

# 2016 Reuse Inventory

May 2017

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**Florida Department of Environmental Protection  
Division of Water Resource Management  
Water Reuse Program**



# *2016 Reuse Inventory*

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

**May 2017**



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



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# 2016 REUSE INVENTORY

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## 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 2016 reuse inventory were due on January 1, 2017, which covers a reporting period of October 1, 2015, through September 30, 2016. Information obtained from the report forms was entered into the Department's "Reuse Inventory Database," which is a Microsoft Access database. Over 94% of the 2016 annual reuse reports have been received thus far. Any data gaps from the 24 reuse systems that did not submit a 2016 annual reuse report form have been filled with data from the 2015 reuse inventory in addition to data from the Department's wastewater facility regulation (WAFR) database. These 24 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 2016 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 2016, 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 2,376 mgd and treated 1,592 mgd of domestic wastewater. These treatment facilities served 431 reuse systems which are listed in Appendix A. Approximately 760 mgd of reclaimed water from these facilities was reused for beneficial purposes. The total reuse capacity associated with these systems was 1,645 mgd. Appendices B<sup>1</sup>, D, E, and K provide information on these reuse facilities and reuse systems<sup>2</sup> as well as their reuse and disposal activities.

Reclaimed water from these systems was used to irrigate 397,750 residences, 574 golf courses, 1,053 parks, and 381 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 58 percent of the 760 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.

Approximately 12,739 acres of edible crops on 65 farms were reported to be irrigated with reclaimed water. Around 79% 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.

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<sup>1</sup> 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.

<sup>2</sup> 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 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 130 mgd. Appendix I provides information on facilities that engage in disposal activities only.

## *All Facilities*

The 521 domestic wastewater treatment facilities included in this report had a total WWTF capacity of 2,571 mgd and a total WWTF flow of 1,721 mgd. Appendix L<sup>3</sup> provides information on all these facilities.

The 760 mgd of reclaimed water use represents approximately 44% of the total domestic wastewater flow in the state. The 1,645 mgd of reuse capacity represents approximately 64% 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 37.7 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 2016 population estimates from the State of Florida's Demographic Estimating Conference, February 2017 and the Florida Demographic Database, April 2016. Figure 2 shows the map of Florida's counties color-coded by range of reuse flow per capita.

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<sup>3</sup> 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<sup>(a)</sup> and Reuse Customers**  
Information by DEP District

DEP District <sup>(b)</sup>	No. of Treatment Facilities Providing Reuse <sup>(c)</sup>	No. of Reuse Systems <sup>(c)</sup>	No. of Residences Irrigated	No. of Golf Courses Irrigated	No. of Parks Irrigated	No. of Schools Irrigated	No. of Cooling Towers <sup>(d)</sup>
Central (Orlando)	121	109	129,971	170	391	131	21
Northeast (Jacksonville)	75	68	21,625	42	11	8	8
Northwest (Pensacola)	63	63	4,502	20	32	7	6
Southeast (West Palm Beach)	50	45	29,854	96	82	31	7
South (Ft. Myers)	73	66	93,347	133	111	32	7
Southwest (Tampa)	96	80	118,451	113	426	172	41
<b>2016 Totals</b>	<b>478</b>	<b>431</b>	<b>397,750</b>	<b>574</b>	<b>1,053</b>	<b>381</b>	<b>90</b>
<b>2015 Totals</b>	<b>478</b>	<b>430</b>	<b>362,737</b>	<b>537</b>	<b>1,022</b>	<b>369</b>	<b>84</b>
<b>% Change</b>	<b>0.0%</b>	<b>+0.2%</b>	<b>+9.7%</b>	<b>+6.9%</b>	<b>+3.0%</b>	<b>+3.3%</b>	<b>+7.1%</b>

**Table 1b. Summary of Reuse Facilities/Systems<sup>(a)</sup> and Reuse Customers**  
Information by Water Management District

Water Management District <sup>(b)</sup>	No. of Treatment Facilities Providing Reuse <sup>(c)</sup>	No. of Reuse Systems <sup>(c)</sup>	No. of Residences Irrigated	No. of Golf Courses Irrigated	No. of Parks Irrigated	No. of Schools Irrigated	No. of Cooling Towers <sup>(d)</sup>
Northwest Florida	62	62	4,502	20	32	7	6
South Florida	106	98	146,222	202	340	83	22
St. Johns River	144	126	114,886	124	193	113	17
Suwannee River	26	26	-	1	2	-	4
Southwest Florida	140	119	132,140	227	486	178	41
<b>2016 Totals</b>	<b>478</b>	<b>431</b>	<b>397,750</b>	<b>574</b>	<b>1,053</b>	<b>381</b>	<b>90</b>
<b>2015 Totals</b>	<b>478</b>	<b>430</b>	<b>362,737</b>	<b>537</b>	<b>1,022</b>	<b>369</b>	<b>84</b>
<b>% Change</b>	<b>0.0%</b>	<b>+0.2%</b>	<b>+9.7%</b>	<b>+6.9%</b>	<b>+3.0%</b>	<b>+3.3%</b>	<b>+7.1%</b>

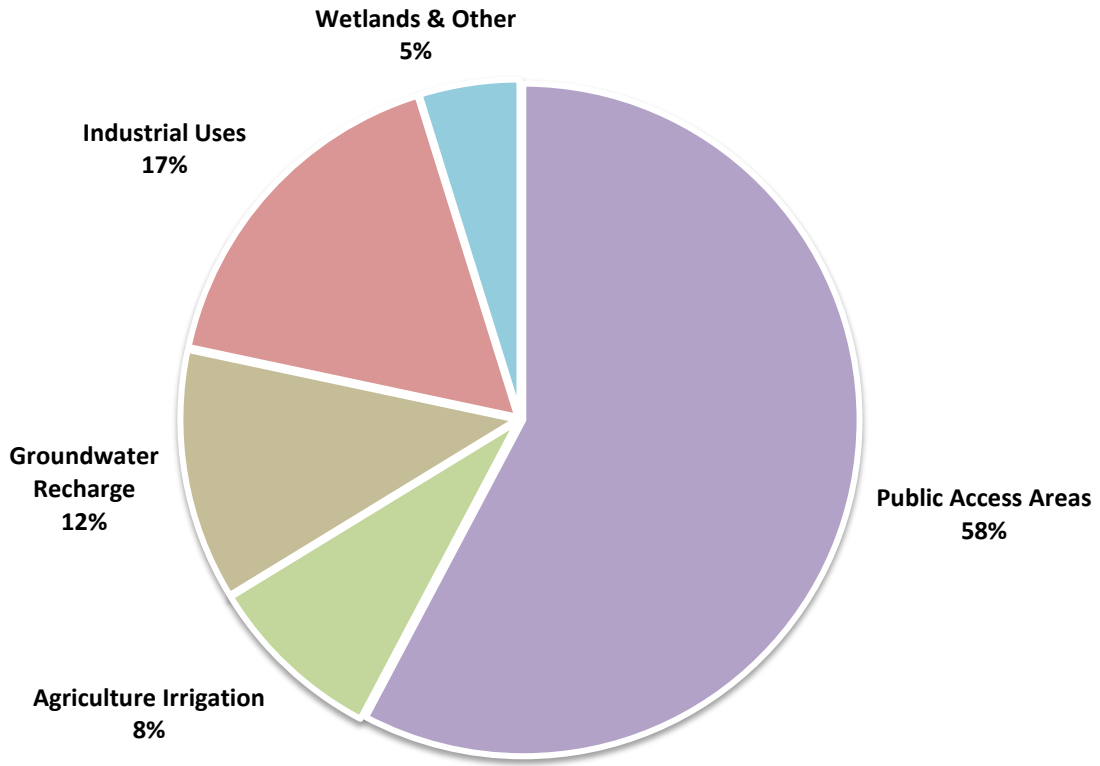
- Notes:
- (a) See definitions in Appendix M for an explanation of the terms ‘reuse facility’ and ‘reuse system’ as used in this report.
  - (b) A few reuse systems are physically located across jurisdictional boundaries (i.e., across more than one water management district, DEP district, or county). 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 <sup>(a)</sup>	Reuse Capacity <sup>(b)</sup> (mgd)	Reuse Flow <sup>(b)</sup> (mgd)	Reported Area <sup>(b, c)</sup> (acres)	Adjusted Area <sup>(b, c)</sup> (acres)
Golf Course Irrigation	191	313.3	124.9	69,769	73,482
Residential Irrigation	143	421.2	217.3	154,267	171,985
Other Public Access Areas & Other	158	209.7	96.7	48,139	52,848
<b>Public Access Areas &amp; Landscape Irrigation Subtotal</b>	<b>245</b>	<b>944.2</b>	<b>438.9</b>	<b>272,174</b>	<b>298,315</b>
Edible Crops <sup>(d)</sup>	17	26.8	10.7	12,739	12,739
Other Crops	110	132.3	54.0	21,446	23,498
<b>Agricultural Irrigation Subtotal</b>	<b>118</b>	<b>159.1</b>	<b>64.8</b>	<b>34,185</b>	<b>36,237</b>
Rapid Infiltration Basins	182	218.9	90.0	6,262	15,557
Absorption Fields	11	4.9	1.7	325	325
Surface Water Augmentation	0	0	0	NA	NA
Injection	0	0	0	NA	NA
<b>Ground Water Recharge &amp; Indirect Potable Reuse Subtotal</b>	<b>186</b>	<b>223.8</b>	<b>91.7</b>	<b>6,587</b>	<b>15,882</b>
At Treatment Plant	106	83.4	58.8	879	3,949
At Other Facilities	43	150.4	69.4	3,922	8,525
<b>Industrial Subtotal</b>	<b>125</b>	<b>233.8</b>	<b>128.2</b>	<b>4,801</b>	<b>12,475</b>
<b>Toilet Flushing</b>	18	1.7	1.0	NA	NA
<b>Fire Protection</b>	2	2.0	0	NA	NA
<b>Wetlands</b>	11	67.5	31.8	3,984	3,984
<b>Other Uses</b>	15	13.0	3.7	191	232
<b>2016 Totals</b>	<b>431</b>	<b>1,645.0</b>	<b>760.0</b>	<b>321,922</b>	<b>367,129</b>
<b>2015 Totals</b>	<b>430</b>	<b>1,667.8</b>	<b>738.2</b>	<b>315,264</b>	<b>346,645</b>
<b>% Change</b>	<b>+0.2%</b>	<b>-1.4%</b>	<b>+3.0%</b>	<b>+2.1%</b>	<b>+5.9%</b>

- 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% 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 <sup>(b)</sup>	Totals
Central (Orlando)	153.40	11.83	46.62	17.80	24.82	254.46
Northeast (Jacksonville)	27.76	7.62	5.13	8.33	0.41	49.25
Northwest (Pensacola)	13.95	29.59	10.78	14.59	6.62	75.53
Southeast (West Palm Beach)	64.07	0.48	5.99	42.53	2.01	115.08
South (Ft. Myers)	82.89	2.51	6.01	1.79	0.35	93.55
Southwest (Tampa)	96.79	12.72	17.15	43.14	2.32	172.13
<b>2016 Totals</b>	<b>438.86</b>	<b>64.75</b>	<b>91.68</b>	<b>128.17</b>	<b>36.53</b>	<b>760.00</b>
<b>2015 Totals</b>	419.82	64.38	94.68	124.15	35.12	738.15
<b>% Change</b>	+4.5%	+0.6%	-3.2%	+3.2%	+4.0%	+3.0%

**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 <sup>(b)</sup>	Totals
Northwest Florida	13.95	29.50	10.78	14.59	6.57	75.39
South Florida	173.47	4.46	45.03	48.84	3.27	275.06
St. Johns River	126.96	8.81	14.11	20.30	24.02	194.20
Suwannee River	0.04	7.43	0.87	0.60	0.33	9.26
Southwest Florida	124.44	14.56	20.90	43.84	2.34	206.09
<b>2016 Totals</b>	<b>438.86</b>	<b>64.75</b>	<b>91.68</b>	<b>128.17</b>	<b>36.53</b>	<b>760.00</b>
<b>2015 Totals</b>	419.82	64.38	94.68	124.15	35.12	738.15
<b>% Change</b>	+4.5%	+0.6%	-3.2%	+3.2%	+4.0%	+3.0%

- 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 <sup>(b)</sup> (mgd)	Capacity Ratio <sup>(c)</sup>	Reuse Flow (mgd)	Total WWTF Flow <sup>(b)</sup> (mgd)	Flow Ratio <sup>(d)</sup>
Central (Orlando)	534.5	452.85	1.18	254.5	319.35	0.80
Northeast (Jacksonville)	144.5	241.26	0.60	49.2	146.26	0.34
Northwest (Pensacola)	173.0	173.97	0.99	75.5	102.64	0.74
Southeast (West Palm Beach)	219.4	950.03	0.23	115.1	695.59	0.17
South (Ft. Myers)	200.2	244.77	0.82	93.5	134.93	0.69
Southwest (Tampa)	373.3	508.08	0.73	172.1	322.59	0.53
<b>2016 Totals</b>	<b>1645.0</b>	<b>2571.0</b>	<b>0.64<sup>(g)</sup></b>	<b>760.0</b>	<b>1721.4</b>	<b>0.44<sup>(g)</sup></b>

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

Water Management Districts	Reuse Capacity (mgd)	Total WWTF Capacity <sup>(b)</sup> (mgd)	Capacity Ratio <sup>(c)</sup>	Reuse Flow (mgd)	Total WWTF Flow <sup>(b)</sup> (mgd)	Flow Ratio <sup>(d)</sup>	Reuse Flow that Replaces Potable-Quality Water <sup>(e)</sup> (mgd)	Flow Ratio for Reuse that Replaces Potable-Quality Water <sup>(f)</sup>
Northwest Florida	172.7	173.72	0.99	75.4	102.53	0.74	24.9	0.24
South Florida	512.6	1242.30	0.41	275.1	904.52	0.30	193.7	0.21
St. Johns River	466.4	537.74	0.87	194.2	327.37	0.59	134.8	0.41
Suwannee River	19.9	18.44	1.08	9.3	10.10	0.92	0.9	0.09
Southwest Florida	473.4	598.76	0.79	206.1	376.86	0.55	165.6	0.44
<b>2016 Totals</b>	<b>1645.0</b>	<b>2571.0</b>	<b>0.64<sup>(g)</sup></b>	<b>760.0</b>	<b>1721.4</b>	<b>0.44<sup>(g)</sup></b>	<b>520.0</b>	<b>0.30<sup>(g)</sup></b>

- 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) <sup>(a)</sup>	Total WWTF Flow (mgd) <sup>(a)</sup>	Reuse Capacity (mgd)	Reuse Flow (mgd)	Capacity Ratio <sup>(b)</sup>	Flow Ratio <sup>(c)</sup>
Alachua	27.84	19.49	15.18	5.25	0.55	0.27
Baker	1.62	0.81	0.37	0.20	0.23	0.25
Bay	35.00	18.32	6.83	2.97	0.20	0.16
Bradford	2.76	1.53	2.70	1.07	0.98	0.70
Brevard	63.72	41.00	48.48	22.34	0.76	0.54
Broward	315.12	224.38	36.08	16.81	0.11	0.07
Calhoun	1.50	0.45	0	0	0	0
Charlotte	16.65	11.90	10.75	5.45	0.65	0.46
Citrus	7.11	3.26	12.63	3.82	1.78	1.17
Clay	20.83	8.97	21.43	5.91	1.03	0.66
Collier	60.62	28.40	38.54	20.19	0.64	0.71
Columbia	3.53	2.50	3.48	2.56	0.99	1.02
De Soto	3.34	1.57	2.95	0.71	0.88	0.45
Dixie	0.40	0.23	0.40	0.40	1.00	1.76
Duval	131.95	83.38	36.92	14.74	0.28	0.18
Escambia	33.78	22.27	40.58	18.16	1.20	0.82
Flagler	12.46	8.84	24.02	8.11	1.93	0.92
Franklin	2.50	0.77	2.63	0.77	1.05	1.00
Gadsden	4.27	2.04	1.48	0.55	0.35	0.27
Gilchrist	0.45	0.19	0.45	0.19	1.00	1.00
Glades	0.24	0.18	0	0	0	0
Gulf	3.69	0.91	2.25	0.79	0.61	0.86
Hamilton	1.57	0.81	0.45	0.18	0.29	0.23
Hardee	2.38	1.53	2.38	1.53	1.00	1.00
Hendry	2.75	2.12	2.75	2.12	1.00	1.00
Hernando	12.40	5.35	20.79	5.35	1.68	1.00
Highlands	4.78	2.63	5.01	2.89	1.05	1.10
Hillsborough	170.04	106.28	51.80	37.38	0.30	0.35
Holmes	1.40	0.75	0	0	0	0
Indian River	16.73	8.84	10.49	6.84	0.63	0.77
Jackson	6.53	3.30	5.52	2.25	0.85	0.68
Jefferson	1.05	0.44	1.10	0.46	1.05	1.06
Lafayette	0.65	0.22	0.67	0.22	1.03	1.00
Lake	30.08	14.26	50.38	13.84	1.68	0.97
Lee	95.60	55.17	85.95	48.69	0.90	0.88
Leon	27.87	20.62	35.75	20.63	1.28	1.00
Levy	1.11	0.56	1.12	0.55	1.01	0.99
Liberty	0.53	0.27	0.53	0.27	1.00	1.00
Madison	1.52	0.80	1.52	0.80	1.00	1.00
Manatee	44.90	32.74	44.45	19.16	0.99	0.59
Marion	20.78	10.38	26.77	10.21	1.29	0.98

County	Total WWTF Capacity (mgd) <sup>(a)</sup>	Total WWTF Flow (mgd) <sup>(a)</sup>	Reuse Capacity (mgd)	Reuse Flow (mgd)	Capacity Ratio <sup>(b)</sup>	Flow Ratio <sup>(c)</sup>
Martin	14.53	7.56	13.55	3.95	0.93	0.52
Miami-Dade	380.31	315.96	20.99	21.62	0.06	0.07
Monroe	16.42	7.72	2.82	0.29	0.17	0.04
Nassau	6.78	3.74	2.46	1.42	0.36	0.38
Okaloosa	28.61	17.34	32.73	16.42	1.14	0.95
Okeechobee	3.20	1.14	1.63	0.52	0.51	0.45
Orange	134.98	140.43	183.73	112.08	1.36	0.80
Osceola	37.28	28.45	50.61	28.31	1.36	1.00
Palm Beach	186.70	119.69	122.62	61.12	0.66	0.51
Pasco	46.75	30.38	41.03	27.07	0.88	0.89
Pinellas	158.25	106.86	138.81	51.66	0.88	0.48
Polk	63.55	34.66	61.39	26.15	0.97	0.75
Putnam	3.95	1.59	5.70	1.44	1.44	0.91
Santa Rosa	11.11	6.76	15.65	4.41	1.41	0.65
Sarasota	47.07	26.78	51.17	13.05	1.09	0.49
Seminole	81.75	43.92	92.82	36.70	1.14	0.84
St. Johns	19.43	10.28	22.17	3.87	1.14	0.38
St. Lucie	33.66	18.03	14.04	4.23	0.42	0.23
Sumter	12.00	7.72	14.32	6.58	1.19	0.85
Suwannee	2.07	0.92	2.36	0.92	1.14	1.00
Taylor	1.65	0.98	2.45	0.98	1.48	1.00
Union	0.70	0.44	0.70	0.44	1.00	1.00
Volusia	72.06	33.19	67.37	24.39	0.93	0.73
Wakulla	1.20	0.95	1.20	0.95	1.00	1.00
Walton	13.08	6.30	25.35	5.74	1.94	0.91
Washington	1.88	1.17	1.45	1.17	0.77	1.00
<b>Totals<sup>(d)</sup>/Avg:</b>	<b>2,570.97</b>	<b>1,721.38</b>	<b>1,644.97</b>	<b>760.00</b>	<b>0.64<sup>(e)</sup></b>	<b>0.44<sup>(e)</sup></b>

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**

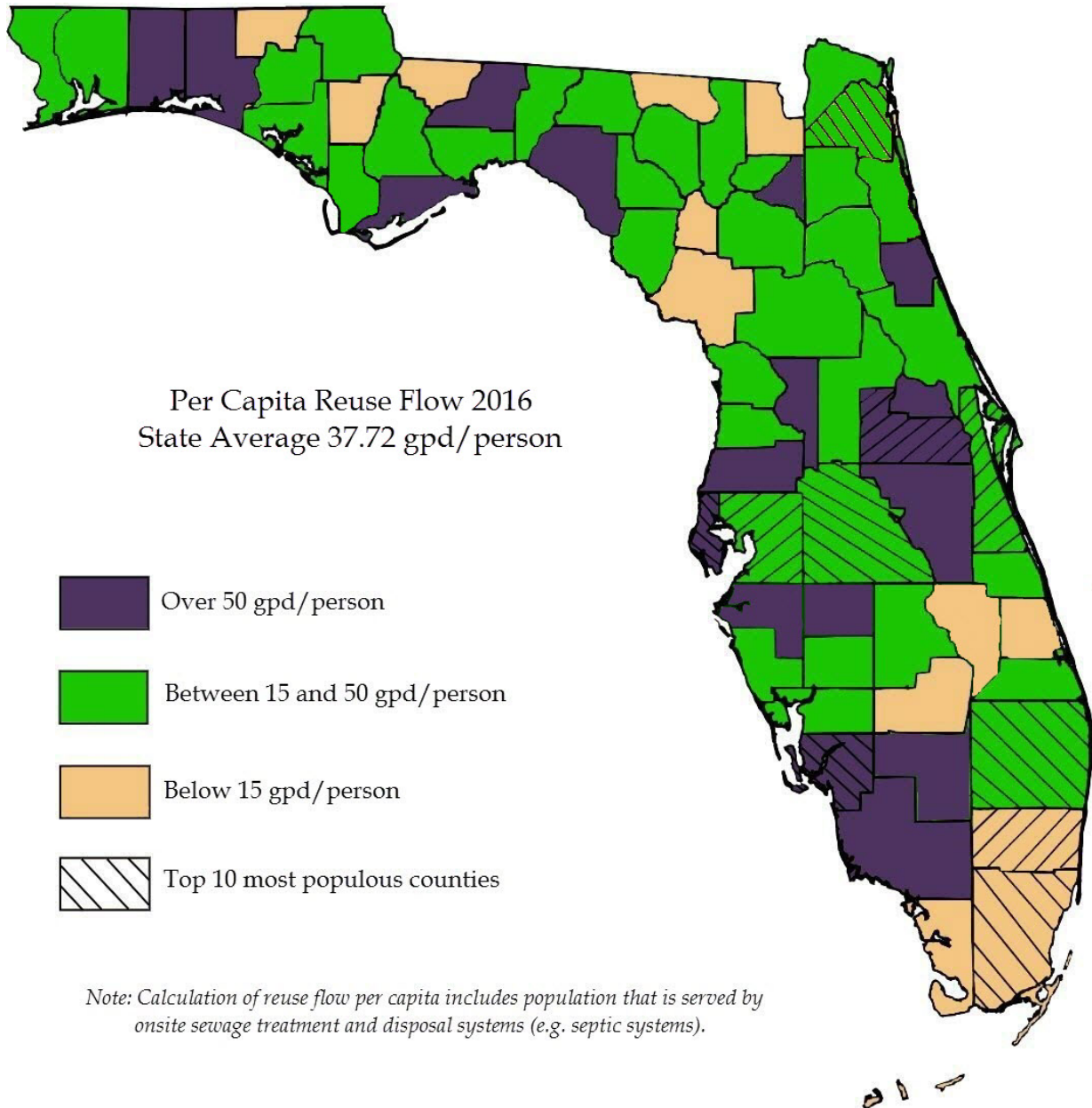
County	Population (2016) <sup>(a)</sup>	Reuse Capacity (gpd/person) <sup>(b)</sup>	Reuse Flow (gpd/person) <sup>(c)</sup>	Rank (flow) <sup>(d)</sup>	Rank (population) <sup>(e)</sup>
Alachua	257,062	59.04	20.43	48	23
Baker	26,965	13.80	7.42	64	52
Bay	176,016	38.80	16.87	53	28
Bradford	27,440	98.21	38.85	29	51
Brevard	568,919	85.22	39.27	28	10
Broward	1,854,513	19.45	9.06	62	2
Calhoun	14,580	0	0	66-67	62
Charlotte	170,450	63.09	31.97	32	29
Citrus	143,054	88.25	26.71	42	33
Clay	205,321	104.35	28.76	38	25
Collier	350,202	110.04	57.64	11	16
Columbia	68,566	50.81	37.29	30	40
De Soto	35,141	83.85	20.09	49	48
Dixie	16,773	23.85	23.97	46	58
Duval	923,647	39.97	15.96	54	7
Escambia	309,986	130.90	58.57	10	20
Flagler	103,095	233.00	78.67	6	35
Franklin	11,916	220.71	64.37	9	65
Gadsden	48,486	30.53	11.30	61	43
Gilchrist	16,848	26.71	11.51	60	57
Glades	13,047	24	13	57	64
Gulf	16,628	135.31	47.33	18	59
Hamilton	14,665	30.69	12.54	59	61
Hardee	27,637	86.19	55.51	13	50
Hendry	38,370	71.64	55.12	14	47
Hernando	179,503	115.82	29.79	36	27
Highlands	101,531	49.37	28.45	39	36
Hillsborough	1,352,797	38.29	27.63	40	4
Holmes	20,003	0	0	66-67	55
Indian River	146,410	71.65	46.75	21	32
Jackson	50,345	109.70	44.63	22	42
Jefferson	14,498	75.94	31.94	33	63
Lafayette	8,621	77.14	25.52	45	67
Lake	323,985	155.51	42.71	25	18
Lee	680,539	126.30	71.55	8	8
Leon	287,671	124.27	71.70	7	22
Levy	40,553	27.52	13.66	56	46
Liberty	8,736	60.67	31.36	34	66
Madison	19,238	79.01	41.74	26	56
Manatee	357,591	124.30	53.59	17	15



County	Population (2016) <sup>(a)</sup>	Reuse Capacity (gpd/person) <sup>(b)</sup>	Reuse Flow (gpd/person) <sup>(c)</sup>	Rank (flow) <sup>(d)</sup>	Rank (population) <sup>(e)</sup>
Marion	345,749	77.43	29.53	37	17
Martin	150,870	89.83	26.15	44	31
Miami-Dade	2,700,794	7.77	8.00	63	1
Monroe	76,047	37.03	3.79	65	38
Nassau	77,841	31.55	18.20	51	37
Okaloosa	192,925	169.63	85.13	4	26
Okeechobee	40,806	39.99	12.62	58	45
Orange	1,280,387	143.49	87.54	3	5
Osceola	322,862	156.76	87.69	2	19
Palm Beach	1,391,741	88.11	43.92	23	3
Pasco	495,868	82.74	54.60	15	12
Pinellas	954,569	145.42	54.12	16	6
Polk	646,989	94.89	40.42	27	9
Putnam	72,972	78.11	19.75	50	39
Santa Rosa	167,009	93.68	26.40	43	30
Sarasota	399,538	128.07	32.66	31	14
Seminole	449,124	206.67	81.72	5	13
St. Johns	220,257	100.64	17.58	52	24
St. Lucie	292,826	47.93	14.44	55	21
Sumter	118,577	120.77	55.53	12	34
Suwannee	44,349	53.19	20.77	47	44
Taylor	22,478	109.00	43.42	24	54
Union	15,887	44.06	27.51	41	60
Volusia	517,411	130.20	47.13	19	11
Wakulla	31,599	37.82	30.00	35	49
Walton	62,943	402.78	91.16	1	41
Washington	24,888	58.34	47.10	20	53
<b>Florida</b>	<b>20,148,654</b>	<b>81.64<sup>(f)</sup></b>	<b>37.72<sup>(f)</sup></b>		

- Notes: (a) 2016 population estimates from the Florida Demographic Estimating Conference, February 2017, and the Florida Demographic Database, April 2016.
- (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 2016, a total of 62 reuse systems in Florida used 15.23 mgd of surface water, 11.17 mgd of ground water, 1.06 mgd of stormwater, and 0.77 mgd of drinking water to supplement reclaimed water supplies for a total of 28.22 mgd of supplemental water used in 2016. In addition, 4.11 mgd of demineralization concentrate was blended with reclaimed water while 0.40 mgd of reclaimed water was recovered from aquifer storage and recovery (ASR) wells and sent to a reuse system. Appendix C details the 62 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 140 Reuse Systems<sup>(a)</sup> That Reported Charging Residential Customers**

<i>Charge Type</i>	<i>Average</i>	<i>Median</i>	<i>Range</i>	<i>No. of Systems</i>
Flat Rate Only (\$/month/connection)	\$10.64	\$9.75	\$6.00 - \$21.03	25
Gallage Charge Only (\$/1000 gallons)	\$1.40	\$0.82	\$0.19 - \$7.59	40
Combination Flat and per Gallon Charge				56
Flat Rate (\$/month/connection)	\$8.12	\$6.42	\$3.00 - \$32.03	
Gallage Charge (\$/1000 gallons)	\$1.13	\$0.88	\$0.10 - \$9.77	

**Table 7b. Summary of Reuse Rates for 223 Reuse Systems<sup>(a)</sup> That Reported Charging Non-Residential Customers**

<i>Charge Type</i>	<i>Average</i>	<i>Median</i>	<i>Range</i>	<i>No. of Systems</i>
Flat Rate Only (\$/month/connection)	\$557.60	\$404	\$8.00 - \$1,500	14
Gallage Charge Only (\$/1000 gallons)	\$0.78	\$0.50	\$0.05 - \$9.12	72
Combination Flat and per Gallon Charge				58
Flat Rate (\$/month/connection)	\$368.81	\$20.02	\$1.29 - \$12,595 <sup>(b)</sup>	
Gallage Charge (\$/1000 gallons)	\$0.96	\$0.70	\$0.08 - \$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 72 utilities reported not charging their residential and/or non-residential reclaimed water customers any fee (base, flat, or gallonage) specific to use of

reclaimed water<sup>4</sup>. 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 <sup>(a)</sup>	No. of Utilities Reporting No Charges <sup>(b)</sup>
Total	233	176	72
Serving both residential and non-residential customers	130	107	12
Serving only residential customers	10	6	2
Serving only non-residential customers	93	63	37
Total serving residential customers	140	113	18
Total serving non-residential customers	223	170	66

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.

The 760 mgd of reclaimed water used in 2016 is estimated to have offset (i.e., avoided) the use of 407 mgd (over 148 billion gallons) of potable quality water

<sup>4</sup> 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 245 mgd (over 89 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 <sup>(a)</sup> (mgd)	Recharge Flow <sup>(a)</sup> (mgd)
Central (Orlando)	229.75	108.29	95.59
Northeast (Jacksonville)	49.16	28.72	15.55
Northwest (Pensacola)	69.02	40.72	23.81
Southeast (West Palm Beach)	113.39	81.31	22.31
South (Ft. Myers)	93.32	47.53	32.99
Southwest (Tampa)	169.81	100.03	54.22
<b>2016 Totals</b>	<b>724.46</b>	<b>406.61</b>	<b>244.46</b>

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

Water Management District	Total Flow (mgd)	Offset Flow <sup>(a)</sup> (mgd)	Recharge Flow <sup>(a)</sup> (mgd)
Northwest Florida	68.88	40.61	23.77
South Florida	272.24	149.95	93.79
St. Johns River	170.32	90.88	59.39
Suwannee River	9.26	5.41	3.39
Southwest Florida	203.75	119.75	64.11
<b>2016 Totals</b>	<b>724.46</b>	<b>406.61</b>	<b>244.46</b>

- 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 <sup>(b)</sup>	RI Reuse Flow	RI Offset Flow	RI RF <sup>(b)</sup>	OPAA Reuse Flow	OPAA Offset Flow	OPAA RF <sup>(b)</sup>	GWR&IPR Reuse Flow	GWR&IPR RF <sup>(b)</sup>	AI Reuse Flow	AI Offset Flow	AI RF <sup>(b)</sup>	IND, TF, FP Reuse Flow	IND, TF, FP Offset Flow	Total Flow	Total Offset Flow	Total RF <sup>(b)</sup>
Alachua	0.131	0.098	0.013	1.616	0.646	0.727	1.560	0.936	0.468	0.095	0.085	1.006	0.604	0.352	0.844	0.844	5.251	3.128	1.645
Baker	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.120	0.108	0.035	0.021	0.012	0.045	0.045	0.200	0.066	0.120
Bay	0.100	0.075	0.010	1.991	0.796	0.896	0.835	0.501	0.251	0.024	0.022	0.000	0.000	0.000	0.020	0.020	2.970	1.393	1.178
Bradford	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.049	0.629	0.367	0.017	0.017	1.066	0.646	0.367
Brevard	6.131	4.598	0.613	10.476	4.190	4.714	2.676	1.606	0.803	0.785	0.707	0.395	0.237	0.138	1.588	1.588	22.051	12.219	6.975
Broward	3.382	2.537	0.338	3.775	1.510	1.699	0.990	0.594	0.297	0.572	0.515	0.000	0.000	0.000	8.091	8.091	16.810	12.732	2.849
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	3.000	2.250	0.300	1.526	0.610	0.687	0.239	0.143	0.072	0.305	0.275	0.000	0.000	0.000	0.380	0.380	5.450	3.384	1.333
Citrus	0.403	0.302	0.040	0.000	0.000	0.000	0.000	0.000	0.000	1.277	1.149	1.658	0.995	0.580	0.483	0.483	3.821	1.780	1.770
Clay	0.612	0.459	0.061	4.738	1.895	2.132	0.000	0.000	0.000	0.556	0.500	0.000	0.000	0.000	0.000	0.000	5.906	2.354	2.694
Collier	6.964	5.223	0.696	10.417	4.167	4.688	2.537	1.522	0.761	0.097	0.087	0.170	0.102	0.060	0.000	0.000	20.185	11.014	6.292
Columbia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.300	1.380	0.805	0.257	0.257	2.557	1.637	0.805
De Soto	0.070	0.053	0.007	0.030	0.012	0.014	0.020	0.012	0.006	0.074	0.067	0.492	0.295	0.172	0.000	0.000	0.686	0.372	0.265
Dixie	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.402	0.241	0.141	0.000	0.000	0.402	0.241	0.141
Duval	1.484	1.113	0.148	5.200	2.080	2.340	1.270	0.762	0.381	0.294	0.265	0.050	0.030	0.018	6.439	6.439	14.737	10.424	3.152
Escambia	0.000	0.000	0.000	0.000	0.000	0.000	0.089	0.053	0.027	0.000	0.000	0.080	0.048	0.028	11.995	11.995	12.164	12.096	0.055
Flagler	2.783	2.087	0.278	2.208	0.883	0.994	0.496	0.298	0.149	2.536	2.282	0.000	0.000	0.000	0.000	0.000	8.023	3.268	3.703
Franklin	0.273	0.205	0.027	0.000	0.000	0.000	0.100	0.060	0.030	0.000	0.000	0.331	0.199	0.116	0.063	0.063	0.767	0.526	0.173
Gadsden	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.138	0.124	0.332	0.199	0.116	0.078	0.078	0.548	0.277	0.240
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	0.787	0.472	0.275	0.000	0.000	0.787	0.472	0.275
Hamilton	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.132	0.079	0.046	0.052	0.052	0.184	0.131	0.046
Hardee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.378	0.227	0.132	1.156	1.156	1.534	1.383	0.132
Hendry	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.717	0.645	1.398	0.839	0.489	0.000	0.000	2.115	0.839	1.135
Hernando	1.745	1.309	0.175	0.026	0.010	0.012	0.008	0.005	0.002	2.957	2.661	0.000	0.000	0.000	0.611	0.611	5.347	1.935	2.850
Highlands	0.000	0.000	0.000	0.000	0.000	0.000	0.026	0.016	0.008	2.565	2.309	0.041	0.025	0.014	0.257	0.257	2.889	0.297	2.331
Hillsborough	2.385	1.789	0.239	12.314	4.926	5.541	4.976	2.986	1.493	0.389	0.350	0.059	0.035	0.021	15.427	15.427	35.550	25.162	7.643
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	3.600	2.700	0.360	2.472	0.989	1.112	0.220	0.132	0.066	0.282	0.254	0.000	0.000	0.000	0.270	0.270	6.844	4.091	1.792
Jackson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.207	1.324	0.772	0.040	0.040	2.247	1.364	0.772

County	GCI Reuse Flow	GCI Offset Flow	GCI RF <sup>(b)</sup>	RI Reuse Flow	RI Offset Flow	RI RF <sup>(b)</sup>	OPAA Reuse Flow	OPAA Offset Flow	OPAA RF <sup>(b)</sup>	GWR&IPR Reuse Flow	GWR&IPR RF <sup>(b)</sup>	AI Reuse Flow	AI Offset Flow	AI RF <sup>(b)</sup>	IND, TF, FP Reuse Flow	IND, TF, FP Offset Flow	Total Flow	Total Offset Flow	Total RF <sup>(b)</sup>
Jefferson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.413	0.248	0.145	0.050	0.050	0.463	0.298	0.145
Lafayette	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.120	0.108	0.080	0.048	0.028	0.020	0.020	0.220	0.068	0.136
Lake	1.501	1.126	0.150	5.500	2.200	2.475	1.288	0.773	0.386	2.737	2.463	2.479	1.487	0.867	0.333	0.333	13.838	5.919	6.342
Lee	11.080	8.310	1.108	32.536	13.014	14.641	1.570	0.942	0.471	2.154	1.939	0.060	0.036	0.021	1.261	1.261	48.661	23.564	18.180
Leon	0.000	0.000	0.000	0.000	0.000	0.000	0.617	0.370	0.185	0.381	0.343	17.769	10.661	6.219	1.860	1.860	20.627	12.892	6.747
Levy	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.348	0.313	0.206	0.124	0.072	0.000	0.000	0.554	0.124	0.385
Liberty	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.274	0.247	0.000	0.000	0.000	0.000	0.000	0.274	0.000	0.247
Madison	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.803	0.482	0.281	0.000	0.000	0.803	0.482	0.281
Manatee	1.831	1.373	0.183	6.418	2.567	2.888	3.600	2.160	1.080	0.000	0.000	6.730	4.038	2.356	0.583	0.583	19.162	10.721	6.507
Marion	2.033	1.525	0.203	0.003	0.001	0.001	2.967	1.780	0.890	0.950	0.855	4.161	2.497	1.456	0.097	0.097	10.211	5.900	3.406
Martin	2.142	1.607	0.214	0.693	0.277	0.312	0.427	0.256	0.128	0.250	0.225	0.000	0.000	0.000	0.433	0.433	3.945	2.573	0.879
Miami-Dade	0.000	0.000	0.000	0.000	0.000	0.000	0.730	0.438	0.219	4.609	4.148	0.000	0.000	0.000	16.276	16.276	21.615	16.714	4.367
Monroe	0.163	0.122	0.016	0.066	0.026	0.030	0.047	0.028	0.014	0.000	0.000	0.000	0.000	0.000	0.012	0.012	0.288	0.189	0.060
Nassau	0.929	0.697	0.093	0.000	0.000	0.000	0.000	0.000	0.000	0.210	0.189	0.000	0.000	0.000	0.278	0.278	1.417	0.975	0.282
Okaloosa	1.231	0.923	0.123	1.943	0.777	0.874	0.867	0.520	0.260	8.159	7.343	3.444	2.067	1.206	0.267	0.267	15.911	4.554	9.806
Okeechobee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.477	0.286	0.167	0.000	0.000	0.477	0.286	0.167
Orange	8.218	6.164	0.822	21.565	8.626	9.704	30.902	18.541	9.271	27.226	24.503	2.595	1.557	0.908	9.215	9.215	99.721	44.103	45.208
Osceola	4.607	3.455	0.461	6.302	2.521	2.836	3.171	1.903	0.951	11.760	10.584	0.071	0.043	0.025	2.402	2.402	28.313	10.323	14.857
Palm Beach	19.822	14.867	1.982	15.188	6.075	6.835	6.928	4.157	2.078	0.004	0.004	0.000	0.000	0.000	17.532	17.532	59.474	42.631	10.899
Pasco	2.414	1.810	0.241	7.387	2.955	3.324	6.967	4.180	2.090	8.571	7.714	0.977	0.586	0.342	0.757	0.757	27.073	10.288	13.711
Pinellas	5.215	3.911	0.521	27.676	11.070	12.454	8.386	5.032	2.516	0.000	0.000	0.008	0.005	0.003	10.378	10.378	51.663	30.396	15.494
Polk	1.205	0.904	0.121	1.686	0.674	0.759	2.148	1.289	0.645	3.959	3.563	2.915	1.749	1.020	13.747	13.747	25.661	18.364	6.107
Putnam	1.362	1.022	0.136	0.000	0.000	0.000	0.000	0.000	0.000	0.079	0.071	0.000	0.000	0.000	0.000	0.000	1.441	1.022	0.207
Santa Rosa	2.033	1.525	0.203	1.073	0.429	0.483	0.230	0.138	0.069	0.413	0.372	0.411	0.247	0.144	0.249	0.249	4.409	2.588	1.271
Sarasota	5.972	4.479	0.597	3.980	1.592	1.791	2.642	1.585	0.793	0.102	0.092	0.350	0.210	0.123	0.001	0.001	13.047	7.867	3.395
Seminole	1.758	1.319	0.176	11.959	4.784	5.382	4.969	2.981	1.491	1.832	1.649	1.448	0.869	0.507	3.437	3.437	25.403	13.389	9.204
St. Johns	3.337	2.503	0.334	0.000	0.000	0.000	0.002	0.001	0.001	0.366	0.329	0.000	0.000	0.000	0.168	0.168	3.873	2.672	0.664
St. Lucie	1.591	1.193	0.159	2.113	0.845	0.951	0.000	0.000	0.000	0.275	0.248	0.000	0.000	0.000	0.250	0.250	4.229	2.288	1.357
Sumter	5.507	4.130	0.551	0.000	0.000	0.000	0.329	0.197	0.099	0.092	0.083	0.484	0.290	0.169	0.172	0.172	6.584	4.790	0.902
Suwannee	0.000	0.000	0.000	0.000	0.000	0.000	0.035	0.021	0.011	0.253	0.228	0.633	0.380	0.222	0.000	0.000	0.921	0.401	0.460
Taylor	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.149	0.134	0.298	0.179	0.104	0.529	0.529	0.976	0.708	0.238
Union	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.437	0.262	0.153	0.000	0.000	0.437	0.262	0.153
Volusia	5.536	4.152	0.554	14.379	5.752	6.471	1.621	0.973	0.486	1.237	1.113	0.195	0.117	0.068	0.659	0.659	23.627	11.652	8.692

County	GCI Reuse Flow	GCI Offset Flow	GCI RF <sup>(b)</sup>	RI Reuse Flow	RI Offset Flow	RI RF <sup>(b)</sup>	OPAA Reuse Flow	OPAA Offset Flow	OPAA RF <sup>(b)</sup>	GWR&IPR Reuse Flow	GWR&IPR RF <sup>(b)</sup>	AI Reuse Flow	AI Offset Flow	AI RF <sup>(b)</sup>	IND, TF, FP Reuse Flow	IND, TF, FP Offset Flow	Total Flow	Total Offset Flow	Total RF <sup>(b)</sup>
Wakulla	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.909	0.545	0.318	0.039	0.039	0.948	0.584	0.318
Walton	2.019	1.514	0.202	0.000	0.000	0.000	0.000	0.000	0.000	1.080	0.972	2.612	1.567	0.914	0.028	0.028	5.738	3.109	2.088
Washington	0.293	0.220	0.029	0.000	0.000	0.000	0.262	0.157	0.079	0.312	0.281	0.294	0.176	0.103	0.011	0.011	1.172	0.564	0.492
<b>Total</b>	<b>124.86</b>	<b>93.65</b>	<b>12.49</b>	<b>217.26</b>	<b>86.90</b>	<b>97.77</b>	<b>96.75</b>	<b>58.05</b>	<b>29.02</b>	<b>91.68</b>	<b>82.52</b>	<b>64.75</b>	<b>38.85</b>	<b>22.66</b>	<b>129.16</b>	<b>129.16</b>	<b>724.46</b>	<b>406.61</b>	<b>244.46</b>

- 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	322	109	431
Number of WWTFs Providing Reuse	366	112	478
Number of WWTFs with no Reuse (Disposal Only)	34	9	43
Total Wastewater Capacity (mgd)	2,319	252	2,571
Total Wastewater Flow (mgd)	1,562	160	1,722
Reuse Capacity (mgd)	1,344	301	1,645
Reuse Flow (mgd)	632	128	760
Public Access Reuse Flow (mgd) <sup>(a)</sup>	395	44	439
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, 2015 to September 30, 2016 reporting period.

Of the 252 reuse systems that reported cross-connection control activities, 11 reuse systems reported identifying and eliminating 1 or more cross-connections. 16,832 new connections to public access reuse systems were reported to occur during the reporting period. Over 95% 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.

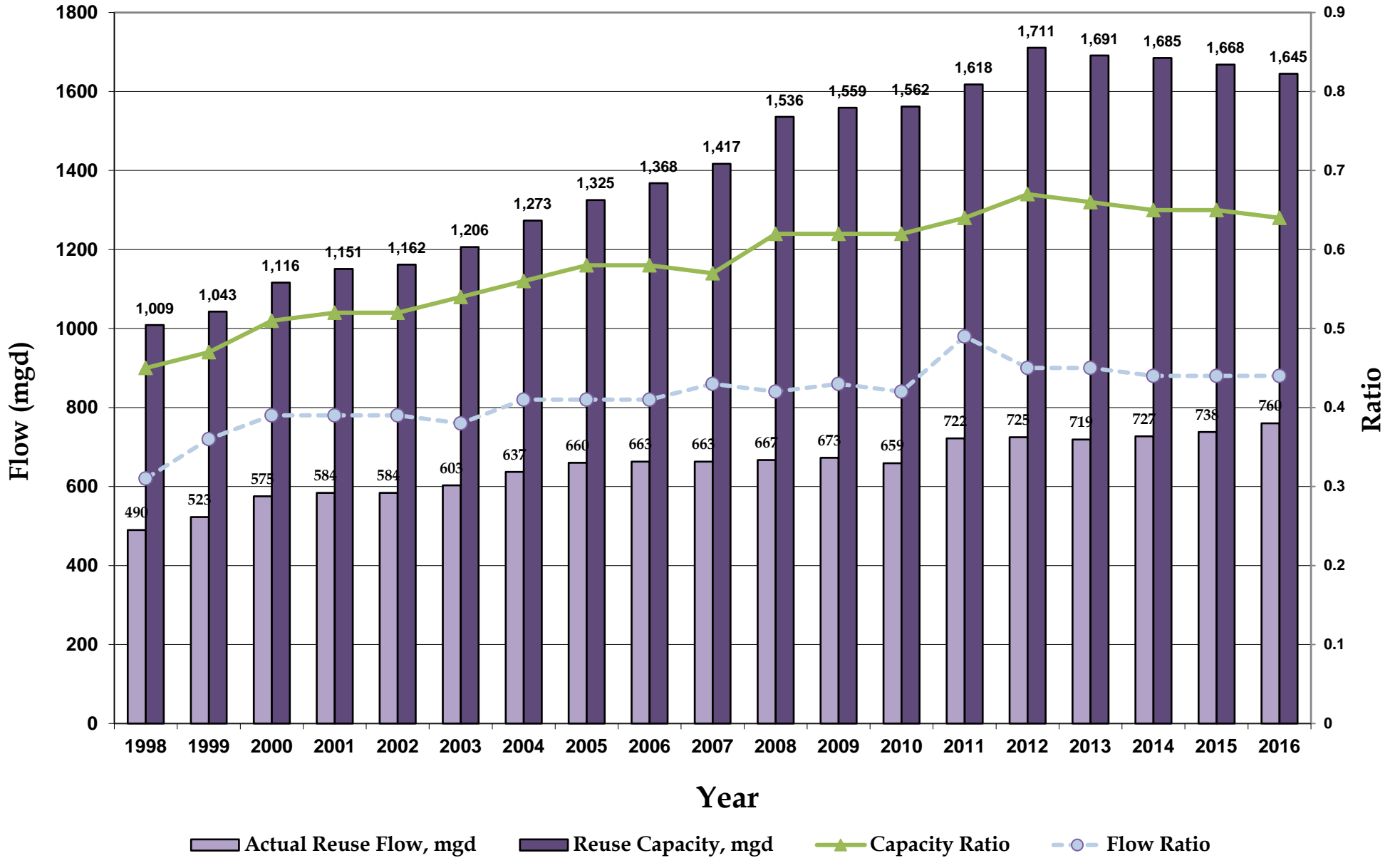
## PREVIOUS INVENTORIES AND TRENDS

DEP published previous reuse inventories for 1986, 1990, 1992, and 1996 through 2015. 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 (1998 to Present)**

Report Year	No. of Facilities Providing Reuse	Reuse Capacity (mgd)	Capacity Ratio	Reuse Flow (mgd)	Flow Ratio <sup>(a)</sup>
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

### Figure 3. Florida's Reuse Growth



## FUTURE UPDATES

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In order 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. Sharon Sawicki, P.E., Florida Department of Environmental Protection, Mail Station 3540, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Ms. Sawicki can be reached at [Sharon.sawicki@dep.state.fl.us](mailto:Sharon.sawicki@dep.state.fl.us).

## REUSE WEBPAGE

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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>

The 2016 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

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