

Technical Fact Sheet SJ2008-FS1  
2007 Annual Water Use Data



September 30, 2008



**St. Johns River Water Management District  
2007 Annual Water Use Data**

**Date: September 30, 2008**

**Introduction:** This document reports 2007 water use data by category for the St. Johns River Water Management District (SJRWMD).

**The following are notes and disclaimers regarding water use data:**

**General**

- Water use statistics are subject to change as updated information becomes available. Changes in methodologies may make year-to-year data comparisons inappropriate.
- SJRWMD is not the only source of information for the reporting of *2007 Annual Water Use Data*. Water use information is obtained from the following multiple sources: raw water withdrawal data submitted to SJRWMD on or before June 24, 2008, via EN50 forms (EN50s); treated water data from Florida Department of Environmental Protection (FDEP) monthly operating reports (MORs) and annual reuse report; data communicated via mail, e-mail, and phone surveys; and data stored in the SJRWMD reclaimed water destination database. SJRWMD attempts to compile the best available data, but it cannot guarantee that contributors use consistent measurement techniques or quality control standards. In most cases, very limited quality assurance of the data is conducted by SJRWMD and the information is reported as received.
- In cases where water use data are not available from any other sources, SJRWMD uses professional analyses of historical data and trends to estimate values.
- A reported threshold of 0.1 million gallons per day (mgd) of average daily flow by individual water users was used for all water use categories, excluding agricultural irrigation, in reporting of *2007 Annual Water Use Data*.

For additional information, please contact David Hornsby, Division of Water Supply Management, at (386) 312-2371 or [dhornsby@sjrwmd.com](mailto:dhornsby@sjrwmd.com).

<b>Term</b>	<b>Definition</b>	<b>Data Source/Methodology</b>
mgd	Million gallons per day—all water use is expressed in average million gallons per day unless otherwise noted.	N/A
Freshwater	Water with 1,000 milligrams per liter (mg/L) or less of total dissolved solids (TDS)—freshwater may be withdrawn from either groundwater or surface water sources.	N/A

Term	Definition	Data Source/Methodology
Saline water	Water with more than 1,000 mg/L of TDS—all reported saline water is withdrawn from surface water or surficial aquifer sources.	N/A
Reuse/reclaimed water <i>Note: Reuse/reclaimed water is not reported in this document because data was not available from FDEP at the time of publication of this document.</i>	Treated wastewater that has received at least secondary treatment and basic disinfection for distribution for nonpotable uses and that has achieved a water resource benefit as described in SJRWMD Technical Publication SJ2006-2, <i>District Water Supply Plan, 2005</i> .	SJRWMD's methodology would have been based on quantities of reclaimed water reported by FDEP in its 2006 Reuse Inventory report, which was scheduled for publication in August 2007. However, this reuse data was not available from FDEP at the time of publication of this document.
Florida population	Estimated number of permanent residents living within the state of Florida.	The source for this number is University of Florida, Bureau of Economic Business and Research (BEBR), <i>Florida Estimates of Population</i> , April 1, 2007.

Term	Definition	Data Source/Methodology
SJRWMD population	Estimated number of permanent residents living within SJRWMD.	Population estimates are intended for planning purposes only; 2007 county population estimates are from BEBR, <i>Florida Estimates of Population</i> , April 1, 2007. For counties within more than one water management district, the portion of the 2007 estimates within SJRWMD is derived by estimating SJRWMD's portion of the 2000 U.S. Census population at the block level. The proportion of each county's population within the public supply and domestic self-supply categories is based on the proportionality from the 2005 population estimates in SJRWMD's <i>Annual Water Use Data</i> fact sheet, which, in turn, was based on the proportionality from 2005 population projections made for SJRWMD's <i>Water Supply Assessment, 2008</i> .
Water use category	Classification of water use based on one of the following six categories—public supply, domestic self-supply, agricultural irrigation self-supply, commercial/industrial/institutional self-supply, recreational self-supply, or thermoelectric power generation self-supply.	N/A
Public supply	Water withdrawn, treated, and delivered to service areas within SJRWMD by privately and publicly owned water supply utilities—includes both residential and nonresidential uses by utilities that withdraw more than 0.1 mgd from groundwater or surface water sources.	Water use data in this category was obtained from MORs submitted to FDEP and represents reporting by approximately 97% of the public supply utilities for which SJRWMD consumptive use permits, issued for quantities greater than 0.1 mgd, were in effect in 2007. Water for use by the city of Cocoa in Brevard County is withdrawn in Orange County.

Term	Definition	Data Source/Methodology
Domestic self-supply	Water withdrawn from privately owned residential wells.	<p>Water use data in this category is estimated from residential population and residential public supply per capita water use rates at the county level. Residential water use for each public supply utility is calculated by multiplying the total public supply water use by the percent of the total water use allocated to residential use, as authorized in the SJRWMD-issued consumptive use permit. The resulting water use values for each public supply utility are then summed to the county level and divided by the total county permanent/residential public supply population to obtain the county-level residential per capita value. The residential per capita value is multiplied by the domestic self-supply population, resulting in the estimated water use for this category. The domestic self-supply population for each county is obtained by subtracting the total number of people served by public supply utilities in each county in 2005 from the total permanent/residential population of each county, respectively. The districtwide average residential public supply per capita of 118 was used for counties that have less than 5% of the county population within SJRWMD or that have no public supply water use.</p>

Term	Definition	Data Source/Methodology
Commercial/ industrial/ institutional self- supply	Water used for commercial, industrial, or institutional purposes not provided by public supply utilities—includes businesses, government facilities, military installations, schools, prisons, hospitals, and industrial uses such as mining, processing, and manufacturing. (Note: Surface water use by mining operations in the commercial/industrial/institutional self-supply category reported in this document represents 5% of the surface water use to account for loss of water in the mining products. The remaining surface water is assumed to be re-circulated in the mining process and, therefore, is considered non-consumptive.)	Data in this category reflects water use information reported to SJRWMD by consumptive use permittees on EN50 reports, not including the use of reclaimed/reuse water.
Thermoelectric power generation self- supply	Water withdrawn from groundwater and surface water sources and used by power plants not supplied by public supply systems. (Note: This does not include water used for once-through cooling, which is considered non-consumptive.)	Data in this category reflects water use information reported to SJRWMD by power plant operators on EN50 reports or through SJRWMD survey, not including the use of reclaimed/reuse water.

Term	Definition	Data Source/Methodology
Agricultural irrigation self-supply	Water withdrawn from groundwater and surface water sources that is used for supplemental crop irrigation.	Water use for irrigation is assessed by crop type due to crop-specific consumption requirements. Monthly water use estimates are based on a modified Blaney-Criddle model. Climate data for running a modified Blaney-Criddle model is obtained from the National Oceanic and Atmospheric Administration (NOAA) and the Florida Climate Center. In instances where climate data is missing, substitute data may be obtained from historical or average values or data from the next closest weather station. Benchmark Farms Program (BMFs) crop-specific data is substituted for modified Blaney-Criddle data in Indian River, Lake, Putnam, St. Johns, and Volusia counties, where BMF crops are significantly represented. Crop type and acreage data are provided through SJRWMD survey's and geographic information system (GIS)-based crop layers, University of Florida–Institute of Food and Agricultural Sciences (IFAS), county agricultural extension agents, and 2002 Florida Agricultural Statistics Service.
Recreational self-supply	Water withdrawn from groundwater and surface water sources that is used for golf course irrigation and that is not supplied by public supply systems.	Data in this category reflects water use information reported to SJRWMD by consumptive use permittees on EN50 reports or through SJRWMD survey, not including the use of reclaimed/reuse water.



**Table 1****St. Johns River Water Management District  
2007 Population by County**

<b>County</b>	<b>County Population</b>	<b>Percentage of County Population in SJRWMD</b>	<b>SJRWMD Population</b>	<b>Public Supply Population</b>	<b>Residential Self-Supply Population</b>
Alachua	247,561	79.5%	196,900	186,461	10,439
Baker	25,623	98.1%	25,134	4,865	20,269
Bradford	29,055	4.2%	1,233	330	903
Brevard	552,109	100.0%	552,109	525,951	26,158
Clay	184,644	100.0%	184,644	131,903	52,740
Duval	897,597	100.0%	897,597	851,405	46,192
Flagler	93,568	100.0%	93,568	74,815	18,753
Indian River	139,757	100.0%	139,757	121,221	18,536
Lake	286,499	99.7%	285,780	230,315	55,465
Marion	325,023	69.8%	226,761	138,669	88,092
Nassau	69,569	100.0%	69,569	34,397	35,172
Okeechobee	39,030	1.9%	732	0	732
Orange	1,105,603	75.2%	830,875	750,905	72,273
Osceola	266,123	0.3%	928	0	928
Putnam	74,799	100.0%	74,799	13,483	61,316
St. Johns	173,935	100.0%	173,935	139,118	34,817
Seminole	425,698	100.0%	425,698	407,791	17,907
Volusia	508,014	100.0%	508,014	469,400	38,615
<b>Total</b>	<b>5,444,207</b>		<b>4,688,033</b>	<b>4,081,029</b>	<b>599,307</b>

Notes: Total population for the state of Florida in 2007 = 18,680,367.

Percent of total state of Florida population that lives within SJRWMD = 25%.

Percent of SJRWMD population served by public supply = 87%.

**Table 2**

**St. Johns River Water Management District  
2007 Total Water Use by County  
in Million Gallons per Day (mgd)**

<b>County</b>	<b>Freshwater (mgd)</b>	<b>Saline Water (mgd)</b>	<b>Reuse* (mgd)</b>	<b>All Water Use (mgd)</b>
Alachua	36.37	0.00	—	36.37
Baker	5.85	0.00	—	5.85
Bradford	1.55	0.00	—	1.55
Brevard	141.56	0.00	—	141.56
Clay	28.23	0.00	—	28.23
Duval	178.99	0.00	—	178.99
Flagler	35.96	5.42	—	41.38
Indian River	118.35	0.00	—	118.35
Lake	115.75	0.00	—	115.75
Marion	49.51	0.00	—	49.51
Nassau	51.72	1.29	—	53.01
Okeechobee	21.32	0.00	—	21.32
Orange	168.77	0.00	—	168.77
Osceola	26.54	0.00	—	26.54
Putnam	50.86	0.00	—	50.86
St. Johns	60.81	0.00	—	60.81
Seminole	79.19	0.00	—	79.19
Volusia	94.48	0.00	—	94.48
<b>Total</b>	<b>1,265.81</b>	<b>6.71</b>	—	<b>1,272.52</b>

\*Reuse data were not available from FDEP at the time of publication of this document.

**Table 3**

**St. Johns River Water Management District  
2007 Total Water Use by Category  
in Million Gallons per Day (mgd)**

<b>Category</b>	<b>Freshwater (mgd)</b>	<b>Saline Water (mgd)</b>	<b>Reuse* (mgd)</b>	<b>All Water Use (mgd)</b>
Public supply	611.47	0.00	—	611.47
Domestic self-supply	72.46	0.00	—	72.46
Commercial/industrial/institutional self-supply	105.01	6.71	—	111.72
Agricultural irrigation self-supply	414.96	0.00	—	414.96
Recreational self-supply	54.22	0.00	—	54.22
Thermoelectric power generation self-supply	7.69	0.00	—	7.69
<b>Total</b>	<b>1,265.81</b>	<b>6.71</b>	—	<b>1,272.52</b>

\*Reuse data were not available from FDEP at the time of publication of this document.

**Table 4**

**St. Johns River Water Management District  
2007 Public Supply and Domestic Self-Supply Water Use  
in Million Gallons per Day (mgd)**

<b>County</b>	<b>Public Supply (mgd)</b>	<b>Domestic Self-Supply* (mgd)</b>
Alachua	27.51	1.03
Baker	0.92	3.45
Bradford	0.55	0.11
Brevard <sup>a</sup>	54.62	1.83
Clay	16.22	5.70
Duval	138.13	6.74
Flagler	9.34	1.31
Indian River	14.97	1.35
Lake	50.30	9.32
Marion	21.19	8.28
Nassau	8.32	7.49
Okeechobee	0.00	0.09
Orange <sup>b</sup>	128.72	8.24
Osceola	0.00	0.11
Putnam	2.97	8.09
St. Johns	16.39	3.62
Seminole	61.80	1.95
Volusia	59.52	3.75
<b>Total</b>	<b>611.47</b>	<b>72.46</b>

\*All domestic self-supply water is from groundwater sources.

<sup>a</sup> Includes 26.35 mgd withdrawn in Orange County for public supply use in Brevard County.

<sup>b</sup> Does not include 26.35 mgd withdrawn in Orange County for public supply use in Brevard County.

**Table 5****St. Johns River Water Management District  
2007 Commercial/Industrial/Institutional Self-Supply Water Use  
in Million Gallons per Day (mgd)**

<b>County</b>	<b>Freshwater (mgd)</b>	<b>Saline Water (mgd)</b>	<b>All Water Use (mgd)</b>
Alachua	0.36	0.00	0.36
Baker	0.53	0.00	0.53
Bradford	0.59	0.00	0.59
Brevard	5.85	0.00	5.85
Clay	0.74	0.00	0.74
Duval	19.49	0.00	19.49
Flagler	0.00	5.42	5.42
Indian River	0.17	0.00	0.17
Lake	9.37	0.00	9.37
Marion	4.62	0.00	4.62
Nassau	32.43	1.29	33.72
Okeechobee	0.00	0.00	0.00
Orange	3.95	0.00	3.95
Osceola	0.00	0.00	0.00
Putnam	24.57	0.00	24.57
St. Johns	1.08	0.00	1.08
Seminole	0.12	0.00	0.12
Volusia	1.14	0.00	1.14
<b>Total</b>	<b>105.01</b>	<b>6.71</b>	<b>111.72</b>

**Table 6**

**St. Johns River Water Management District  
2007 Agricultural Irrigation Self-Supply Water Use  
in Million Gallons per Day (mgd)**

<b>County</b>	<b>Freshwater (mgd)</b>
Alachua	6.66
Baker	0.95
Bradford	0.15
Brevard	73.86
Clay	3.99
Duval	3.10
Flagler	22.98
Indian River	93.09
Lake	35.18
Marion	12.44
Nassau	0.63
Okeechobee	21.23
Orange	25.63
Osceola	26.43
Putnam	14.31
St. Johns	35.27
Seminole	13.09
Volusia	25.97
<b>Total</b>	<b>414.96</b>

**Table 7**

**St. Johns River Water Management District  
2007 Crops Included in Agricultural  
Irrigation Self-Supply Water Use**

<b>Vegetable Crops</b>	<b>Fruit Crops</b>	<b>Field Crops</b>	<b>Ornamentals and Grasses</b>
Cabbage	Blueberries	Field corn	Fern
Carrots	Citrus	Peanuts	Ornamentals (field grown)
Cucumbers	Grapes	Cotton	Ornamentals (container grown)
Peppers	Peaches		Improved pasture
Potatoes	Pecans		Sod
Sweet corn	Strawberries		
Misc. vegetables	Watermelon		
	Misc. fruits and nuts		

Note: The above table identifies the crops included in estimates of 2007 agricultural irrigation self-supply water use.

**Table 8**

**St. Johns River Water Management District  
2007 Recreational Self-Supply Water Use  
in Million Gallons per Day (mgd)**

<b>County</b>	<b>Freshwater (mgd)</b>
Alachua	0.45
Baker	0.00
Bradford	0.15
Brevard	5.27
Clay	1.58
Duval	5.79
Flagler	2.33
Indian River	8.77
Lake	11.58
Marion	2.98
Nassau	2.85
Okeechobee	0.00
Orange	1.77
Osceola	0.00
Putnam	0.22
St. Johns	4.45
Seminole	2.23
Volusia	3.80
<b>Total</b>	<b>54.22</b>

**Table 9**

**St. Johns River Water Management District  
2007 Thermoelectric Power Generation Self-Supply Water Use  
in Million Gallons per Day (mgd)**

<b>County</b>	<b>Freshwater* (mgd)</b>	<b>Saline Water* (mgd)</b>	<b>All Water Use (mgd)</b>
Alachua	0.36	0.00	0.36
Baker	0.00	0.00	0.00
Bradford	0.00	0.00	0.00
Brevard	0.13	0.00	0.13
Clay	0.00	0.00	0.00
Duval	5.74	0.00	5.74
Flagler	0.00	0.00	0.00
Indian River	0.00	0.00	0.00
Lake	0.00	0.00	0.00
Marion	0.00	0.00	0.00
Nassau	0.00	0.00	0.00
Okeechobee	0.00	0.00	0.00
Orange	0.46	0.00	0.46
Osceola	0.00	0.00	0.00
Putnam	0.70	0.00	0.70
St. Johns	0.00	0.00	0.00
Seminole	0.00	0.00	0.00
Volusia	0.30	0.00	0.30
<b>Total</b>	<b>7.69</b>	<b>0.00</b>	<b>7.69</b>

\*Non-consumptive (returned to source) surface water usage is not reported.