

2014 Reuse Inventory

July 2015



**Florida Department of Environmental Protection
Water Reuse Program**

2014 Reuse Inventory

**Water Reuse Program
Florida Department of Environmental Protection**

July 2015



2600 Blair Stone Road, M.S. 3540
Tallahassee, FL 32399-2800
<http://www.dep.state.fl.us/water/reuse>



TABLE OF CONTENTS

TABLE OF CONTENTS	II
2014 REUSE INVENTORY	1
Purpose	1
Inventory Design	1
Results	2
Supplemental Water Supplies	14
Reuse Rates	14
Efficient and Effective Water Reuse	15
Water Resource Caution Areas	20
Cross-Connection Control	20
PREVIOUS INVENTORIES AND TRENDS	21
FUTURE UPDATES	23
REUSE WEBPAGE	23
REFERENCES	23
APPENDICES	
Appendix A. Reuse Systems in the Inventory	A - 1
Appendix B. Domestic Wastewater Treatment Facilities (0.1 mgd and greater) Providing Reuse	B - 1
Appendix C. Supplemental Water Supplies	C - 1
Appendix D. Reclaimed Water Utilization	D - 1
Appendix E. Effluent Disposal For Reuse Systems	E - 1
Appendix F. Public Access Reuse Customers and Cooling Towers	F - 1
Appendix G. Edible Crop Inventory	G - 1
Appendix H. Charges for Use of Reclaimed Water	H - 1
Appendix I. Domestic Wastewater Treatment Facilities (0.1 mgd and greater) With No Reuse	I - 1
Appendix J. Cross-Connection Control Activities	J - 1
Appendix K. Summary of Reuse and Disposal Flows For Reuse Systems	K - 1
Appendix L. All Domestic Wastewater Facilities (0.1 mgd and greater)	L - 1
Appendix M. Codes, Abbreviations, and Definitions Used in the Database, Inventory Report, and Appendices	M - 1

LIST OF TABLES

Table 1.	Summary of Reuse Facilities/Systems and Reuse Customers	4
Table 2.	Summary of Reuse Activities	5
Table 3.	Reuse Flows for Reuse Types by FDEP District and Water Management District	7
Table 4.	Capacity and Flow Ratios by FDEP District and Water District Management	8
Table 5.	County Capacity and Flow Ratios	9
Table 6.	Per Capita Reuse Information	11
Table 7a.	Summary of Reuse Rates for Reuse Systems	14
Table 7b.	Summary of Reuse Systems and Utilities with Public Reuse Access Customers (Residential and Non-Residential)	15
Table 8a.	Summary of Offset and Recharge Flows	16
Table 8b.	County Offset and Recharge Flows Due to Water Reuse	17
Table 9.	Reuse Activity in Water Resource Caution Areas	20
Table 10.	Summary of FDEP Reuse Inventories (1986 to Present)	21

LIST OF FIGURES

Figure 1.	Reclaimed Water Utilization by Flow	6
Figure 2.	Map of Per Capita Reuse Flow by County	13
Figure 3.	Florida's Reuse Growth	22

2014 REUSE INVENTORY

Purpose

Water conservation and the promotion of reuse of reclaimed water have been established in Sections 403.064 and 373.250, Florida Statutes (F.S.), as formal state objectives. Florida maintains the largest and most comprehensive inventories of permitted reuse systems in the country. This inventory and future, annual updates of the inventory enable monitoring of the State's efforts to encourage and promote reuse of reclaimed water in Florida. In addition, the information contained in the inventory gives municipalities and utilities interested in developing reuse programs access to other communities and utilities that have already implemented such programs.

Inventory Design

Chapter 62-610, Florida Administrative Code (F.A.C.), requires owners (permittees) of domestic wastewater facilities having permitted capacities of 0.1 million gallons per day (mgd) and above that provide reclaimed water for reuse to submit annual reuse reports on the Florida Department of Environmental Protection (FDEP) Form 62-610.300(4)(a)2., F.A.C. These annual reports are the basis for this inventory.

The forms for the 2014 reuse inventory were due on January 1, 2015, which covers a reporting period of October 1, 2013, through September 30, 2014. Information obtained from the report forms was entered into the Department's "Reuse Inventory Database," which is a Microsoft Access database. Over 97% of the 2014 annual reuse reports were received and entered into the database. For the 10 reuse systems that did not submit a 2014 annual reuse report form, data from the 2013 reuse inventory or the Department's wastewater facility regulation database were used. These 10 facilities will have blank values under the "report received" column in Appendix A.

In addition to the reuse reports received from the owners and operators of the wastewater treatment facilities and reuse systems, flow data and other information for facilities not engaged in reuse activities was obtained from the Department's wastewater facility regulation database.

The 2014 reuse inventory includes all active domestic wastewater treatment facilities having permitted capacities of 0.1 mgd or more, including those that do not engage in reuse activities. This threshold is also the minimum treatment plant capacity that is allowed by Chapter 62-610, F.A.C., to provide reclaimed water for irrigation of public access areas (such as parks and golf courses).

Appendix M provides definitions of terms, codes and abbreviations used in this report and appendices.

Results

Reuse Facilities

In 2014, a total of 477 domestic wastewater treatment facilities with permitted capacities of 0.1 mgd or above made reclaimed water available for reuse. These facilities had a permitted wastewater treatment facility (WWTF) capacity totaling 2,366 mgd and treated 1,501 mgd of domestic wastewater. These treatment facilities served 428 reuse systems which are listed in Appendix A. Approximately 727 mgd of reclaimed water from these facilities was reused for beneficial purposes. The total reuse capacity associated with these systems was 1,685 mgd. Appendices B¹, D, E, and K provide information on these reuse facilities and reuse systems² as well as their reuse and disposal activities.

Reclaimed water from these systems was used to irrigate 360,329 residences, 542 golf courses, 987 parks, and 371 schools. Appendix F provides details on the numbers and types of public access reuse customers, including cooling towers and unique uses for reclaimed water. Table 1 summarizes the data in terms of the number of reuse facilities and reuse systems in each FDEP district and water management district, as well as the breakdown of certain public access reuse activities, such as number of residences, golf courses, parks, and schools irrigated by reclaimed water.

Table 2 provides a summary of reuse activities by reuse type, including the number of reuse systems, capacity, flow, and area for each reuse subtype. Irrigation of areas accessible to the public represented about 55 percent of the 727 mgd of reclaimed water reused. Figure 1 shows the percentage of reclaimed water utilization by flow for each reuse type. Table 3 compares the types of reclaimed water utilization in each FDEP district and water management district.

Over 13,722 acres of edible crops on 65 farms were reported to be irrigated with reclaimed water. Around 81% of the farmland was dedicated to the production of citrus (i.e., oranges, tangerines, grapefruit, etc.). Appendix G provides information on the 19 reuse systems providing reclaimed water for the irrigation of edible crops and the farms using the reclaimed water.

Disposal Facilities

There are about 49 active domestic wastewater treatment facilities having permitted capacities of 0.1 mgd or greater that do not provide reuse of any kind. These facilities had a total WWTF capacity of 209 mgd and a total WWTF flow of 133 mgd. Appendix I provides information on facilities that engage in disposal activities only.

¹ Due to the design of the reuse database, some facilities listed in Appendix B are assigned to the county where the reuse system is located. For example, the JEA-Julington Creek treatment facility is reported to be in Duval County, where JEA-South Grid is largely located, rather than St. Johns County where the treatment facility is actually located.

² See definitions in Appendix M for an explanation of the terms 'reuse facility' and 'reuse system' as used in this report.

All Facilities

The 526 domestic wastewater treatment facilities with permitted capacities of 0.1 mgd or more had a total WWTF capacity of 2,575 mgd and a total WWTF flow of 1,634 mgd. Appendix L³ provides information on all these facilities.

The 727 mgd of reclaimed water use represents approximately 44% of the total domestic wastewater flow in the state. The 1,685 mgd of reuse capacity represents approximately 65% of the total domestic wastewater treatment capacity in the state. Table 4 provides the reuse capacity and flow ratios for each FDEP district and water management district.

Table 5 provides a summary, by county, of the total domestic wastewater treatment plant and reuse capacities and flows for all facilities with permitted capacities of 0.1 mgd or greater, the ratio of the reuse capacity to wastewater treatment plant capacity, and the ratio of the reuse flow to total WWTF flow.

The state-wide average reuse flow per capita, including population served by onsite sewage treatment and disposal systems (e.g., septic tanks), was 37 gallons per day of reuse per person. Table 6 shows the per capita reuse capacities and reuse flows for each county in Florida. The per capita usage is based on 2014 population estimates from the State of Florida's Demographic Estimating Conference, February 2015 and the Florida Demographic Database, April 2014. Figure 2 shows the map of Florida's counties color-coded by range of reuse flow per capita.

³ The total flow from all facilities reported in Appendix L does not equal totaling all reported reuse flows in Appendix D with all reported disposal flows in Appendices I and K. Reasons for this include:

- (1) Use of supplemental water supplies to augment public access reclaimed water application;
- (2) Use of reclaimed water in wetland creation, restoration, or enhancement activities that then later gets discharged or reused again;
- (3) Use of aquifer storage and recovery wells;
- (4) Use of reclaimed water at the treatment plant that is then reused again offsite or discharged; and
- (5) Other minor discrepancies due to internal rounding or differences in metering at the treatment plants.

**Table 1. Summary of Reuse Facilities/Systems^(a) and Reuse Customers
Information by District**

DEP District ^(b)	No. of Treatment Facilities Providing Reuse ^(c)	No. of Reuse Systems ^(c)	No. of Residences Irrigated	No. of Golf Courses Irrigated	No. of Parks Irrigated	No. of Schools Irrigated	No. of Cooling Towers ^(d)
Central (Orlando)	121	110	121,365	140	346	127	16
Northeast (Jacksonville)	73	66	17,534	43	8	8	4
Northwest (Pensacola)	64	63	3,566	24	35	8	5
Southeast (West Palm Beach)	51	46	27,903	97	73	29	6
South (Ft. Myers)	75	68	87,377	133	108	32	5
Southwest (Tampa)	93	75	102,584	105	417	167	42
2014 Totals	477	428	360,329	542	987	371	78
Water Management District^(b)							
Northwest Florida	63	62	3,566	24	35	8	5
South Florida	110	102	134,332	204	266	78	16
St. Johns River	143	126	108,247	124	209	112	12
Suwannee River	27	27	-	1	2	-	3
Southwest Florida	134	111	114,184	189	475	173	42
2014 Totals	477	428	360,329	542	987	371	78
2013 Totals	482	434	343,782	536	948	358	78
% Change	-1.0%	-1.4%	+4.8%	+1.1%	+4.1%	+3.6%	0%

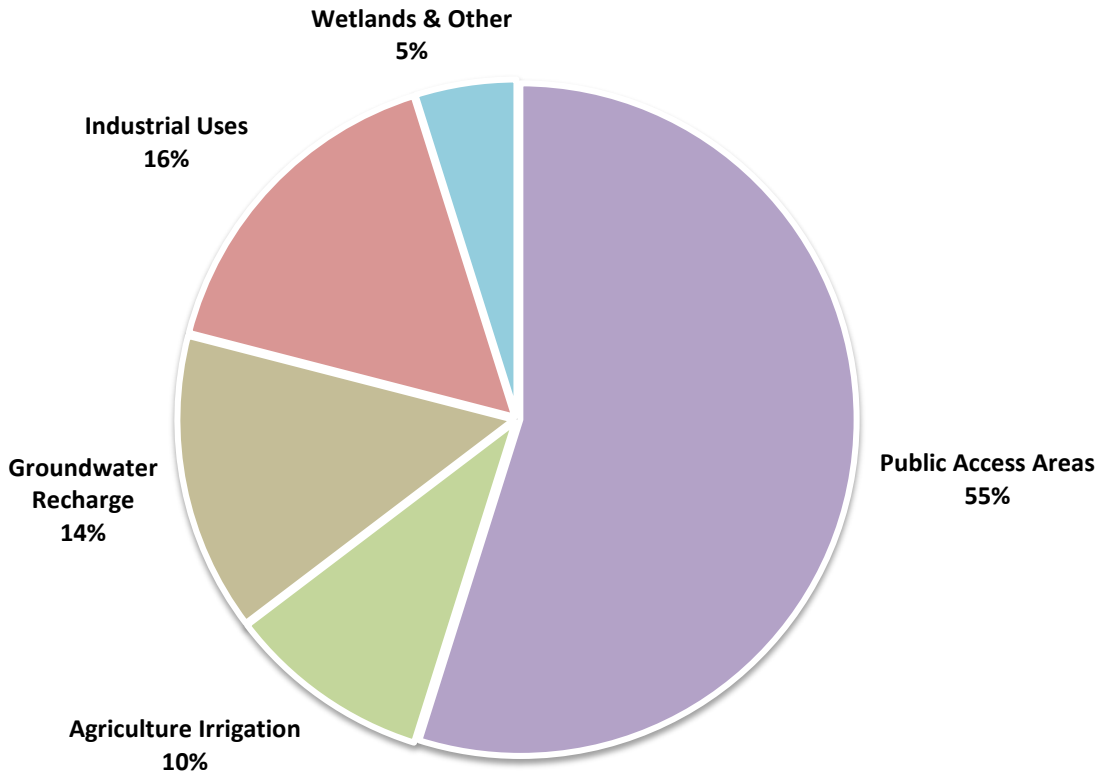
- Notes:
- (a) See definitions in Appendix M for an explanation of the terms ‘reuse facility’ and ‘reuse system’ as used in this report.
 - (b) A few reuse systems are physically located across jurisdictional boundaries (i.e., across more than one water management district, FDEP district, or county). Due to the design of the database, all of the reuse systems’ reuse flows are attributed to the jurisdiction in which the majority of the reuse system is located. For example, Ocala #1, Ocala #2, and Villages WWTF are listed as being located within the St. Johns River Water Management District; however, some of their reuse customers are also located within the Southwest Florida Water Management District.
 - (c) The number of treatment facilities providing reuse (Appendix B) is greater than the number of reuse systems (Appendix A) because in several cases multiple treatment facilities serve one reuse system. Furthermore, a treatment facility may send reclaimed water to more than one reuse system while these facilities will be listed more than once in Appendix B, they are only counted once in the total number of facilities providing reuse.
 - (d) The number of cooling towers includes once-through cooling towers at power plants as well as other commercial use cooling towers.

Table 2. Summary of Reuse Activities

Reuse Type	Number of Systems^(a)	Reuse Capacity^(b) (mgd)	Reuse Flow^(b) (mgd)	Reported Area^(b,c) (acres)	Adjusted Area^(b,c) (acres)
<u>Public Access Areas & Landscape Irrigation</u>					
Golf Course Irrigation	193	319.7	127.0	67,814	69,706
Residential Irrigation	134	451.2	185.1	146,798	160,608
Other Public Access Areas & Other	153	219.9	86.8	41,262	51,924
Subtotal	245	990.9	398.9	255,875	282,238
<u>Agricultural Irrigation</u>					
Edible Crops ^(d)	19	28.8	11.5	13,942	13,942
Other Crops	114	137.2	59.8	22,518	24,587
Subtotal	123	166.0	71.3	36,460	38,529
<u>Ground Water Recharge & Indirect Potable Reuse</u>					
Rapid Infiltration Basins	179	216.3	102.2	14,976	17,436
Absorption Fields	16	6.1	2.1	491	491
Surface Water Augmentation	0	0	0	NA	NA
Injection	0	0	0	NA	NA
Subtotal	184	222.3	104.3	15,467	17,927
<u>Industrial</u>					
At Treatment Plant	102	84.5	53.7	825	5,037
At Other Facilities	42	132.1	63.5	4,774	4,403
Subtotal	120	216.6	117.3	5,599	9,440
<u>Toilet Flushing</u>	18	1.5	0.6	NA	NA
<u>Fire Protection</u>	2	2.0	0	NA	NA
<u>Wetlands</u>	10	76.7	32.1	5,440	5,440
<u>Other Uses</u>	17	9.0	2.6	276	309
2014 Totals	428	1,685.1	727.1	319,116	353,955
2013 Totals	434	1,690.9	719.5	317,493	358,177
% Change	-1.4%	-0.3%	+1.1%	+0.5%	-1.2%

- Notes: (a) The numbers of systems are not additive since a single system may engage in one or more reuse activity.
 (b) Discrepancies in column totals are due to internal rounding associated with the development of this summary table; totals presented in table are calculated without rounding individual values.
 (c) Some facilities did not report the acreage where reclaimed water was applied. For a better representation of the actual acreage, the averages of the reported areas were used to adjust the acreage totals to include the non-reported values.
 (d) About 81% of total area for edible crops is citrus – including oranges, grapefruit, and tangerines.

Figure 1. Reclaimed Water Utilization by Flow



Note: (1) Agriculture irrigation includes edible crops (e.g., citrus) as well as feed and fodder crops (e.g., sprayfields).

Table 3. Reuse Flows (mgd) for Reuse Types by FDEP District and Water Management District

	Public Access Areas	Agricultural Irrigation	Ground Water Recharge	Industrial	Other ^(b)	Totals
DEP Districts						
Central (Orlando)	123.83	13.37	62.04	17.71	25.13	242.07
Northeast (Jacksonville)	20.62	8.61	4.99	8.06	0.33	42.61
Northwest (Pensacola)	15.07	32.18	10.07	12.34	7.46	77.12
Southeast (West Palm Beach)	58.54	0.76	5.57	38.31	1.86	105.04
South (Ft. Myers)	88.86	4.99	4.75	1.61	0.34	100.55
Southwest (Tampa)	91.94	11.41	16.91	39.24	0.18	159.69
2014 Totals	398.86	71.32	104.33	117.28	35.30	727.08
Water Management Districts						
Northwest Florida	15.07	32.02	10.07	12.34	7.37	76.87
South Florida	165.69	6.58	56.87	45.14	3.64	277.92
St. Johns River	98.75	8.90	16.46	19.32	23.78	167.21
Suwannee River	0.00	8.72	0.87	0.90	0.25	10.74
Southwest Florida	119.35	15.09	20.06	39.57	0.27	194.34
2014 Totals	398.86	71.32	104.33	117.28	35.30	727.08
2013 Totals	385.78	71.11	100.96	125.36	36.28	719.49
% Change	+3.4%	+0.3%	+3.3%	-6.4%	-2.7%	+1.1%

Notes: (a) Any discrepancies in totals are due to rounding associated with developing this summary table; totals presented in table are calculated without rounding individual values.

(b) Includes wetlands, fire protection, toilet flushing and all "other uses."

Table 4. Capacity and Flow Ratios by FDEP District and Water Management District

DEP Districts	Reuse Capacity (mgd)	Total WWTF Capacity ^(b) (mgd)	Capacity Ratio ^(c)	Reuse Flow (mgd)	Total WWTF Flow ^(b) (mgd)	Flow Ratio ^(d)		
Central (Orlando)	528.8	449.53	1.18	242.1	282.73	0.86		
Northeast (Jacksonville)	133.3	238.66	0.56	42.6	146.17	0.29		
Northwest (Pensacola)	174.4	176.62	0.99	77.1	104.56	0.74		
Southeast (West Palm Beach)	231.9	950.08	0.24	105.0	683.23	0.15		
South (Ft. Myers)	191.8	242.38	0.79	100.6	122.60	0.82		
Southwest (Tampa)	424.9	517.51	0.82	159.7	294.68	0.54		
2014 Totals	1685.1	2574.8	0.65^(g)	727.1	1634.0	0.44^(g)		

Water Management Districts	Reuse Capacity (mgd)	Total WWTF Capacity ^(b) (mgd)	Capacity Ratio ^(c)	Reuse Flow (mgd)	Total WWTF Flow ^(b) (mgd)	Flow Ratio ^(d)	Reuse Flow that Replaces Potable-Quality Water ^(e) (mgd)	Flow Ratio for Reuse that Replaces Potable-Quality Water ^(f)
Northwest Florida	174.1	176.37	0.99	76.9	104.40	0.74	26.0	0.25
South Florida	520.4	1239.77	0.42	277.9	862.40	0.32	188.3	0.22
St. Johns River	444.8	536.85	0.83	167.2	311.58	0.54	107.7	0.35
Suwannee River	22.1	18.76	1.18	10.7	11.81	0.91	1.1	0.10
Southwest Florida	523.7	603.02	0.87	194.3	343.78	0.57	151.4	0.44
2014 Totals	1685.1	2574.8	0.65^(g)	727.1	1634.0	0.44^(g)	474.7	0.29^(g)

- Note: (a) Discrepancies in totaling the columns are due to internal rounding associated with the development of this table; totals presented in table are calculated without rounding individual values.
- (b) Totals include the wastewater treatment plant (WWTF) capacity and flow of facilities over 0.1 million gallons per day (mgd) that do not provide reuse.
- (c) Capacity Ratio = Reuse Capacity/Total WWTF Capacity.
Capacities ratios greater than 1.0 (i.e., greater than 100%) indicate the utility(s) may employ several reuse options, making the reuse capacity greater than the WWTF capacity.
- (d) Flow Ratio = Reuse Flow/Total WWTF Flow.
- (e) Reuse Flow That Replaces Potable-Quality Water includes flows for public access irrigation, irrigation of edible crops, toilet flushing, fire protection, and industrial uses. Not included in this flow calculation are agriculture irrigation of other crops, absorption fields, rapid infiltration basins, wetlands, and industrial reuse at the treatment plant.
- (f) Flow Ratio for Reuse that Replaces Potable-Quality Water = Reuse Flow that Replaces Potable-Quality Water/Total WWTF Flow.
- (g) State average.

Table 5. County Capacity and Flow Ratios

County	Total WWTF Capacity (mgd) ^(a)	Total WWTF Flow (mgd) ^(a)	Reuse Capacity (mgd)	Reuse Flow (mgd)	Capacity Ratio ^(b)	Flow Ratio ^(c)
Alachua	27.85	20.81	13.60	4.08	0.49	0.20
Baker	1.58	1.07	0.24	0.22	0.15	0.21
Bay	35.00	18.50	7.53	3.55	0.22	0.19
Bradford	3.43	1.79	2.70	1.15	0.79	0.64
Brevard	68.23	39.78	51.68	21.03	0.76	0.53
Broward	315.12	222.71	36.45	16.38	0.12	0.07
Calhoun	1.50	0.60	0	0	0	0
Charlotte	16.75	10.22	13.17	3.87	0.79	0.38
Citrus	7.11	3.11	8.78	3.11	1.23	1.00
Clay	21.32	8.82	18.66	3.95	0.88	0.45
Collier	60.62	26.68	38.19	23.42	0.63	0.88
Columbia	3.53	2.75	3.48	2.75	0.99	1.00
De Soto	3.34	1.08	3.16	1.08	0.95	1.00
Dixie	0.40	0.21	0.40	0.57	1.00	2.72
Duval	131.95	79.78	33.79	11.73	0.26	0.15
Escambia	33.78	23.03	40.68	18.62	1.20	0.81
Flagler	12.19	8.75	24.09	7.80	1.98	0.89
Franklin	2.50	0.88	2.71	0.91	1.08	1.03
Gadsden	4.27	2.12	1.48	0.59	0.35	0.28
Gilchrist	0.45	0.22	0.45	0.22	1.00	0.99
Glades	0.24	0.17	0	0	1	1
Gulf	3.69	0.99	2.25	0.88	0.61	0.89
Hamilton	1.65	0.96	0.45	0.24	0.27	0.25
Hardee	2.29	1.09	2.29	1.09	1.00	1.00
Hendry	2.75	2.02	2.75	2.02	1.00	1.00
Hernando	9.55	5.00	18.04	5.00	1.89	1.00
Highlands	4.90	2.37	4.69	2.35	0.96	0.99
Hillsborough	164.54	101.31	52.19	38.47	0.32	0.38
Holmes	1.40	0.70	0	0	0	0
Indian River	16.73	8.13	11.16	6.21	0.67	0.76
Jackson	6.58	3.22	5.53	2.39	0.84	0.74
Jefferson	1.05	0.55	1.30	0.64	1.24	1.17
Lafayette	0.65	0.26	0.65	0.26	1.00	1.00
Lake	29.21	12.69	50.20	12.63	1.72	1.00
Lee	95.95	48.14	78.52	50.96	0.82	1.06
Leon	28.05	20.88	34.07	19.34	1.21	0.93
Levy	1.11	0.48	1.12	0.48	1.01	1.00
Liberty	0.53	0.30	0.53	0.30	1.00	1.00
Madison	1.14	0.96	1.14	0.96	1.00	1.00
Manatee	50.40	29.08	37.91	14.95	0.75	0.51
Marion	21.98	9.33	25.70	9.22	1.17	0.99

County	Total WWTF Capacity (mgd) ^(a)	Total WWTF Flow (mgd) ^(a)	Reuse Capacity (mgd)	Reuse Flow (mgd)	Capacity Ratio ^(b)	Flow Ratio ^(c)
Martin	14.61	7.75	13.68	4.57	0.94	0.59
Miami-Dade	380.31	314.38	20.99	16.75	0.06	0.05
Monroe	16.47	7.15	2.86	0.37	0.17	0.05
Nassau	6.78	3.72	2.44	1.39	0.36	0.37
Okaloosa	31.11	17.61	39.09	17.73	1.26	1.01
Okeechobee	3.20	1.01	1.63	0.56	0.51	0.56
Orange	129.98	108.13	175.95	107.50	1.35	0.99
Osceola	37.19	26.89	47.15	27.20	1.27	1.01
Palm Beach	187.02	114.12	134.89	56.21	0.72	0.49
Pasco	49.15	27.33	44.35	27.76	0.90	1.02
Pinellas	170.65	95.38	214.94	51.83	1.26	0.54
Polk	61.11	31.03	46.37	17.47	0.76	0.56
Putnam	4.30	2.03	5.70	1.45	1.32	0.72
Santa Rosa	11.04	6.92	10.79	4.43	0.98	0.64
Sarasota	44.07	26.13	48.20	16.31	1.09	0.62
Seminole	79.88	44.84	101.97	36.69	1.28	0.82
St. Johns	16.43	10.63	16.88	2.48	1.03	0.23
St. Lucie	33.31	15.13	13.09	4.38	0.39	0.29
Sumter	12.00	7.08	16.27	7.17	1.36	1.01
Suwannee	1.56	1.11	4.38	1.05	2.81	0.95
Taylor	1.65	1.28	2.45	1.28	1.48	1.00
Union	0.70	0.55	0.70	0.55	1.00	1.00
Volusia	70.86	34.00	59.87	20.62	0.84	0.61
Wakulla	1.20	1.14	1.20	1.14	1.00	1.00
Walton	13.08	6.23	25.85	5.63	1.98	0.90
Washington	1.87	0.90	1.44	0.97	0.77	1.08
Totals^(d)/Avg:	2,574.78	1,633.97	1,685.13	727.08	0.65^(e)	0.44^(e)

Notes: (a) Totals include the wastewater treatment plant (WWTF) capacity and flow of facilities over 0.1 million gallons per day (mgd) that do not provide reuse.

(b) Capacity Ratio = Reuse Capacity/Total WWTF Capacity.
Capacities ratios greater than 1.0 (i.e., greater than 100%) indicate the utility(s) may employ several reuse options, making the reuse capacity greater than the WWTF capacity.

(c) Flow Ratio = Reuse Flow/Total WWTF Flow.
Flow ratios greater than 1.0 (i.e., greater than 100%) indicate that reuse may include supplemental water supplies, reclaimed water recovered from aquifer storage recover wells, or reclaimed water that is reused at the treatment plant and then reused again offsite.

(d) Discrepancies in totaling the columns are due to internal rounding associated with the development of this table; totals presented in table are calculated without rounding individual values.

(e) State Average.

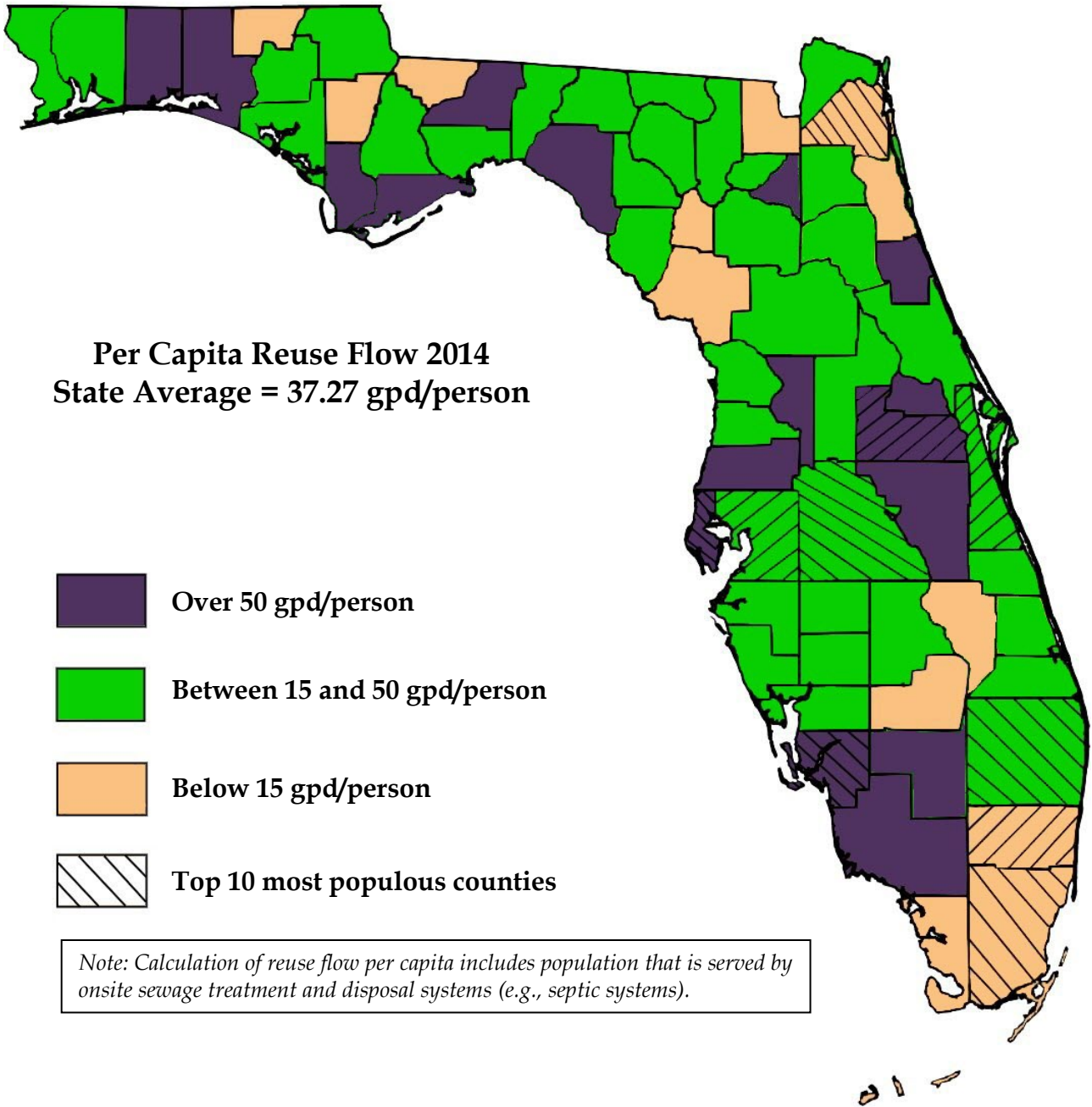
Table 6. Per Capita Reuse Information

County	Population (2014) ^(a)	Reuse Capacity (gpd/person) ^(b)	Reuse Flow (gpd/person) ^(c)	Rank (flow) ^(d)	Rank (population) ^(e)
Alachua	250,730	54.22	16.27	53	23
Baker	26,991	9.04	8.26	63	52
Bay	170,781	44.08	20.81	48	28
Bradford	27,323	98.63	42.20	23	51
Brevard	552,427	93.55	38.08	31	10
Broward	1,803,903	20.21	9.08	62	2
Calhoun	14,592	0	0	66-67	62
Charlotte	164,467	80.05	23.55	45	29
Citrus	140,798	62.32	22.08	47	33
Clay	197,403	94.53	20.00	50	25
Collier	336,783	113.41	69.55	9	17
Columbia	67,826	51.37	40.57	28	40
De Soto	34,426	91.69	31.34	36	48
Dixie	16,356	24.46	34.73	35	59
Duval	890,066	37.96	13.18	57	7
Escambia	303,907	133.84	61.27	12	19
Flagler	99,121	243.05	78.67	6	36
Franklin	11,794	229.78	76.90	8	65
Gadsden	48,096	30.78	12.18	59	43
Gilchrist	16,853	26.70	12.82	58	57
Glades	12,852	25	13	56	64
Gulf	16,543	136.01	53.26	16	58
Hamilton	14,351	31.36	16.93	52	63
Hardee	27,712	82.71	39.33	29	50
Hendry	37,895	72.54	53.20	17	47
Hernando	174,955	103.11	28.60	40	27
Highlands	99,818	47.02	23.50	46	35
Hillsborough	1,301,887	40.09	29.55	39	4
Holmes	20,025	0	0	66-67	55
Indian River	140,955	79.20	44.03	21	32
Jackson	50,231	110.01	47.58	19	42
Jefferson	14,597	89.13	43.91	22	61
Lafayette	8,696	74.52	29.67	38	66
Lake	309,736	162.08	40.76	27	18
Lee	653,485	120.15	77.99	7	8
Leon	281,292	121.11	68.75	10	22
Levy	40,473	27.57	11.88	61	45
Liberty	8,668	61.14	34.84	34	67
Madison	19,303	59.06	49.73	18	56
Manatee	339,545	111.64	44.03	20	15

County	Population (2014) ^(a)	Reuse Capacity (gpd/person) ^(b)	Reuse Flow (gpd/person) ^(c)	Rank (flow) ^(d)	Rank (population) ^(e)
Marion	337,455	76.16	27.33	43	16
Martin	148,585	92.06	30.75	37	31
Miami-Dade	2,613,692	8.03	6.41	64	1
Monroe	74,044	38.64	4.94	65	38
Nassau	75,321	32.39	18.43	51	37
Okaloosa	190,666	205.03	92.97	2	26
Okeechobee	39,828	40.98	14.11	55	46
Orange	1,227,995	143.28	87.54	4	5
Osceola	295,553	159.52	92.02	3	20
Palm Beach	1,360,238	99.17	41.32	25	3
Pasco	479,340	92.52	57.92	13	12
Pinellas	933,258	230.31	55.54	15	6
Polk	623,174	74.40	28.03	41	9
Putnam	72,523	78.60	20.02	49	39
Santa Rosa	159,785	67.50	27.72	42	30
Sarasota	387,140	124.50	42.14	24	14
Seminole	437,086	233.30	83.94	5	13
St. Johns	207,443	81.39	11.94	60	24
St. Lucie	282,821	46.27	15.47	54	21
Sumter	111,125	146.41	64.56	11	34
Suwannee	44,168	99.14	23.81	44	44
Taylor	22,932	106.84	55.69	14	54
Union	15,647	44.74	35.41	33	60
Volusia	503,851	118.82	40.93	26	11
Wakulla	31,285	38.20	36.44	32	49
Walton	59,793	432.36	94.14	1	41
Washington	24,959	57.50	38.99	30	53
Florida	19,507,369	86.38^(f)	37.27^(f)		

- Notes: (a) 2014 population estimates from the Florida Demographic Estimating Conference, February 2015, and the Florida Demographic Database, April 2014.
- (b) Reuse Capacity = Reuse Capacity (gpd)/Population.
- (c) Reuse Flow = Reuse Flow (gpd)/Population.
- (d) Counties ranked from highest rate of reuse flow per capita to lowest rate of reuse flow per capita (e.g., county with highest rate of reuse flow per capita is ranked No. 1; counties with no reuse flow per capita tie for last place).
- (e) Counties ranked according to population capita (e.g., county with highest population is ranked No. 1).
- (f) State average.
- (e) Discrepancies in calculating per capita statistics are due to internal rounding associated with the development of these tables; values presented in this table are calculated without rounding individual values.
- gpd = gallons per day (equivalent to mgd*1,000,000)*

Figure 2. Map of Per Capita Reuse Flow by County



Supplemental Water Supplies

Some reuse systems use other sources of water to augment the reclaimed water supply. In 2014, a total of 58 reuse systems in Florida used 17.14 mgd of surface water, 10.34 mgd of ground water, 0.20 mgd of stormwater, and 0.72 mgd of drinking water to supplement reclaimed water supplies for a total of 28.40 mgd of supplemental water used in 2014. In addition, 7.92 mgd of demineralization concentrate was blended with reclaimed water while 0.325 mgd of reclaimed water was recovered from aquifer storage and recovery (ASR) wells and sent to a reuse system. Appendix C details the 58 reuse systems in the state which use supplemental water supplies and summarizes the flows by water management district.

Reuse Rates

Utilities recoup costs associated with the reuse system through rate recovery. Reuse costs can be allocated among wastewater customers, water users, and reclaimed water users. Table 7a provides a summary of charges made for the use of reclaimed water in Florida for reuse systems that reported charging fees.

Table 7a. Summary of Reuse Rates for Reuse Systems^(a)

Residential Customers - 134 systems

	<i>Average</i>	<i>Median</i>	<i>Range</i>	<i>No. of Systems</i>
Flat Rate Only (\$/month/connection)	\$9.66	\$9.00	\$2.79- \$21.03	27
Gallonge Charge Only (\$/1000 gallons)	\$0.95	\$0.67	\$0.19 - \$3.05	43
Combination Flat and per Gallon Charge				48
Flat Rate (\$/month/connection)	\$8.28	\$7.06	\$2.98 - \$32.03	
Gallonge Charge (\$/1000 gallons)	\$1.18	\$0.93	\$0.10 - \$9.36	

Non-Residential Customers - 223 systems

	<i>Average</i>	<i>Median</i>	<i>Range</i>	<i>No. of Systems</i>
Flat Rate Only (\$/month/connection)	\$563.98	\$393	\$6 - \$1,500	14
Gallonge Charge Only (\$/1000 gallons)	\$0.58	\$0.45	\$0.05 - \$3.05	81
Combination Flat and per Gallon Charge				48
Flat Rate (\$/month/connection)	\$441.03	\$18.17	\$0.08 - \$12,595 ^(b)	
Gallonge Charge (\$/1000 gallons)	\$0.80	\$0.65	\$0.05 - \$3.35	

Notes: (a) Many reuse systems charge a tiered-rate based on total volume used and/or their rates are based on the size of the connection; however, only one charge value per customer type was chosen for this data analysis.

(b) \$12,595/month reported by Dunes CDD.

A total of 72 utilities reported not charging their residential and/or non-residential reclaimed water customers any fee (base, flat, or gallonage) specific to use of reclaimed water⁴. These utilities may recoup the costs associated with the reuse

⁴ Some of these utilities may not only own and operate the reuse system but also the establishment(s) to which public access reclaimed water is being applied, such as a golf course. Therefore, they do not charge themselves for the use of the reclaimed water.

system through other means. Table 7b provides a summary of reuse systems, utilities, and customer types.

Table 7b. Summary of Reuse Systems and Utilities with Public Access Reuse Customers (Residential and Non-Residential)

	No. of Reuse Systems	No. of Utilities ^(a)	No. of Utilities Reporting No Charges ^(b)
Total	235	180	72
Serving both residential and non-residential customers	124	101	10
Serving only residential customers	11	8	2
Serving only non-residential customers	100	71	44
Total serving residential customers	135	109	14
Total serving non-residential customers	224	172	68

Notes: (a) A utility can be a public (e.g., JEA, Lee County, City of Sanibel, etc.) or private (e.g., Toho Water Authority) entity operating one or more reuse systems within that entity's jurisdiction or area. See Appendix M for definitions of these terms as used in this report.

(b) Number of unique utilities that reported not charging their reuse customers for the use of their reclaimed water.

Appendix H shows the 235 reuse systems who reported having public access reuse customers and their charges for use of reclaimed water.

Efficient and Effective Water Reuse

In 2003, Water Reuse for Florida: Strategies for Effective Use of Reclaimed Water, also known as, "*The Strategies Report*," was published. The report identifies strategies for increasing the efficient and effective use of reclaimed water. Two concepts introduced in the report, "potable quality water offset" and "recharge fraction," will play increasingly important roles in shaping efficient and effective water reuse in Florida.

"Potable quality water offset" means the amount of potable quality water (Class F-I, G-I, or G-II ground water or water meeting drinking water standards) saved through the use of reclaimed water expressed as a percentage of the total reclaimed water used. "Recharge fraction" means the portion of reclaimed water used in a reuse system that recharges an underlying potable quality ground water (Class F-I, G-I, or G-II ground water) that is used for potable supply, or augments a Class I surface water, expressed as a percentage of the total reclaimed water used.

The 727 mgd of reclaimed water used in 2014 is estimated to have offset (i.e., avoided) the use of 382 mgd (over 139 billion gallons) of potable quality water while serving to add 241 mgd (over 88 billion gallons) back to available water supplies.

Table 8a summarizes the amount of potable quality water offset and recharge flow achieved within each FDEP district and water management district. Table 8b

details the amount of reclaimed water used to offset and recharge potable quality water by county.

Table 8a. Summary of Offset and Recharge Flows

FDEP District	Total Flow (mgd)	Offset Flow^(a) (mgd)	Recharge Flow^(a) (mgd)
Central (Orlando)	217.06	94.52	98.88
Northeast (Jacksonville)	42.43	25.35	13.21
Northwest (Pensacola)	69.81	41.19	23.87
Southeast (West Palm Beach)	103.22	75.14	19.20
South (Ft. Myers)	100.34	53.21	33.74
Southwest (Tampa)	159.51	92.59	51.99
2014 Totals	692.37	382.00	240.89
Water Management District	Total Flow (mgd)	Offset Flow^(a) (mgd)	Recharge Flow^(a) (mgd)
Northwest Florida	69.56	41.00	23.82
South Florida	274.45	144.49	100.98
St. Johns River	143.54	77.42	50.03
Suwannee River	10.74	6.38	3.84
Southwest Florida	194.08	112.70	62.21
2014 Totals	692.37	382.00	240.89

- Note: (a) The offset and recharge flows were calculated using values from Table 5 of the *Strategies Report*. See Table 8b for details.
- (b) Discrepancies in totaling the columns are due to internal rounding associated with the development of this table; totals presented in table are calculated without rounding individual values.

Table 8b. County Offset and Recharge Flows Due to Water Reuse

	Golf Course Irrigation (mgd)			Residential Irrigation (mgd)			Other Public Access Areas (mgd)			Ground Water Recharge & Indirect Potable Reuse(mgd)		Agricultural Irrigation (mgd)			Industrial Uses, Toilet Flushing & Fire Protection(mgd)		Totals (mgd)		
County	GCI Reuse Flow	GCI Offset Flow	GCI RF ^(b)	RI Reuse Flow	RI Offset Flow	RI RF ^(b)	OPAA Reuse Flow	OPAA Offset Flow	OPAA RF ^(b)	GWR&IPR Reuse Flow	GWR&IPR RF ^(b)	AI Reuse Flow	AI Offset Flow	AI RF ^(b)	IND, TF, FP Reuse Flow	IND, TF, FP Offset Flow	Total Flow	Total Offset Flow	Total RF ^(b)
Alachua	0.590	0.443	0.059	1.360	0.544	0.612	0.420	0.252	0.126	0.057	0.051	0.631	0.379	0.221	1.020	1.020	4.079	2.638	1.069
Baker	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.175	0.158	0.048	0.029	0.017	0.000	0.000	0.223	0.029	0.174
Bay	0.622	0.467	0.062	1.695	0.678	0.763	1.121	0.673	0.336	0.022	0.020	0.000	0.000	0.000	0.094	0.094	3.554	1.911	1.181
Bradford	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.131	0.679	0.396	0.022	0.022	1.153	0.701	0.396
Brevard	6.256	4.692	0.626	9.889	3.956	4.450	2.435	1.461	0.731	0.768	0.691	0.057	0.034	0.020	1.453	1.453	20.858	11.595	6.517
Broward	3.761	2.821	0.376	2.923	1.169	1.315	0.442	0.265	0.133	0.517	0.465	0.000	0.000	0.000	8.734	8.734	16.377	12.989	2.289
Calhoun	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Charlotte	2.039	1.529	0.204	0.918	0.367	0.413	0.072	0.043	0.022	0.429	0.386	0.000	0.000	0.000	0.416	0.416	3.874	2.356	1.025
Citrus	0.635	0.476	0.064	0.000	0.000	0.000	0.000	0.000	0.000	1.147	1.032	1.327	0.796	0.464	0.000	0.000	3.109	1.272	1.560
Clay	0.459	0.344	0.046	3.305	1.322	1.487	0.000	0.000	0.000	0.029	0.026	0.000	0.000	0.000	0.155	0.155	3.948	1.821	1.559
Collier	8.374	6.281	0.837	11.546	4.618	5.196	2.872	1.723	0.862	0.101	0.091	0.530	0.318	0.186	0.000	0.000	23.423	12.940	7.171
Columbia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.602	1.561	0.911	0.150	0.150	2.752	1.711	0.911
De Soto	0.090	0.068	0.009	0.020	0.008	0.009	0.040	0.024	0.012	0.067	0.060	0.782	0.469	0.274	0.000	0.000	0.999	0.569	0.364
Dixie	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.568	0.341	0.199	0.000	0.000	0.568	0.341	0.199
Duval	1.588	1.191	0.159	2.220	0.888	0.999	1.630	0.978	0.489	0.275	0.248	0.000	0.000	0.000	6.019	6.019	11.732	9.076	1.894
Escambia	0.000	0.000	0.000	0.000	0.000	0.000	0.070	0.042	0.021	0.000	0.000	0.382	0.229	0.134	11.744	11.744	12.196	12.015	0.155
Flagler	2.324	1.743	0.232	1.886	0.754	0.849	0.453	0.272	0.136	2.957	2.661	0.000	0.000	0.000	0.000	0.000	7.620	2.769	3.878
Franklin	0.125	0.094	0.013	0.000	0.000	0.000	0.307	0.184	0.092	0.000	0.000	0.420	0.252	0.147	0.055	0.055	0.907	0.585	0.252
Gadsden	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.136	0.122	0.372	0.223	0.130	0.078	0.078	0.586	0.301	0.253
Gilchrist	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.216	0.130	0.076	0.000	0.000	0.216	0.130	0.076
Glades	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.085	0.051	0.030	0.000	0.000	0.085	0.051	0.030
Gulf	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.881	0.529	0.308	0.000	0.000	0.881	0.529	0.308
Hamilton	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.161	0.096	0.056	0.082	0.082	0.243	0.179	0.056
Hardee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.307	0.184	0.107	0.783	0.783	1.090	0.967	0.107
Hendry	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.656	0.590	1.360	0.816	0.476	0.000	0.000	2.016	0.816	1.066
Hernando	1.402	1.052	0.140	0.000	0.000	0.000	0.000	0.000	0.000	2.824	2.542	0.000	0.000	0.000	0.777	0.777	5.003	1.829	2.682
Highlands	0.000	0.000	0.000	0.000	0.000	0.000	0.045	0.027	0.014	2.237	2.013	0.032	0.019	0.011	0.032	0.032	2.346	0.078	2.038
Hillsborough	2.398	1.799	0.240	12.024	4.810	5.411	4.297	2.578	1.289	0.434	0.391	0.105	0.063	0.037	19.216	19.216	38.474	28.465	7.367

County	GCI Reuse Flow	GCI Offset Flow	GCI RF ^(b)	RI Reuse Flow	RI Offset Flow	RI RF ^(b)	OPAA Reuse Flow	OPAA Offset Flow	OPAA RF ^(b)	GWR&IPR Reuse Flow	GWR&IPR RF ^(b)	AI Reuse Flow	AI Offset Flow	AI RF ^(b)	IND, TF, FP Reuse Flow	IND, TF, FP Offset Flow	Total Flow	Total Offset Flow	Total RF ^(b)
Holmes	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Indian River	3.097	2.323	0.310	0.850	0.340	0.383	1.300	0.780	0.390	0.452	0.407	0.000	0.000	0.000	0.507	0.507	6.206	3.950	1.489
Jackson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.347	1.408	0.821	0.043	0.043	2.390	1.451	0.821
Jefferson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.545	0.327	0.191	0.096	0.096	0.641	0.423	0.191
Lafayette	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.152	0.137	0.103	0.062	0.036	0.003	0.003	0.258	0.065	0.173
Lake	2.066	1.550	0.207	3.430	1.372	1.544	1.383	0.830	0.415	3.370	3.033	2.207	1.324	0.772	0.170	0.170	12.626	5.246	5.970
Lee	11.935	8.951	1.194	29.262	11.705	13.168	7.154	4.292	2.146	1.233	1.110	0.054	0.032	0.019	1.284	1.284	50.922	26.265	17.636
Leon	0.000	0.000	0.000	0.000	0.000	0.000	0.260	0.156	0.078	0.381	0.343	18.699	11.219	6.545	0.000	0.000	19.340	11.375	6.966
Levy	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.292	0.263	0.189	0.113	0.066	0.000	0.000	0.481	0.113	0.329
Liberty	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.302	0.272	0.000	0.000	0.000	0.000	0.000	0.302	0.000	0.272
Madison	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.960	0.576	0.336	0.000	0.000	0.960	0.576	0.336
Manatee	1.664	1.248	0.166	4.380	1.752	1.971	3.044	1.826	0.913	0.000	0.000	5.300	3.180	1.855	0.554	0.554	14.942	8.560	4.906
Marion	1.704	1.278	0.170	0.003	0.001	0.001	2.576	1.545	0.773	1.069	0.962	3.719	2.231	1.302	0.153	0.153	9.224	5.209	3.208
Martin	2.387	1.790	0.239	0.756	0.302	0.340	0.374	0.224	0.112	0.483	0.435	0.216	0.129	0.075	0.288	0.288	4.504	2.734	1.201
Miami-Dade	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.060	0.030	3.810	3.429	0.000	0.000	0.000	12.837	12.837	16.747	12.897	3.459
Monroe	0.253	0.190	0.025	0.054	0.022	0.024	0.048	0.029	0.014	0.000	0.000	0.000	0.000	0.000	0.011	0.011	0.366	0.251	0.064
Nassau	0.896	0.672	0.090	0.000	0.000	0.000	0.000	0.000	0.000	0.230	0.207	0.000	0.000	0.000	0.262	0.262	1.388	0.934	0.297
Okaloosa	2.183	1.637	0.218	1.849	0.740	0.832	0.731	0.439	0.219	7.969	7.172	4.221	2.533	1.477	0.118	0.118	17.071	5.466	9.919
Okeechobee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.515	0.309	0.180	0.000	0.000	0.515	0.309	0.180
Orange	9.829	7.372	0.983	13.130	5.252	5.909	17.786	10.672	5.336	39.946	35.951	3.961	2.377	1.386	11.829	11.829	96.481	37.501	49.565
Osceola	4.219	3.164	0.422	6.086	2.434	2.739	3.104	1.862	0.931	11.733	10.560	0.038	0.023	0.013	2.018	2.018	27.198	9.502	14.665
Palm Beach	20.422	15.317	2.042	10.571	4.228	4.757	7.601	4.561	2.280	0.054	0.048	0.033	0.020	0.011	15.816	15.816	54.496	39.941	9.139
Pasco	1.850	1.388	0.185	8.627	3.451	3.882	6.068	3.641	1.820	9.246	8.321	1.193	0.716	0.418	0.780	0.780	27.764	9.975	14.627
Pinellas	5.778	4.334	0.578	28.157	11.263	12.671	7.580	4.548	2.274	0.000	0.000	0.012	0.007	0.004	10.307	10.307	51.834	30.459	15.527
Polk	1.239	0.929	0.124	1.389	0.556	0.625	1.412	0.847	0.424	3.259	2.933	3.163	1.898	1.107	6.828	6.828	17.290	11.058	5.213
Putnam	1.010	0.758	0.101	0.000	0.000	0.000	0.355	0.213	0.107	0.087	0.078	0.000	0.000	0.000	0.000	0.000	1.452	0.971	0.286
Santa Rosa	2.807	2.105	0.281	0.761	0.304	0.342	0.178	0.107	0.053	0.147	0.132	0.285	0.171	0.100	0.019	0.019	4.197	2.706	0.909
Sarasota	6.670	5.003	0.667	4.411	1.764	1.985	3.055	1.833	0.917	0.030	0.027	2.147	1.288	0.751	0.001	0.001	16.314	9.889	4.347
Seminole	1.617	1.213	0.162	10.183	4.073	4.582	5.157	3.094	1.547	2.553	2.298	2.845	1.707	0.996	0.713	0.713	23.068	10.800	9.585
St. Johns	2.116	1.587	0.212	0.000	0.000	0.000	0.000	0.000	0.000	0.305	0.275	0.000	0.000	0.000	0.055	0.055	2.476	1.642	0.486
St. Lucie	1.638	1.229	0.164	2.322	0.929	1.045	0.000	0.000	0.000	0.255	0.230	0.000	0.000	0.000	0.160	0.160	4.375	2.317	1.438
Sumter	4.600	3.450	0.460	0.000	0.000	0.000	1.917	1.150	0.575	0.286	0.257	0.371	0.223	0.130	0.000	0.000	7.174	4.823	1.422
Suwannee	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.002	0.001	0.258	0.232	0.791	0.475	0.277	0.000	0.000	1.052	0.476	0.510

County	GCI Reuse Flow	GCI Offset Flow	GCI RF ^(b)	RI Reuse Flow	RI Offset Flow	RI RF ^(b)	OPAA Reuse Flow	OPAA Offset Flow	OPAA RF ^(b)	GWR&IPR Reuse Flow	GWR&IPR RF ^(b)	AI Reuse Flow	AI Offset Flow	AI RF ^(b)	IND, TF, FP Reuse Flow	IND, TF, FP Offset Flow	Total Flow	Total Offset Flow	Total RF ^(b)
Taylor	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.169	0.152	0.659	0.395	0.231	0.449	0.449	1.277	0.844	0.383
Union	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.554	0.332	0.194	0.000	0.000	0.554	0.332	0.194
Volusia	3.962	2.972	0.396	11.114	4.446	5.001	1.383	0.830	0.415	2.310	2.079	0.170	0.102	0.060	1.496	1.496	20.435	9.845	7.951
Wakulla	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.093	0.656	0.383	0.047	0.047	1.140	0.703	0.383
Walton	2.111	1.583	0.211	0.000	0.000	0.000	0.000	0.000	0.000	0.839	0.755	2.652	1.591	0.928	0.027	0.027	5.629	3.202	1.894
Washington	0.249	0.187	0.025	0.000	0.000	0.000	0.000	0.000	0.000	0.276	0.248	0.279	0.167	0.098	0.169	0.169	0.973	0.523	0.371
Total	126.97	95.22	12.70	185.12	74.05	83.30	86.77	52.06	26.03	104.33	93.89	71.32	42.79	24.96	117.87	117.87	692.37	382.00	240.89

- Notes: (a) These totals do not include flows to reuse activities that do not represent an offset to potable quality water or aquifer recharge, such as wetlands, decorative fountains, and storage purposes.
- (b) RF = recharge flow - the portion of reuse flow that is recharged to water supplies.
- (c) The offset and recharge flows were calculated by multiplying the total flow for a reuse activity by the percentages of potable quality offset and recharge fraction for that reuse activity as prescribed in Table 5 of the *Strategies Report* seen below:

Reuse Activity	Potable Quality Water Offset (%)	Recharge Fraction (%)	Justification Using Table 5 of <i>Strategies Report</i>
Golf Course Irrigation	75	10	Efficient landscape irrigation
Residential Irrigation	40	45	Rounded averages of efficient and inefficient residential irrigation
Other Public Access Areas	60	30	Rounded averages of efficient and inefficient landscape irrigation
Ground Water Recharge & Indirect Potable Reuse	0	90	High Desirability - rapid infiltration basins
Agricultural Irrigation	60	35	Rounded averages of efficient and inefficient agricultural irrigation
Industrial Uses, Toilet Flushing, and Fire Protection	100	0	High Desirability - cooling towers, toilet flushing and fire protection

Water Resource Caution Areas

Water resource caution areas (WRCAs) are areas that have critical water supply problems or are projected to have critical water supply problems within the next 20 years. Originally, water reuse was required only within these water resource caution areas, unless such reuse is not economically, environmentally, or technically feasible as determined by a reuse feasibility study. Currently, Chapter 62-40, F.A.C., requires use of reclaimed water statewide. Domestic wastewater facilities located within, discharging within or serving a population within designated water resource caution areas are required to prepare reuse feasibility studies before receiving a domestic wastewater permit. Table 9 summarizes information about reuse systems located within WRCAs and those located outside of WRCAs.

Table 9. Reuse Activity in Water Resource Caution Areas

	Inside WRCA	Outside WRCA	Total
Number of Reuse Systems	316	112	428
Number of WWTFs Providing Reuse	360	117	477
Number of WWTFs with no Reuse (Disposal Only)	37	12	49
Total Wastewater Capacity (mgd)	2,324	251	2,575
Total Wastewater Flow (mgd)	1,474	160	1,634
Reuse Capacity (mgd)	1,411	275	1,685
Reuse Flow (mgd)	593	134	727
Public Access Reuse Flow (mgd) ^(a)	354	45	399
Edible Crops Reuse Flow (mgd)	12	0	12

Note: (a) This includes irrigation of residential landscapes, golf courses, schools, parks, and other public access reuse such as toilet flushing and fire protection.

Cross-Connection Control

Cross-connections between reclaimed water lines and potable water lines are strictly prohibited in Florida. In 1999, reporting requirements for cross-connection control activities were added to the Annual Reuse Report Form. Appendix J summarizes cross-connection control activities reported by reuse systems for the October 1, 2013 to September 30, 2014 reporting period.

Of the 251 reuse systems that reported cross-connection control activities, 14 reuse systems reported identifying and eliminating 1 or more cross-connections. 15,040 new connections to public access reuse systems were reported to occur in 2014. Over 99% of the new connections were inspected to ensure that no cross-connections had been created.

The 2004 Guidelines for Water Reuse published by the U.S. Environmental Protection Agency (EPA) provides guidelines for establishing cross-connection

prevention and control programs. Utilities should consult the EPA Guidelines for implementation and enforcement of cross-connection control programs.

PREVIOUS INVENTORIES AND TRENDS

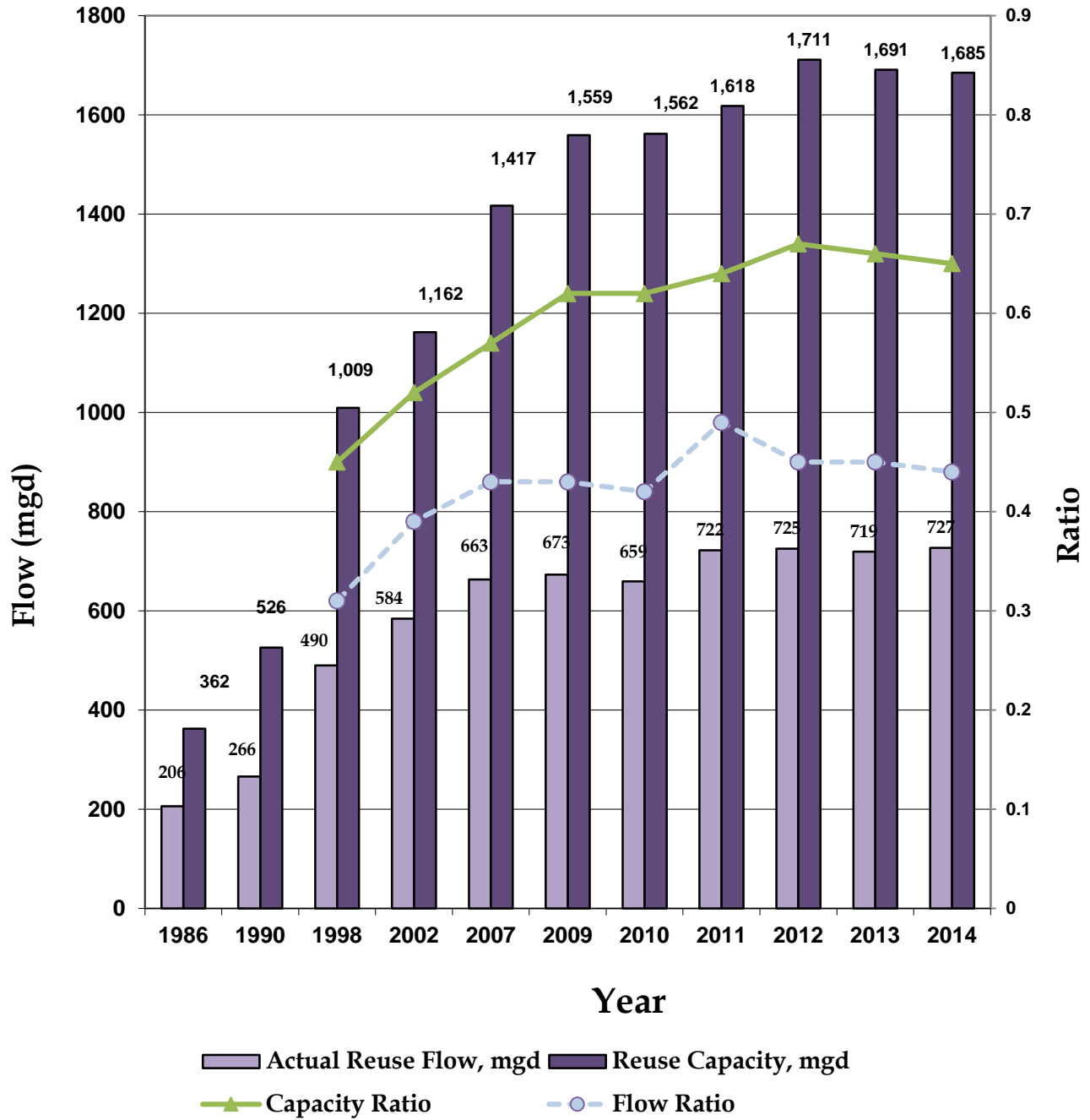
The FDEP (and its predecessor agency) published previous reuse inventories for 1986, 1990, 1992, and 1996 through 2013. Table 10 shows a summary of the total number of domestic wastewater treatment facilities providing water for reuse, the reuse capacities and capacity ratios of the reuse facilities, and the average reuse flow rates and flow ratios recorded for previous inventories and the 2014 inventory. Figure 3 presents the growth of Florida's reuse capacity and flow. The capacity and flow ratios are also presented in Figure 3.

Table 10. Summary of FDEP Reuse Inventories (1986 to Present)

Report Year	No. of Facilities Providing Reuse	Reuse Capacity (mgd)	Capacity Ratio ^(a)	Reuse Flow (mgd)	Flow Ratio ^(a)
1986	118	362	-	206	-
1990	212	526	-	266	-
1992	308	601	-	290	-
1996	444	820	-	395	-
1997	451	878	-	441	-
1998	451	1,009	0.45	490	0.31
1999	459	1,043	0.47	523	0.36
2000	457	1,116	0.51	575	0.39
2001	461	1,151	0.52	584	0.39
2002	467	1,162	0.52	584	0.39
2003	469	1,206	0.54	603	0.38
2004	468	1,273	0.56	637	0.41
2005	465	1,325	0.58	660	0.41
2006	468	1,368	0.58	663	0.41
2007	475	1,417	0.57	663	0.43
2008	481	1,536	0.62	667	0.42
2009	484	1,559	0.62	673	0.43
2010	482	1,562	0.62	659	0.42
2011	487	1,618	0.64	722	0.49
2012	486	1,711	0.67	725	0.45
2013	482	1,691	0.66	719	0.45
2014	477	1,685	0.65	727	0.44

Note: (a) The capacity and flow ratios are unavailable for 1986 through 1997.

Figure 3. Florida's Reuse Growth



FUTURE UPDATES

In order to monitor the effectiveness of the State's reuse program, the FDEP will update this inventory each year.

Suggested corrections, additions, or deletions may be brought to the attention of Ms. Hsiang-Yu Chou-Hoofman, P.E., Florida Department of Environmental Protection, Mail Station 3540, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Ms. Chou-Hoofman can be reached by phone at (850) 245-8617 or by e-mail at hsiangyu.chou@dep.state.fl.us.

REUSE WEBPAGE

For more information on water reuse in Florida, please see FDEP's website devoted to reuse at:

www.dep.state.fl.us/water/reuse/

The 2014 Reuse Inventory, including downloadable spreadsheets for each of the appendices, can be found at the above website by following the *Florida's Reuse Inventory* link.

REFERENCES

Florida Department of Environmental Protection, "Reuse of Reclaimed Water and Land Application," Chapter 62-610, Florida Administrative Code, Florida Department of Environmental Protection, Tallahassee, Florida, 2006.

Florida Department of Environmental Protection, 2013 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2014.

Florida Department of Environmental Protection, 2012 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2013.

Florida Department of Environmental Protection, 2011 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2012.

Florida Department of Environmental Protection, 2010 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2011.

Florida Department of Environmental Protection, 2009 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2010.

Florida Department of Environmental Protection, 2008 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2010.

Florida Department of Environmental Protection, 2007 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2009.

Florida Department of Environmental Protection, 2006 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2007.

Florida Department of Environmental Protection, 2005 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2006.

Florida Department of Environmental Protection, 2004 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2005.

Florida Department of Environmental Protection, 2003 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2004.

Florida Department of Environmental Protection, 2002 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2003.

Florida Department of Environmental Protection, 2001 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2002.

Florida Department of Environmental Protection, 2000 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2001.

Florida Department of Environmental Protection, 1999 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 2000.

Florida Department of Environmental Protection, 1998 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 1999.

Florida Department of Environmental Protection, 1997 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 1998.

Florida Department of Environmental Protection, 1996 Reuse Inventory, Florida Department of Environmental Protection, Tallahassee, Florida, 1997.

Florida Department of Environmental Regulation, 1992 Reuse Inventory, Florida Department of Environmental Regulation, Tallahassee, Florida, 1992.

Florida Department of Environmental Regulation, 1990 Reuse Inventory, Florida Department of Environmental Regulation, Tallahassee, Florida, 1990.

Florida Department of Environmental Regulation, 1986 Reuse Inventory, Florida Department of Environmental Regulation, Tallahassee, Florida, 1986.

Florida Legislature, Population Estimates for Year 2014, Office of Economic and Demographic Research, Tallahassee, FL. 2015.

Reuse Coordinating Committee, Water Reuse for Florida: Strategies for Effective Use of Reclaimed Water, Florida Department of Environmental Protection, Tallahassee, Florida, 2003.

United States Environmental Protection Agency, 2004 Guidelines for Water Reuse, United State Environmental Protection Agency, Washington D.C., 2004.

APPENDICES
