

Technical Fact Sheet SJ2007-FS1
2006 Annual Water Use Data



Revised May 20, 2008

**St. Johns River Water Management District
2006 Annual Water Use Data**

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Introduction: This document reports 2006 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 *2006 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 5, 2007, 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, quality assurance of the data is not 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 threshold of 0.1 million gallons per day (mgd) of average daily flow by individual water users was used for all water use categories in reporting of *2006 Annual Water Use Data*.

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Term	Definition	Data Source/Methodology
mgd	Million gallons per day—all water use is expressed in 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Freshwater	Water with 1,000 milligrams per liter (mg/L) or less of total dissolved solids (TDS)—freshwater may be withdrawn from either groundwater or surface water sources.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Saline water	Water with more than 1,000 mg/L of TDS—all reported saline water is withdrawn from surface water or surficial aquifer sources.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	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> .	Reclaimed water use data is developed by identifying those quantities of reclaimed water reported by FDEP in its <i>2006 Reuse Inventory, August 2007</i> , that are used in place of higher-quality water for those uses not requiring higher quality, as well as quantities of reclaimed water used to augment other water supply sources, typically by groundwater recharge.
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, April 1, 2006</i> .

Term	Definition	Data Source/Methodology
SJRWMD population	Estimated number of permanent residents living within SJRWMD.	Population estimates are intended for planning purposes only; 2006 county population estimates are from BEBR, <i>Florida Estimates of Population</i> , April 1, 2006. For counties within more than one water management district, the portion of the 2006 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, 2003</i> .
Water use category	Classification of water use based on one of the following six categories—public supply; domestic self-supply; agricultural 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 monthly operating reports (MORs) submitted to FDEP and represents reporting by 95.2% of the public supply utilities for which SJRWMD consumptive use permits, issued for quantities greater than 0.1 mgd, were in effect in 2006.

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 public supply per capita water use rates. Residential water use for each public supplier 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 supplier are then summed to the county level and divided by the total county permanent/residential public supply population to obtain the 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 is obtained by subtracting the number of people served by public supply utilities from the total permanent/residential population of the county. Per capita values of 100 gallons per day (gpd) are used for counties having 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 recirculated in the mining process and, therefore, is considered nonconsumptive.)	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 nonconsumptive.)	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 withdrawals from groundwater and surface water sources that are used for supplemental crop irrigation and that are not supplied by public supply systems.	Water use for irrigation is assessed by crop type due to crop-specific consumption requirements. Water use for this category does not include the use of reclaimed/reuse water. 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 counties where BMF crops are significantly represented. BMF data is supplemented by data from the U.S. Department of Agriculture–Natural Resources Conservation Service (USDA-NRCS). Crop type and acreage data are provided through a SJRWMD survey of University of Florida–Institute of Food and Agricultural Sciences (IFAS) county agricultural extension agents. When this data is not reported, SJRWMD used 2002 data reported by the Florida Agricultural Statistics Service.
Recreational self-supply	Water withdrawn from groundwater and surface water sources that are used for golf course irrigation and that are 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
2006 Population by County**

County	County Population	Percentage of County Population in SJRWMD	SJRWMD Population	Public Supply Population	Residential Self-Supply Population
Alachua	243,779	77%	187,610	166,537	21,074
Baker	25,004	93%	23,238	4,344	18,894
Bradford	28,551	5%	1,427	331	1,095
Brevard	543,050	100%	543,050	523,200	19,850
Clay	176,901	100%	176,901	133,603	43,298
Duval	879,235	100%	879,235	829,571	49,664
Flagler	89,075	100%	89,075	84,288	4,787
Indian River	135,262	100%	135,262	115,592	19,670
Lake	276,783	99%	275,353	220,494	54,859
Marion	315,074	72%	227,560	120,435	107,125
Nassau	68,188	100%	68,188	28,086	40,102
Okeechobee	38,666	2%	789	0	789
Orange	1,079,524	76%	819,543	740,663	78,880
Osceola	255,903	1%	2,559	0	2,559
Putnam	74,416	100%	74,416	11,557	62,859
St. Johns	165,291	100%	165,291	139,617	25,674
Seminole	420,667	100%	420,667	389,670	30,997
Volusia	503,844	100%	503,844	469,258	34,586
Total	5,319,213		4,594,008	3,977,246	616,762

Note: Total population for the state of Florida in 2006 = 18,349,132.

Percent of total state of Florida population that lives within SJRWMD = 29%.

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

Table 2**St. Johns River Water Management District
2006 Total Water Use by County
in Million Gallons per Day (mgd)**

County	Freshwater (mgd)	Saline Water (mgd)	Reuse (mgd)	All Water Use (mgd)
Alachua	38.77	0.00	4.14	42.91
Baker	8.42	0.00	0.00	8.42
Bradford	2.55	0.00	0.00	2.55
Brevard	158.59	0.00	21.52	180.11
Clay	28.89	0.00	3.85	32.74
Duval	180.19	0.00	6.21	186.40
Flagler	29.11	7.20	6.89	43.20
Indian River	295.42	0.00	5.87	301.29
Lake	116.28	0.00	7.77	124.05
Marion	50.96	0.00	4.08	55.04
Nassau	54.74	1.28	0.62	56.64
Okeechobee	27.53	0.00	0.00	27.53
Orange	165.63	0.00	24.58	190.21
Osceola	97.07	0.00	0.00	97.07
Putnam	63.80	0.00	0.48	64.28
St. Johns	59.81	0.00	3.75	63.56
Seminole	78.75	0.00	20.16	98.91
Volusia	106.56	0.00	17.57	124.13
Total	1,563.07	8.48	127.49	1,699.04

Table 3

**St. Johns River Water Management District
2006 Total Water Use by Category
in Million Gallons per Day (mgd)**

Category	Freshwater (mgd)	Saline Water (mgd)	Reuse* (mgd)	All Water Use (mgd)
Public supply	630.45	0.00	—	630.45
Domestic self-supply	72.91	0.00	—	72.91
Commercial/industrial/institutional self-supply	123.27	8.48	—	131.75
Agricultural irrigation self-supply	670.61	0.00	—	670.61
Recreational self-supply	62.37	0.00	—	62.37
Thermoelectric power generation self-supply	3.46	0.00	—	3.46
Total	1,563.07	8.48	127.49	1,699.04

Note: *Reuse not reported by water use category.

Table 4**St. Johns River Water Management District
2006 Public Supply and Domestic Self-Supply Water Use
in Million Gallons per Day (mgd)**

County	Public Supply (mgd)	Domestic Self-Supply* (mgd)
Alachua	28.21	2.04
Baker	0.87	3.51
Bradford	0.00	0.90
Brevard	61.27	1.03
Clay	16.14	3.72
Duval	138.54	7.70
Flagler	9.71	0.33
Indian River	15.50	1.75
Lake	52.09	6.86
Marion	22.36	9.64
Nassau	7.74	8.50
Okeechobee	0.00	0.08
Orange	132.33	8.44
Osceola	0.00	0.26
Putnam	2.83	10.43
St. Johns	16.59	2.16
Seminole	64.18	2.76
Volusia	62.09	2.80
Total	630.45	72.91

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

Table 5

**St. Johns River Water Management District
2006 Commercial/Industrial/Institutional Self-Supply Water Use
in Million Gallons per Day (mgd)**

County	Freshwater (mgd)	Saline Water (mgd)	All Water Use (mgd)
Alachua	0.67	0.00	0.67
Baker	0.45	0.00	0.45
Bradford	0.82	0.00	0.82
Brevard	6.54	0.00	6.54
Clay	1.14	0.00	1.14
Duval	22.79	0.00	22.79
Flagler	0.10	7.20	7.30
Indian River	0.00	0.00	0.00
Lake	11.43	0.00	11.43
Marion	4.22	0.00	4.22
Nassau	34.98	1.28	36.26
Okeechobee	0.00	0.00	0.00
Orange	3.67	0.00	3.67
Osceola	0.00	0.00	0.00
Putnam	34.52	0.00	34.52
St. Johns	0.88	0.00	0.88
Seminole	0.00	0.00	0.00
Volusia	1.06	0.00	1.06
Total	123.27	8.48	131.75

Table 6

**St. Johns River Water Management District
2006 Agricultural Irrigation Self-Supply Water Use
in Million Gallons per Day (mgd)**

County	Freshwater (mgd)
Alachua	7.16
Baker	3.59
Bradford	0.15
Brevard	84.26
Clay	5.46
Duval	3.90
Flagler	16.97
Indian River	267.63
Lake	31.44
Marion	11.42
Nassau	0.36
Okeechobee	27.45
Orange	19.02
Osceola	96.81
Putnam	14.51
St. Johns	34.75
Seminole	9.39
Volusia	36.34
Total	670.61

Table 7

**St. Johns River Water Management District
2006 Crops Included in Agricultural
Irrigation Self-Supply Water Use**

Vegetable Crops	Fruit Crops	Field Crops	Ornamentals and Grasses
Cabbage Carrot Cucumber Pepper Potato Sweet corn Misc.	Blueberry Citrus Grape Peach Pecan Strawberry Watermelon Misc.	Field corn Peanut Tobacco Misc.	Fern Ornamental (field grown) Ornamental (container grown) Improved pasture Sod

Note: The above table identifies the crops included in estimates of 2006 agricultural irrigation self-supply water use.

Table 8

**St. Johns River Water Management District
2006 Recreational Self-Supply Water Use
in Million Gallons per Day (mgd)**

County	Freshwater (mgd)
Alachua	0.51
Baker	0.00
Bradford	0.68
Brevard	5.37
Clay	2.43
Duval	6.01
Flagler	2.00
Indian River	10.54
Lake	14.46
Marion	3.32
Nassau	3.16
Okeechobee	0.00
Orange	1.67
Osceola	0.00
Putnam	0.31
St. Johns	5.43
Seminole	2.42
Volusia	4.06
Total	62.37

Table 9

**St. Johns River Water Management District
2006 Thermoelectric Power Generation Self-Supply Water Use
in Million Gallons per Day (mgd)**

County	Freshwater* (mgd)	Saline Water* (mgd)	All Water (mgd)
Alachua	0.18	0.00	0.18
Baker	0.00	0.00	0.00
Bradford	0.00	0.00	0.00
Brevard	0.12	0.00	0.12
Clay	0.00	0.00	0.00
Duval	1.25	0.00	1.25
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	0.50	0.00	0.50
Osceola	0.00	0.00	0.00
Putnam	1.20	0.00	1.20
St. Johns	0.00	0.00	0.00
Seminole	0.00	0.00	0.00
Volusia	0.21	0.00	0.21
Total	3.46	0.00	3.46

Note: *Nonconsumptive (returned to source) surface water usage is not reported.