

2017 Reuse Inventory

**Division of Water Resource Management
Florida Department of Environmental Protection
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2017 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 2017 reuse inventory were due on January 1, 2018, which covers a reporting period of October 1, 2016, through September 30, 2017. Information obtained from the report forms was entered into DEP's "Reuse Inventory Database," which is a Microsoft Access database. Over 91 percent of the 2017 annual reuse reports have been received thus far. Any data gaps from the 36 reuse systems that did not submit a 2017 annual reuse report form have been filled with data from the 2016 reuse inventory, in addition to data from DEP's wastewater facility regulation (WAFR) database. These 36 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 DEP's WAFR database.

The 2017 reuse inventory includes all active domestic wastewater treatment facilities having permitted capacities of 0.1 million gallons per day (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 ground water 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 DEP'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 2017, a total of 477 domestic wastewater treatment facilities reported making reclaimed water available for reuse. These facilities had a permitted wastewater treatment facility (WWTF) capacity totaling 2,378 mgd and treated 1,556 mgd of domestic wastewater. These treatment facilities served 430 reuse systems which are listed in Appendix A. Approximately 813 mgd of reclaimed water from these facilities was reused for beneficial purposes. The total reuse capacity associated with these systems was 1,689 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 419,016 residences, 574 golf courses, 1,016 parks and 397 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 60 percent of the 813 mgd of reclaimed water reused. Figure 1 shows the percentage of reclaimed

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 physically located.

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

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.

Approximately 12,879 acres of edible crops on 67 farms were reported to be irrigated with reclaimed water. Around 79 percent of the farmland was dedicated to the production of citrus (e.g., oranges, tangerines, grapefruit, etc.). Appendix G provides information on the 17 reuse systems providing reclaimed water for the irrigation of edible crops and the farms using the reclaimed water.

Disposal Facilities

There are about 43 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 195 mgd and a total WWTF flow of 124 mgd. Appendix I provides information on facilities that engage in disposal activities only.

All Facilities

The 520 domestic wastewater treatment facilities included in this report had a total WWTF capacity of 2,572 mgd and a total WWTF flow of 1,680 mgd. Appendix L³ provides information on all these facilities.

The 813 mgd of reclaimed water use represents approximately 48 percent of the total domestic wastewater flow in the state. The 1,690 mgd of reuse capacity represents approximately 66 percent 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 statewide average reuse flow per capita, including population served by on-site sewage treatment and disposal systems (e.g., septic tanks), was 39.7 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 2017

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.

population estimates from the State of Florida's Demographic Estimating Conference, December 2017, and the Florida Demographic Database, January 2018. Figure 2 shows the map of Florida's counties color-coded by range of reuse flow per capita.

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	108	139,682	169	395	137	21
Northeast (Jacksonville)	76	69	25,037	43	13	12	10
Northwest (Pensacola)	64	64	4,778	20	34	8	7
Southeast (West Palm Beach)	50	45	30,404	95	83	32	6
South (Fort Myers)	72	65	94,918	130	110	32	7
Southwest (Tampa)	95	79	124,197	117	381	176	41
2017 Totals	477	430	419,016	574	1016	397	92
2016 Totals	478	431	397,750	574	1,053	381	90
Percent Change	-0.2%	-0.2%	+5.3%	0.0%	-3.5%	+4.2%	+2.2%

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	63	63	4,778	20	34	8	7
South Florida	106	98	152,202	200	338	85	22
St. Johns River	145	127	122,908	129	207	122	18
Suwannee River	26	26	-	1	2	-	4
Southwest Florida	137	116	139,128	224	435	182	41
2017 Totals	477	430	419,016	574	1,016	397	92
2016 Totals	478	431	397,750	574	1,053	381	90
Percent Change	-0.2%	-0.2%	+5.3%	0.0%	-3.5%	+4.2%	+2.2%

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.

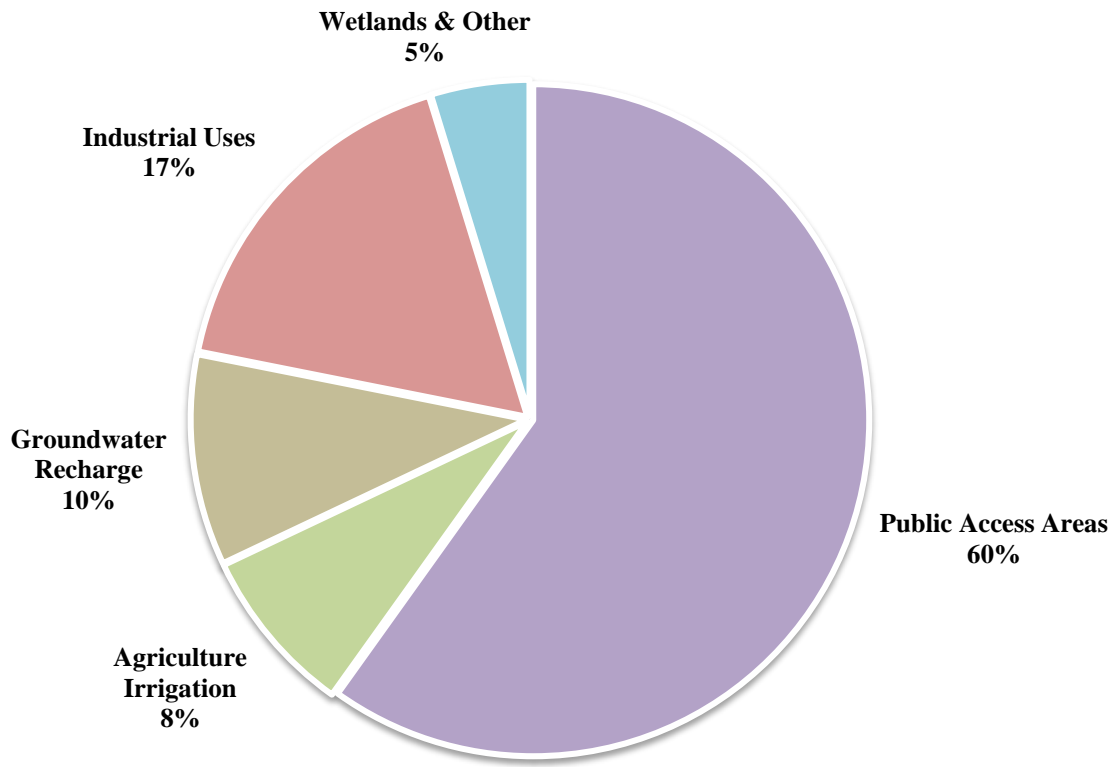
Table 2. Summary of Reuse Activities

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	189	318.5	140.28	69,922.46	73,649.25
Residential Irrigation	145	434.8	246.80	154,340.55	173,788.21
Other Public Access Areas & Other	161	225.5	100.49	46,802.67	55,574.10
Public Access Areas & Landscape Irrigation Subtotal	245	978.8	487.58	271,065.7	303,011.6
Edible Crops ^(d)	17	26.8	11.13	12,878.90	12,878.90
Other Crops	110	132.0	54.54	21,478.75	21,707.71
Agricultural Irrigation Subtotal	117	158.8	65.67	34,357.7	34,586.6
Rapid Infiltration Basins	182	216.5	81.56	6,347.51	6,799.47
Absorption Fields	10	3.2	0.89	145.15	145.15
Surface Water Augmentation	0	0.0	0.00	N/A	N/A
Injection	0	0.0	0.00	N/A	N/A
Ground Water Recharge & Indirect Potable Reuse Subtotal	187	219.7	82.45	6,492.7	6,944.6
At Treatment Plant	104	89.4	63.73	890.14	1,672.96
At Other Facilities	43	151.7	75.47	4,897.54	6,876.24
Industrial Subtotal	123	241.1	139.20	5,787.7	8,549.2
Toilet Flushing	15	2.2	0.85	N/A	N/A
Fire Protection	2	2.0	0.00	N/A	N/A
Wetlands	14	82.8	35.56	4,727.85	4,727.85
Other Uses	11	4.1	1.23	172.00	1,158.72
2017 Totals	430	1,689.5	812.5	322,604	358,979
2016 Totals	431	1,645.0	760.0	321,922	367,129
Percent Change	-0.2%	+2.7%	+6.9%	+0.2%	-2.2%

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 79 percent of total area for edible crops is citrus, including oranges, grapefruit and tangerines.

Figure 1: Reclaimed Water Utilization by Flow



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

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)	161.79	12.99	42.39	20.58	25.60	263.35
Northeast (Jacksonville)	31.72	7.86	5.52	11.96	0.59	57.65
Northwest (Pensacola)	15.01	30.27	10.20	14.00	6.03	75.51
Southeast (West Palm Beach)	72.86	0.53	5.26	45.36	2.48	126.49
South (Fort Myers)	91.85	2.95	5.42	1.51	0.38	102.11
Southwest (Tampa)	114.35	11.07	13.66	45.79	2.56	187.44
2017 Totals	487.58	65.67	82.45	139.20	37.64	812.54
2016 Totals	438.86	64.75	91.68	128.17	36.53	760.00
Percent Change	+11.1%	+1.4%	-10.1%	+8.6%	+3.0%	+6.9%

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	15.01	30.19	10.20	14.00	5.99	75.39
South Florida	194.68	6.02	39.05	52.45	3.07	295.26
St. Johns River	134.91	8.83	15.26	25.94	25.55	210.49
Suwannee River	0.00	7.70	0.95	0.53	0.45	9.63
Southwest Florida	142.98	12.94	17.00	46.27	2.58	221.76
2017 Totals	487.58	65.67	82.45	139.20	37.64	812.54
2016 Totals	438.86	64.75	91.68	128.17	36.53	760.00
Percent Change	+11.1%	+1.4%	-10.1%	+8.6%	+3.0%	+6.9%

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)	551.1	456.37	1.21	263.35	303.44	0.87
Northeast (Jacksonville)	148.7	241.68	0.62	57.65	154.53	0.37
Northwest (Pensacola)	176.2	174.22	1.01	75.51	100.15	0.75
Southeast (West Palm Beach)	231.9	950.16	0.24	126.49	681.60	0.19
South (Fort Myers)	195.4	242.12	0.81	102.11	132.20	0.77
Southwest (Tampa)	386.2	507.88	0.76	187.44	307.82	0.61
2017 Totals	1,689.5	2,572.4	0.66^(g)	812.5	1,679.7	0.48^(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	175.9	173.97	1.01	75.39	100.02	0.75	24.9	0.25
South Florida	526.7	1242.80	0.42	295.26	860.99	0.34	216.9	0.25
St. Johns River	487.0	542.96	0.90	210.49	348.84	0.60	147.9	0.42
Suwannee River	20.6	18.44	1.12	9.63	10.35	0.93	0.8	0.08
Southwest Florida	479.3	594.27	0.81	221.76	359.53	0.62	184.5	0.51
2017 Totals	1,689.5	2,572.4	0.66^(g)	812.5	1,679.7	0.48^(g)	575.0	0.34^(g)

Notes:

- (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 WWTF capacity and flow of facilities over 0.1 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 percent) 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 WWTF.
- (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	20.68	15.29	5.43	0.55	0.26
Baker	1.62	0.86	0.37	0.21	0.23	0.24
Bay	35.00	16.23	6.83	3.44	0.20	0.21
Bradford	2.76	1.60	2.70	1.06	0.98	0.66
Brevard	63.72	40.61	51.27	23.85	0.80	0.59
Broward	315.12	219.96	37.72	17.90	0.12	0.08
Calhoun	1.50	0.48	0.00	0.00	0.00	0.00
Charlotte	16.65	10.86	10.70	4.65	0.64	0.43
Citrus	6.91	3.35	12.43	3.36	1.80	1.00
Clay	20.83	9.47	21.43	6.80	1.03	0.72
Collier	60.62	29.28	36.05	24.79	0.59	0.85
Columbia	3.53	2.76	3.48	2.75	0.99	1.00
De Soto	3.34	1.46	2.97	0.77	0.89	0.53
Dixie	0.40	0.22	0.40	0.38	1.00	1.73
Duval	131.95	87.76	37.25	20.23	0.28	0.23
Escambia	33.78	21.70	42.63	17.32	1.26	0.80
Flagler	12.46	10.01	25.58	9.32	2.05	0.93
Franklin	2.50	0.67	2.63	0.67	1.05	1.00
Gadsden	4.27	1.95	1.48	0.55	0.35	0.28
Gilchrist	0.45	0.19	0.45	0.19	1.00	1.00
Glades	0.24	0.18	0.00	0.00	0.00	0.00
Gulf	3.69	0.81	2.25	0.69	0.61	0.85
Hamilton	1.57	0.75	0.45	0.23	0.29	0.30
Hardee	2.38	1.42	2.38	1.42	1.00	1.00
Hendry	2.75	2.46	2.75	2.46	1.00	1.00
Hernando	12.40	5.83	20.79	5.83	1.68	1.00
Highlands	4.63	2.58	4.77	2.59	1.03	1.00
Hillsborough	170.04	103.59	54.66	39.96	0.32	0.39
Holmes	1.40	0.65	0.00	0.00	0.00	0.00
Indian River	16.73	8.24	14.57	8.23	0.87	1.00
Jackson	6.53	2.99	5.52	2.22	0.85	0.74
Jefferson	1.05	0.41	1.10	0.39	1.05	0.96
Lafayette	0.65	0.23	1.14	0.28	1.77	1.19
Lake	29.57	14.56	49.04	15.84	1.66	1.09
Lee	95.60	51.84	86.43	50.70	0.90	0.98
Leon	27.87	21.54	35.95	21.54	1.29	1.00
Levy	1.11	0.52	1.12	0.52	1.01	1.00
Liberty	0.53	0.27	0.53	0.27	1.00	1.00
Madison	1.52	0.79	1.52	0.79	1.00	1.00
Manatee	44.90	31.40	45.69	22.20	1.02	0.71
Marion	20.78	10.16	26.79	9.96	1.29	0.98
Martin	14.53	7.58	13.80	4.61	0.95	0.61

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County	Total WWTF Capacity (mgd) ^(a)	Total WWTF Flow (mgd) ^(a)	Reuse Capacity (mgd)	Reuse Flow (mgd)	Capacity Ratio ^(b)	Flow Ratio ^(c)
Miami-Dade	380.31	311.51	23.11	21.40	0.06	0.07
Monroe	16.42	7.67	2.86	0.23	0.17	0.03
Nassau	6.78	3.89	2.58	1.57	0.38	0.40
Okaloosa	28.61	17.09	33.00	16.26	1.15	0.95
Okeechobee	3.20	1.18	1.63	0.56	0.51	0.47
Orange	138.73	107.54	195.29	116.32	1.41	1.08
Osceola	37.65	27.77	52.21	27.80	1.39	1.00
Palm Beach	186.70	117.80	127.34	69.75	0.68	0.59
Pasco	46.75	31.39	48.06	28.17	1.03	0.90
Pinellas	158.25	95.95	140.28	61.21	0.89	0.64
Polk	63.55	33.25	61.96	25.29	0.98	0.76
Putnam	4.19	1.74	5.94	1.63	1.42	0.94
Santa Rosa	11.11	7.33	16.12	4.78	1.45	0.65
Sarasota	44.57	27.53	48.57	15.73	1.09	0.57
Seminole	81.65	62.74	93.55	38.66	1.15	0.62
St. Johns	19.61	10.73	23.29	3.78	1.19	0.35
St. Lucie	33.79	15.33	13.70	4.05	0.41	0.26
Sumter	12.00	6.34	14.18	6.53	1.18	1.03
Suwannee	2.07	0.88	2.55	1.05	1.23	1.19
Taylor	1.65	0.95	2.45	0.95	1.48	1.00
Union	0.70	0.49	0.70	0.49	1.00	1.00
Volusia	72.06	33.73	68.79	24.40	0.95	0.72
Wakulla	1.20	0.95	1.20	0.95	1.00	1.00
Walton	13.33	6.04	25.48	5.37	1.91	0.89
Washington	1.88	1.06	1.47	1.06	0.78	1.00
Totals^(d)/Avg	2,572.44	1,679.73	1,689.49	812.54	0.66^(e)	0.48^(e)

Notes:

- (a) Totals include the WWTF capacity and flow of facilities over 0.1 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 percent) 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 percent) 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 off-site.
- (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 (2017)^(a)	Reuse Capacity (gpd/person)^(b)	Reuse Flow (gpd/person)^(c)	Rank (flow)^(d)	Rank (population)^(e)
Alachua	260,003	58.79	20.89	51	23
Baker	27,191	13.68	7.54	64	52
Bay	178,820	38.18	19.24	53	28
Bradford	27,642	97.50	38.17	31	50
Brevard	575,211	89.13	41.46	26	10
Broward	1,873,970	20.13	9.55	62	2
Calhoun	15,001	0	0	66-67	61
Charlotte	172,720	61.98	26.93	43	29
Citrus	143,801	86.40	23.34	46	33
Clay	208,549	102.74	32.61	32	25
Collier	357,470	100.85	69.35	9	16
Columbia	68,943	50.53	39.82	28	40
De Soto	35,621	83.28	21.64	49	48
Dixie	16,726	23.91	22.48	47	58
Duval	936,811	39.76	21.60	50	7
Escambia	313,381	136.02	55.26	14	20
Flagler	105,157	243.24	88.66	1	35
Franklin	12,161	216.27	55.09	16	65
Gadsden	48,263	30.68	11.30	60	43
Gilchrist	17,224	26.13	11.26	61	57
Glades	13,087	24.07	13.75	56	64
Gulf	16,297	138.06	42.52	24	59
Hamilton	14,663	30.69	15.54	55	62
Hardee	27,426	86.85	51.67	18	51
Hendry	39,057	70.38	63.01	11	47
Hernando	181,882	114.30	32.04	34	27
Highlands	102,138	46.68	25.34	44	36
Hillsborough	1,379,302	39.63	28.97	39	4
Holmes	20,210	0	0	66-67	55
Indian River	148,962	97.83	55.26	15	32
Jackson	50,418	109.54	44.03	22	42
Jefferson	14,611	75.35	26.97	42	63
Lafayette	8,479	134.45	32.43	33	67
Lake	331,724	147.84	47.75	20	18
Lee	698,468	123.74	72.59	8	8
Leon	287,899	124.87	74.82	7	22
Levy	41,015	27.21	12.70	59	46
Liberty	8,719	60.79	30.74	35	66
Madison	19,377	78.44	40.72	27	56
Manatee	368,782	123.90	60.20	12	15
Marion	349,267	76.69	28.51	40	17

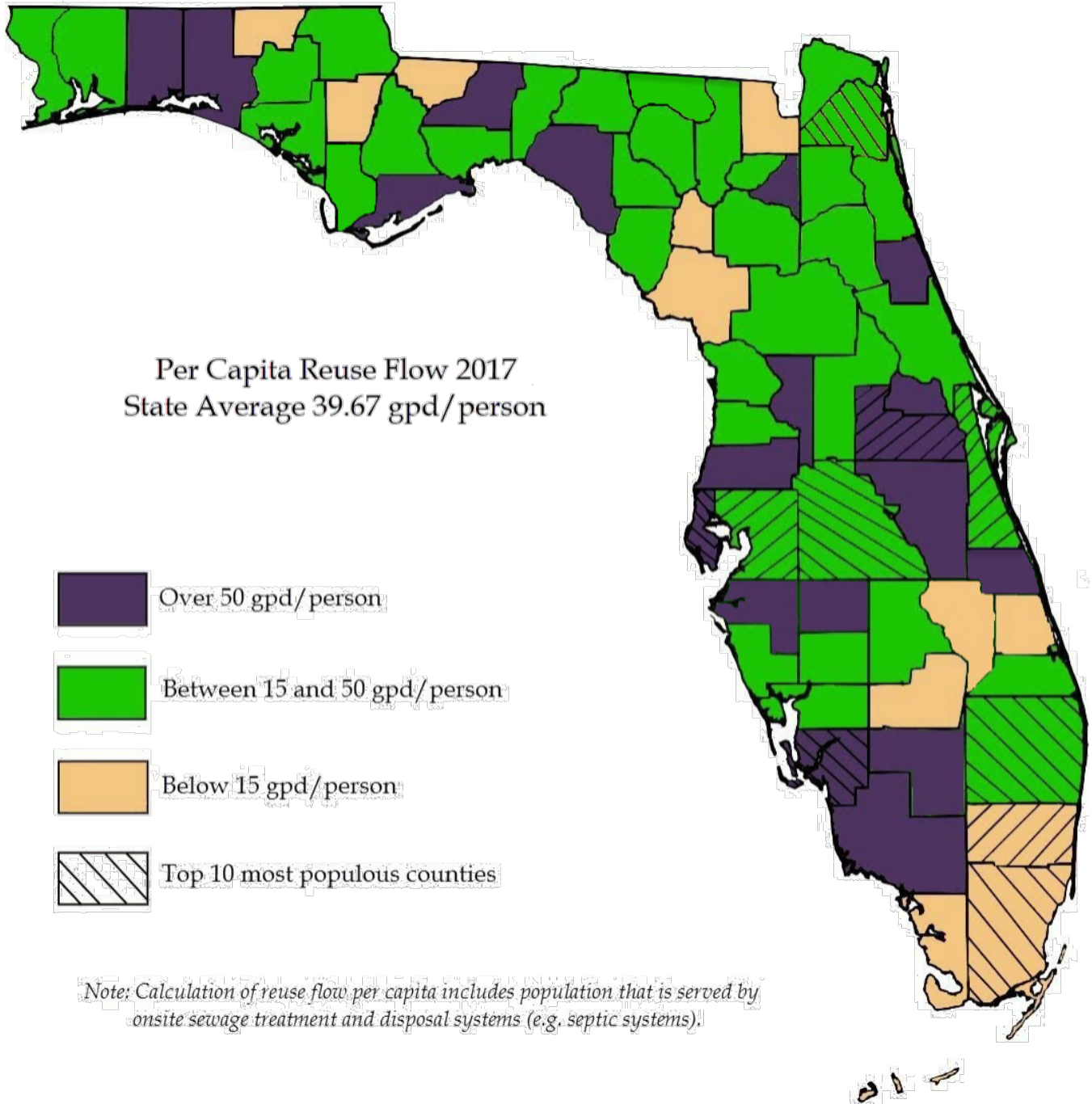
Florida Department of Environmental Protection, 2017 Reuse Inventory

County	Population (2017) ^(a)	Reuse Capacity (gpd/person) ^(b)	Reuse Flow (gpd/person) ^(c)	Rank (flow) ^(d)	Rank (population) ^(e)
Martin	153,022	90.16	30.12	37	31
Miami-Dade	2,743,095	8.42	7.80	63	1
Monroe	76,889	37.16	3.05	65	38
Nassau	80,456	32.07	19.54	52	37
Okaloosa	195,488	168.82	83.20	4	26
Okeechobee	41,140	39.67	13.59	58	45
Orange	1,313,880	148.64	88.53	2	5
Osceola	337,614	154.64	82.33	5	19
Palm Beach	1,414,144	90.05	49.32	19	3
Pasco	505,709	95.03	55.71	13	12
Pinellas	962,003	145.82	63.63	10	6
Polk	661,645	93.65	38.23	30	9
Putnam	73,176	81.17	22.33	48	39
Santa Rosa	170,835	94.34	27.99	41	30
Sarasota	407,260	119.26	38.63	29	14
Seminole	454,757	205.71	85.01	3	13
St. Johns	229,715	101.36	16.45	54	24
St. Lucie	297,634	46.04	13.59	57	21
Sumter	120,700	117.48	54.09	17	34
Suwannee	44,690	57.04	23.47	45	44
Taylor	22,295	109.89	42.66	23	54
Union	15,947	43.90	30.73	36	60
Volusia	523,405	131.42	46.61	21	11
Wakulla	31,909	37.45	29.62	38	49
Walton	65,301	390.15	82.28	6	41
Washington	24,985	58.72	42.39	25	53
Florida	20,484,142	82.48	39.67^(f)		

Notes:

- (a) 2017 population estimates from the Florida Demographic Estimating Conference, December 2017, and the Florida Demographic Database, January 2018.
- (b) Reuse Capacity = Reuse Capacity (gpd)/Population. Gallons per day (gpd) are equivalent to mgd divided by 1 million.
- (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 are tied 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.

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 2017, a total of 64 reuse systems in Florida used 13.13 mgd of surface water, 17.32 mgd of ground water, 1.24 mgd of stormwater, and 2.67 mgd of drinking water to supplement reclaimed water supplies for a total of 34.35 mgd of supplemental water used in 2017. In addition, 5.59 mgd of demineralization concentrate was blended with reclaimed water while 3.69 mgd of reclaimed water was recovered from aquifer storage and recovery (ASR) wells and sent to a reuse system. Appendix C details the 64 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 Reuse Systems^(a) That Reported Charging Residential Customers

Charge Type	Average	Median	Range	No. of Systems
Flat Rate Only (\$/month/connection)	\$10.83	\$9.88	\$6.00– \$21.03	24
Gallonge Charge Only (\$/1,000 gallons)	\$1.20	\$0.56	\$0.15 – \$5.93	35
Combination Flat and per Gallon Charge				
Flat Rate (\$/month/connection)	\$9.26	\$7.82	\$1.41 – \$32.03	65
Gallonge Charge (\$/1,000 gallons)	\$1.22	\$0.99	\$0.10 – \$9.77	

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

Charge Type	Average	Median	Range	No. of Systems
Flat Rate Only (\$/month/connection)	\$519.76	\$331	\$6 – \$1,500	15
Gallonge Charge Only (\$/1,000 gallons)	\$0.65	\$0.50	\$0.05 - \$3.63	66
Combination Flat and per Gallon Charge				67
Flat Rate (\$/month/connection)	\$283.95	\$18.23	\$1.29 – \$10,398 ^(b)	
Gallonge Charge (\$/1,000 gallons)	\$1.11	\$0.80	\$0.08 – \$5.57	

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) \$10,398/month reported by Dunes Community Development District (CDD).

A total of 69 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 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	233	177	69
Serving both residential and non-residential customers	133	109	11
Serving only residential customers	10	6	2
Serving only non-residential customers	90	62	39
Total serving residential customers	143	115	17
Total serving non-residential customers	223	171	63

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 233 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.

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.

The 813 mgd of reclaimed water used in 2017 is estimated to have offset (i.e., avoided) the use of 442 mgd (over 161 billion gallons) of potable quality water while serving to add 252 mgd (approximately 92 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)	235.51	114.11	94.84
Northeast (Jacksonville)	57.34	34.34	17.50
Northwest (Pensacola)	69.60	40.93	24.04
Southeast (West Palm Beach)	124.09	90.50	22.63
South (Ft. Myers)	101.87	51.70	36.10
Southwest (Tampa)	184.88	110.63	56.57
2017 Totals	773.29	442.21	251.69

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	69.48	40.84	24.01
South Florida	290.87	165.96	94.06
St. Johns River	184.32	99.55	63.41
Suwannee River	9.44	5.41	3.55
Southwest Florida	219.18	130.44	66.66
2017 Totals	773.29	442.21	251.69

Notes:

- (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&I PR Reuse Flow	GWR&I PR 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	0.159	0.119	0.016	1.450	0.580	0.653	1.989	1.193	0.597	0.111	0.100	0.814	0.488	0.285	0.907	0.907	5.430	3.288	1.650
Baker	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.101	0.091	0.036	0.022	0.013	0.068	0.068	0.205	0.090	0.104
Bay	0.101	0.076	0.010	2.413	0.965	1.086	0.849	0.509	0.255	0.025	0.023	0.000	0.000	0.000	0.052	0.052	3.440	1.602	1.373
Bradford	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.055	0.633	0.369	0.000	0.000	1.055	0.633	0.369
Brevard	5.786	4.340	0.579	11.887	4.755	5.349	2.713	1.628	0.814	0.896	0.806	0.495	0.297	0.173	1.595	1.595	23.372	12.614	7.721
Broward	2.818	2.114	0.282	3.412	1.365	1.535	0.942	0.565	0.283	0.749	0.674	0.000	0.000	0.000	9.981	9.981	17.902	14.024	2.774
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	2.781	2.086	0.278	1.198	0.479	0.539	0.082	0.049	0.025	0.293	0.264	0.000	0.000	0.000	0.297	0.297	4.651	2.911	1.106
Citrus	0.793	0.595	0.079	0.000	0.000	0.000	0.000	0.000	0.000	1.036	0.932	0.929	0.557	0.325	0.599	0.599	3.357	1.751	1.337
Clay	0.662	0.497	0.066	5.741	2.296	2.583	0.000	0.000	0.000	0.397	0.357	0.000	0.000	0.000	0.000	0.000	6.800	2.793	3.007
Collier	6.825	5.119	0.683	14.911	5.964	6.710	2.627	1.576	0.788	0.188	0.169	0.240	0.144	0.084	0.000	0.000	24.791	12.803	8.434
Columbia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.578	1.547	0.902	0.167	0.167	2.745	1.714	0.902
De Soto	0.070	0.053	0.007	0.020	0.008	0.009	0.010	0.006	0.003	0.130	0.117	0.521	0.313	0.182	0.000	0.000	0.751	0.379	0.318
Dixie	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.376	0.226	0.132	0.000	0.000	0.376	0.226	0.132
Duval	1.475	1.107	0.148	6.760	2.704	3.042	1.620	0.972	0.486	0.272	0.245	0.010	0.006	0.004	10.094	10.094	20.232	14.883	3.924
Escambia	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.060	0.030	0.000	0.000	0.729	0.437	0.255	10.961	10.961	11.790	11.458	0.285
Flagler	3.482	2.612	0.348	2.559	1.024	1.152	0.376	0.226	0.113	2.796	2.516	0.000	0.000	0.000	0.000	0.000	9.213	3.861	4.129
Franklin	0.208	0.156	0.021	0.000	0.000	0.000	0.092	0.055	0.027	0.000	0.000	0.295	0.177	0.103	0.075	0.075	0.670	0.463	0.152
Gadsden	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.142	0.128	0.325	0.195	0.114	0.078	0.078	0.545	0.273	0.242
Gilchrist	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.194	0.116	0.068	0.000	0.000	0.194	0.116	0.068
Glades	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
Gulf	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.693	0.416	0.243	0.000	0.000	0.693	0.416	0.243
Hamilton	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.173	0.104	0.061	0.055	0.055	0.228	0.159	0.061
Hardee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.368	0.221	0.129	1.049	1.049	1.417	1.270	0.129
Hendry	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.727	0.654	1.734	1.040	0.607	0.000	0.000	2.461	1.040	1.261
Hernando	1.716	1.287	0.172	0.026	0.010	0.012	0.008	0.005	0.002	3.459	3.113	0.000	0.000	0.000	0.619	0.619	5.828	1.921	3.299
Highlands	0.000	0.000	0.000	0.000	0.000	0.000	0.026	0.016	0.008	2.509	2.258	0.041	0.025	0.014	0.012	0.012	2.588	0.052	2.280
Hillsborough	2.966	2.225	0.297	14.851	5.940	6.683	4.187	2.512	1.256	0.455	0.410	0.105	0.063	0.037	17.394	17.394	39.958	28.134	8.682
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	4.374	3.281	0.437	2.781	1.112	1.251	0.220	0.132	0.066	0.292	0.263	0.000	0.000	0.000	0.000	0.000	7.667	4.525	2.018
Jackson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.180	1.308	0.763	0.040	0.040	2.220	1.348	0.763
Jefferson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.351	0.211	0.123	0.043	0.043	0.394	0.254	0.123

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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&I PR Reuse Flow	GWR&I PR 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)
Lafayette	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.147	0.132	0.080	0.048	0.028	0.048	0.048	0.275	0.096	0.160
Lake	1.807	1.355	0.181	7.133	2.853	3.210	0.452	0.271	0.136	3.807	3.426	2.431	1.459	0.851	0.211	0.211	15.841	6.149	7.803
Lee	12.164	9.123	1.216	33.837	13.535	15.227	1.686	1.012	0.506	1.565	1.409	0.082	0.049	0.029	1.325	1.325	50.659	25.044	18.386
Leon	0.000	0.000	0.000	0.000	0.000	0.000	0.875	0.525	0.263	0.377	0.339	18.229	10.937	6.380	2.060	2.060	21.541	13.522	6.982
Levy	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.326	0.293	0.195	0.117	0.068	0.000	0.000	0.521	0.117	0.362
Liberty	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.268	0.241	0.000	0.000	0.000	0.000	0.000	0.268	0.000	0.241
Madison	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.789	0.473	0.276	0.000	0.000	0.789	0.473	0.276
Manatee	2.636	1.977	0.264	8.336	3.334	3.751	4.278	2.567	1.283	0.000	0.000	6.332	3.799	2.216	0.613	0.613	22.195	12.290	7.514
Marion	2.408	1.806	0.241	0.018	0.007	0.008	2.380	1.428	0.714	0.563	0.507	4.488	2.693	1.571	0.099	0.099	9.956	6.033	3.040
Martin	2.594	1.945	0.259	0.724	0.290	0.326	0.614	0.368	0.184	0.235	0.212	0.011	0.007	0.004	0.309	0.309	4.487	2.919	0.985
Miami-Dade	0.000	0.000	0.000	0.000	0.000	0.000	0.570	0.342	0.171	3.716	3.344	0.000	0.000	0.000	17.110	17.110	21.396	17.452	3.515
Monroe	0.132	0.099	0.013	0.067	0.027	0.030	0.026	0.016	0.008	0.000	0.000	0.000	0.000	0.000	0.010	0.010	0.235	0.151	0.051
Nassau	0.904	0.678	0.090	0.000	0.000	0.000	0.000	0.000	0.000	0.274	0.247	0.000	0.000	0.000	0.394	0.394	1.572	1.072	0.337
Okaloosa	1.111	0.833	0.111	2.196	0.878	0.988	0.753	0.452	0.226	8.214	7.393	3.221	1.933	1.127	0.383	0.383	15.878	4.479	9.845
Okeechobee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.521	0.313	0.182	0.000	0.000	0.521	0.313	0.182
Orange	10.369	7.777	1.037	24.263	9.705	10.918	29.739	17.843	8.922	25.159	22.643	4.360	2.616	1.526	11.514	11.514	105.404	49.455	45.046
Osceola	4.524	3.393	0.452	8.170	3.268	3.677	3.028	1.817	0.908	8.088	7.279	0.034	0.020	0.012	2.404	2.404	26.248	10.902	12.328
Palm Beach	27.308	20.481	2.731	15.092	6.037	6.791	7.660	4.596	2.298	0.016	0.014	0.000	0.000	0.000	18.000	18.000	68.076	49.114	11.835
Pasco	3.130	2.348	0.313	8.846	3.538	3.981	6.996	4.198	2.099	5.298	4.768	0.972	0.583	0.340	0.919	0.919	26.161	11.586	11.501
Pinellas	6.883	5.162	0.688	32.685	13.074	14.708	10.154	6.092	3.046	0.000	0.000	0.008	0.005	0.003	11.485	11.485	61.215	35.818	18.446
Polk	1.520	1.140	0.152	2.083	0.833	0.937	2.256	1.353	0.677	3.415	3.074	2.360	1.416	0.826	13.115	13.115	24.749	17.857	5.666
Putnam	1.418	1.064	0.142	0.000	0.000	0.000	0.000	0.000	0.000	0.216	0.194	0.000	0.000	0.000	0.000	0.000	1.634	1.064	0.336
Santa Rosa	2.002	1.502	0.200	1.491	0.596	0.671	0.332	0.199	0.100	0.229	0.206	0.395	0.237	0.138	0.332	0.332	4.781	2.866	1.315
Sarasota	6.389	4.792	0.639	5.356	2.142	2.410	3.646	2.188	1.094	0.006	0.005	0.334	0.200	0.117	0.000	0.000	15.731	9.322	4.265
Seminole	1.344	1.008	0.134	12.090	4.836	5.441	4.968	2.981	1.490	2.195	1.976	0.465	0.279	0.163	3.495	3.495	24.557	12.599	9.204
St. Johns	3.013	2.259	0.301	0.072	0.029	0.032	0.032	0.019	0.010	0.405	0.365	0.000	0.000	0.000	0.251	0.251	3.773	2.559	0.708
St. Lucie	1.508	1.131	0.151	2.095	0.838	0.943	0.026	0.016	0.008	0.249	0.224	0.000	0.000	0.000	0.168	0.168	4.046	2.152	1.325
Sumter	5.098	3.824	0.510	0.000	0.000	0.000	0.315	0.189	0.095	0.308	0.277	0.509	0.305	0.178	0.299	0.299	6.529	4.617	1.060
Suwannee	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.002	0.001	0.334	0.301	0.522	0.313	0.183	0.000	0.000	0.859	0.315	0.484
Taylor	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.142	0.128	0.550	0.330	0.193	0.259	0.259	0.951	0.589	0.320
Union	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.490	0.294	0.172	0.000	0.000	0.490	0.294	0.172
Volusia	5.457	4.093	0.546	14.241	5.696	6.408	1.262	0.757	0.379	1.373	1.236	0.205	0.123	0.072	1.069	1.069	23.607	11.738	8.640
Wakulla	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.913	0.548	0.320	0.032	0.032	0.945	0.580	0.320

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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&IP R Reuse Flow	GWR&I PR 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)
Walton	2.064	1.548	0.206	0.000	0.000	0.000	0.000	0.000	0.000	0.619	0.557	2.651	1.591	0.928	0.038	0.038	5.373	3.177	1.691
Washington	0.281	0.211	0.028	0.000	0.000	0.000	0.138	0.083	0.041	0.330	0.297	0.284	0.170	0.099	0.026	0.026	1.059	0.490	0.466
Total	140.28	105.21	14.03	246.80	98.72	111.06	98.03	58.82	29.41	82.45	74.21	65.67	39.40	22.99	140.05	140.05	773.29	442.21	251.69

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 (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	321	109	430
Number of WWTFs Providing Reuse	365	112	477
Number of WWTFs with no Reuse (Disposal Only)	34	9	43
Total Wastewater Capacity (mgd)	2,320	252	2,572
Total Wastewater Flow (mgd)	1,526	154	1,680
Reuse Capacity (mgd)	1,384	306	1,690
Reuse Flow (mgd)	679	134	813
Public Access Reuse Flow (mgd) ^(a)	433	55	488
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, 2016 to September 30, 2017, reporting period.

Of the 252 reuse systems that reported cross-connection control activities, 12 reuse systems reported identifying and eliminating one or more cross-connections. A total of 21,488 new connections to public access reuse systems were reported to occur during the reporting period. Over 99.8 percent of the new connections were inspected to ensure that no cross-connections had been created.

The 2012 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

DEP has published reuse inventories since 1998. Table 10 shows a summary of the total number of domestic wastewater treatment facilities providing water for reuse, reuse capacities and capacity ratios of the reuse facilities, and average reuse flow rates and flow ratios recorded for these previous inventories and the 2017 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 (1998 to Present)

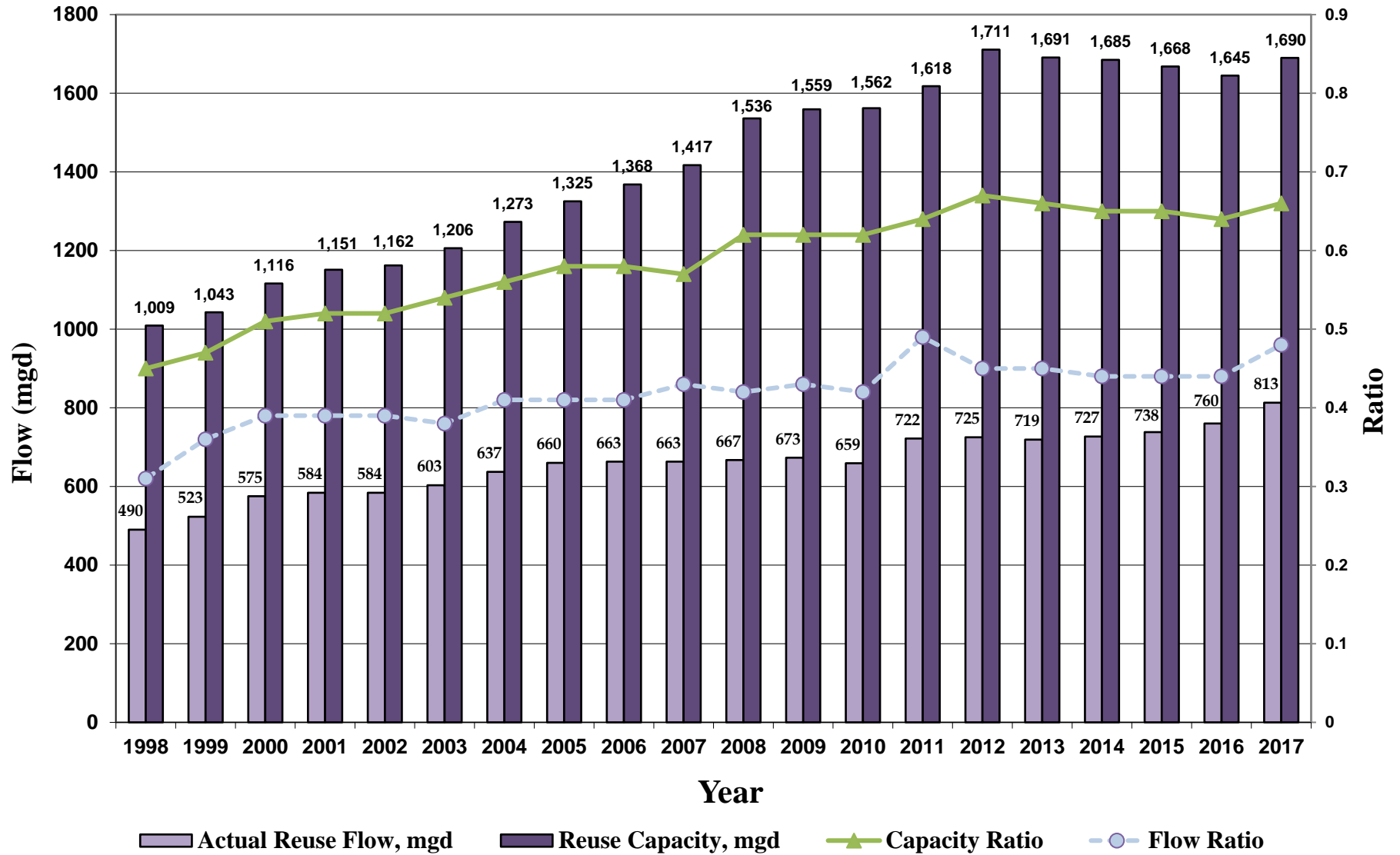
Report Year	No. of Facilities Providing Reuse	Reuse Capacity (mgd)	Capacity Ratio ^(a)	Reuse Flow (mgd)	Flow Ratio ^(b)
1998	451	1,009	0.45	490	0.31
1999	459	1,043	0.47	523	0.36
2000	457	1,116	0.51	575	0.39
2001	461	1,151	0.52	584	0.39
2002	467	1,162	0.52	584	0.39
2003	469	1,206	0.54	603	0.38
2004	468	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
2016	478	1,645	0.64	760	0.44
2017	477	1,690	0.66	813	0.48

Notes:

(a) Capacity Ratio = Total Reuse Capacity/Total WWTF Capacity.

(b) Flow Ratio = Total Reuse Flow/Total WWTF Flow.

Figure 3: Florida's Reuse Growth



Future Updates

To monitor the effectiveness of the State's reuse program, DEP will continue to update this inventory each year.

Suggested corrections, additions, or deletions may be brought to the attention of Ms. Kelly Fannon, E.I., Florida Department of Environmental Protection, Mail Station 3540, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Kelly Fannon can be reached at kelly.fannon@dep.state.fl.us.

Reuse Webpage

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

<https://floridadep.gov/water/domestic-wastewater/content/water-reuse-program>

Downloadable spreadsheets for each of the appendices, can be found at

<https://floridadep.gov/water/domestic-wastewater/content/reuse-inventory-database-and-annual-report..>

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Appendices