an artesian aquifer (groundwater under pressure greater than the atmospheric pressure) composed of limestone and dolomite. The Floridan aquifer is recharged by the surficial aquifer in areas where the potentiometric surface of the Floridan aquifer is lower than the water levels in the surficial aquifer. The Lake Wales and Mount Dora ridges have high potential for recharge to the Floridan aquifer in the MSJ groundwater basin. The entire County is characterized by regions of high to moderate recharge and discharge for the Floridan aquifer system (SJRWMD 1990).

2.2 Groundwater

Groundwater, a traditional water source, is currently the main potable water supply source in the County, with fresh water from the Upper Floridan aquifer being the main source for public supply. The SJRWMD anticipates that the development of future groundwater projects will be minimal due to existing stresses on groundwater availability, which will cause a shift from traditional to alternative water supplies.

Although the County is inland from the sea and bordered on the west by the peninsular

divide, there are some areas where salt water¹ exists in the Floridan aquifer (Figure 2-2). This region is in the northeastern region of the County around the St Johns River, where lenses of relict brackish water exist in the Floridan aquifer, and concentrations of chloride can exceed 1000 mg/L (SJRWMD 1990). Two relatively small pockets containing sulfate concentrations exceeding 250 mg/L are present in the northeastern region of the County.

The Lower Floridan aquifer typically contains lower quality or brackish water, which does not meet potable standards due to its higher mineral content². The removal of dissolved solids to meet potable water standards results in relatively higher treatment costs than the costs of treating fresh groundwater to meet potable water standards, and thus will impose additional considerations to development as a future water supply due in part to concerns with disposal of the mineralized by-product.

Potential future demands will be assessed to determine the extent to which future water supply needs will be met by groundwater (yield). Existing and projected demands, water quality, availability of alternative sources, impacts from uses outside the County and a suite of other factors will all impact the determination of the extent to which this source will be further utilized.

2.3 Surface Water

Surface water includes water present in lakes, rivers, streams, creeks and wetlands. Surface water is currently used in Lake County for non-potable uses, mainly for commercial and industrial purposes.

Surface water generally is more difficult to treat and capture for potable use than fresh groundwater due to variability in flows and water quality (SJRWMD 2006). Economic factors such as treatment, storage and distribution costs can dictate the feasibility of developing surface water supplies. Surface water quality is often more variable, typically having higher concentrations of biological contaminants, organic materials, and pollutants than groundwater; rendering treatment costs that are higher than fresh groundwater treatment costs. Surface water supplies are subject to fluctuations mainly due to fluctuations in rainfall. Anthropogenic factors within contributing watersheds can also affect available yields. Therefore, storage (i.e., reservoirs) may be necessary and add additional capital costs. Since major surface water locations may not be located near customers, the distribution of treated surface water may significantly increase supply costs.

In addition to these considerations, minimum flows and levels (MFLs) will dictate the viability of water supply from potential surface water bodies by imposing limits to withdrawals. These withdrawal limits also may impact groundwater availability, therefore MFLs are relevant to both surface and groundwater withdrawals. Florida law (Chapter

¹ Connate salt water is remnants of the retreating sea remaining in cavities of the Floridan aquifer.

²Chloride and sulfate concentrations greater than or equal to 250 milligrams per liter (mg/L), or total dissolved solids (TDS) greater than or equal to 500 mg/L.

373, *Florida Statutes* [F.S.]) requires Florida's water management districts to establish MFLs to protect priority water bodies, watercourses, springs, and associated wetlands, and aquifers from significant harm caused by groundwater or surface water withdrawals (SJRWMD 2005). SJRWMD's surface water hydrologic regime for lakes is based on a set of up to five MFLs or levels:

- Minimum Infrequent High
- Minimum Frequent High
- Minimum Average
- Minimum Frequent Low
- Minimum Infrequent Low

Minimum Infrequent High – This flow or level floods the riparian wetlands at a frequency sufficient to support important ecological processes such as floodplain maintenance functions and the transport of sediment, detritus, nutrients, and biological propagules.

Minimum Frequent High – This flow or level inundates the floodplain habitat sufficiently to allow surface water biota access for feeding, reproduction, and refugia. Flooding should be of sufficient magnitude, duration, and frequency to maintain the floodplain plant community structure and composition adapted to periodic inundation. This level and flow should occur annually or biannually for several weeks.

Minimum Frequent Low – This is the minimum that should occur during mild droughts. When this water level and flow does not occur too frequently or for too great a duration, there is no significant harm to lotic and floodplain communities because this level provides the drawdown condition required for regeneration by many floodplain plant species. This level may limit some recreational potential of the stream or lake.

Minimum Infrequent Low – This is a very low and infrequent flow or level that may occur for short durations during more extreme droughts.

Table 2-1 shows the surface water bodies that have already had MFLs adopted, and Table 2-2 shows the priority water bodies that are scheduled for MFLs. Refer to Figure 2-3 for the locations of these water bodies.

Table 2-1 Adopted MFLs in Lake County

Water Body Type	Water Body Name
River	Wekiva River @ S.R. 46 Bridge
Spring	Messant Spring
Spring	Seminole Spring
River	Black Water Creek @ S.R. 44 Bridge
Lake	Apshawa North
Lake	Apshawa South
Wetland	Boggy Marsh
Lake	Cherry
Lake	Dorr
Lake	Emma
Lake	Louisa
Lake	Lucy
Lake	Minneola
Lake	Norris
Lake	Pine Island
Lake	Sunset

Table 2-2 Priority Water Bodies Scheduled for MFLs in Lake County

Proposed MFLs			
Water Body Type	Water Body Name	Voluntary Peer Review	Year
Lake	Dyches	Not Listed	2008
Lake	Mt. Plymouth	Not Listed	2008
Lake	Saunders	Not Listed	2008
Spring	Apopka Spring	Yes	2009
Spring	Bugg Spring	Yes	2009
River	Alexander Springs Creek	Yes	2011
Spring	Alexander Springs	Yes	2011
Spring	Silver Glen	Yes	2011

A number of the large and small lakes in the County are potential future sources for communities in the Alliance. However, due to the high level of treatment required for potable use of surface water and resource availability limitations, these lakes would likely serve primarily to augment reuse water or other non-potable projects. Evaluation of lakes that could serve to offset localized, non-potable Alliance Member demands will be included when demand, conservation, and reuse baseline data and projections are completed in later tasks.

The three (3) principal surface water systems that been identified as major potential sources for potable water and reuse water supplementation are the Ocklawaha River,

St. Johns River, and the Withlacoochee River. The watershed basins for each river are shown in Figure 2-4. A general discussion of the water supply considerations of these water bodies follows. More detail on their respective locations and potential projects is provided in Chapter 3.0.

2.3.1 The St. Johns River

The 2005 SJRWMD District Water Supply Plan (2005 DWSP) reviewed the water availability, reliability, and quality of the St. John's River to determine the feasibility of withdrawing surface water to meet future needs for the entire District. In the 2005 DWSP, the District established that the St. John's River can supply a large quantity of raw water, that will vary in water quality and quantity based on the selected withdrawal locations and established MFLs for the river segment.

During low-flow periods, water in the St. Johns River adjacent to Lake County is slightly to moderately brackish. Flow diverted during these times would require partial demineralization and associated demineralization concentrate management. SJRWMD anticipates that the brine discharge would likely be discharged to the river downstream of the withdrawal.

In addition to brackish water quality, disinfection byproducts are of potential concern. Ozone disinfection leads to accumulation of bromate byproducts that would necessitate removal of the contaminant to meet water quality standards. Further, the river experiences blue-green algae blooms, which generate toxins under certain conditions. These additional factors will influence the cost of developing the river as a potable source.

2.3.2 The Ocklawaha River

The Ocklawaha River transects the County (flowing north into Marion County) and has been identified in two studies as a potential regional water source. The 2005 DWSP identified two candidate locations for alternative surface water supply: the upper basin and the lower basin in the vicinity of the Rodman Reservoir. The WRAMS included the middle reach of the river as a third potential source, and reservoir storage may be required there. These three alternatives are considered potential alternate water supply sources for Lake County, although potential yield is limited in the upper basin.

Within the Ocklawaha, the river's confluence with the Silver River is the first location north of Lake County with good water quality, strong yield, and resource reliability, due primarily to the influx of large groundwater-based flows emanating from the Silver Spring's discharge to the Silver River.

The rivers and lakes in the Upper Ocklawaha River Basin (UORB) have exhibited drastic declines in water quality due to agricultural activity in the UORB and loss of marsh and river habitat due to changes resulting from canal and dam construction over the last century. Additionally, wetland areas on the floodplains of major lakes have been

adversely impacted because high water stages have been reduced by flood control activities (SJRWMD 2005). The SJRWMD and citizen groups have developed the Upper Ocklawaha River Basin Initiative to help restore the basin to its former state. While the projects under this initiative target water quality, they will also require water allocations from surface water bodies within the basin, including the Ocklawaha River and Lake Apopka (SJRWMD Initiative 2006). These allocations may affect future withdrawals from the upper basin, but may help improve the reliability of the middle reach.

2.3.3 The Withlacoochee River

The Withlacoochee Regional Water Supply Authority (WRWSA) Regional Water Supply Plan Update – 2005 (RWSPU) characterizes and assesses the Withlacoochee River and its associated water bodies, including Lake Panasoffkee, Rainbow River, and Lake Rousseau, using a review of surface water flow and level records compared with the SWFWMD regulatory constraints. Although surface water source development may be limited somewhat by the establishment of MFL's, significant water supply yield is available in the major surface waters of the Withlacoochee River Basin, particularly downstream of the Wysong-Coogler water conservation structure (just north of Lake Panasoffkee).

The Withlacoochee River Basin includes portions of Pasco, Sumter, Hernando, Citrus, Marion, and Levy counties. The Withlacoochee River and its associated water bodies are the dominant surface water features in the region, and contain numerous physiographic, hydrologic, sociocultural, and biological characteristics relevant to water supply development.

The headwaters of the Withlacoochee River originate in the Green Swamp of central Florida. The river generally flows northwest, functioning as a political and physical boundary within the basin, until it terminates at the Gulf of Mexico in Levy County. The potentiometric surface of the Floridan aquifer is high in the basin and the Upper Floridan aquifer contributes much of the Withlacoochee's flow (USFWS, 2005), though the river accepts substantial surface water inputs as well. Generally, the Withlacoochee River has moderately elevated nutrient, dissolved oxygen, and coliform levels, and portions of each reach within the river are considered impaired (FDEP, 2005). Other principal surface water features, from south to northwest within the Withlacoochee River Basin, include Lake Panasoffkee, the Tsala Apopka Chain of Lakes, Rainbow River, and Lake Rousseau.

2.4 Reclaimed Water

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)

Reuse water can be applied in a number of ways to decrease reliance on traditional water supplies, including golf course irrigation; recharge of groundwater supplies; landscape / residential irrigation; industrial use, and others (Water Reuse Program, 2006).

The relative desirability of reuse applications vary, however, in terms of their potable offset and groundwater recharge potential as shown in Table 2-3. In particular, spray field irrigation is not considered beneficial reuse for the purposes of this planning effort since it does not offset potable use. However, reuse desirability is defined as a water supply characterization and does not account for the fact that spray field irrigation can have water quality improvement benefits when compared to direct recharge, depending on the level of wastewater treatment.

The use of rapid infiltration basins (RIBs) to recharge high-quality reclaimed water to the surficial aquifer is a well-established and accepted practice in the SJRWMD. Irrigation of public access areas will also be considered as a potential beneficial use when reuse evaluations are completed in later tasks, as this use provides a significant potable water offset. The targeting of aquifer recharge or potable offset as the water supply goal for reuse project evaluations will be determined on a case-by-case basis.

Table 2-3 Reuse Desirability (FDEP, 2003)

Category	Desirability: Beneficial Reuse or Recharge ³
Aquifer recharge (e.g., rapid infiltration basin) ⁴	
Golf course and landscape/residential areas irrigation ⁵	
Spray field irrigation ⁶	

Existing wastewater and reuse data is presented in Table 2-4 and locations of wastewater facilities are shown in Figure 2-5. A total of twenty-six (26) wastewater facilities with a 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 RIBs. This flow provides a substantial recharge benefit, but does not offset potable use.

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)). This flow offsets potable use, but has a limited recharge benefit as a portion of the applied flows are subject to evapotranspiration and evaporation.

The remaining 5.83 mgd of flows are distributed to sprayfields (absorption fields (AF) or other crops (OC)). This flow does not offset potable use and has a limited recharge benefit, as a portion of the applied flows are subject to evapotranspiration and evaporation. As a result, sprayfields are considered undesirable reuse applications from the water supply perspective.

See Figure 2-6 for the distribution of reuse flows.

³ Florida Department of Environmental Protection, Water Reuse for Florida. 2003. "Strategies for Effective Use of Reclaimed Water"

⁴ Non-beneficial reuse, but considered potentially valuable by the FDEP and SJRWMD as recharge.

⁵ Beneficial reuse.

⁶ Non-beneficial reuse.

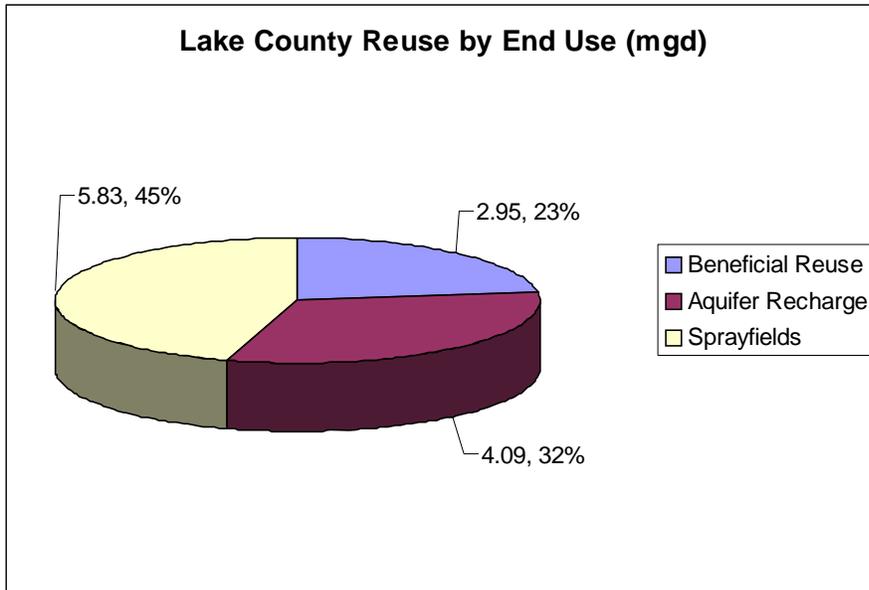


Figure 2-6 Lake County Reuse Distribution by End Use

Potential future sources for reuse water include increases in flows within existing utility service areas, the re-allocation of existing, non-beneficial reuse flows, and the new collection of wastewater from expansion of utility service. An inventory of potential reuse projects is evaluated in Chapter 4, with further analysis to be completed in future tasks.

A total of five WWTFs permitted for 100,000 gpd or greater are located or discharge reuse water within the Wekiva Study Area. These existing facilities may have to enhance treatment to reduce total nitrogen as N to 10 mg/L, and new systems in the Wekiva Study Area will be required to meet this standard (FDEP, 2004).

2.5 Demand Reduction (Water Conservation)

Water conservation is an extremely important component of Florida's overall water management program. Water conservation is an essential, cost effective element of water supply planning that allows for management of both existing and future water demands without requiring major capital outlays. Although water conservation applies to all water use sectors, it is particularly relevant in the public supply and commercial / industrial sectors, since the greatest demand for water in Lake County falls under these categories. A conservation inventory analysis of existing and proposed conservation practices and options for expanding conservation practices in the County will be presented in Technical Memorandum 4.

A myriad of conservation elements or Best Management Practices (BMP's) may be applied within a conservation program. These generally fall within the categories of watering restrictions, pricing incentives (inverted rate structures), metering, structural (plumbing and landscape) measures, and education. Watering restriction enforcement,

inverted rate structures, education programs, and conservation coordinators are some of the broad, effective elements of a comprehensive conservation program for a municipality or community.

A common water usage restriction in Florida is the limiting of lawn watering to specific days and times. For example, houses with addresses ending in an even number may be allowed to water on two specific days, and houses with addresses ending in an odd number are allowed to water on two different days. Watering is typically not allowed during the hottest part of the day, in an effort to reduce water loss due to evaporation. Lawn watering restrictions can be an effective best management practice, particularly when enforcement programs are in place (Davis, 1996; TBW, 1999).

Inverted or conservation rate structures are one of the most effective conservation BMP's. With inverted rate structures, the price per unit increases as consumption increases. Decreases in water usage due to increases in price are predictable and statistically valid, and price-induced changes in water use also vary with property value. Customers residing in more expensive homes tend to use more water, but price increases reduce their use by a higher amount than customers in less expensive homes because they use more water for discretionary purposes, such as landscaping. Access to substitute water sources, such as irrigation wells, also affects the amount of demand reduction accomplished by pricing (Whitcomb, 2005).

Public education is critical to achieving public acceptance of conservation BMP's. For example, when lawn watering restrictions or inverted rate structures are utilized, it is necessary to educate the public about these measures. However, education is usually combined with other conservation measures and it is difficult to assess how effective education is. When used alone, education is not typically very effective, but the most effective conservation programs always contain an educational component. It appears that education alone can add an additional 4-8% to the overall per capita reduction rate (Irvine Ranch Water District, 2004; Rocky Mountain Institute, 1991; SWFWMD, 2001). Education can take the form of media releases, billing inserts, announcements on television, placards, display ads, efforts in schools, and other outreach activities.

2.6 Stormwater

Stormwater is defined as water that accumulates on land as a result of storms and can include runoff from urban areas such as roads and roofs (www.water-technology.net, 2006). Stormwater as discussed here is usually not identified as a water supply source per se, since water supply plans tend to focus on the larger supplies available in surface waters (e.g., SWFWMD, 2006; SJRWMD, 2006). However, stormwater is commonly utilized as a supplemental non-potable water supply source (FDEP, 2005), and additional stormwater supply projects are planned (SJRWMD, 2006; Hartman, 2006).

In a water supply context, stormwater can be distinguished from surface water in that stormwater is of shorter duration, presents smaller quantities of water, and is related to specific rainfall events. Surface water, on the other hand, collects and integrates larger groundwater flows and runoff volumes over longer periods in natural bodies such as