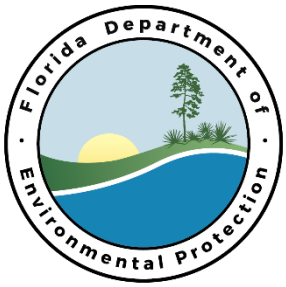
2015 Reuse Inventory

May 2016



Florida Department of Environmental Protection
Water Reuse Program

2015 Reuse Inventory

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

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

2015 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 (DEP) Form 62-610.300(4)(a)2., F.A.C. These annual reports are the basis for this inventory.

The forms for the 2015 reuse inventory were due on January 1, 2016, which covers a reporting period of October 1, 2014, through September 30, 2015. 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 2015 annual reuse reports were received and entered into the database. For the 13 reuse systems that did not submit a 2015 annual reuse report form, data from the 2014 reuse inventory or the Department's wastewater facility regulation (WAFR) database were used. These 13 facilities have "Report Not Received" under the "Date 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 2015 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).

A few facilities with permitted capacities below 0.1 mgd also engage in some reuse activities (such as groundwater recharge through rapid infiltration basins). These facilities are not required to submit an annual reuse report but some voluntarily submit a form. The data from these facilities are also included in this inventory. Also, certain reuse facilities have reduced permitted capacities to below 0.1 mgd

but are still active facilities that make reclaimed water available for reuse. If data for these facilities are available in the Department's WAFR database, those results are also included in this inventory. Facilities with permitted capacities under 0.1 mgd have "*" under the "Date Received" column in Appendix A.

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

Results

Reuse Facilities

In 2015, a total of 478 domestic wastewater treatment facilities reported making reclaimed water available for reuse. These facilities had a permitted wastewater treatment facility (WWTF) capacity totaling 2,374 mgd and treated 1,545 mgd of domestic wastewater. These treatment facilities served 430 reuse systems which are listed in Appendix A. Approximately 738 mgd of reclaimed water from these facilities was reused for beneficial purposes. The total reuse capacity associated with these systems was 1,668 mgd. Appendices B[1], D, E, and K provide information on these reuse facilities and reuse systems[2] as well as their reuse and disposal activities.

Reclaimed water from these systems was used to irrigate 362,737 residences, 537 golf courses, 1022 parks, and 369 schools. Appendix F provides details on the numbers and types of public access reuse customers, including cooling towers and unique uses for reclaimed water. Tables 1a and 1b summarize the data in terms of the number of reuse facilities and reuse systems in each DEP district and water management district, respectively, 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 57 percent of the 738 mgd of reclaimed water reused. Figure 1 shows the percentage of reclaimed water utilization by flow for each reuse type. Tables 3a and 3b compare the types of reclaimed water utilization in each DEP district and water management district, respectively.

Over 13,290 acres of edible crops on 68 farms were reported to be irrigated with reclaimed water. Around 80% 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.

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[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.

Disposal Facilities

There are about 46 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 202 mgd and a total WWTF flow of 126 mgd. Appendix I provides information on facilities that engage in disposal activities only.

All Facilities

The 524 domestic wastewater treatment facilities included in this report had a total WWTF capacity of 2,576 mgd and a total WWTF flow of 1,671 mgd. Appendix L[3] provides information on all these facilities.

The 738 mgd of reclaimed water use represents approximately 44% of the total domestic wastewater flow in the state. The 1,668 mgd of reuse capacity represents approximately 65% of the total domestic wastewater treatment capacity in the state. Tables 4a and 4b provide the reuse capacity and flow ratios for each DEP district and water management district, respectively.

Table 5 provides a summary, by county, of the total domestic wastewater treatment plant and reuse capacities and flows for all facilities included in this report, 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 2015 population estimates from the State of Florida's Demographic Estimating Conference, December 2015 and the Florida Demographic Database, April 2015. 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 1a. Summary of Reuse Facilities/Systems[a] and Reuse Customers

Information by DEP 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)	120	109	123,369	139	373	124	17
Northeast (Jacksonville)	74	67	19,453	45	10	8	7
Northwest (Pensacola)	63	63	3,730	22	35	7	5
Southeast (West Palm Beach)	51	46	28,882	98	80	30	7
South (Ft. Myers)	76	69	83,211	129	106	32	5
Southwest (Tampa)	94	76	104,092	104	418	168	43
2015 Totals	**478**	**430**	**362,737**	**537**	**1022**	**369**	**84**
2014 Totals	477	428	360,329	542	987	371	78
% Change	+0.2%	+0.5%	+0.7%	-0.9%	+3.5%	-0.5%	+7.7%

Table 1b. Summary of Reuse Facilities/Systems[a] and Reuse Customers

Information by Water Management District

Water Management 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]
Northwest Florida	62	62	3,730	22	35	7	5
South Florida	111	103	132,694	200	322	80	16
St. Johns River	143	126	110,219	125	185	108	17
Suwannee River	26	26	-	1	2	-	3
Southwest Florida	136	113	116,094	189	478	174	43
2015 Totals	**478**	**430**	**362,737**	**537**	**1022**	**369**	**84**
2014 Totals	477	428	360,329	542	987	371	78
% Change	+0.2%	+0.5%	+0.7%	-0.9%	+3.5%	-0.5%	+7.7%

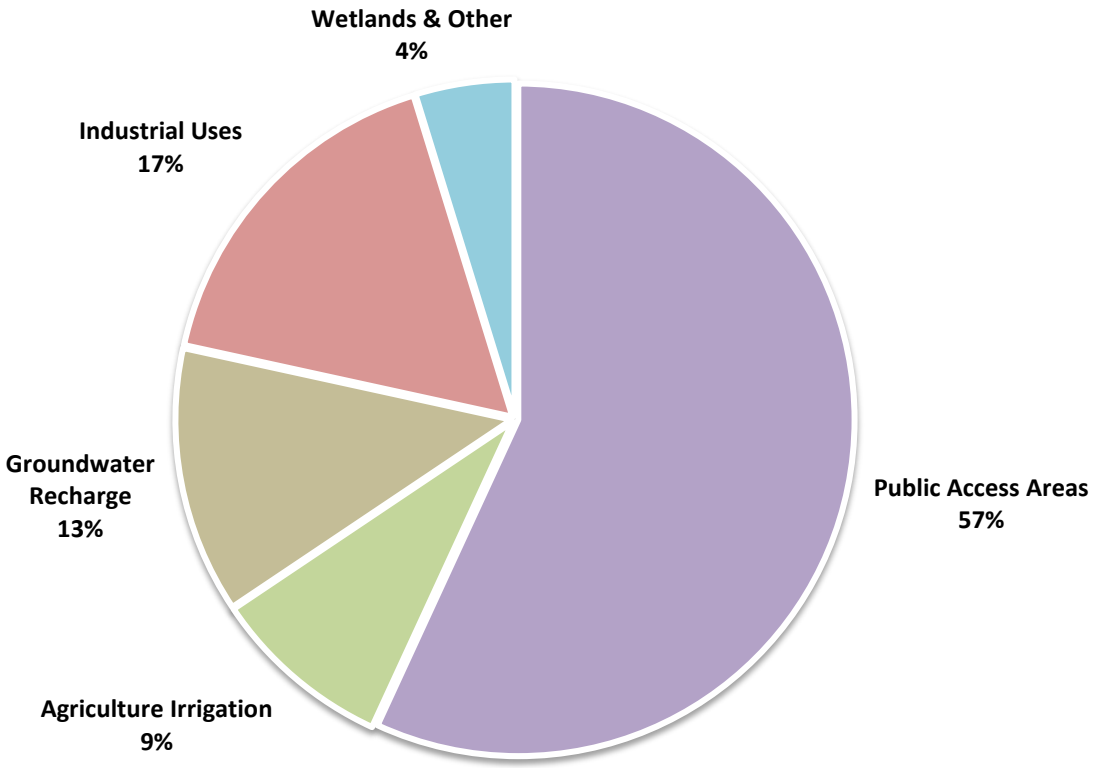
Notes:
(a) See definitions in Appendix M for an explanation of the terms 'reuse facility' and 'reuse system' as used in this report.
(b) A few reuse systems are physically located across jurisdictional boundaries (i.e., across more than one water management district, DEP district, or county). Due to 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)
Golf Course Irrigation	191	310.2	130.8	69,379	72,369
Residential Irrigation	136	459.4	192.8	147,722	162,344
Other Public Access Areas & Other	153	210.5	96.3	46,405	53,514
Public Access Areas & Landscape Irrigation Subtotal	**244**	**980.1**	**419.8**	**263,506**	**288,226**
Edible Crops[d]	19	28.0	10.5	13,292	13,292
Other Crops	110	130.3	53.9	21,862	23,978
Agricultural Irrigation Subtotal	**118**	**158.3**	**64.4**	**35,154**	**37,270**
Rapid Infiltration Basins	183	212.3	92.8	6,378	6,930
Absorption Fields	13	5.4	1.9	406	406
Surface Water Augmentation	0	0	0	NA	NA
Injection	0	0	0	NA	NA
Ground Water Recharge & Indirect Potable Reuse Subtotal	**187**	**217.7**	**94.7**	**6,784**	**7,336**
At Treatment Plant	106	84.2	55.8	866	3,099
At Other Facilities	42	144.7	68.4	4,695	6,397
Industrial Subtotal	**126**	**228.9**	**124.2**	**5,561**	**9,495**
Toilet Flushing	19	1.7	0.7	NA	NA
Fire Protection	2	2.0	0	NA	NA
Wetlands	10	67.0	31.8	3,984	3,984
Other Uses	18	12.2	2.7	276	333
2015 Totals	**430**	**1,667.8**	**738.2**	**315,264**	**346,645**
2014 Totals	428	1,685.1	727.1	319,116	353,882
% Change	+0.5%	-1.0%	+1.5%	-1.2%	-2.1%

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 80% 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 3a. Reuse Flows (mgd) for Reuse Types by DEP District

DEP Districts	Public Access Areas	Agricultural Irrigation	Ground Water Recharge	Industrial	Other [(b)]	Totals
Central (Orlando)	141.80	11.73	53.48	21.79	25.15	253.95
Northeast (Jacksonville)	22.86	7.45	5.17	8.47	0.34	44.29
Northwest (Pensacola)	13.53	28.64	9.06	12.24	6.81	70.29
Southeast (West Palm Beach)	63.32	1.08	4.86	38.38	2.02	109.65
South (Ft. Myers)	88.40	3.26	4.96	1.69	0.41	98.72
Southwest (Tampa)	89.91	12.22	17.15	41.58	0.39	161.25
2015 Totals	**419.82**	**64.38**	**94.68**	**124.15**	**35.12**	**738.15**
2014 Totals	398.86	71.32	104.33	117.28	35.30	727.08
% Change	+5.3%	-9.7%	-9.3%	+5.9%	-0.5%	+1.5%

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

Water Management Districts	Public Access Areas	Agricultural Irrigation	Ground Water Recharge	Industrial	Other [(b)]	Totals
Northwest Florida	13.53	28.50	9.06	12.24	6.78	70.11
South Florida	179.48	5.24	48.79	46.15	3.33	282.98
St. Johns River	107.43	8.61	15.67	22.66	24.24	178.62
Suwannee River	0.21	7.35	0.89	0.99	0.24	9.68
Southwest Florida	119.16	14.68	20.27	42.12	0.54	196.77
2015 Totals	**419.82**	**64.38**	**94.68**	**124.15**	**35.12**	**738.15**
2014 Totals	398.86	71.32	104.33	117.28	35.30	727.08
% Change	+5.3%	-9.7%	-9.3%	+5.9%	-0.5%	+1.5%

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 4a. Capacity and Flow Ratios by DEP 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)	527.1	450.89	1.17	254.0	312.69	0.81
Northeast (Jacksonville)	135.6	238.21	0.57	44.3	150.96	0.29
Northwest (Pensacola)	171.0	173.90	0.98	70.3	95.89	0.73
Southeast (West Palm Beach)	209.2	950.00	0.22	109.7	657.84	0.17
South (Ft. Myers)	201.6	242.31	0.83	98.7	127.45	0.77
Southwest (Tampa)	423.4	520.72	0.81	161.2	326.47	0.49
2015 Totals	**1667.8**	**2576.0**	**0.65[g]**	**738.2**	**1671.3**	**0.44[g]**

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

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	170.7	173.65	0.98	70.1	95.74	0.73	24.2	0.25
South Florida	498.4	1244.93	0.40	283.0	866.03	0.33	201.3	0.23
St. Johns River	454.2	532.92	0.85	178.6	322.15	0.55	115.4	0.36
Suwannee River	19.6	18.07	1.08	9.7	10.50	0.92	1.4	0.13
Southwest Florida	525.0	606.46	0.87	196.8	376.87	0.52	157.1	0.42
2015 Totals	**1667.8**	**2576.0**	**0.65[g]**	**738.2**	**1671.3**	**0.44[g]**	**499.4**	**0.30[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	27.84	20.53	13.53	4.64	0.49	0.23
Baker	1.62	0.87	0.37	0.23	0.23	0.27
Bay	35.00	15.41	9.08	2.61	0.26	0.17
Bradford	2.76	1.60	2.70	1.13	0.98	0.71
Brevard	63.72	38.65	48.72	22.84	0.76	0.59
Broward	315.12	215.01	36.51	17.62	0.12	0.08
Calhoun	1.50	0.50	0	0	0	0
Charlotte	16.75	10.37	12.15	5.68	0.73	0.55
Citrus	7.11	3.21	10.67	3.25	1.50	1.02
Clay	21.32	8.94	20.81	4.07	0.98	0.46
Collier	60.62	27.28	38.49	23.33	0.63	0.86
Columbia	3.48	2.51	3.48	2.61	1.00	1.04
De Soto	3.34	1.48	3.23	1.11	0.97	0.75
Dixie	0.40	0.22	0.40	0.38	1.00	1.76
Duval	131.95	85.86	35.79	12.76	0.27	0.15
Escambia	33.78	21.18	40.68	17.60	1.20	0.83
Flagler	12.29	8.82	24.09	8.09	1.96	0.92
Franklin	2.50	0.79	2.63	0.76	1.05	0.96
Gadsden	4.27	1.99	1.48	0.58	0.35	0.29
Gilchrist	0.45	0.21	0.45	0.21	1.00	1.00
Glades	0.24	0.17	0	0	0	0
Gulf	3.69	1.08	2.25	0.94	0.61	0.87
Hamilton	1.57	0.88	0.45	0.22	0.29	0.25
Hardee	2.29	1.21	2.29	1.21	1.00	1.00
Hendry	2.75	1.95	2.75	1.95	1.00	1.00
Hernando	10.15	5.14	18.29	5.14	1.80	1.00
Highlands	4.78	2.56	4.87	2.68	1.02	1.04
Hillsborough	170.04	109.51	50.15	34.96	0.29	0.32
Holmes	1.40	0.63	0	0	0	0
Indian River	16.73	8.26	10.86	6.43	0.65	0.78
Jackson	6.53	2.58	5.52	1.84	0.85	0.71
Jefferson	1.05	0.69	1.10	0.72	1.05	1.05
Lafayette	0.65	0.23	0.65	0.23	1.01	1.00
Lake	29.58	13.59	50.95	14.01	1.72	1.03
Lee	96.05	52.01	85.68	49.30	0.89	0.95
Leon	27.87	20.20	33.89	18.75	1.22	0.93
Levy	1.11	0.55	1.12	0.55	1.01	1.00
Liberty	0.53	0.29	0.53	0.29	1.00	1.00
Madison	1.14	0.71	1.14	0.71	1.00	1.00
Manatee	44.90	29.89	36.96	16.45	0.82	0.55
Marion	21.51	9.80	25.27	9.71	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	14.53	7.25	13.90	4.03	0.96	0.56
Miami-Dade	380.31	297.86	20.99	15.95	0.06	0.05
Monroe	16.42	7.41	2.82	0.40	0.17	0.05
Nassau	6.78	3.94	2.54	1.53	0.37	0.39
Okaloosa	28.61	15.18	34.40	15.20	1.20	1.00
Okeechobee	3.20	0.95	1.63	0.73	0.51	0.77
Orange	134.98	133.67	172.68	109.57	1.28	0.82
Osceola	37.28	28.06	49.54	29.48	1.33	1.05
Palm Beach	187.02	113.47	111.32	60.70	0.60	0.53
Pasco	49.15	32.55	45.80	28.50	0.93	0.88
Pinellas	170.65	109.00	209.94	48.20	1.23	0.44
Polk	63.72	34.60	49.29	23.53	0.77	0.68
Putnam	3.95	1.61	5.70	1.59	1.44	0.98
Santa Rosa	11.04	6.14	11.25	3.78	1.02	0.61
Sarasota	44.07	25.57	51.27	14.10	1.16	0.55
Seminole	80.75	46.30	95.95	38.38	1.19	0.83
St. Johns	16.43	10.80	16.88	2.67	1.03	0.25
St. Lucie	33.31	15.04	13.95	4.19	0.42	0.28
Sumter	12.00	7.87	16.31	7.82	1.36	0.99
Suwannee	2.13	1.21	2.38	1.21	1.12	1.00
Taylor	1.65	1.00	2.45	1.00	1.48	1.00
Union	0.70	0.47	0.70	0.47	1.00	1.00
Volusia	70.86	34.77	67.71	22.16	0.96	0.64
Wakulla	1.21	0.99	1.21	0.99	1.00	1.00
Walton	13.08	7.17	25.51	5.26	1.95	0.73
Washington	1.87	1.07	1.44	0.97	0.77	0.90
Totals[d]/Avgs:	**2,576.03**	**1,671.30**	**1,667.84**	**738.15**	**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

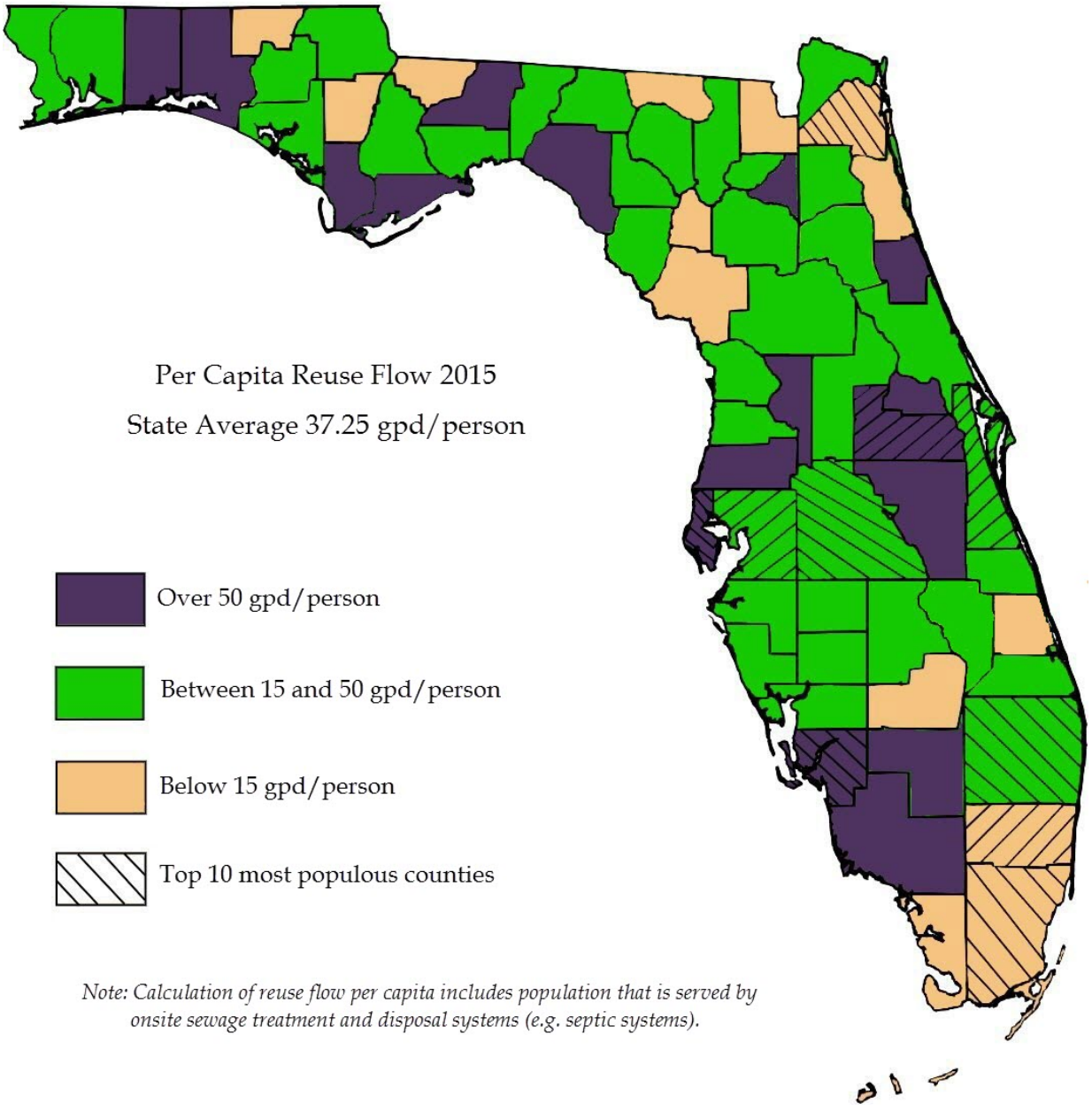
County	Population (2015)[a]	Reuse Capacity (gpd/person)[b]	Reuse Flow (gpd/person)[c]	Rank (flow)[d]	Rank (population)[e]
Alachua	254,893	53.08	18.19	52	23
Baker	27,017	13.77	8.59	63	52
Bay	173,310	52.40	15.05	53	28
Bradford	27,310	98.68	41.38	25	51
Brevard	561,714	86.73	40.66	26	10
Broward	1,827,367	19.98	9.64	62	2
Calhoun	14,549	0	0	66-67	62
Charlotte	167,141	72.71	33.96	33	29
Citrus	141,501	75.41	23.00	47	33
Clay	201,277	103.39	20.22	49	25
Collier	343,802	111.96	67.87	8	16
Columbia	68,163	51.11	38.31	28	40
De Soto	34,777	92.78	31.86	35	48
Dixie	16,468	24.29	23.26	45	58
Duval	905,574	39.52	14.08	56	7
Escambia	306,944	132.52	57.35	14	20
Flagler	101,353	237.69	79.78	5	35
Franklin	11,840	222.13	64.19	11	65
Gadsden	48,315	30.64	12.09	61	43
Gilchrist	16,839	26.72	12.41	60	57
Glades	12,853	25	13	58	64
Gulf	16,346	137.65	57.38	13	59
Hamilton	14,630	30.76	14.89	54	61
Hardee	27,645	82.91	43.91	23	50
Hendry	38,096	72.16	51.16	15	47
Hernando	176,819	103.44	29.05	38	27
Highlands	100,748	48.35	26.57	43	36
Hillsborough	1,325,563	37.83	26.38	44	4
Holmes	19,902	0	0	66-67	55
Indian River	143,326	75.77	44.84	19	32
Jackson	50,458	109.42	36.45	31	42
Jefferson	14,519	75.83	49.45	17	63
Lafayette	8,664	75.02	26.78	42	67
Lake	316,569	160.94	44.25	20	18
Lee	665,845	128.68	74.04	7	8
Leon	284,443	119.14	65.90	10	22
Levy	40,448	27.59	13.50	57	45
Liberty	8,698	60.93	33.57	34	66
Madison	19,200	59.38	36.96	30	56
Manatee	349,334	105.79	47.10	18	15

County	Population (2015)[a]	Reuse Capacity (gpd/person)[b]	Reuse Flow (gpd/person)[c]	Rank (flow)[d]	Rank (population)[e]
Marion	341,205	74.07	28.45	39	17
Martin	150,062	92.65	26.88	41	31
Miami-Dade	2,653,934	7.91	6.01	64	1
Monroe	74,206	37.95	5.39	65	38
Nassau	76,536	33.13	20.03	50	37
Okaloosa	191,898	179.25	79.23	6	26
Okeechobee	40,052	40.75	18.28	51	46
Orange	1,252,396	137.88	87.49	2	5
Osceola	308,327	160.66	95.60	1	19
Palm Beach	1,378,417	80.76	44.04	21	3
Pasco	487,588	93.93	58.45	12	12
Pinellas	944,971	222.17	51.01	16	6
Polk	633,052	77.86	37.17	29	9
Putnam	72,756	78.34	21.81	48	39
Santa Rosa	162,925	69.02	23.17	46	30
Sarasota	392,090	130.76	35.97	32	14
Seminole	442,903	216.65	86.66	4	13
St. Johns	213,566	79.06	12.52	59	24
St. Lucie	287,749	48.46	14.58	55	21
Sumter	115,657	141.06	67.60	9	34
Suwannee	44,452	53.52	27.24	40	44
Taylor	22,824	107.34	43.94	22	54
Union	15,918	43.98	29.46	37	60
Volusia	510,494	132.64	43.40	24	11
Wakulla	31,283	38.52	31.69	36	49
Walton	60,687	420.39	86.66	3	41
Washington	24,975	57.78	38.76	27	53
Florida	**19,815,183**	**84.17[f]**	**37.25[f]**		

Notes:
(a) 2015 population estimates from the Florida Demographic Estimating Conference, December 2015, and the Florida Demographic Database, April 2015.
(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.
(g) 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 2015, a total of 61 reuse systems in Florida used 15.78 mgd of surface water, 9.57 mgd of ground water, 0.36 mgd of stormwater, and 1.58 mgd of drinking water to supplement reclaimed water supplies for a total of 27.29 mgd of supplemental water used in 2015. In addition, 4.02 mgd of demineralization concentrate was blended with reclaimed water while 0.94 mgd of reclaimed water was recovered from aquifer storage and recovery (ASR) wells and sent to a reuse system. Appendix C details the 61 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. Tables 7a and 7b provide 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 137 Reuse Systems[(a)] That Reported Charging Residential Customers

Charge Type	*Average*	*Median*	*Range*	*No. of Systems*
Flat Rate Only ($/month/connection)	$10.44	$9.63	$5.90– $21.03	24
Gallonage Charge Only ($/1000 gallons)	$1.22	$0.75	$0.19 – $5.78	37
Combination Flat and per Gallon Charge				58
Flat Rate ($/month/connection)	$8.12	$6.31	$2.98 – $33.16	
Gallonage Charge ($/1000 gallons)	$1.13	$0.94	$0.10 – $9.36	

Table 7b. Summary of Reuse Rates for 224 Reuse Systems[(a)] That Reported Charging Non-Residential Customers

Charge Type	*Average*	*Median*	*Range*	*No. of Systems*
Flat Rate Only ($/month/connection)	$564.65	$398	$6 – $1,500	14
Gallonage Charge Only ($/1000 gallons)	$0.63	$0.48	$0.05 - $3.63	72
Combination Flat and per Gallon Charge				55
Flat Rate ($/month/connection)	$377.30	$18.04	$1.96 – $12,595[(b)]	
Gallonage Charge ($/1000 gallons)	$1.03	$0.78	$0.05 – $5.25	

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 77 utilities reported not charging their residential and/or non-residential reclaimed water customers any fee (base, flat, or gallonage) specific to use of

reclaimed water[4]. These utilities may recoup the costs associated with the reuse system through other means. Table 7c provides a summary of reuse systems, utilities, and customer types.

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

Description of Reuse System	No. of Reuse Systems	No. of Utilities[(a)]	No. of Utilities Reporting No Charges[(b)]
Total	234	177	77
Serving both residential and non-residential customers	127	103	11
Serving only residential customers	10	6	2
Serving only non-residential customers	97	68	43
Total serving residential customers	137	109	17
Total serving non-residential customers	224	171	71

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 234 reuse systems that reported having public access reuse customers and the charges for reported 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 738 mgd of reclaimed water used in 2015 is estimated to have offset (i.e., avoided) the use of 396 mgd (over 144 billion gallons) of potable quality water

[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.

while serving to add 236 mgd (over 86 billion gallons) back to available water supplies.

Tables 8a and 8b summarize the amount of potable quality water offset and recharge flow achieved within each DEP district and water management district, respectively. Table 8c details the amount of reclaimed water used to offset and recharge potable quality water by county.

Table 8a. Summary of Offset and Recharge Flows by DEP District

DEP District	Total Flow (mgd)	Offset Flow[(a)] (mgd)	Recharge Flow[(a)] (mgd)
Central (Orlando)	228.95	107.60	96.44
Northeast (Jacksonville)	44.19	26.31	13.70
Northwest (Pensacola)	63.56	37.72	21.61
Southeast (West Palm Beach)	107.71	78.08	20.06
South (Ft. Myers)	98.44	52.08	33.01
Southwest (Tampa)	160.86	94.62	51.63
2015 Totals	**703.70**	**396.40**	**236.45**

Table 8b. Summary of Offset and Recharge Flows by Water Management District

Water Management District	Total Flow (mgd)	Offset Flow[(a)] (mgd)	Recharge Flow[(a)] (mgd)
Northwest Florida	63.38	37.60	21.55
South Florida	279.86	153.14	96.93
St. Johns River	154.55	84.31	52.90
Suwannee River	9.68	5.77	3.44
Southwest Florida	196.23	115.59	61.63
2015 Totals	**703.70**	**396.40**	**236.45**

Note: (a) The offset and recharge flows were calculated using values from Table 5 of the *Strategies Report*. See Table 8c 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 8c. County Offset and Recharge Flows Due to Water Reuse

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	0.595	0.446	0.059	1.325	0.530	0.596	0.889	0.533	0.267	0.061	0.055	0.519	0.311	0.182	1.250	1.250	4.638	3.070	1.159
Baker	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.160	0.144	0.043	0.026	0.015	0.029	0.029	0.232	0.055	0.159
Bay	0.062	0.047	0.006	1.834	0.734	0.825	0.685	0.411	0.206	0.018	0.016	0.000	0.000	0.000	0.010	0.010	2.609	1.201	1.053
Bradford	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.100	0.660	0.385	0.030	0.030	1.130	0.690	0.385
Brevard	6.318	4.738	0.632	10.875	4.350	4.894	2.614	1.568	0.784	0.810	0.729	0.096	0.058	0.034	1.669	1.669	22.381	12.382	7.072
Broward	4.248	3.186	0.425	3.770	1.508	1.697	0.696	0.418	0.209	0.565	0.509	0.000	0.000	0.000	8.340	8.340	17.619	13.452	2.839
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	2.994	2.246	0.299	1.051	0.420	0.473	0.790	0.474	0.237	0.427	0.384	0.000	0.000	0.000	0.414	0.414	5.676	3.554	1.394
Citrus	0.559	0.419	0.056	0.000	0.000	0.000	0.000	0.000	0.000	1.257	1.131	1.243	0.746	0.435	0.195	0.195	3.254	1.360	1.622
Clay	0.529	0.397	0.053	3.384	1.354	1.523	0.000	0.000	0.000	0.037	0.033	0.000	0.000	0.000	0.119	0.119	4.069	1.869	1.609
Collier	9.428	7.071	0.943	10.479	4.192	4.716	3.044	1.826	0.913	0.103	0.093	0.280	0.168	0.098	0.000	0.000	23.334	13.257	6.762
Columbia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.412	1.447	0.844	0.199	0.199	2.611	1.646	0.844
De Soto	0.090	0.068	0.009	0.020	0.008	0.009	0.040	0.024	0.012	0.069	0.062	0.739	0.443	0.259	0.000	0.000	0.958	0.543	0.351
Dixie	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.383	0.230	0.134	0.000	0.000	0.383	0.230	0.134
Duval	1.589	1.192	0.159	3.600	1.440	1.620	1.300	0.780	0.390	0.254	0.229	0.000	0.000	0.000	6.012	6.012	12.755	9.424	2.398
Escambia	0.000	0.000	0.000	0.000	0.000	0.000	0.088	0.053	0.026	0.000	0.000	0.035	0.021	0.012	11.595	11.595	11.718	11.669	0.039
Flagler	2.528	1.896	0.253	1.919	0.768	0.864	0.487	0.292	0.146	3.044	2.740	0.000	0.000	0.000	0.000	0.000	7.978	2.956	4.002
Franklin	0.221	0.166	0.022	0.000	0.000	0.000	0.093	0.056	0.028	0.000	0.000	0.401	0.241	0.140	0.045	0.045	0.760	0.507	0.190
Gadsden	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.149	0.134	0.357	0.214	0.125	0.078	0.078	0.584	0.292	0.259
Gilchrist	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.209	0.125	0.073	0.000	0.000	0.209	0.125	0.073
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	0.938	0.563	0.328	0.000	0.000	0.938	0.563	0.328
Hamilton	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.142	0.085	0.050	0.076	0.076	0.218	0.161	0.050
Hardee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.322	0.193	0.113	0.892	0.892	1.214	1.085	0.113
Hendry	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.551	0.496	1.398	0.839	0.489	0.000	0.000	1.949	0.839	0.985
Hernando	1.526	1.145	0.153	0.060	0.024	0.027	0.020	0.012	0.006	2.736	2.462	0.000	0.000	0.000	0.795	0.795	5.137	1.976	2.648
Highlands	0.000	0.000	0.000	0.000	0.000	0.000	0.022	0.013	0.007	2.508	2.257	0.032	0.019	0.011	0.115	0.115	2.677	0.147	2.275
Hillsborough	2.274	1.706	0.227	11.462	4.585	5.158	4.247	2.548	1.274	0.359	0.323	0.101	0.061	0.035	16.521	16.521	34.964	25.420	7.018
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	3.272	2.454	0.327	2.281	0.912	1.026	0.220	0.132	0.066	0.340	0.306	0.000	0.000	0.000	0.314	0.314	6.427	3.812	1.726
Jackson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.801	1.081	0.630	0.038	0.038	1.839	1.119	0.630

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)]
Jefferson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.686	0.412	0.240	0.032	0.032	0.718	0.444	0.240
Lafayette	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.138	0.124	0.089	0.053	0.031	0.005	0.005	0.232	0.058	0.155
Lake	1.556	1.167	0.156	4.747	1.899	2.136	1.251	0.751	0.375	3.190	2.871	2.955	1.773	1.034	0.310	0.310	14.009	5.899	6.572
Lee	11.414	8.561	1.141	30.990	12.396	13.946	4.367	2.620	1.310	1.193	1.074	0.011	0.007	0.004	1.284	1.284	49.259	24.867	17.475
Leon	0.000	0.000	0.000	0.000	0.000	0.000	0.641	0.385	0.192	0.355	0.320	17.749	10.649	6.212	0.000	0.000	18.745	11.034	6.724
Levy	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.310	0.202	0.121	0.071	0.000	0.000	0.546	0.121	0.380
Liberty	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.292	0.263	0.000	0.000	0.000	0.000	0.000	0.292	0.000	0.263
Madison	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.710	0.426	0.248	0.000	0.000	0.710	0.426	0.248
Manatee	1.831	1.373	0.183	4.325	1.730	1.946	3.790	2.274	1.137	0.000	0.000	5.960	3.576	2.086	0.542	0.542	16.448	9.495	5.352
Marion	2.229	1.672	0.223	0.003	0.001	0.001	2.762	1.657	0.829	0.923	0.830	3.650	2.190	1.278	0.140	0.140	9.707	5.660	3.161
Martin	2.213	1.660	0.221	0.708	0.283	0.319	0.480	0.288	0.144	0.262	0.236	0.025	0.015	0.009	0.222	0.222	3.910	2.468	0.928
Miami-Dade	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.060	0.030	3.193	2.874	0.000	0.000	0.000	12.653	12.653	15.946	12.713	2.904
Monroe	0.275	0.206	0.028	0.077	0.031	0.035	0.037	0.022	0.011	0.000	0.000	0.000	0.000	0.000	0.011	0.011	0.400	0.270	0.073
Nassau	0.852	0.639	0.085	0.000	0.000	0.000	0.000	0.000	0.000	0.323	0.291	0.000	0.000	0.000	0.358	0.358	1.533	0.997	0.376
Okaloosa	1.605	1.204	0.161	1.591	0.636	0.716	0.781	0.469	0.234	7.279	6.551	3.064	1.838	1.072	0.432	0.432	14.752	4.579	8.734
Okeechobee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.616	0.370	0.216	0.000	0.000	0.616	0.370	0.216
Orange	10.192	7.644	1.019	13.740	5.496	6.183	27.185	16.311	8.156	31.632	28.469	2.400	1.440	0.840	11.431	11.431	96.580	42.322	44.667
Osceola	4.975	3.731	0.498	5.924	2.370	2.666	3.909	2.345	1.173	12.243	11.019	0.022	0.013	0.008	2.402	2.402	29.475	10.861	15.362
Palm Beach	22.386	16.790	2.239	11.372	4.549	5.117	7.786	4.672	2.336	0.251	0.226	0.435	0.261	0.152	16.763	16.763	58.993	43.034	10.070
Pasco	1.846	1.385	0.185	8.194	3.278	3.687	7.042	4.225	2.113	9.448	8.503	0.910	0.546	0.319	0.829	0.829	28.269	10.262	14.806
Pinellas	4.649	3.487	0.465	26.086	10.434	11.738	7.587	4.552	2.276	0.000	0.000	0.010	0.006	0.004	9.868	9.868	48.200	28.347	14.483
Polk	1.324	0.993	0.132	1.554	0.622	0.699	1.535	0.921	0.461	3.349	3.014	3.673	2.204	1.286	11.938	11.938	23.373	16.678	5.592
Putnam	1.507	1.130	0.151	0.000	0.000	0.000	0.000	0.000	0.000	0.080	0.072	0.000	0.000	0.000	0.000	0.000	1.587	1.130	0.223
Santa Rosa	1.834	1.375	0.183	0.956	0.382	0.430	0.294	0.176	0.088	0.147	0.132	0.133	0.080	0.047	0.019	0.019	3.382	2.033	0.880
Sarasota	6.290	4.718	0.629	3.960	1.584	1.782	3.029	1.817	0.909	0.110	0.099	0.714	0.428	0.250	0.001	0.001	14.104	8.548	3.669
Seminole	1.435	1.076	0.144	11.230	4.492	5.054	5.571	3.343	1.671	2.258	2.032	1.969	1.181	0.689	4.488	4.488	26.951	14.580	9.590
St. Johns	2.147	1.610	0.215	0.000	0.000	0.000	0.000	0.000	0.000	0.324	0.292	0.000	0.000	0.000	0.202	0.202	2.673	1.812	0.506
St. Lucie	1.577	1.183	0.158	2.192	0.877	0.986	0.014	0.008	0.004	0.251	0.226	0.000	0.000	0.000	0.160	0.160	4.194	2.228	1.374
Sumter	5.466	4.100	0.547	0.000	0.000	0.000	1.667	1.000	0.500	0.084	0.076	0.468	0.281	0.164	0.133	0.133	7.818	5.514	1.286
Suwannee	0.000	0.000	0.000	0.000	0.000	0.000	0.214	0.128	0.064	0.221	0.199	0.776	0.466	0.272	0.000	0.000	1.211	0.594	0.535
Taylor	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.183	0.165	0.397	0.238	0.139	0.423	0.423	1.003	0.661	0.304
Union	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.469	0.281	0.164	0.000	0.000	0.469	0.281	0.164
Volusia	4.205	3.154	0.421	13.086	5.234	5.889	0.858	0.515	0.257	2.337	2.103	0.173	0.104	0.061	1.372	1.372	22.031	10.379	8.730

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)]
Wakulla	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.955	0.573	0.334	0.036	0.036	0.991	0.609	0.335
Walton	2.509	1.881	0.251	0.000	0.000	0.000	0.000	0.000	0.000	0.485	0.437	2.240	1.344	0.784	0.026	0.026	5.259	3.251	1.471
Washington	0.218	0.164	0.022	0.000	0.000	0.000	0.124	0.074	0.037	0.333	0.300	0.285	0.171	0.100	0.008	0.008	0.968	0.417	0.458
Total	**130.77**	**98.07**	**13.08**	**192.79**	**77.12**	**86.76**	**96.26**	**57.76**	**28.88**	**94.68**	**85.21**	**64.38**	**38.63**	**22.53**	**124.82**	**124.82**	**703.70**	**396.40**	**236.45**

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 *Strategies Report*
Golf Course Irrigation (GCI)	75	10	Efficient landscape irrigation
Residential Irrigation (RI)	40	45	Rounded averages of efficient and inefficient residential irrigation
Other Public Access Areas (OPAA)	60	30	Rounded averages of efficient and inefficient landscape irrigation
Ground Water Recharge & Indirect Potable Reuse (GWR&IPR)	0	90	High Desirability - rapid infiltration basins
Agricultural Irrigation (AI)	60	35	Rounded averages of efficient and inefficient agricultural irrigation
Industrial Uses (IND), Toilet Flushing (TF), and Fire Protection (FP)	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

Reuse Activity	Inside WRCA	Outside WRCA	Total
Number of Reuse Systems	317	113	430
Number of WWTFs Providing Reuse	361	117	478
Number of WWTFs with no Reuse (Disposal Only)	35	11	46
Total Wastewater Capacity (mgd)	2,320	256	2,576
Total Wastewater Flow (mgd)	1,514	157	1,671
Reuse Capacity (mgd)	1,385	283	1,668
Reuse Flow (mgd)	602	136	738
Public Access Reuse Flow (mgd)[(a)]	370	50	420
Edible Crops Reuse Flow (mgd)	11	0	11

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, 2014 to September 30, 2015 reporting period.

Of the 254 reuse systems that reported cross-connection control activities, 7 reuse systems reported identifying and eliminating 1 or more cross-connections. 15,145 new connections to public access reuse systems were reported to occur in 2014. Over 95%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

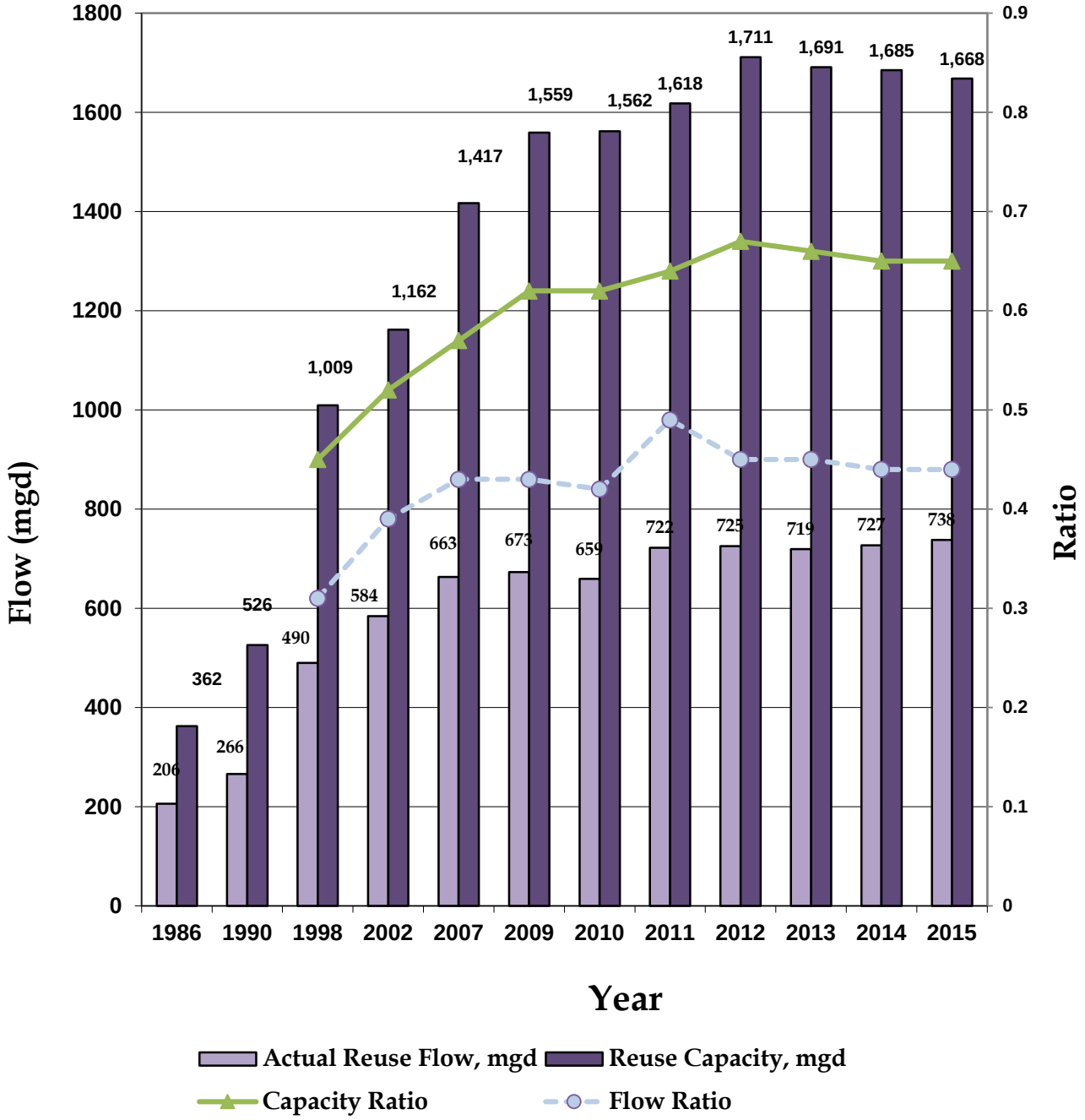
The DEP (and its predecessor agency) published previous reuse inventories for 1986, 1990, 1992, and 1996 through 2014. Table 10 shows a summary of the total number of domestic wastewater treatment facilities providing water for reuse, the reuse capacities and capacity ratios of the reuse facilities, and the average reuse flow rates and flow ratios recorded for previous inventories and the 2015 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 DEP 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
2015	478	1,668	0.65	738	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 DEP 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 at hsiangyu.chou@dep.state.fl.us.

REUSE WEBPAGE

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

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

The 2015 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.

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APPENDICES