

# 2013 Reuse Inventory

May 2014

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Florida Department of Environmental Protection  
Water Reuse Program



# *2013 Reuse Inventory*

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

**May 2014**



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



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# 2013 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 (FDEP) Form 62-610.300(4)(a)2., F.A.C. These annual reports are the basis for this inventory.

The forms for the 2013 reuse inventory were due on January 1, 2014, which covers a reporting period of October 1, 2012, through September 30, 2013. Information obtained from the report forms was entered into the Department's "Reuse Inventory Database," which is a Microsoft Access 2003 database. Over 93% of the 2013 annual reuse reports were received and entered into the database. For the 30 reuse systems that did not submit a 2013 annual reuse report form, data from the 2012 reuse inventory or the Department's wastewater facility regulation database were used. These 30 facilities will have blank values under the "report received" column in Appendix A.

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

The 2013 reuse inventory includes all active domestic wastewater treatment facilities having permitted capacities of 0.1 mgd or more, including those that do not engage in reuse activities. This threshold is also the minimum treatment plant capacity that is allowed by Chapter 62-610, F.A.C., to provide reclaimed water for irrigation of public access areas (such as parks and golf courses).

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

## Results

### *Reuse Facilities*

In 2013, a total of 482 domestic wastewater treatment facilities with permitted capacities of 0.1 mgd or above made reclaimed water available for reuse. These facilities had a permitted wastewater treatment facility (WWTF) capacity totaling 2,367 mgd and treated 1,468 mgd of domestic wastewater. These treatment facilities served 434 reuse systems which are listed in Appendix A. Approximately 719 mgd of reclaimed water from these facilities was reused for beneficial purposes. The total reuse capacity associated with these systems was 1,691 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 343,782 residences, 536 golf courses, 948 parks, and 358 schools. Appendix F provides details on the numbers and types of public access reuse customers, including cooling towers and unique uses for reclaimed water. Table 1 summarizes the data in terms of the number of reuse facilities and reuse systems in each FDEP district and water management district, as well as the breakdown of certain public access reuse activities, such as number of residences, golf courses, parks, and schools irrigated by reclaimed water.

Table 2 provides a summary of reuse activities by reuse type, including the number of reuse systems, capacity, flow, and area for each reuse subtype. Irrigation of areas accessible to the public represented about 54 percent of the 719 mgd of reclaimed water reused. Figure 1 shows the percentage of reclaimed water utilization by flow for each reuse type. Table 3 compares the types of reclaimed water utilization in each FDEP district and water management district.

Over 13,763 acres of edible crops on 66 farms were reported to be irrigated with reclaimed water. Around 86% of the farmland was dedicated to the production of citrus (i.e., oranges, tangerines, grapefruit, etc.). Appendix G provides information on the 18 reuse systems providing reclaimed water for the irrigation of edible crops and the farms using the reclaimed water.

### *Disposal Facilities*

There are about 49 active domestic wastewater treatment facilities having permitted capacities of 0.1 mgd or greater that do not provide reuse of any kind. These facilities had a total WWTF capacity of 209 mgd and a total WWTF flow of 135 mgd. Appendix I provides information on facilities that engage in disposal activities only.

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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.

## *All Facilities*

The 531 domestic wastewater treatment facilities with permitted capacities of 0.1 mgd or more had a total WWTF capacity of 2,576 mgd and a total WWTF flow of 1,603 mgd. Appendix L<sup>3</sup> provides information on all these facilities.

The 719 mgd of reclaimed water use represents approximately 45% of the total domestic wastewater flow in the state. The 1,691 mgd of reuse capacity represents approximately 66% of the total domestic wastewater treatment capacity in the state. Table 4 provides the reuse capacity and flow ratios for each FDEP district and water management district.

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

The state-wide average reuse flow per capita, including population served by onsite sewage treatment and disposal systems (e.g., septic tanks), was 37 gallons per day of reuse per person. Table 6 shows the per capita reuse capacities and reuse flows for each county in Florida. The per capita usage is based on 2013 population estimates from the State of Florida's Demographic Estimating Conference, February 2014 and the Florida Demographic Database, April 2013. 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 1. Summary of Reuse Facilities/Systems<sup>(a)</sup> and Reuse Customers  
Information by 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)	122	110	110,065	140	309	123	17
Northeast (Jacksonville)	72	65	14,674	37	9	6	3
Northwest (Pensacola)	66	65	3,427	24	33	9	5
Southeast (West Palm Beach)	52	47	28,037	93	71	21	6
South (Ft. Myers)	75	70	85,872	138	112	34	5
Southwest (Tampa)	95	77	101,707	104	414	165	42
<b>2013 Totals</b>	<b>482</b>	<b>434</b>	<b>343,782</b>	<b>536</b>	<b>948</b>	<b>358</b>	<b>78</b>
<b>Water Management District<sup>(b)</sup></b>							
Northwest Florida	65	64	3,427	24	33	9	5
South Florida	112	104	127,468	203	238	73	17
St. Johns River	144	126	99,799	123	212	105	12
Suwannee River	27	27	-	1	2	-	2
Southwest Florida	134	113	113,088	185	463	171	42
<b>2013 Totals</b>	<b>482</b>	<b>434</b>	<b>343,782</b>	<b>536</b>	<b>948</b>	<b>358</b>	<b>78</b>
<b>2012 Totals</b>	486	438	321,340	548	961	328	89
<b>% Change</b>	-0.8%	-0.9%	+7.0%	-2.2%	-1.4%	+9.1%	-12.4%

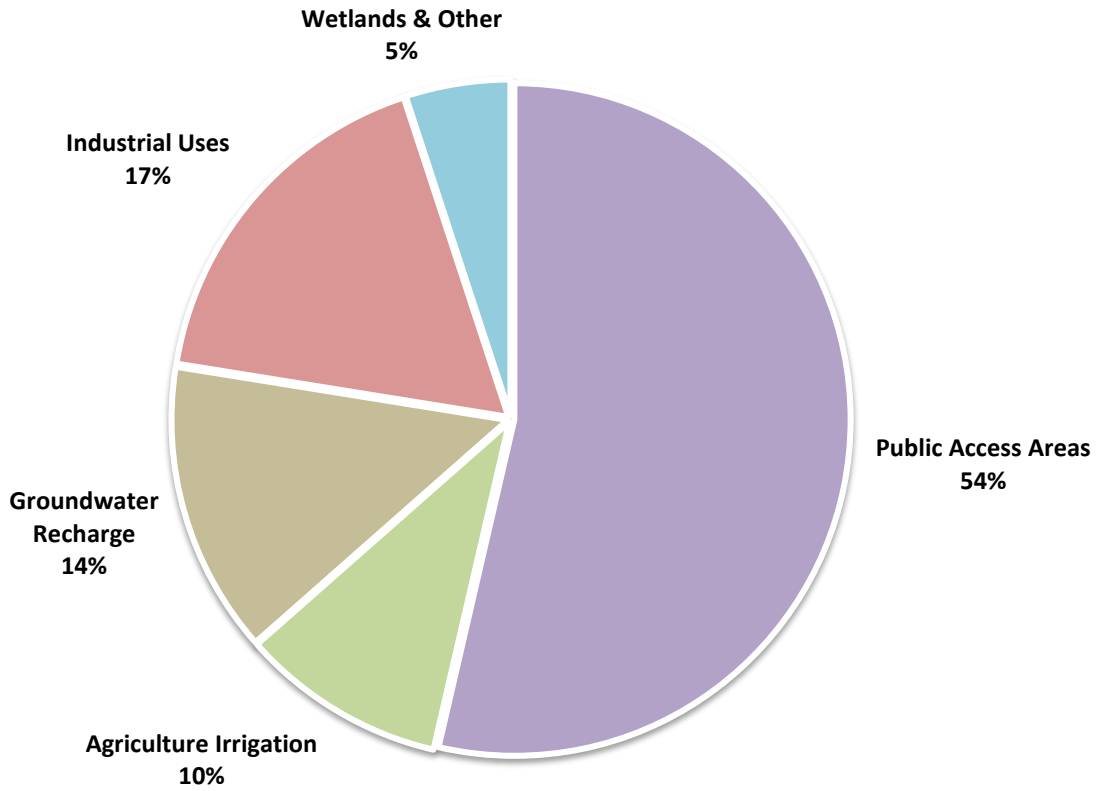
- Notes:
- (a) See definitions in Appendix M for an explanation of the terms ‘reuse facility’ and ‘reuse system’ as used in this report.
  - (b) A few reuse systems are physically located across jurisdictional boundaries (i.e., across more than one water management district, FDEP district, or county).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

**Table 2. Summary of Reuse Activities**

<b>Reuse Type</b>	<b>Number of Systems<sup>(a)</sup></b>	<b>Reuse Capacity<sup>(b)</sup> (mgd)</b>	<b>Reuse Flow<sup>(b)</sup> (mgd)</b>	<b>Reported Area<sup>(b,c)</sup> (acres)</b>	<b>Adjusted Area<sup>(b,c)</sup> (acres)</b>
<b><u>Public Access Areas &amp; Landscape Irrigation</u></b>					
Golf Course Irrigation	194	322.5	123.0	68,088	71,242
Residential Irrigation	133	445.7	184.1	144,462	160,274
Other Public Access Areas & Other	152	216.2	78.8	41,869	53,767
<b>Subtotal</b>	<b>247</b>	<b>984.4</b>	<b>385.8</b>	<b>254,420</b>	<b>285,283</b>
<b><u>Agricultural Irrigation</u></b>					
Edible Crops <sup>(d)</sup>	18	25.3	13.0	13,763	13,763
Other Crops	116	138.2	58.1	22,670	24,802
<b>Subtotal</b>	<b>124</b>	<b>163.5</b>	<b>71.1</b>	<b>36,433</b>	<b>38,565</b>
<b><u>Ground Water Recharge &amp; Indirect Potable Reuse</u></b>					
Rapid Infiltration Basins	178	219.1	98.8	14,799	14,799
Absorption Fields	16	6.2	2.1	491	491
Surface Water Augmentation	0	0	0	NA	NA
Injection	0	0	0	NA	NA
<b>Subtotal</b>	<b>183</b>	<b>225.3</b>	<b>101.0</b>	<b>15,290</b>	<b>15,290</b>
<b><u>Industrial</u></b>					
At Treatment Plant	104	84.7	59.0	803	2,055
At Other Facilities	42	140.1	66.4	4,854	11,270
<b>Subtotal</b>	<b>123</b>	<b>224.9</b>	<b>125.4</b>	<b>5,657</b>	<b>13,325</b>
<b><u>Toilet Flushing</u></b>	<b>17</b>	<b>1.6</b>	<b>0.4</b>	<b>NA</b>	<b>NA</b>
<b><u>Fire Protection</u></b>	<b>2</b>	<b>2.0</b>	<b>0</b>	<b>NA</b>	<b>NA</b>
<b><u>Wetlands</u></b>	<b>10</b>	<b>76.7</b>	<b>33.4</b>	<b>5,440</b>	<b>5,440</b>
<b><u>Other Uses</u></b>	<b>16</b>	<b>12.5</b>	<b>2.5</b>	<b>254</b>	<b>273</b>
<b>2013 Totals</b>	<b>434</b>	<b>1,690.9</b>	<b>719.5</b>	<b>317,493</b>	<b>358,177</b>
<b>2012 Totals</b>	<b>438</b>	<b>1,710.7</b>	<b>724.9</b>	<b>309,095</b>	<b>351,148</b>
<b>% Change</b>	<b>-0.9%</b>	<b>-1.2%</b>	<b>-0.7%</b>	<b>+2.7%</b>	<b>+2.0%</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 86% of total area for edible crops is citrus – including oranges, grapefruit, and tangerines.

# Figure 1. Reclaimed Water Utilization by Flow



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

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

	Public Access Areas	Agricultural Irrigation	Ground Water Recharge	Industrial	Other <sup>(b)</sup>	Totals
<b>DEP Districts</b>						
Central (Orlando)	121.85	16.87	57.92	17.36	26.93	240.92
Northeast (Jacksonville)	21.17	8.31	5.14	11.11	0.19	45.91
Northwest (Pensacola)	12.23	30.41	8.90	11.78	7.19	70.51
Southeast (West Palm Beach)	56.15	0.71	5.56	43.00	1.60	107.02
South (Ft. Myers)	86.89	3.44	4.20	1.53	0.18	96.24
Southwest (Tampa)	87.50	11.37	19.25	40.58	0.19	158.89
<b>2013 Totals</b>	<b>385.78</b>	<b>71.11</b>	<b>100.96</b>	<b>125.36</b>	<b>36.28</b>	<b>719.49</b>
<b>Water Management Districts</b>						
Northwest Florida	12.23	30.27	8.90	11.78	7.18	70.36
South Florida	154.93	9.73	52.79	50.25	2.98	270.69
St. Johns River	103.80	9.06	16.16	21.69	25.76	176.47
Suwannee River	0.28	8.39	0.93	0.62	0.13	10.36
Southwest Florida	114.54	13.65	22.19	41.02	0.23	191.61
<b>2013 Totals</b>	<b>385.78</b>	<b>71.11</b>	<b>100.96</b>	<b>125.36</b>	<b>36.28</b>	<b>719.49</b>
<b>2012 Totals</b>	397.07	72.64	95.56	122.27	37.37	724.91
<b>% Change</b>	-2.8%	-2.1%	+5.7%	+2.5%	-2.9%	-0.7%

- Notes: (a) Any discrepancies in totals are due to rounding associated with developing this summary table; totals presented in table are calculated without rounding individual values.  
 (b) Includes wetlands, fire protection, toilet flushing and all “other uses.”

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

DEP Districts	Reuse Capacity (mgd)	Total WWTF Capacity <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)	530.6	450.49	1.18	240.9	272.35	0.88		
Northeast (Jacksonville)	132.1	237.69	0.56	45.9	138.40	0.33		
Northwest (Pensacola)	173.5	176.83	0.98	70.5	97.06	0.73		
Southeast (West Palm Beach)	229.5	950.38	0.24	107.0	670.06	0.16		
South (Ft. Myers)	196.2	241.94	0.81	96.2	126.41	0.76		
Southwest (Tampa)	429.0	518.29	0.83	158.9	298.64	0.53		
<b>2013 Totals</b>	<b>1690.9</b>	<b>2575.6</b>	<b>0.66<sup>(g)</sup></b>	<b>719.5</b>	<b>1602.9</b>	<b>0.45<sup>(g)</sup></b>		

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	173.2	176.58	0.98	70.4	96.87	0.73	22.6	0.23
South Florida	526.8	1239.89	0.42	270.7	846.10	0.32	179.6	0.21
St. Johns River	439.3	538.48	0.82	176.5	301.96	0.58	114.5	0.38
Suwannee River	21.0	18.76	1.12	10.4	11.17	0.93	0.9	0.08
Southwest Florida	530.6	601.91	0.88	191.6	346.82	0.55	148.0	0.43
<b>2013 Totals</b>	<b>1690.9</b>	<b>2575.6</b>	<b>0.66<sup>(g)</sup></b>	<b>719.5</b>	<b>1602.9</b>	<b>0.45<sup>(g)</sup></b>	<b>465.6</b>	<b>0.29<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	27.85	19.26	12.10	4.38	0.43	0.23
Baker	1.58	1.09	0.24	0.24	0.15	0.22
Bay	35.00	18.53	6.64	2.61	0.19	0.14
Bradford	3.43	1.25	2.70	1.27	0.79	1.02
Brevard	68.23	38.56	48.28	23.75	0.71	0.62
Broward	315.12	225.25	37.17	16.89	0.12	0.07
Calhoun	1.50	0.64	0	0	0	0
Charlotte	16.75	10.18	15.83	4.04	0.95	0.40
Citrus	7.13	3.16	8.78	3.16	1.23	1.00
Clay	21.35	8.88	18.15	4.23	0.85	0.48
Collier	60.58	27.47	38.00	22.32	0.63	0.81
Columbia	3.53	2.58	3.48	2.65	0.99	1.03
De Soto	3.34	1.27	3.08	1.00	0.92	0.79
Dixie	0.40	0.19	0.40	0.19	1.00	1.00
Duval	131.90	74.83	33.66	14.87	0.26	0.20
Escambia	33.78	21.75	40.68	17.62	1.20	0.81
Flagler	12.19	8.73	23.92	7.98	1.96	0.91
Franklin	2.50	0.79	2.61	0.79	1.04	1.00
Gadsden	4.27	2.00	1.48	0.62	0.35	0.31
Gilchrist	0.45	0.22	0.45	0.22	1.00	1.00
Glades	0.24	0.17	0	0	1	1
Gulf	3.69	0.75	2.25	0.66	0.61	0.89
Hamilton	1.65	1.07	0.45	0.34	0.27	0.32
Hardee	2.29	1.23	2.29	1.23	1.00	1.00
Hendry	2.75	1.97	2.75	1.97	1.00	1.00
Hernando	10.10	4.89	17.73	4.89	1.76	1.00
Highlands	4.64	2.00	4.47	1.97	0.96	0.98
Hillsborough	164.54	103.44	63.40	38.57	0.39	0.37
Holmes	1.40	0.80	0	0	0	0
Indian River	16.73	7.67	10.03	5.80	0.60	0.76
Jackson	6.58	3.03	5.53	2.20	0.84	0.72
Jefferson	1.05	0.58	1.30	0.54	1.24	0.92
Lafayette	0.65	0.25	0.65	0.25	1.00	1.00
Lake	29.52	12.50	45.50	12.52	1.54	1.00
Lee	95.45	51.11	76.73	48.53	0.80	0.95
Leon	28.05	18.01	34.07	18.26	1.21	1.01
Levy	1.11	0.51	1.13	0.51	1.02	1.00
Liberty	0.53	0.28	0.53	0.28	1.00	1.00
Madison	1.14	0.85	1.52	0.85	1.33	1.00
Manatee	50.40	28.87	31.85	14.98	0.63	0.52
Marion	21.98	9.08	26.25	9.07	1.19	1.00

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	14.91	7.41	13.86	3.85	0.93	0.52
Miami-Dade	380.31	293.62	20.99	16.96	0.06	0.06
Monroe	16.83	7.05	2.94	0.31	0.17	0.04
Nassau	6.78	3.46	2.52	1.28	0.37	0.37
Okaloosa	31.25	15.39	39.21	15.39	1.25	1.00
Okeechobee	3.20	1.00	1.63	0.67	0.51	0.67
Orange	130.02	100.41	182.18	102.36	1.40	1.02
Osceola	37.19	25.51	50.11	25.79	1.35	1.01
Palm Beach	187.02	120.12	133.29	58.80	0.71	0.49
Pasco	49.15	26.99	44.35	27.38	0.90	1.01
Pinellas	170.65	97.75	215.40	50.79	1.26	0.52
Polk	61.33	30.92	45.23	17.89	0.74	0.58
Putnam	4.30	1.64	6.35	0.81	1.48	0.50
Santa Rosa	11.04	6.36	10.79	3.85	0.98	0.61
Sarasota	44.07	26.59	52.07	15.94	1.18	0.60
Seminole	79.88	46.06	102.03	38.61	1.28	0.84
St. Johns	15.48	10.64	16.88	2.91	1.09	0.27
St. Lucie	33.31	14.99	12.56	4.04	0.38	0.27
Sumter	12.00	7.01	16.21	7.01	1.35	1.00
Suwannee	1.56	1.27	4.38	1.27	2.81	1.00
Taylor	1.65	1.16	2.45	1.14	1.48	0.98
Union	0.70	0.52	0.70	0.52	1.00	1.00
Volusia	71.46	33.22	60.03	21.81	0.84	0.66
Wakulla	1.26	0.96	1.26	0.96	1.00	1.00
Walton	13.08	6.14	25.73	5.70	1.97	0.93
Washington	1.87	1.05	1.44	1.04	0.77	0.99
<b>Totals<sup>(d)</sup>/Avg:</b>	<b>2,575.61</b>	<b>1,602.91</b>	<b>1,690.95</b>	<b>719.49</b>	<b>0.66<sup>(e)</sup></b>	<b>0.45<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**

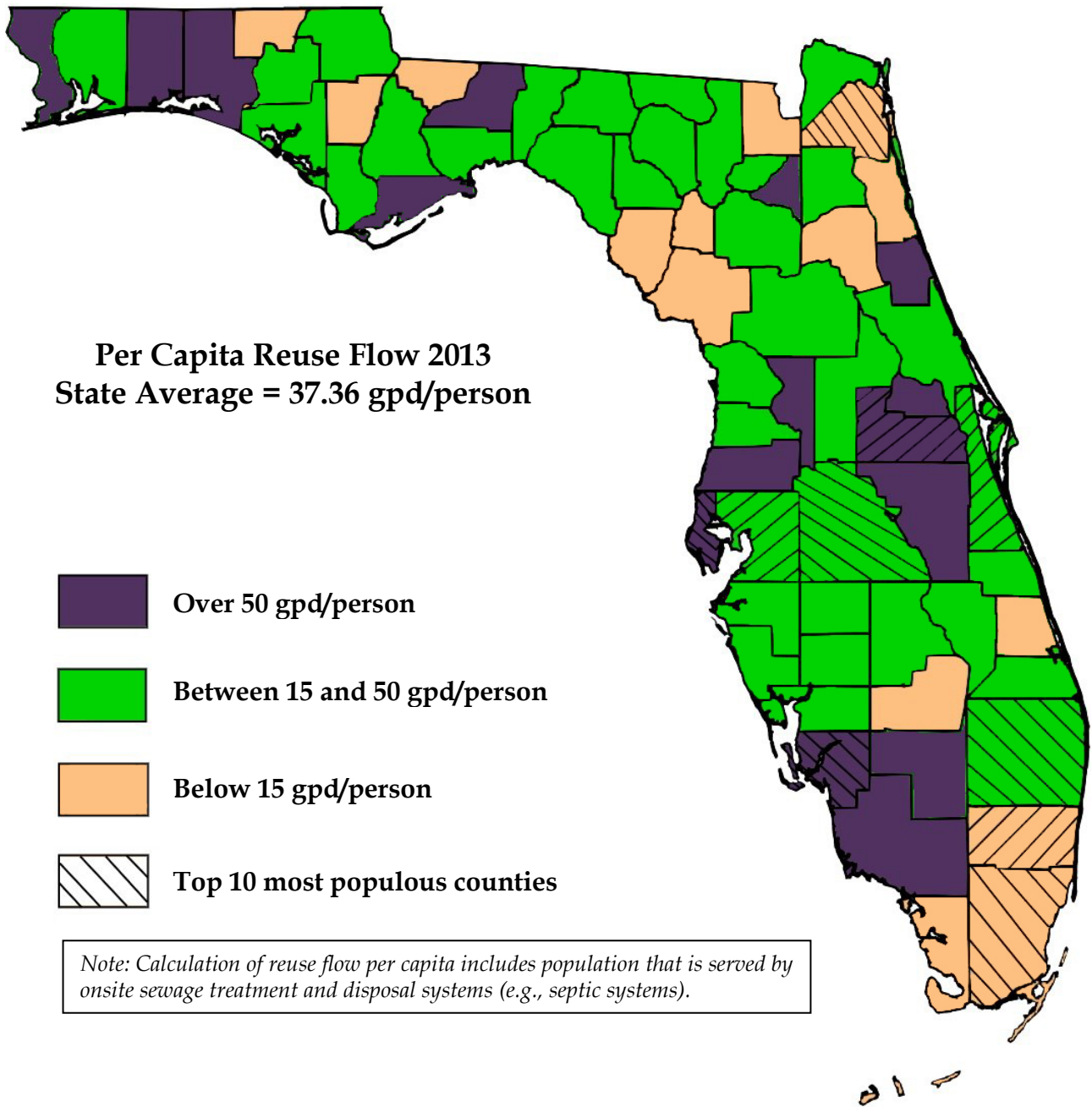
County	Population (2013) <sup>(a)</sup>	Reuse Capacity (gpd/person) <sup>(b)</sup>	Reuse Flow (gpd/person) <sup>(c)</sup>	Rank (flow) <sup>(d)</sup>	Rank (population) <sup>(e)</sup>
Alachua	248,002	48.77	17.67	49	23
Baker	26,881	9.08	8.78	63	52
Bay	169,866	39.10	15.38	53	28
Bradford	27,217	99.02	46.70	17	51
Brevard	548,424	88.04	43.31	24	10
Broward	1,784,715	20.83	9.46	62	2
Calhoun	14,621	0	0	66-67	61
Charlotte	163,679	96.72	24.69	43	29
Citrus	140,519	62.45	22.46	46	32
Clay	192,843	94.10	21.92	47	25
Collier	333,663	113.89	66.90	9	17
Columbia	67,489	51.62	39.28	30	40
De Soto	34,367	89.52	29.01	38	48
Dixie	16,263	24.60	11.44	60	58
Duval	876,075	38.42	16.97	51	7
Escambia	301,120	135.08	58.53	12	19
Flagler	97,843	244.48	81.60	6	36
Franklin	11,562	225.74	68.67	8	65
Gadsden	47,588	31.11	12.99	57	43
Gilchrist	16,880	26.66	12.91	58	57
Glades	12,658	25	13	56	64
Gulf	16,106	139.70	40.98	29	59
Hamilton	14,507	31.02	23.57	45	63
Hardee	27,682	82.80	44.40	19	50
Hendry	37,808	72.71	52.03	15	47
Hernando	173,808	101.99	28.15	40	27
Highlands	99,092	45.15	19.88	48	35
Hillsborough	1,276,410	49.67	30.22	35	4
Holmes	20,022	0	0	66-67	55
Indian River	139,586	71.88	41.54	26	33
Jackson	50,166	110.15	43.78	21	42
Jefferson	14,554	89.39	36.83	31	62
Lafayette	8,618	74.84	28.54	39	66
Lake	303,317	150.00	41.28	28	18
Lee	643,367	119.26	75.42	7	8
Leon	278,377	122.38	65.59	11	22
Levy	40,304	27.94	12.53	59	45
Liberty	8,483	62.48	32.54	33	67
Madison	19,395	78.37	44.03	20	56
Manatee	333,880	95.41	44.86	18	16



County	Population (2013) <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	335,008	78.36	27.08	41	15
Martin	148,077	93.59	26.03	42	31
Miami-Dade	2,582,375	8.13	6.57	64	1
Monroe	73,560	39.95	4.20	65	38
Nassau	74,661	33.74	17.20	50	37
Okaloosa	188,349	208.17	81.69	5	26
Okeechobee	39,762	41.04	16.88	52	46
Orange	1,202,978	151.44	85.09	4	5
Osceola	288,361	173.77	89.45	3	20
Palm Beach	1,345,652	99.05	43.70	23	3
Pasco	473,566	93.65	57.82	13	12
Pinellas	926,610	232.46	54.81	14	6
Polk	613,950	73.67	29.14	36	9
Putnam	72,605	87.46	11.21	61	39
Santa Rosa	157,317	68.56	24.47	44	30
Sarasota	385,292	135.16	41.37	27	14
Seminole	431,074	236.69	89.56	2	13
St. Johns	201,541	83.77	14.46	54	24
St. Lucie	281,151	44.68	14.39	55	21
Sumter	105,104	154.23	66.72	10	34
Suwannee	43,873	99.81	29.02	37	44
Taylor	23,018	106.44	49.47	16	54
Union	15,483	45.21	33.65	32	60
Volusia	498,978	120.31	43.70	22	11
Wakulla	30,869	40.66	31.00	34	49
Walton	57,779	445.27	98.60	1	41
Washington	24,793	57.89	42.00	25	53
<b>Florida</b>	19,259,543	<b>87.80<sup>(f)</sup></b>	<b>37.36<sup>(f)</sup></b>		

- Notes: (a) 2013 population estimates from the Florida Demographic Estimating Conference, February 2014, and the Florida Demographic Database, April 2013.
- (b) Reuse Capacity = Reuse Capacity (gpd)/Population.
- (c) Reuse Flow = Reuse Flow (gpd)/Population.
- (d) Counties ranked from highest rate of reuse flow per capita to lowest rate of reuse flow per capita (e.g., county with highest rate of reuse flow per capita is ranked No. 1; counties with no reuse flow per capita tie for last place).
- (e) Counties ranked according to population capita (e.g., county with highest population is ranked No. 1).
- (f) State average.
- (e) Discrepancies in calculating per capita statistics are due to internal rounding associated with the development of these tables; values presented in this table are calculated without rounding individual values.
- gpd = gallons per day (equivalent to mgd\*1,000,000)*

## Figure 2. Map of Per Capita Reuse Flow by County



## Supplemental Water Supplies

Some reuse systems use other sources of water to augment the reclaimed water supply. In 2013, a total of 55 reuse systems in Florida used 15.58 mgd of surface water, 11.48 mgd of ground water, 0.22 mgd of stormwater, and 0.29 mgd of drinking water to supplement reclaimed water supplies for a total of 27.57 mgd of supplemental water used in 2013. In addition, 2.69 mgd of demineralization concentrate was blended with reclaimed water while 0.27 mgd of reclaimed water was recovered from aquifer storage and recovery (ASR) wells and sent to a reuse system. Appendix C details the 55 reuse systems in the state which use supplemental water supplies and summarizes the flows by water management district.

## Reuse Rates

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

**Table 7a. Summary of Reuse Rates for Reuse Systems<sup>(a)</sup>**

### Residential Customers - 133 systems

	<i>Average</i>	<i>Median</i>	<i>Range</i>	<i>No. of Systems</i>
Flat Rate Only (\$/month/connection)	\$10.34	\$9.25	\$5.46- \$19.25	26
Gallonge Charge Only (\$/1000 gallons)	\$0.95	\$0.75	\$0.19 - \$3.05	43
Combination Flat and per Gallon Charge				48
Flat Rate (\$/month/connection)	\$8.01	\$6.49	\$2.82 - \$32.03	
Gallonge Charge (\$/1000 gallons)	\$1.15	\$0.93	\$0.12 - \$9.36	

### Non-Residential Customers - 227 systems

	<i>Average</i>	<i>Median</i>	<i>Range</i>	<i>No. of Systems</i>
Flat Rate Only (\$/month/connection)	\$555.78	\$387	\$0.43 - \$1,500	16
Gallonge Charge Only (\$/1000 gallons)	\$0.58	\$0.40	\$0.05 - \$3.05	85
Combination Flat and per Gallon Charge				49
Flat Rate (\$/month/connection)	\$728.39	\$17.90	\$0.08 - \$12,595 <sup>(b)</sup>	
Gallonge Charge (\$/1000 gallons)	\$0.82	\$0.63	\$0.10 - \$3.14	

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 70 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

<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.

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

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

	No. of Reuse Systems	No. of Utilities <sup>(a)</sup>	No. of Utilities Reporting No Charges <sup>(b)</sup>
Total	238	181	70
Serving both residential and non-residential customers	122	100	10
Serving only residential customers	11	7	2
Serving only non-residential customers	105	74	46
Total serving residential customers	133	107	14
Total serving non-residential customers	227	174	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 238 reuse systems who reported having public access reuse customers and their charges for use of reclaimed water.

### Efficient and Effective Water Reuse

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

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

The 719 mgd of reclaimed water used in 2013 is estimated to have offset (i.e., avoided) the use of 382 mgd (over 139 billion gallons) of potable quality water while serving to add 235 mgd (over 85 billion gallons) back to available water supplies.

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

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

**Table 8a. Summary of Offset and Recharge Flows**

<b>FDEP District</b>	<b>Total Flow (mgd)</b>	<b>Offset Flow<sup>(a)</sup> (mgd)</b>	<b>Recharge Flow<sup>(a)</sup> (mgd)</b>
Central (Orlando)	214.16	95.10	95.75
Northeast (Jacksonville)	45.85	28.33	13.60
Northwest (Pensacola)	63.36	37.65	21.57
Southeast (West Palm Beach)	105.43	77.55	19.25
South (Ft. Myers)	96.08	51.10	32.04
Southwest (Tampa)	158.70	91.77	52.30
<b>2013 Totals</b>	<b>683.59</b>	<b>381.50</b>	<b>234.50</b>
<b>Water Management District</b>	<b>Total Flow (mgd)</b>	<b>Offset Flow<sup>(a)</sup> (mgd)</b>	<b>Recharge Flow<sup>(a)</sup> (mgd)</b>
Northwest Florida	63.22	37.56	21.52
South Florida	267.75	144.58	95.84
St. Johns River	150.87	82.58	51.51
Suwannee River	10.36	5.96	3.86
Southwest Florida	191.39	110.82	61.77
<b>2013 Totals</b>	<b>683.59</b>	<b>381.50</b>	<b>234.50</b>

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

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

	Golf Course Irrigation (mgd)			Residential Irrigation (mgd)			Other Public Access Areas (mgd)			Ground Water Recharge & Indirect Potable Reuse(mgd)		Agricultural Irrigation (mgd)			Industrial Uses, Toilet Flushing & Fire Protection(mgd)		Totals (mgd)		
County	GCI Reuse Flow	GCI Offset Flow	GCI RF <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	0.729	0.547	0.073	1.331	0.532	0.599	0.421	0.252	0.126	0.101	0.091	1.009	0.605	0.353	0.792	0.792	4.383	2.729	1.242
Baker	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.187	0.168	0.049	0.029	0.017	0.000	0.000	0.236	0.029	0.185
Bay	0.329	0.247	0.033	1.576	0.630	0.709	0.551	0.331	0.165	0.049	0.044	0.000	0.000	0.000	0.107	0.107	2.612	1.315	0.951
Bradford	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.165	0.699	0.408	0.106	0.106	1.271	0.805	0.408
Brevard	6.430	4.823	0.643	12.267	4.907	5.520	2.431	1.459	0.729	0.743	0.669	0.167	0.100	0.058	1.619	1.619	23.657	12.907	7.620
Broward	3.745	2.809	0.375	2.607	1.043	1.173	0.541	0.325	0.162	0.556	0.500	0.000	0.000	0.000	9.440	9.440	16.889	13.616	2.210
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	2.120	1.590	0.212	1.062	0.425	0.478	0.098	0.059	0.029	0.392	0.353	0.000	0.000	0.000	0.333	0.333	4.005	2.406	1.072
Citrus	0.651	0.488	0.065	0.000	0.000	0.000	0.000	0.000	0.000	1.198	1.078	1.307	0.784	0.457	0.000	0.000	3.156	1.272	1.601
Clay	0.508	0.381	0.051	3.487	1.395	1.569	0.000	0.000	0.000	0.040	0.036	0.000	0.000	0.000	0.192	0.192	4.227	1.968	1.656
Collier	7.688	5.766	0.769	10.231	4.092	4.604	3.637	2.182	1.091	0.147	0.132	0.620	0.372	0.217	0.000	0.000	22.323	12.413	6.813
Columbia	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.526	1.516	0.884	0.125	0.125	2.651	1.641	0.884
De Soto	0.160	0.120	0.016	0.020	0.008	0.009	0.030	0.018	0.009	0.067	0.060	0.720	0.432	0.252	0.000	0.000	0.997	0.578	0.346
Dixie	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.186	0.112	0.065	0.000	0.000	0.186	0.112	0.065
Duval	0.894	0.671	0.089	2.390	0.956	1.076	2.200	1.320	0.660	0.294	0.265	0.000	0.000	0.000	9.089	9.089	14.867	12.036	2.090
Escambia	0.000	0.000	0.000	0.000	0.000	0.000	0.061	0.037	0.018	0.000	0.000	0.401	0.241	0.140	10.993	10.993	11.455	11.270	0.159
Flagler	2.502	1.877	0.250	1.961	0.784	0.882	0.447	0.268	0.134	3.007	2.706	0.000	0.000	0.000	0.000	0.000	7.917	2.929	3.973
Franklin	0.036	0.027	0.004	0.000	0.000	0.000	0.307	0.184	0.092	0.000	0.000	0.415	0.249	0.145	0.036	0.036	0.794	0.496	0.241
Gadsden	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.135	0.122	0.385	0.231	0.135	0.098	0.098	0.618	0.329	0.256
Gilchrist	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.218	0.131	0.076	0.000	0.000	0.218	0.131	0.076
Glades	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.085	0.051	0.030	0.000	0.000	0.085	0.051	0.030
Gulf	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.660	0.396	0.231	0.000	0.000	0.660	0.396	0.231
Hamilton	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.283	0.170	0.099	0.059	0.059	0.342	0.229	0.099
Hardee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.326	0.196	0.114	0.903	0.903	1.229	1.099	0.114
Hendry	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.754	0.679	1.213	0.728	0.425	0.000	0.000	1.967	0.728	1.103
Hernando	1.208	0.906	0.121	0.000	0.000	0.000	0.000	0.000	0.000	2.762	2.486	0.000	0.000	0.000	0.922	0.922	4.892	1.828	2.607
Highlands	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.914	1.723	0.032	0.019	0.011	0.024	0.024	1.970	0.043	1.734
Hillsborough	2.471	1.853	0.247	11.701	4.680	5.265	4.088	2.453	1.226	0.557	0.501	0.209	0.125	0.073	19.545	19.545	38.571	28.656	7.313

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>
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	3.113	2.335	0.311	1.745	0.698	0.785	0.273	0.164	0.082	0.365	0.329	0.000	0.000	0.000	0.303	0.303	5.799	3.500	1.507
Jackson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.153	1.292	0.754	0.043	0.043	2.196	1.335	0.754
Jefferson	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.529	0.317	0.185	0.007	0.007	0.536	0.324	0.185
Lafayette	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.153	0.138	0.093	0.056	0.033	0.000	0.000	0.246	0.056	0.170
Lake	2.681	2.011	0.268	2.844	1.138	1.280	1.133	0.680	0.340	3.395	3.055	2.293	1.376	0.803	0.176	0.176	12.522	5.380	5.746
Lee	11.005	8.254	1.101	28.320	11.328	12.744	7.061	4.237	2.118	0.872	0.785	0.047	0.028	0.016	1.183	1.183	48.488	25.030	16.764
Leon	0.000	0.000	0.000	0.000	0.000	0.000	0.155	0.093	0.047	0.341	0.307	17.763	10.658	6.217	0.000	0.000	18.259	10.751	6.570
Levy	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.005	0.003	0.307	0.276	0.189	0.113	0.066	0.000	0.000	0.505	0.119	0.345
Liberty	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.276	0.248	0.000	0.000	0.000	0.000	0.000	0.276	0.000	0.248
Madison	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.854	0.512	0.299	0.000	0.000	0.854	0.512	0.299
Manatee	1.602	1.202	0.160	4.081	1.632	1.836	2.732	1.639	0.820	0.000	0.000	5.500	3.300	1.925	1.050	1.050	14.965	8.823	4.741
Marion	1.582	1.187	0.158	0.003	0.001	0.001	1.905	1.143	0.572	1.533	1.380	3.905	2.343	1.367	0.143	0.143	9.071	4.817	3.478
Martin	1.998	1.499	0.200	0.808	0.323	0.364	0.292	0.175	0.088	0.320	0.288	0.120	0.072	0.042	0.278	0.278	3.816	2.347	0.981
Miami-Dade	0.000	0.000	0.000	0.000	0.000	0.000	0.100	0.060	0.030	3.959	3.563	0.000	0.000	0.000	12.900	12.900	16.959	12.960	3.593
Monroe	0.215	0.161	0.022	0.037	0.015	0.017	0.048	0.029	0.014	0.000	0.000	0.000	0.000	0.000	0.009	0.009	0.309	0.214	0.053
Nassau	0.773	0.580	0.077	0.000	0.000	0.000	0.000	0.000	0.000	0.170	0.153	0.000	0.000	0.000	0.341	0.341	1.284	0.921	0.230
Okaloosa	1.582	1.187	0.158	1.515	0.606	0.682	0.675	0.405	0.203	6.935	6.242	3.928	2.357	1.375	0.184	0.184	14.819	4.738	8.659
Okeechobee	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.487	0.292	0.170	0.000	0.000	0.487	0.292	0.170
Orange	9.503	7.127	0.950	11.145	4.458	5.015	13.799	8.279	4.140	38.509	34.658	7.017	4.210	2.456	11.358	11.358	91.331	35.433	47.219
Osceola	4.328	3.246	0.433	6.538	2.615	2.942	3.211	1.926	0.963	9.197	8.277	0.265	0.159	0.093	1.921	1.921	25.459	9.867	12.708
Palm Beach	18.691	14.018	1.869	12.496	4.998	5.623	6.147	3.688	1.844	0.061	0.055	0.099	0.059	0.035	19.946	19.946	57.439	42.710	9.426
Pasco	2.090	1.568	0.209	8.743	3.497	3.934	3.752	2.251	1.126	10.956	9.860	1.024	0.614	0.358	0.817	0.817	27.381	8.747	15.487
Pinellas	5.978	4.484	0.598	26.435	10.574	11.896	8.134	4.880	2.440	0.000	0.000	0.013	0.008	0.005	10.231	10.231	50.791	30.177	14.938
Polk	1.454	1.091	0.145	1.315	0.526	0.592	1.068	0.641	0.320	3.774	3.396	2.992	1.795	1.047	7.115	7.115	17.718	11.168	5.501
Putnam	0.376	0.282	0.038	0.000	0.000	0.000	0.355	0.213	0.107	0.083	0.075	0.000	0.000	0.000	0.000	0.000	0.814	0.495	0.219
Santa Rosa	2.360	1.770	0.236	0.609	0.244	0.274	0.237	0.142	0.071	0.149	0.134	0.066	0.040	0.023	0.021	0.021	3.442	2.216	0.738
Sarasota	7.361	5.521	0.736	5.002	2.001	2.251	2.798	1.679	0.839	0.051	0.046	0.726	0.436	0.254	0.001	0.001	15.939	9.637	4.126
Seminole	1.408	1.056	0.141	9.617	3.847	4.328	6.689	4.013	2.007	2.469	2.222	2.587	1.552	0.905	0.736	0.736	23.506	11.204	9.603
St. Johns	2.517	1.888	0.252	0.000	0.000	0.000	0.000	0.000	0.000	0.324	0.292	0.000	0.000	0.000	0.073	0.073	2.914	1.961	0.543
St. Lucie	1.429	1.072	0.143	1.965	0.786	0.884	0.197	0.118	0.059	0.304	0.274	0.000	0.000	0.000	0.150	0.150	4.045	2.126	1.360
Sumter	4.892	3.669	0.489	0.000	0.000	0.000	1.457	0.874	0.437	0.106	0.095	0.469	0.281	0.164	0.089	0.089	7.013	4.914	1.186
Suwannee	0.000	0.000	0.000	0.000	0.000	0.000	0.268	0.161	0.080	0.268	0.241	0.737	0.442	0.258	0.000	0.000	1.273	0.603	0.580

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>
Taylor	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.205	0.185	0.477	0.286	0.167	0.457	0.457	1.139	0.743	0.351
Union	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
Volusia	4.317	3.238	0.432	12.201	4.880	5.490	1.465	0.879	0.440	1.965	1.769	0.167	0.100	0.058	1.482	1.482	21.597	10.580	8.189
Wakulla	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.033	0.030	0.874	0.524	0.306	0.050	0.050	0.957	0.574	0.336
Walton	2.094	1.571	0.209	0.000	0.000	0.000	0.000	0.000	0.000	0.711	0.640	2.853	1.712	0.999	0.039	0.039	5.697	3.321	1.848
Washington	0.140	0.105	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.269	0.242	0.384	0.230	0.134	0.248	0.248	1.041	0.584	0.391
<b>Total</b>	<b>122.96</b>	<b>92.22</b>	<b>12.30</b>	<b>184.05</b>	<b>73.62</b>	<b>82.82</b>	<b>78.77</b>	<b>47.26</b>	<b>23.63</b>	<b>100.96</b>	<b>90.87</b>	<b>71.11</b>	<b>42.66</b>	<b>24.89</b>	<b>125.73</b>	<b>125.73</b>	<b>683.59</b>	<b>381.50</b>	<b>234.50</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	75	10	Efficient landscape irrigation
Residential Irrigation	40	45	Rounded averages of efficient and inefficient residential irrigation
Other Public Access Areas	60	30	Rounded averages of efficient and inefficient landscape irrigation
Ground Water Recharge & Indirect Potable Reuse	0	90	High Desirability - rapid infiltration basins
Agricultural Irrigation	60	35	Rounded averages of efficient and inefficient agricultural irrigation
Industrial Uses, Toilet Flushing, and Fire Protection	100	0	High Desirability - cooling towers, toilet flushing and fire protection



## Water Resource Caution Areas

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

**Table 9. Reuse Activity in Water Resource Caution Areas**

	Inside WRCA	Outside WRCA	Total
Number of Reuse Systems	316	118	434
Number of WWTFs Providing Reuse	359	123	482
Number of WWTFs with no Reuse (Disposal Only)	37	12	49
Total Wastewater Capacity (mgd)	2,311	265	2,576
Total Wastewater Flow (mgd)	1,445	158	1,603
Reuse Capacity (mgd)	1,388	303	1,691
Reuse Flow (mgd)	586	133	719
Public Access Reuse Flow (mgd) <sup>(a)</sup>	347	39	386
Edible Crops Reuse Flow (mgd)	13	0	13

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, 2012 to September 30, 2013 reporting period.

Of the 255 reuse systems that reported cross-connection control activities, 14 reuse systems reported identifying and eliminating 1 or more cross-connections. 12,170 new connections to public access reuse systems were reported to occur in 2013. Over 99% of the new connections were inspected to ensure that no cross-connections had been created.

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

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

## PREVIOUS INVENTORIES AND TRENDS

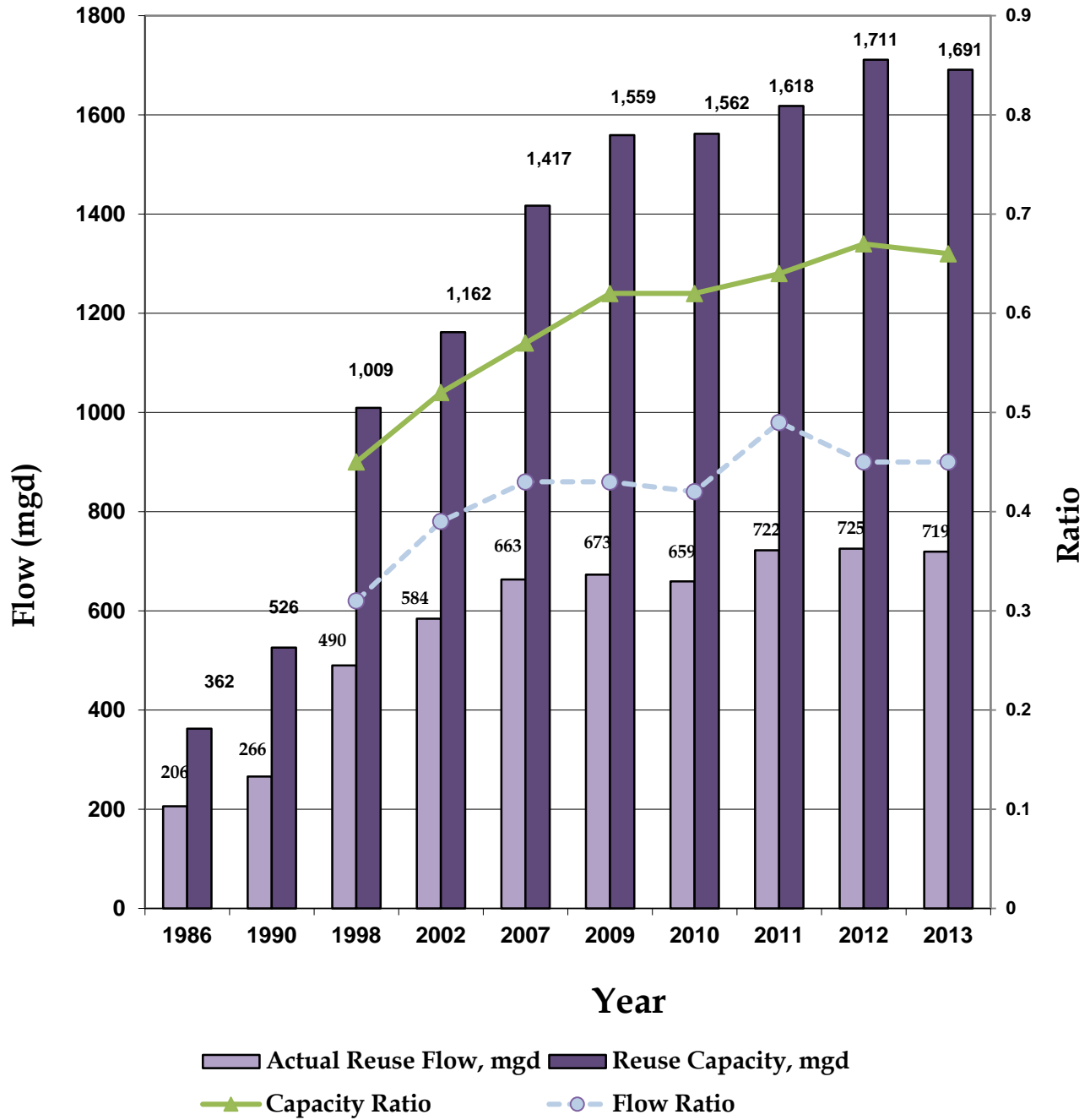
The FDEP (and its predecessor agency) published previous reuse inventories for 1986, 1990, 1992, and 1996 through 2012. Table 10 shows a summary of the total number of domestic wastewater treatment facilities providing water for reuse, the reuse capacities and capacity ratios of the reuse facilities, and the average reuse flow rates and flow ratios recorded for previous inventories and the 2013 inventory. Figure 3 presents the growth of Florida's reuse capacity and flow. The capacity and flow ratios are also presented in Figure 3.

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

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

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

### Figure 3. Florida's Reuse Growth



## FUTURE UPDATES

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

Suggested corrections, additions, or deletions may be brought to the attention of Mrs. Shanin Speas-Frost, P.E., Florida Department of Environmental Protection, Mail Station 3540, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400. Mrs. Speas-Frost can be reached by phone at (850) 245-8610, by fax at (850) 245-8621, or by e-mail at [shanin.speasfrost@dep.state.fl.us](mailto:shanin.speasfrost@dep.state.fl.us).

## REUSE WEBPAGE

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

[www.dep.state.fl.us/water/reuse/](http://www.dep.state.fl.us/water/reuse/)

The 2013 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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