Technical Fact Sheet SJ2022-FS1

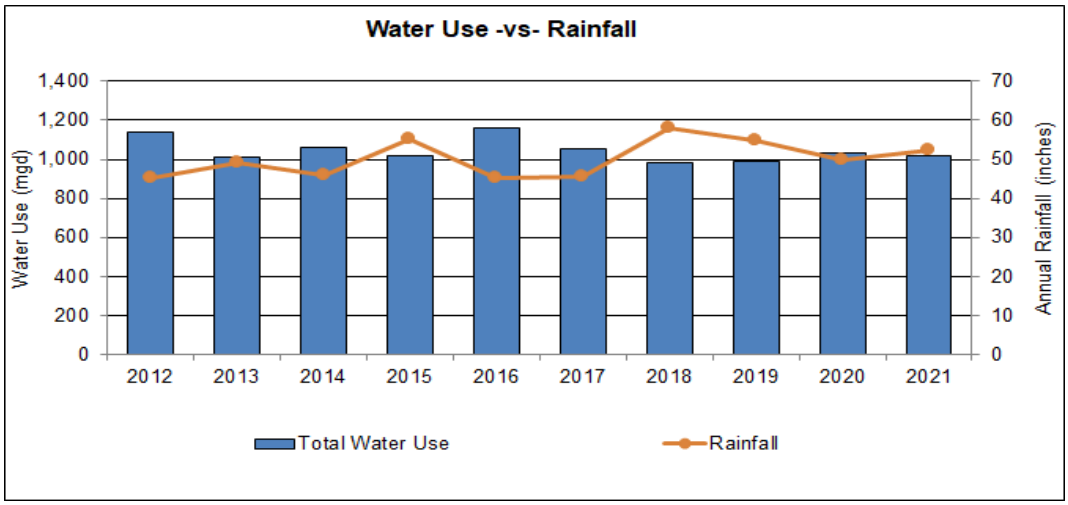
2021 Report of Annual Water Use for St. Johns River Water Management District

St. Johns River Water Management District
2021 Annual Water Use Executive Summary

This executive summary provides a brief overview of the water use statistics for the last 10 years. Definitions for the categories of water use and explanations regarding changes in water use are included in the report, following the executive summary. Unless specifically indicated, water use data in this report does not include beneficial reclaimed water use amounts.

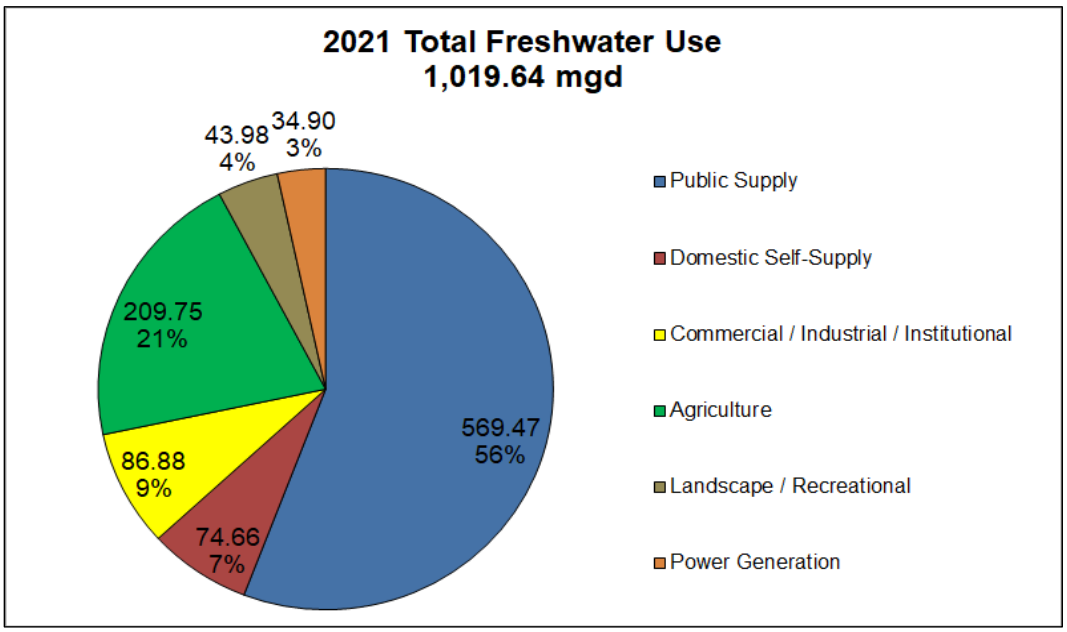
2021 Rainfall

- At 52.3 inches, it was the fourth wettest year in the last decade.
- 7.3 inches higher than the 10-year low in 2012 and 2.3 inches higher than the 10-year average.



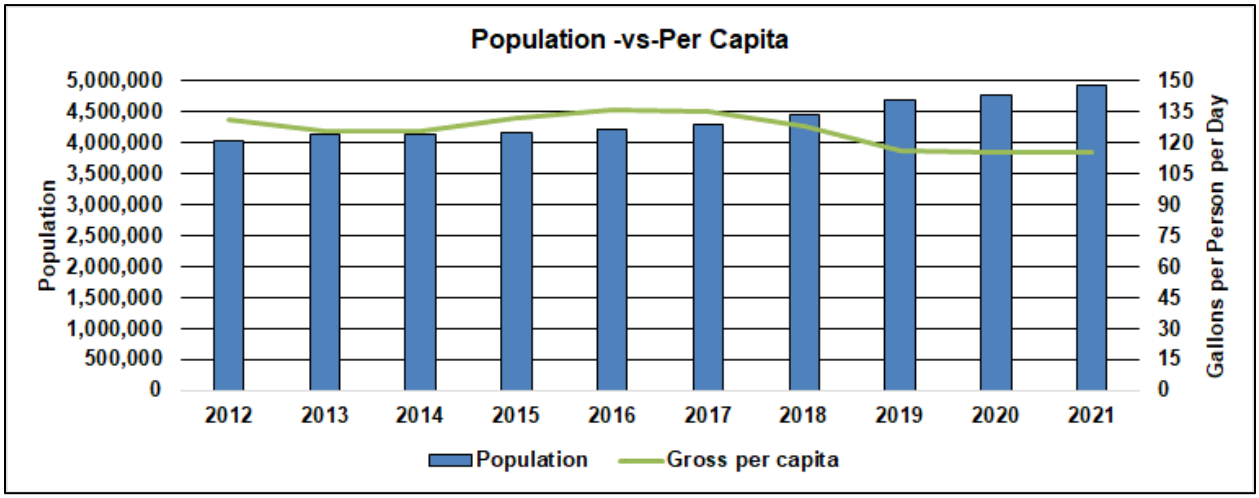
2021 Total Freshwater Use

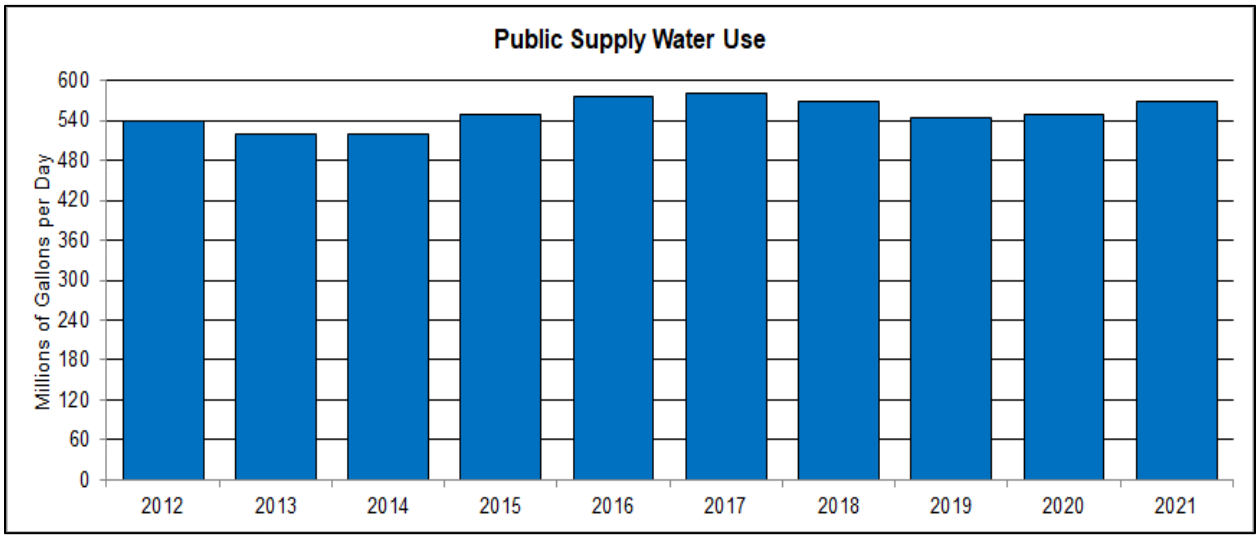
- 1% higher than the five-year average and 1% lower than 2020 use.



2021 Public Supply Water Use

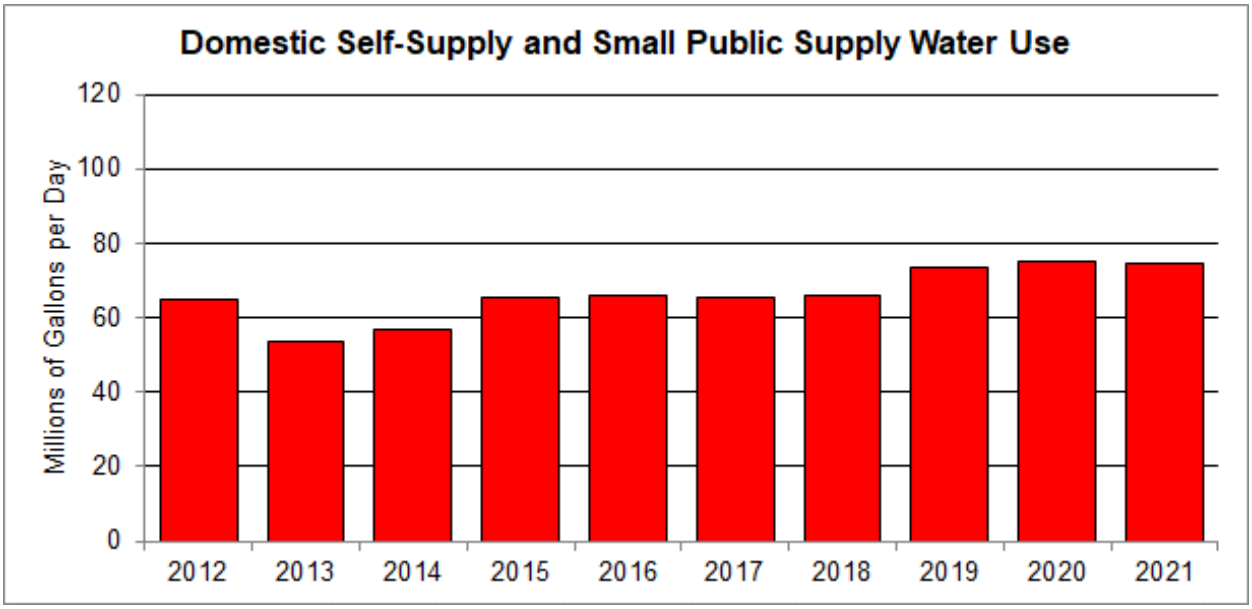
- Between 2012 and 2021, public supply water use remained relatively constant, increasing 5% from 540.07 million gallons per day (mgd) to 569.47 mgd, while population increased 22% from 4,039,934 to 4,939,318 persons.
- Between 2012 and 2021, gross per capita rates decreased 12% from 131 gallons per person per day to 115 gallons per person per day (the 10-year average was 126).
- Changes in public supply water use can be attributed to several factors, such as rainfall, implementation of conservation, increased use of reclaimed water, economic factors, etc.





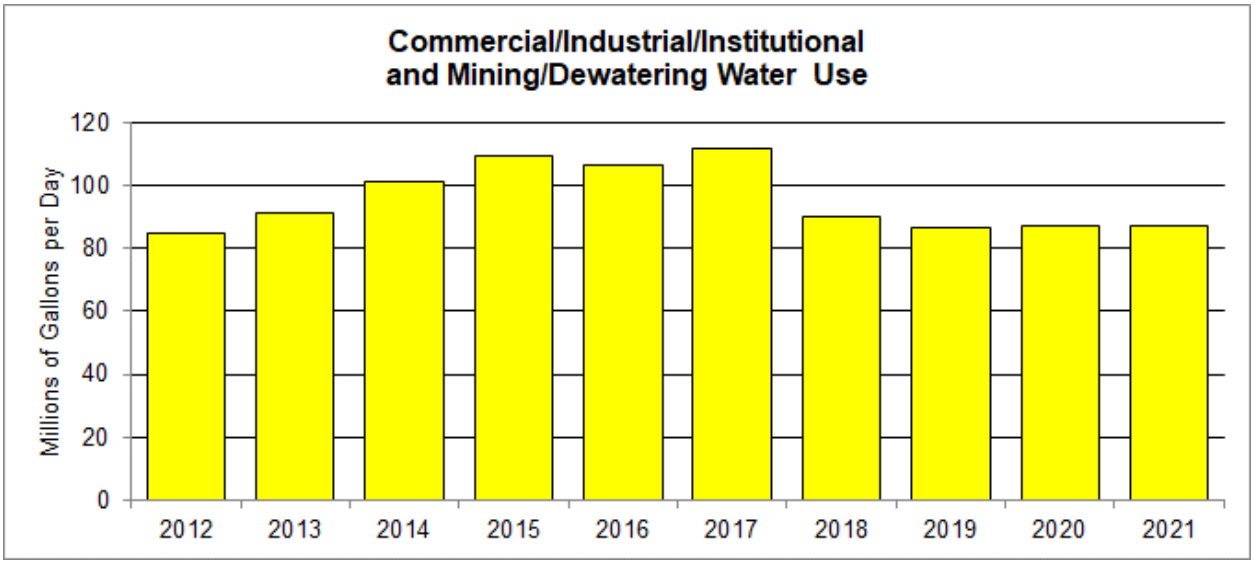
2021 Domestic Self-Supply and Small Public Supply (DSS) Water Use

- At 74.66 mgd, 2021 water use was 1% below 2020 water use.
- Changes in DSS water use can be attributed to several factors, such as changes in population (6% increase from 2020 of 879,231 to 936,237 in 2021), rainfall, and implementation of conservation.
- Population associated with DSS consumed an average 82 gallons per person per day.



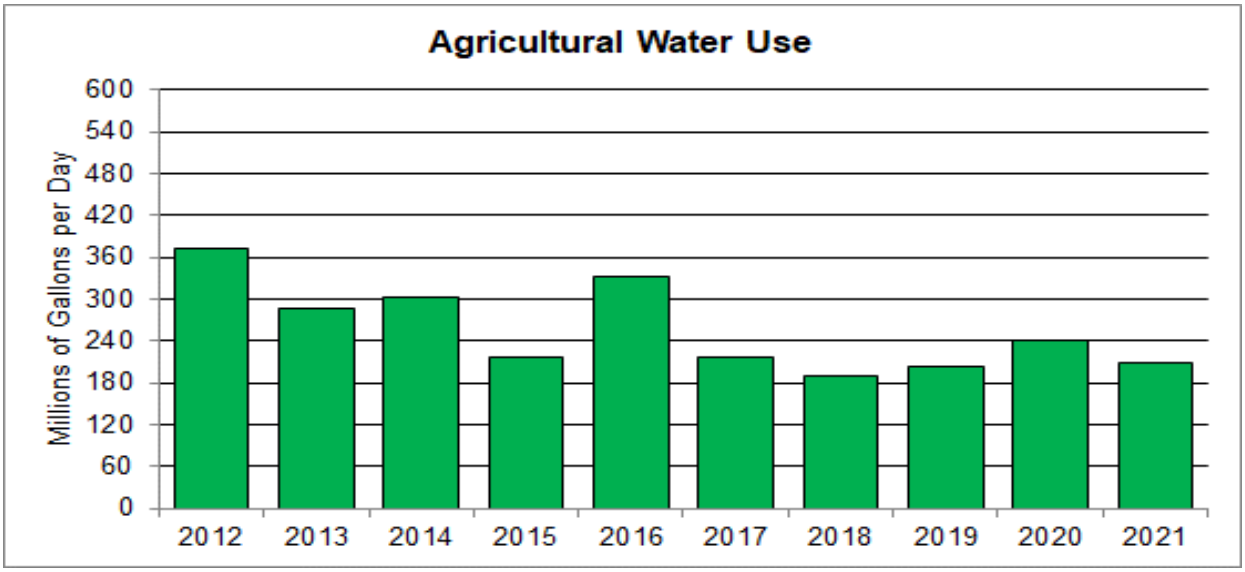
2021 Commercial/Industrial/Institutional and Mining/Dewatering (CII/MD) Water Use

- Mining and pulp and paper make up 73% of CII/MD freshwater use.
- At 86.88 mgd, CII/MD use was 9% below the annual average of the last 10 years.



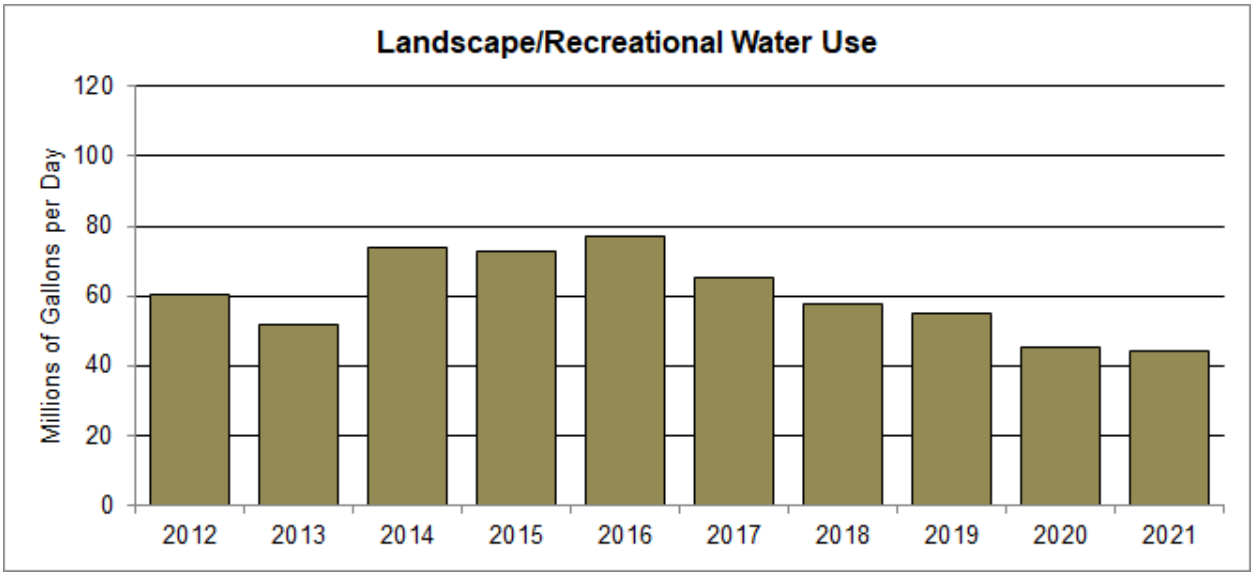
2021 Agricultural Water Use

- At 209.75 mgd, freshwater use was 18% lower than the annual average over the last 10 years.
- Being the fourth wettest year in the last decade, required water for irrigation of crops was less, decreasing 2021 water use 13% below 2020 water use.



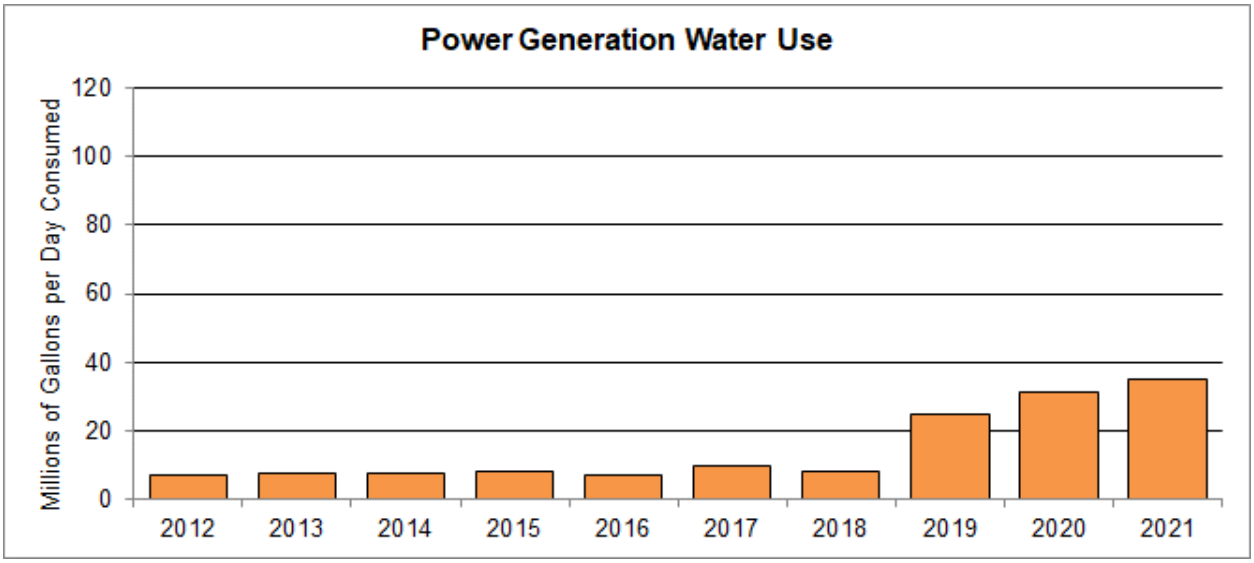
2021 Landscape/Recreational (LR) Water Use

- The LR category used 43.98 mgd of water in 2021, and active golf courses represent 71% of this use (31.27 mgd).
- Total LR freshwater use was 3% lower than 2020 and was 27% lower than the annual average over the last 10 years, reflecting the increased use of reclaimed water for irrigation.



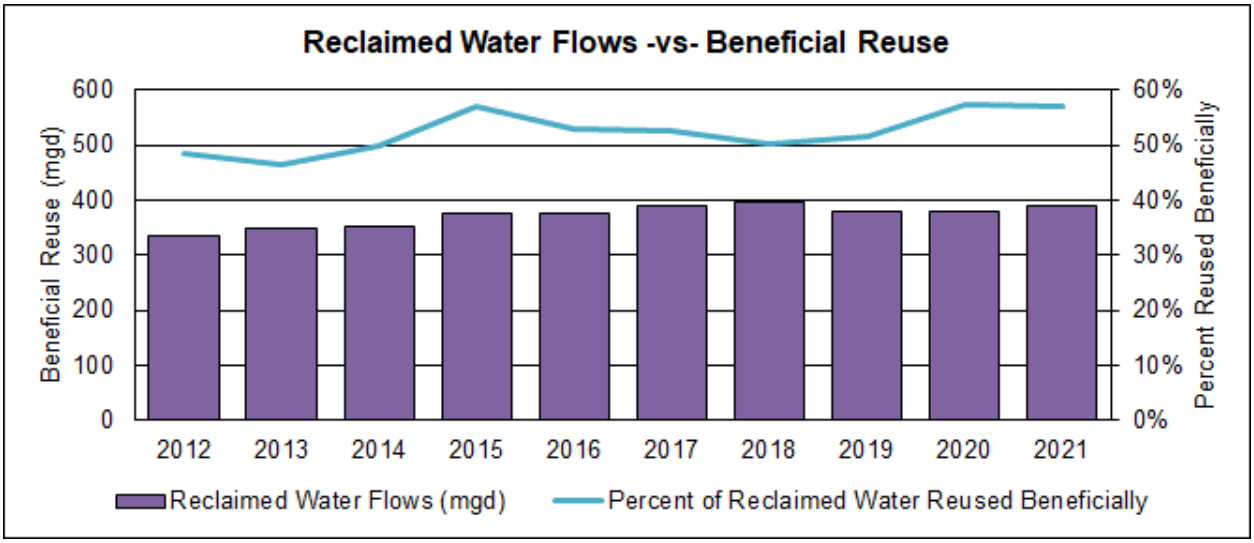
2021 Power Generation Water Use

- In 2021, the combined consumptive water use was 34.90 mgd.
- 2% of surface water withdrawals account for evaporative losses.
- This category represents approximately 3% of the total freshwater withdrawals.
- The 2021 value continues to be larger than previous years due to additional water use reporting in Brevard (9.82 mgd) and Duval Counties (15.27 mgd) and the new facility in Okeechobee County (5.84 mgd).



2021 Beneficial Reuse

- Beneficial Reuse totaled 212 mgd, with an additional 11 mgd of recharge in Alachua County.
- Districtwide, more than 50% of wastewater flows have been reused beneficially since 2014.
- Countywide reuse utilization rates range from 9% (Baker) to 96% (Alachua).



20-Year Historical Perspective

Category	2002		2021		% Change
	Freshwater Use	Percent of Total	Freshwater Use	Percent of Total	
Public supply (PS)	535.64	46	569.47	56	6
Agriculture irrigation self-supply (AG)	383.08	33	209.75	21	-45
Power generation self-supply (PG)	36.00	3	34.90	3	-3
Commercial / Industrial / Institutional and Mining Dewatering self-supply (CII/MD)	96.72	8	86.88	9	-10
Landscape / Recreational self-supply (LR)	39.87	4	43.98	4	10
Domestic self-supply and small public supply systems (DSS)	69.44	6	74.66	7	8
Total	**1,160.75**	**100**	**1,019.64**	**100**	**-12**

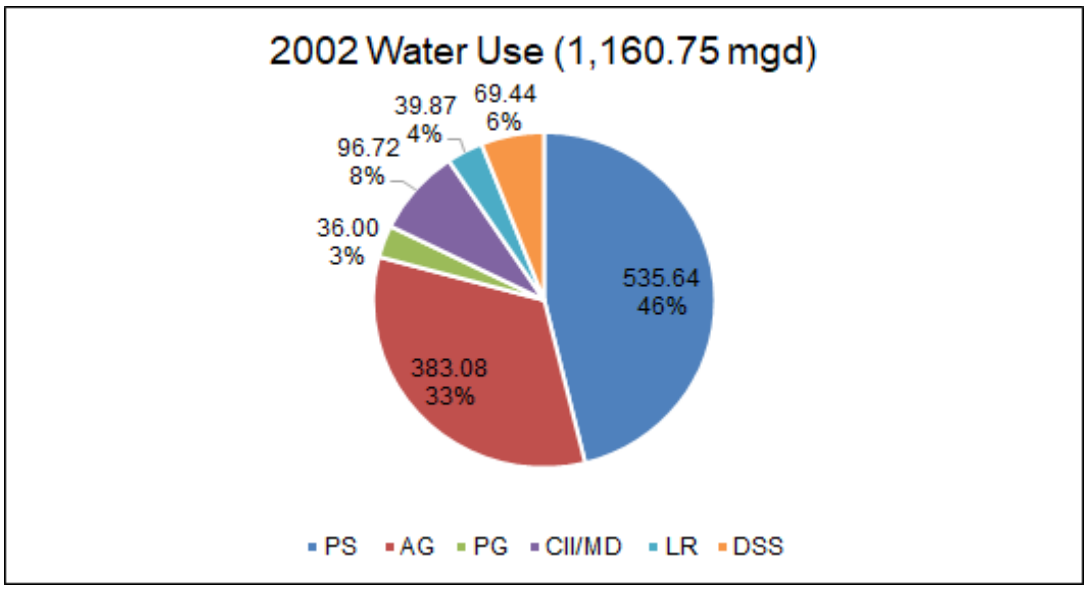
Category	2002		2021		% Change
	Population	Percent of Total	Population	Percent of Total	
Public supply	3,595,522	87	4,939,318	84	37
Domestic self-supply and small public supply systems	529,048	13	936,237	16	77
Total	**4,124,570**	**100**	**5,875,555**	**100**	**42**

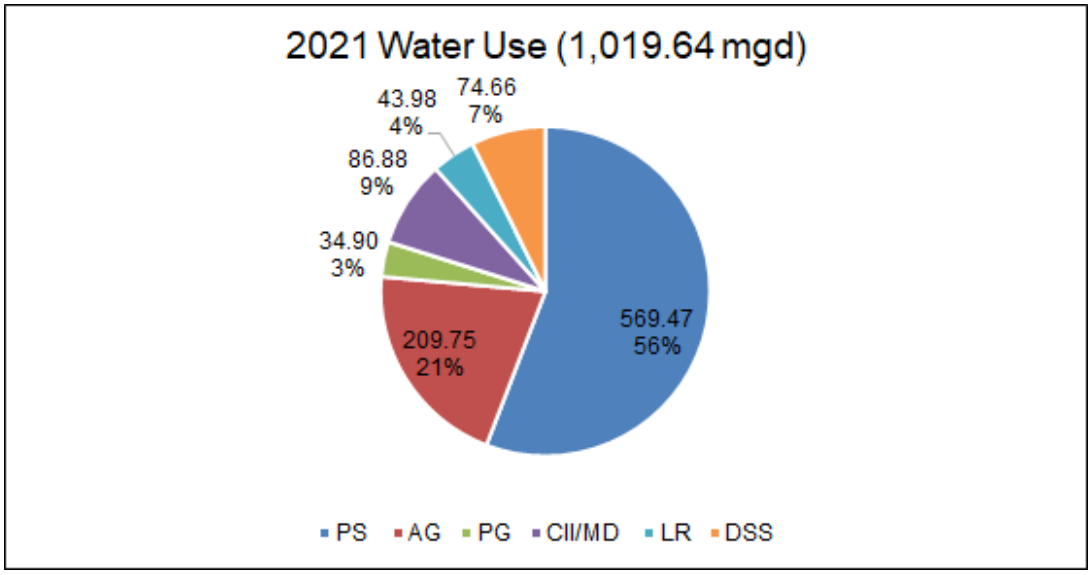
Per Capita Rates	2002	2021	% Change
Gross Per Capita	153	115	-25
Residential Per Capita	127	82	-35

Reclaimed Water	2002	2021	% Change
Total flow	297.99	390.96	31
Beneficially used	119.00	222.53	87
Percent beneficially used	40	57	17

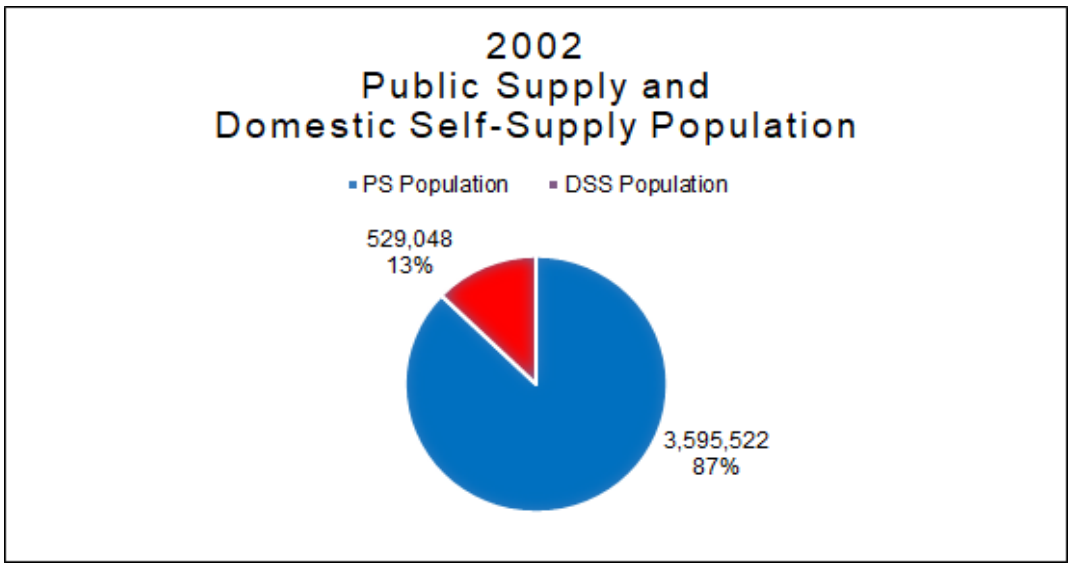
Note: Water use and reclaimed water flows are shown in million gallons per day (mgd).
Beneficial reuse for 2021 includes 11 mgd of recharge in Alachua County.

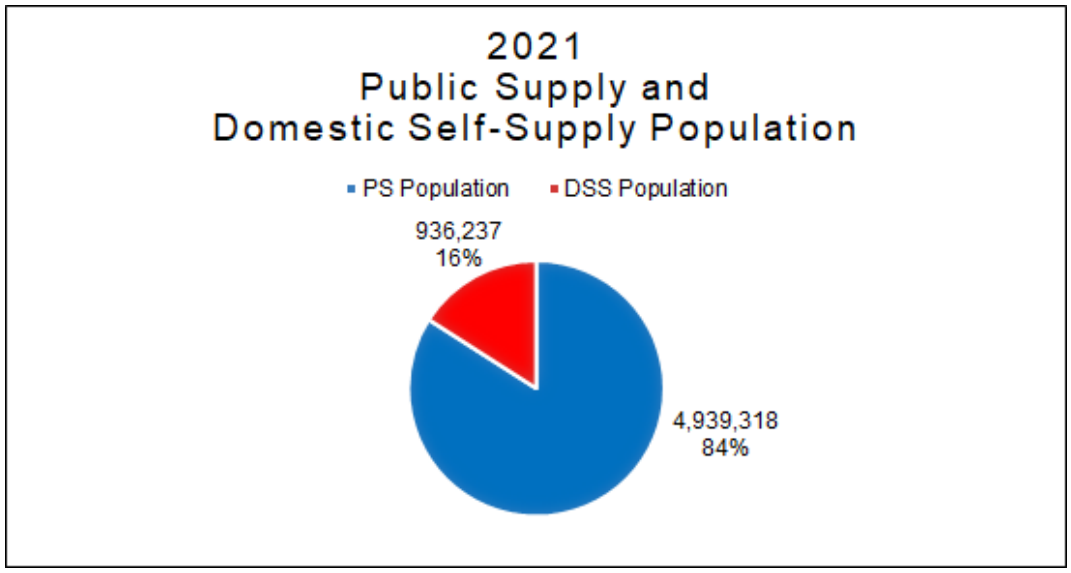
20-Year Historical Perspective (Cont.)

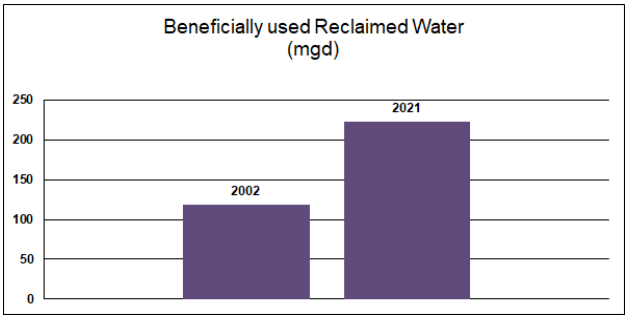


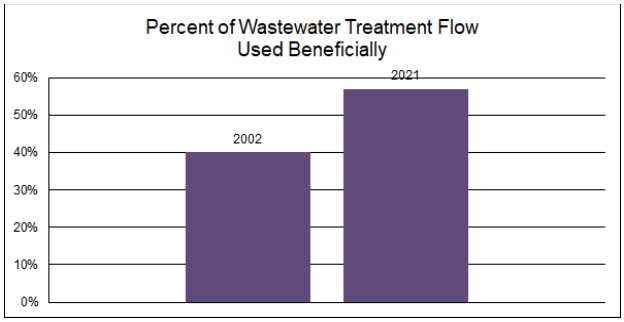


20-Year Historical Perspective (Cont.)









Technical Fact Sheet SJ2022-FS1
2021 Survey of Annual Water Use
for St. Johns River Water Management District

Introduction. St. Johns River Water Management District (SJRWMD) has published annual water use data since 1978. These "annual water use surveys" assess total water use, with data arranged by source, category of use, and county. Amounts are based on best available data at the time of publication. Published reports can be found on the SJRWMD website, *www.sjrwmd.com*. In publishing the annual data, SJRWMD cooperates with the U.S. Geological Survey (USGS) that compiles national water use data on five-year intervals.

Since 2002, total public supply water use, which represents 56% of total freshwater use in 2021, has increased by 6% (from 535.64 mgd to 569.47 mgd). At the same time, total population served by public supply has increased 37% (from 3,595,522 to 4,938,318 persons). In the 10-year period ending in 2021, public supply water use increased 5% (from 540.07 mgd to 569.47 mgd), while population served by public supply increased 22% from 4,039,934 to 4,938,318 persons. Although public supply water use in 2021 is 3% higher than the 10-year average (due to factors such as rainfall / drought conditions and economic factors), the gross per capita rate has seen a significant decrease since 2002 and is 12% lower than the 10-year period beginning in 2012.

Factors such as conservation, less landscape irrigation with potable water, and increases in multifamily housing occupancy can decrease gross per capita rates. Conversely, expanded tourism and other commercial development, larger irrigated lots, and increases in single family housing can increase gross per capita rates. Since 2002, gross per capita water use has decreased from 153 gallons per person per day to 115 gallons per person per day.

Geographic Survey Area. SJRWMD includes all or part of 18 counties, encompassing 12,300 square miles in northeast and east-central Florida and representing more than 5.8 million people, or approximately 27% of the state's population. The following water basins are located within SJRWMD: the entire St. Johns River and Nassau River basins, the Northern Coastal Basins, a portion of the Indian River Lagoon, and portions of the St. Marys River Basin and Florida Ridge.

Area Rainfall Statistics. Average annual rainfall within SJRWMD for 2021 was 52.33 inches. From the most recent 10-year period, 2012–2021, average annual rainfall within SJRWMD varied by 12.91 inches (from 45.05 to 57.96 inches). Average annual rainfall within SJRWMD for the 10-year period January 2012–December 2021 was 50.08 inches. A comparison of rainfall and water use over the most recent 10-year period, 2012–2021, is shown in Figures 11 and 12.

Through evapotranspiration, nearly 70% of rainfall within SJRWMD is returned to the atmosphere, while the remaining 30% becomes runoff to surface waters or recharge to aquifers (Fernald and Purdum 1998).

Data Sources, Methodology and Terminology. Data for the 2021 Report of Annual Water Use came from a variety of sources: raw water withdrawal data submitted to SJRWMD (via EN-50 forms, which represents 82% of the 2021 water use in this report) and treated water data from Florida Department of Environmental Protection (DEP) monthly operating reports (MORs). Reuse water data were derived from the *2021 Reuse Inventory Report* (DEP 2022). Rainfall by

county was obtained from SJRWMD's monthly hydrologic conditions reports (SJRWMD 2022). Water use for those small users (18% of the 2021 total water use) that are not required to report information to SJRWMD or DEP is estimated using analyses of historical data and trends.

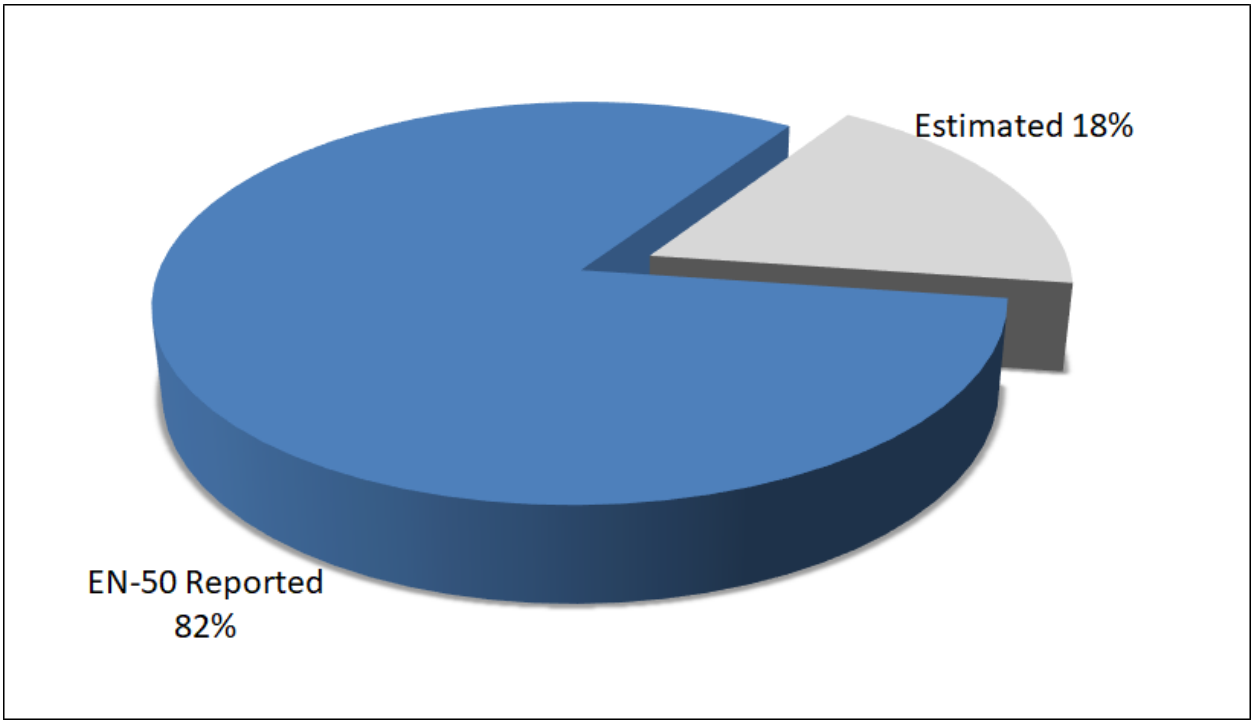


Figure 1. Reported and estimated water use (mgd) in SJRWMD, 2021

Freshwater. Water with concentration of total dissolved solids (TDS) less than 1,000 milligrams per liter (mg/L) is considered freshwater and may be withdrawn from either groundwater or surface water sources. This definition is based on the one provided by USGS, in Water Supply Paper 2254 (Hem 1985), and has been used for reporting consistency with USGS. This definition differs from that used by SJRWMD in determining if a source is "brackish" when identifying an alternative water supply source. Source waters that do not always meet federal and state drinking water standards for chloride, sulfate, or total dissolved solids are generally identified by SJRWMD as "brackish" waters.

Saline water. Water with more than 1,000 mg/L TDS is considered saline. All water reported as saline is withdrawn from surface water or surficial aquifer sources in SJRWMD.

Reuse. Reclaimed water is treated wastewater that has received at least secondary treatment and basic disinfection. It may be distributed for nonpotable uses that achieve a water resource benefit (SJRWMD 2006).

> Data Source/Methodology: SJRWMD's methodology is based on quantities of reuse water reported by DEP in the *2021 Reuse Inventory Report* (DEP 2022). Water management districts refine the quantities of beneficial reuse reports in DEP's Reuse Inventory Report to reflect those uses of reclaimed water that achieve a water resource benefit. In particular, reuse must take the place of an existing or potential use of higher-quality water or be used to grow useful crops; restore or maintain adopted minimum

flows and/or levels of a river, lake, or wetland; or effectively recharge a useable aquifer. If the water applied does not meet one of these requirements, it is considered as disposal. Types of reclaimed water considered as reuse by DEP are as follows: underground injection for disposal; absorption fields and rapid infiltration basins located in discharge areas; surface water augmentation where not required; spray fields; and artificial wetlands.

SJRWMD population. This is the number of permanent residents living within SJRWMD's 18-county region.

Data Source/Methodology: Population estimates are intended for planning purposes only; 2021 county population estimates are from *Florida Estimates of Population, 2021* (BEBR 2021).

Water use category. Classification of water use is based on one of the following six categories: (1) public supply, (2) domestic self-supply and small public supply systems, (3) agricultural self-supply, (4) commercial/industrial/institutional and mining/dewatering self-supply, (5) landscape/recreational self-supply, and (6) power generation self-supply. Beneficial use of reclaimed water is also included in this report. Listed below are the definitions for each water use category and the source or methodology for the data presented in this report.

Public supply. Water withdrawn, treated, and delivered to service areas within SJRWMD by privately and publicly owned water supply utilities (or systems) is defined as public supply. This encompasses both residential and nonresidential uses by utilities that are permitted to withdraw equal to or more than 0.10 million gallons per day (mgd) from groundwater or surface water sources.

Data Source/Methodology: Water use data in this category were obtained from two sources: SJRWMD EN-50 forms and DEP's MOR datasets. All Individual consumptive use permits (CUPs) require the permittee to measure their water use. Individual CUPs that are permitted to withdraw more than 0.10 mgd are required to submit this pumpage data to SJRWMD via the EN-50. Water use data for permits with allocations of 0.10 mgd or less are also required to measure their water use and maintain the data, but are not required to report water use to SJRWMD unless specifically requested. The water use data for these CUPs was obtained from MORs. These are submitted to DEP by approximately 98% of the public supply utilities for which SJRWMD had individual CUPs in effect during 2021. (Water for use by the city of Cocoa, in Brevard County, is withdrawn from wells in Orange County.)

Domestic self-supply and small public supply systems. Domestic self-supply water use refers primarily to water use by individuals not served by a public supply water utility (e.g., a residence with a private well). The population associated with small public supply utility systems (permitted average daily flow less than 0.10 mgd) is also included in this category. In most cases, small public supply utility systems need not report water use data to SJRWMD. However, many of these small public supply utility systems do report water use data to DEP via MORs.

Data Source/Methodology: Domestic self-supply water use is calculated from residential population and residential public supply (including small public supply systems) per capita water use rates at the county level. Residential water use for each public supply utility and small public supply system is calculated by multiplying the total public supply and small public supply system water use by the percent of the total water use allocated to residential use, as authorized in the SJRWMD-issued CUP. The resulting water use values for each public supply utility and small public supply system are then summed to the county level and divided by the total county permanent/residential public supply and small public supply population to obtain the county-level residential per capita value. The county residential per capita value is multiplied by the domestic self-supply population, resulting in the amount of water use for domestic self-supply. The domestic self-supply population for each county partially within SJRWMD is obtained using BEBR countywide estimates (BEBR 2021), Public Supply Service Area Boundaries, a land use parcel layer containing residential units, and served population estimates. For counties with a population of less than 5% within the jurisdiction of SJRWMD or that have no public supply or small public supply system water use, SJRWMD's average residential public supply (including small public supply systems) per capita figure of 82 gallons per day (gpd) was used. For the purpose of reporting, all domestic self-supply water is assumed to be groundwater. Water use data for small public supply systems was obtained from SJRWMD EN-50 and/or DEP MORs.

Commercial/industrial/institutional and mining/dewatering self-supply. This is water withdrawn from groundwater and surface water sources for commercial, industrial, institutional, mining or dewatering purposes not provided by public supply systems. It includes businesses, government facilities, military installations, schools, prisons, hospitals, industrial uses such as processing and manufacturing and mining and long-term dewatering operations. (Note: For this report, surface water use by mining and long-term dewatering operations represents 5% of surface water use, to account for the loss of water entrained in mining products and evaporative losses. The remaining surface water is assumed to be recirculated in the mining process and, therefore, is considered nonconsumptive. Where nonconsumptive is defined by SJRWMD as any use of water that does not reduce the water supply from which it is withdrawn or diverted.)

Data Source/Methodology: Data in this category reflects water use information reported to SJRWMD by consumptive use permittees via SJRWMD EN-50 forms.

Agricultural self-supply. This is reported and calculated water from groundwater and surface water sources for use in supplemental crop irrigation. It also includes non-irrigation use such as draining an agricultural field after a large rainstorm, as well as water use associated with aquaculture, livestock, etc.

Data Source/Methodology: Data in this category reflect water use information reported to SJRWMD by agricultural water users via SJRWMD EN-50 forms and water use amounts provided by the Florida Department of Agriculture and

Consumer Services (FDACS) Florida Statewide Agricultural Irrigation Demand VIII (Balmoral, 2021).

Landscape/recreational self-supply. This is water withdrawn from groundwater and surface water sources for use in golf course irrigation, irrigation of urban landscapes or athletic fields, water-based recreational areas, and ornamental or decorative purposes not supplied by public supply systems.

Data Source/Methodology: Data in this category reflect water use information reported to SJRWMD by consumptive use permittees via SJRWMD EN-50 forms.

Power generation self-supply. This is water withdrawn from groundwater and surface water sources and used by power plants not supplied by public supply systems. (Note: Surface water use for once-through cooling represents 2% of surface water use, to account for the loss of water through evaporation.)

Data Source/Methodology: Data in this category reflect water use information reported to SJRWMD by power plant operators via SJRWMD EN-50 forms or through a yearly SJRWMD survey. Monthly operating report data from DEP was used to cross-check EN-50 data and fill in any data gaps.

2021 Water Use by Category. Water use is reported for water withdrawals from fresh, saline, and reuse water sources, expressed in average mgd unless otherwise noted. In this 2021 report, the water use amounts are based on best available data as of May 5, 2022. As shown in Figure 1, 82% of the 2021 water use was reported to SJRWMD via EN-50 forms. Water withdrawal information is reported for six categories of use: (1) public supply, (2) domestic self-supply and small public supply systems, (3) commercial/industrial/institutional and mining/dewatering self-supply, (4) agricultural self-supply, (5) landscape/recreational irrigation self-supply, and (6) power generation self-supply. This report also includes information on beneficially reused wastewater flows. A reporting threshold of 0.10 mgd of permitted average daily flow by individual water users was used for all water use categories, excluding the agricultural self-supply and domestic self-supply and small public supply systems categories, in the reporting of consumptive use for 2021. Consumptive use is defined by SJRWMD as any use of water that reduces the supply from which it is withdrawn or diverted.

Rainfall and water use totals within SJRWMD are shown in Table 1, with figures tabulated by county. Table 2 shows total water use by category and Table 3 shows water use by county and category. The total consumptive use in SJRWMD for 2021, including fresh, saline, and reuse (reclaimed) water, was 1,234.02 mgd. Of the total consumptive amount, 1,019.64 mgd was freshwater and 2.68 mgd was saline water (Tables 1–3). In 2021, the largest consumptive use of freshwater within SJRWMD was public supply, which totaled 569.47 mgd, or 56%, of total consumptive freshwater use (Tables 2 and 3, Figure 2). Next was agricultural water use, which used 209.75 mgd, or 21%, of total consumptive freshwater within SJRWMD (Tables 2 and 3, Figure 2). Beneficial use of reclaimed water accounted for 211.70 mgd and was reported under the agricultural, commercial/industrial/institutional and landscape/recreational categories of water use (Tables 2 and 3, Figure 2). An additional 10.83 mgd of beneficial reuse in Alachua County was used for recharge.

Public Supply. In 2021, approximately 4,939,318 people were served by a public supply utility; this is around 84% of the SJRWMD total population (Table 4 note). Public supply water use, from both groundwater and surface water sources, was 1% above the recent five-year average (Tables 2 and 3, Figures 2 and 3). Average gross per capita use, based on the population served by a public supply system, was 115 gallons per capita per day (gpcd). As seen in Table 5, gross per capita ranges from 90 gpd to 138 gpd. Average residential per capita (with the inclusion of Bradford and Okeechobee counties) for SJRWMD is 82 gpd. It ranges from 44 gpd to 112 gpd. Public supply water use typically fluctuates during the year in response to seasonal rainfall and temperature variations. Water use tends to increase during the warm season (April–October), when outdoor use is highest. In 2021, public supply water use ranged from a low of 511.33 mgd in February to a high of 657.88 mgd in May (Figure 3). Of the total water withdrawn for public supply use, 97% was groundwater.

Counties with the largest public supply water use during 2021 were Duval County (114.75 mgd, serving 838,390 people; 137 gpcd) and Orange County[1] (127.11 mgd, serving 1,085,704 people; 117 gpcd) and (Table 3, Figures 4 and 5). These counties combined represented 42% of total public supply water use and 39% of the public supply population. (Note: There is no public supply water use in the portions of Okeechobee and Osceola counties within SJRWMD.)

Domestic Self-Supply and Small Public Supply Systems. In 2021, approximately 936,237 people used 74.66 mgd of domestic self-supply water (including small public supply systems), or 7%, of total water used in SJRWMD (Tables 2–4, Figure 2). Duval County had the largest self-supplied population, with 178,419 people (16.24 mgd). Marion County had the second-largest population, 141,643 (8.97 mgd), followed by St. Johns County, 118,944 (12.20 mgd) (Table 4).

Domestic self-supply water use (including small public supply systems) has fluctuated over the 10-year period, reaching a low of 53.84 mgd in 2013 to a high of 75.22 mgd in 2020. The average for the 10-year period was 66.12 mgd; water use in 2021 was 13% above average. Fluctuations in water use are mainly attributed to changes in methodologies since the initial publication of water use reporting in 1978. In 2021, average DSS water use per capita within SJRWMD was 82 gpcd (Table 5). As the DSS category total water use includes respective water use and population associated with small public supply systems, the residential per capita rates listed in Table 5 may not equal the DSS water use divided by the DSS population listed.

Commercial/Industrial/Institutional and Mining/Dewatering Self-Supply. In 2021, total freshwater use in the commercial/industrial/institutional and mining/dewatering category was 86.88 mgd, or 9%, of total freshwater use (Tables 2 and 3, Figure 2). Of this freshwater total, 64.54 mgd was groundwater and 22.34 mgd was surface water. Additional reclaimed water use totaled 44.83 mgd (Table 2).

[1] Orange County (Orange County Utilities / Orlando Utilities Commission) totals only include the water consumed and population served in SJRWMD.

Most of the water withdrawn for commercial/industrial/institutional and mining/dewatering purposes supplied the pulp and paper industries in Duval, Nassau, and Putnam counties. Water use for pulp and paper production in 2021 totaled 54.39 mgd. It included 33.06 mgd of fresh groundwater, 19.97 mgd of fresh surface water, and 1.36 mgd of saline surface water. The second-largest water user in this category was the mining industry, which accounted for 8.54 mgd of fresh groundwater and 1.82 mgd of fresh surface water. Pulp/paper production and mining accounted for a combined total of 63.39 mgd of freshwater, or 73%, of the commercial/industrial/institutional and mining/dewatering freshwater use.

Over the last 10 years, commercial/industrial/institutional and mining/dewatering self-supply water use was highest in 2017 (111.77 mgd) and lowest in 2012 (84.91 mgd). The average for the 10-year period was 95.55 mgd; water use in 2021 was 9% below this average. Commercial/industrial/institutional and mining/dewatering freshwater use in 2021 varied from a low of 77.65 mgd in December to a high of 93.51 mgd in February (Figure 6).

Agricultural Self-Supply. Total freshwater use for agriculture was 209.75 mgd, which is 21% of total freshwater use in SJRWMD during 2021 (Tables 2 and 3, Figure 2). Reuse water accounted for 0.92 mgd of agricultural water use. Agricultural permittees used 167.99 mgd of groundwater (80%) and 41.76 mgd of surface water (20%). Agricultural water use in 2021 reached a low of 126.57 mgd in September and a high of 326.44 mgd in April (Figure 7). This fluctuation is typical of irrigation water use and is related to rainfall patterns and timing of planting and harvesting.

By county, the largest water use for agriculture occurred in Indian River County, with 49.40 mgd, accounting for 24% of total SJRWMD agricultural freshwater use (Table 3). During 2021 in SJRWMD, the largest agricultural water use was for cut foliage and ornamentals, which accounted for 50.85 mgd, or 24%, of total agricultural freshwater use. Citrus and hay were the two other largest categories; accounting for 42.76 mgd, or 20%, and 35.70 mgd, or 17%, respectively, of total agricultural freshwater use (Figure 8).

Landscape/Recreational Irrigation Self-Supply. The landscape/recreational irrigation self-supply category includes water used to irrigate turf grass for golf courses, urban landscapes, athletic fields, water-based recreational areas, or for ornamental or decorative purposes. Use of freshwater in the landscape/recreational irrigation category totaled 43.98 mgd, about 4%, of total freshwater use in 2021. Slightly over 74% (32.65 mgd) of the quantities were withdrawn from surface water sources. The remaining 11.33 mgd (26%) came from groundwater sources. Reuse water under this category totaled 165.95 mgd. By county (Table 3), the largest freshwater use for landscape/recreational irrigation occurred in Indian River County (11.11 mgd), followed by Lake County (7.63 mgd), and Volusia County (4.59 mgd). In terms of reuse, the four counties with the largest reclaimed water used for landscape/recreational are Orange (35.91 mgd), Seminole (24.95 mgd), Volusia (24.03 mgd), and Brevard (21.51 mgd).

During the past 10 years (2012–2021), landscape/recreational irrigation freshwater use was highest in 2016 (77.03 mgd) and lowest in 2021 (43.98 mgd). Average freshwater use over the 10-year period was 60.31 mgd. Landscape/recreational irrigation freshwater

use in 2021 was 27% below the 10-year average. Landscape/recreational irrigation freshwater use in 2021 varied from a low of 29.38 mgd in February to a high of 75.12 mgd in May (Figure 9).

Power Generation Self-Supply. The power generation self-supply category consists of water withdrawn from groundwater and surface water sources by power plants. Consumptive water use includes 2% of surface water by power generation facilities. This is to account for the loss of water due to evaporation for once-through cooling. Water use amounts for 2021 totaled 34.90 mgd (Tables 2 and 3, Figure 2). The largest amount of consumptive water use within this category (Table 3) occurred in Duval County (15.27 mgd).

Power generation water use in 2021 fluctuated from a low of 27.85 mgd in February to a high of 38.58 mgd in September (Figure 10). Fluctuations in water use are related to power plant shutdowns for maintenance or increased power demands during periods of high or low temperatures.

Beneficial Reuse (Reclaimed Water). As explained on Page 10, beneficially reused wastewater has received at least secondary treatment and basic disinfection. It is currently used by permittees to help meet agricultural, commercial/industrial/institutional, and landscape/recreation demands. In 2021, 222.53 mgd of reclaimed water was used for beneficial purposes. In terms of beneficial utilization rates, the top four counties were Alachua (96%), Lake (89%), Putnam (88%), and Orange (80%) (Figures 13 and 14). Seventy-five percent of the reclaimed water is applied to landscape, fields and golf courses (Figure 15). Of note, 10.83 mgd of reclaimed water for recharge in Alachua County is included above.

Reclaimed water pumps at the Fleming Island Regional Wastewater Plant in Clay County.

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Table 1. Total water use (mgd) and rainfall by county in SJRWMD, 2021

County	Freshwater (mgd)	Saline Water (mgd)	Reuse (mgd)	Total Water Use (mgd)	Rainfall (inches)
Alachua	27.14	0.00	6.13	33.27	61.41
Baker	3.88	0.00	0.08	3.96	57.65
Bradford	0.38	0.00	0.00	0.38	62.02
Brevard	101.18	0.00	23.38	124.56	49.36
Clay	21.51	0.00	5.77	27.28	53.19
Duval	162.74	0.00	19.21	181.95	52.14
Flagler	21.53	1.32	6.36	29.21	51.02
Indian River	80.94	0.00	6.18	87.12	45.53
Lake	95.41	0.00	17.52	112.93	48.75
Marion	41.20	0.00	1.28	42.48	56.54
Nassau	43.21	1.36	1.74	46.31	53.46
Okeechobee	11.56	0.00	0.00	11.56	46.80
Orange	142.03	0.00	57.63	199.66	50.34
Osceola	12.45	0.00	0.00	12.45	46.82
Putnam	48.92	0.00	1.82	50.74	56.75
St. Johns	57.85	0.00	4.01	61.86	51.86
Seminole	64.87	0.00	35.04	99.91	53.45
Volusia	82.84	0.00	25.55	108.39	51.91
Total	**1,019.64**	**2.68**	**211.70**	**1,234.02**	**52.33**

Note: Total water use is in million gallons per day (mgd).
Amounts are based on best available data as of May 5, 2022.
Source of domestic self-supply is assumed to be groundwater.
Orange County (Orange County Utilities / Orlando Utilities Commission) totals only include the water consumed and population served in SJRWMD.
An additional 10.83 mgd of reclaimed water was used for recharge in Alachua County.

Table 2. Total water use (mgd) by category in SJRWMD, 2021

Category	Freshwater (mgd)	Saline Water (mgd)	Reuse (mgd)	Total Water Use (mgd)
Public supply	569.47	0.00	0.00	569.47
Domestic self-supply and small public supply systems	74.66	0.00	0.00	74.66
Commercial / Industrial / Institutional and Mining / Dewatering self-supply	86.88	2.68	44.83	134.39
Agricultural irrigation self-supply	209.75	0.00	0.92	210.67
Landscape / Recreational self-supply	43.98	0.00	165.95	209.93
Power generation self-supply	34.90	0.00	0.00	34.90
Total	**1,019.64**	**2.68**	**211.70**	**1,234.02**

Note: Water use is in million gallons per day (mgd).
Source of domestic self-supply is assumed to be groundwater.
Amounts are based on best available data as of May 5, 2022.
An additional 10.83 mgd of reclaimed water was used for recharge in Alachua County.

Table 3. Total water use (mgd) by county and category in SJRWMD, 2021

County	Freshwater							Saline Water	Reuse	All Water Use
	Public Supply	Domestic Self-Supply	Commercial/ Industrial/ Institutional	Agricultural Self-Supply	Landscape/ Recreational Self-Supply	Power Generation Self-Supply	Total Freshwater	Commercial/ Industrial/ Institutional		
Alachua	22.14	0.95	0.47	3.09	0.13	0.36	27.14	0.00	6.13	33.27
Baker	0.93	2.05	0.43	0.47	0.00	0.00	3.88	0.00	0.08	3.96
Bradford	0.04	0.34	0.00	0.00	0.00	0.00	0.38	0.00	0.00	0.38
Brevard	52.91	2.72	2.29	30.15	3.29	9.82	101.18	0.00	23.38	124.56
Clay	13.85	5.79	0.18	1.10	0.59	0.00	21.51	0.00	5.77	27.28
Duval	114.75	16.24	11.45	1.61	3.42	15.27	162.74	0.00	19.21	181.95
Flagler	11.04	0.38	0.00	9.07	1.04	0.00	21.53	1.32	6.36	29.21
Indian River	20.07	0.29	0.07	49.40	11.11	0.00	80.94	0.00	6.18	87.12
Lake	46.39	6.10	11.34	23.73	7.63	0.22	95.41	0.00	17.52	112.93
Marion	19.07	8.97	2.78	7.15	3.23	0.00	41.20	0.00	1.28	42.48
Nassau	7.83	4.01	29.05	0.95	1.37	0.00	43.21	1.36	1.74	46.31
Okeechobee	0.00	0.13	0.00	5.59	0.00	5.84	11.56	0.00	0.00	11.56
Orange	127.11	4.22	1.77	7.11	1.33	0.49	142.03	0.00	57.63	199.66
Osceola	0.00	0.11	0.00	12.34	0.00	0.00	12.45	0.00	0.00	12.45
Putnam	2.48	3.12	23.53	18.90	0.11	0.78	48.92	0.00	1.82	50.74
St. Johns	19.84	12.20	0.49	20.91	4.41	0.00	57.85	0.00	4.01	61.86
Seminole	57.81	2.38	0.17	2.78	1.73	0.00	64.87	0.00	35.04	99.91
Volusia	53.21	4.66	2.86	15.40	4.59	2.12	82.84	0.00	25.55	108.39
Total	**569.47**	**74.66**	**86.88**	**209.75**	**43.98**	**34.90**	**1,019.64**	**2.68**	**211.70**	**1,234.02**

Note: Water use is in million gallons per day (mgd).
Amounts are based on best available data as of May 5, 2022.
Source of domestic self-supply is assumed to be groundwater.
Small public supply systems are included in the domestic self-supply category.
Mining and dewatering are included in the commercial/industrial/institutional category.
Orange County (Orange County Utilities / Orlando Utilities Commission) totals only include the water consumed and population served in SJRWMD.
An additional 10.83 mgd of reclaimed water was used for recharge in Alachua County.

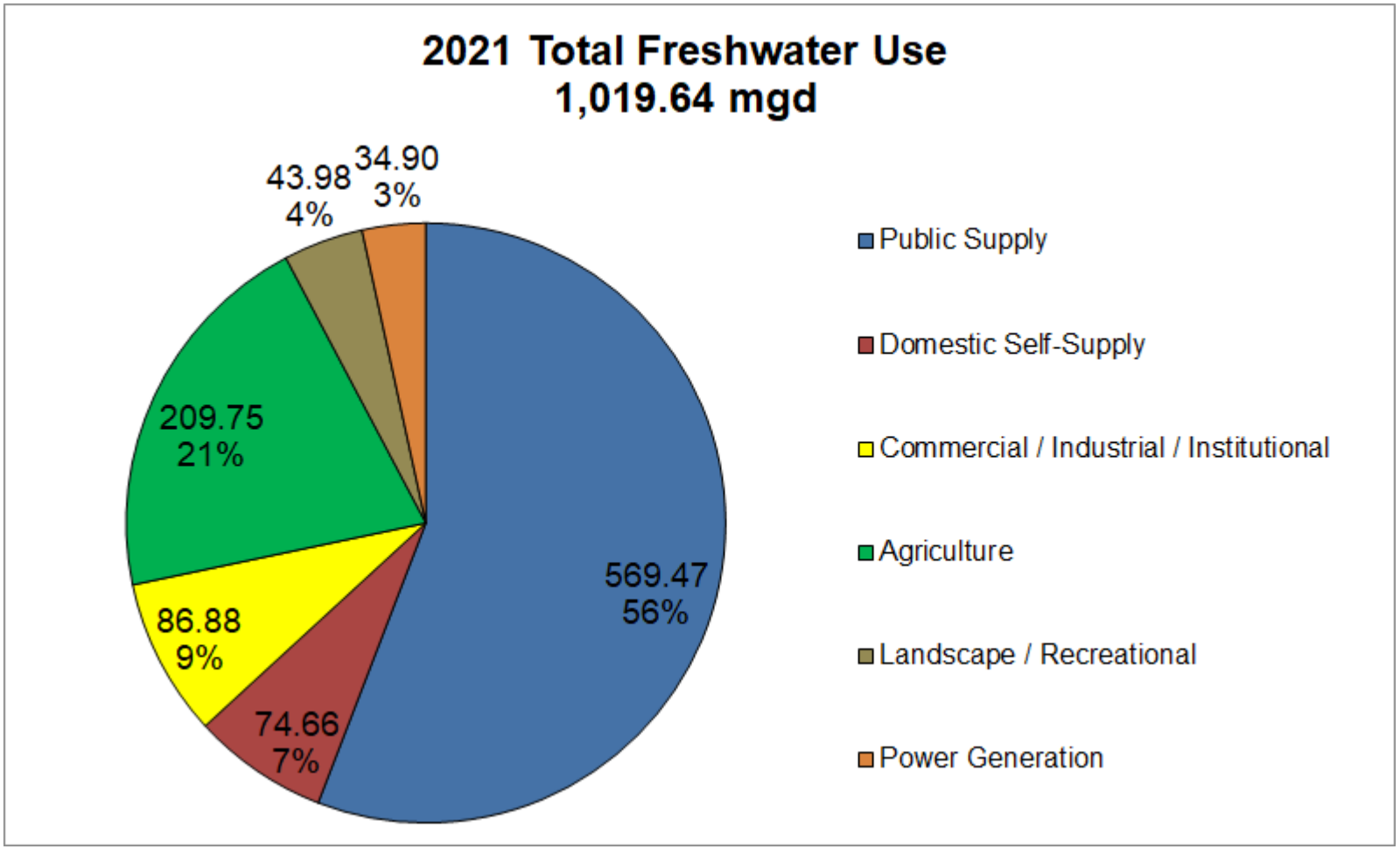

Figure 2. Total freshwater use (mgd), 2021

Note: Water use is in million gallons per day (mgd).
Amounts are based on best available data as of May 5, 2022.
Source of domestic self-supply is assumed to be groundwater.

Table 4. Population by county, 2021

County	SJRWMD Population	Public Supply Population	Domestic Self-Supply and Small Public Supply Systems Population
Alachua*	226,505	211,441	15,064
Baker*	35,277	9,081	26,196
Bradford*	5,681	932	4,749
Brevard	635,821	589,139	46,682
Clay	221,436	141,465	79,971
Duval	1,016,809	838,390	178,419
Flagler	119,662	112,420	7,242
Indian River	176,071	169,465	6,606
Lake*	405,376	336,239	69,137
Marion*	293,798	152,155	141,643
Nassau	98,136	62,560	35,576
Okeechobee*	1,611	0	1,611
Orange*	1,131,907	1,085,704	46,203
Osceola*	1,309	0	1,309
Putnam	73,950	21,415	52,535
St. Johns	285,533	166,589	118,944
Seminole	505,145	470,882	34,263
Volusia	641,528	571,441	70,087
Total	**5,875,555**	**4,939,318**	**936,237**

Note: 2021 county population is derived from BEBR, Florida Estimates of Population (BEBR 2021)
Total population for the state of Florida in 2021 = 21,898,945
Percent of total state of Florida population that lives within SJRWMD = 27%
Percent of SJRWMD population served by public supply = 84%
Orange County (Orange County Utilities / Orlando Utilities Commission) totals only include the population served in SJRWMD.
*County population only represents the population in SJRWMD.

Table 5. Gross and residential public supply per capita water use in gallons per day, 2021

County	PS Gross Per Capita (gpcd)	PS Residential Per Capita (gpcd)
Alachua	105	60
Baker	102	102
Bradford	98	71
Brevard	90	57
Clay	98	71
Duval	137	90
Flagler	98	54
Indian River	118	44
Lake	138	102
Marion	125	60
Nassau	125	112
Okeechobee	N/A	82
Orange	117	103
Osceola	N/A	82
Putnam	116	59
St. Johns	119	93
Seminole	123	82
Volusia	93	68
Total	**115**	**82**

Note: As of December 2021, there were no significant permitted public supply uses in SJRWMD's portion of Okeechobee and Osceola counties. The population residing therein rely on domestic wells for their potable needs.

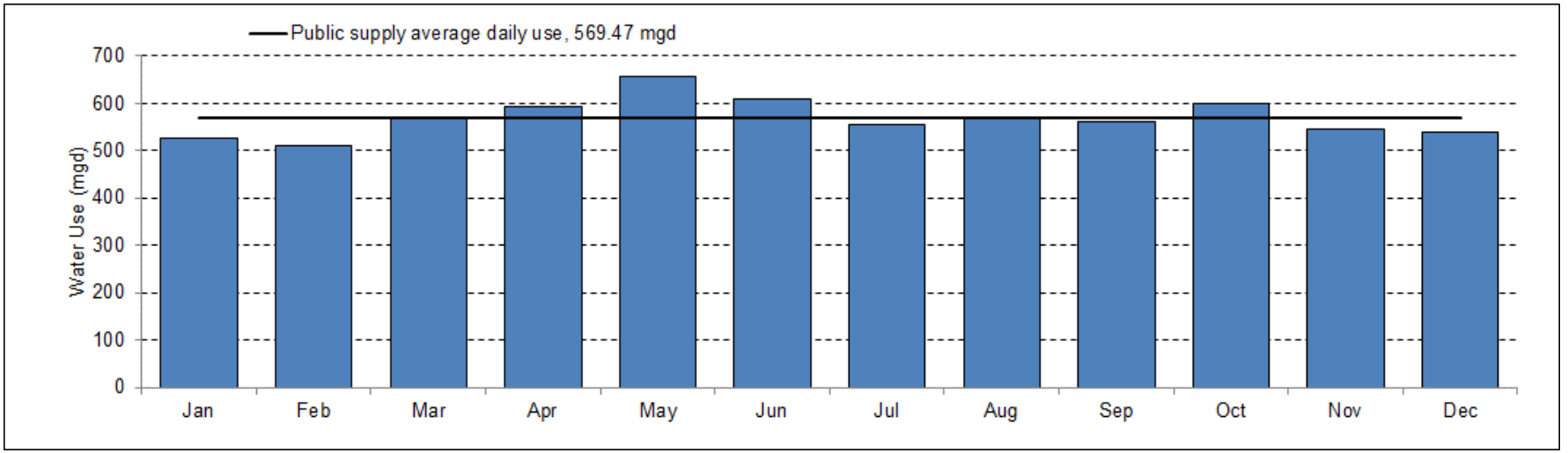

Figure 3. Average daily public supply water use (mgd) by month, 2021

Note: Water use is in million gallons per day (mgd).
Amounts are based on best available data as of May 5, 2022.

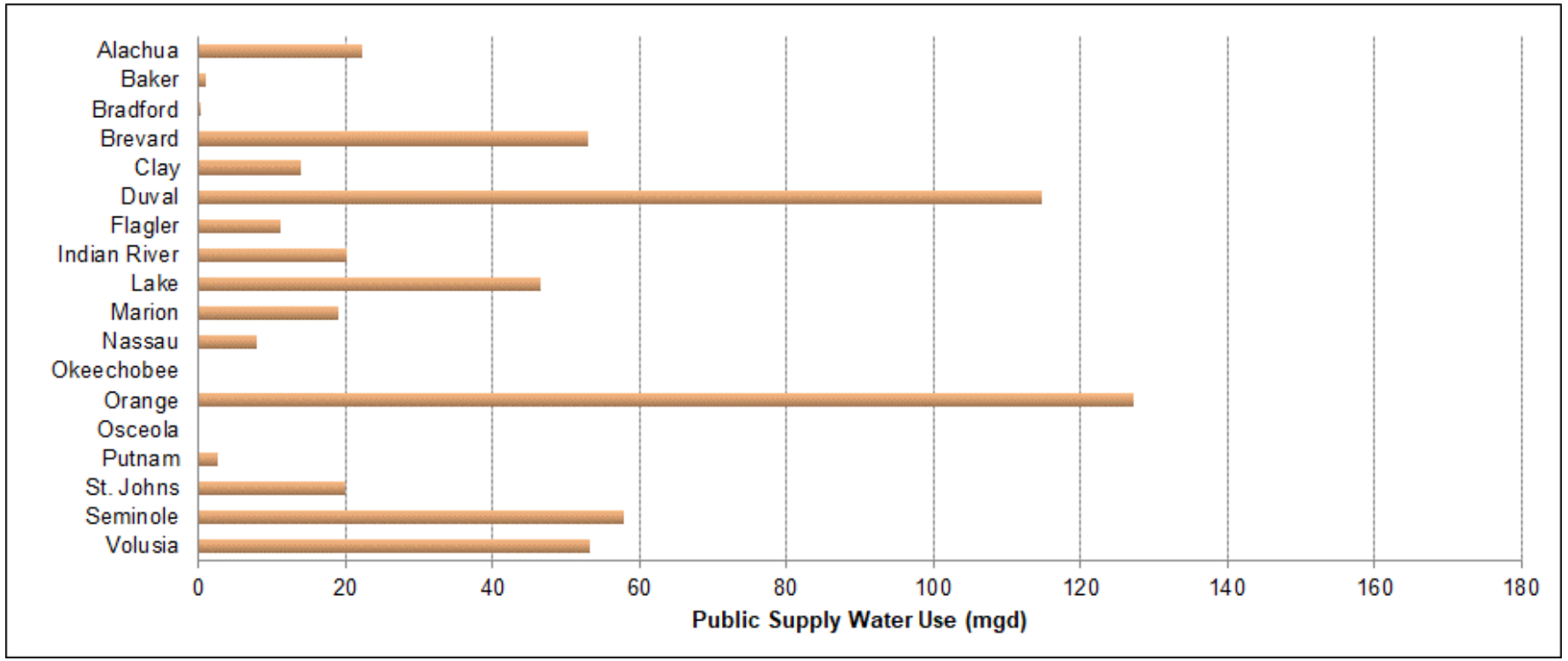

Figure 4. Water use (mgd) for public supply in SJRWMD, 2021

Note: Water use is in million gallons per day (mgd).
Amounts are based on best available data as of May 5, 2022.
Total public supply water use in SJRWMD for 2021 was 569.47 mgd.
Orange County (Orange County Utilities / Orlando Utilities Commission) totals only include the water consumed in SJRWMD.

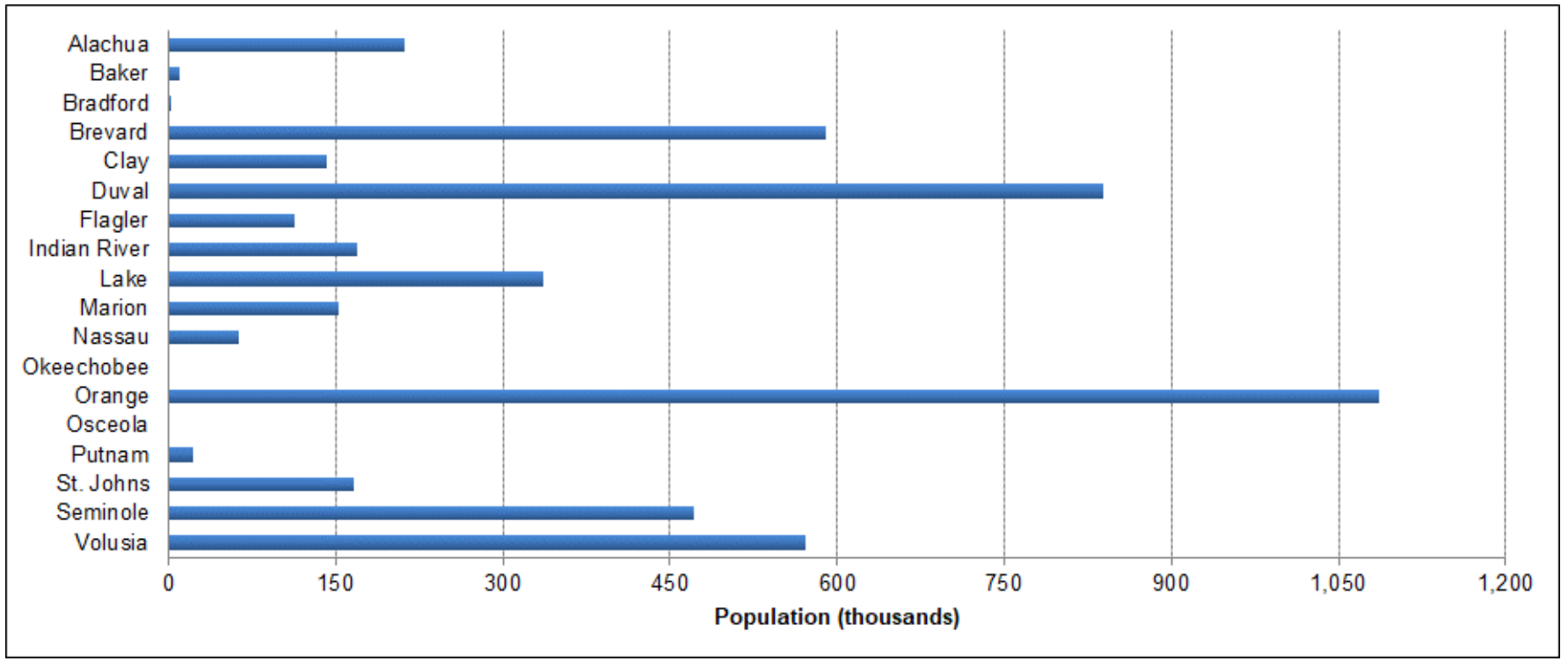

Figure 5. Population served by public supply in SJRWMD, 2021

Note: Population estimates are based on best available data as of May 5, 2022.
Total public supply population in SJRWMD for 2021 was 4,939,318.
Orange County (Orange County Utilities / Orlando Utilities Commission) totals only include the population served in SJRWMD.

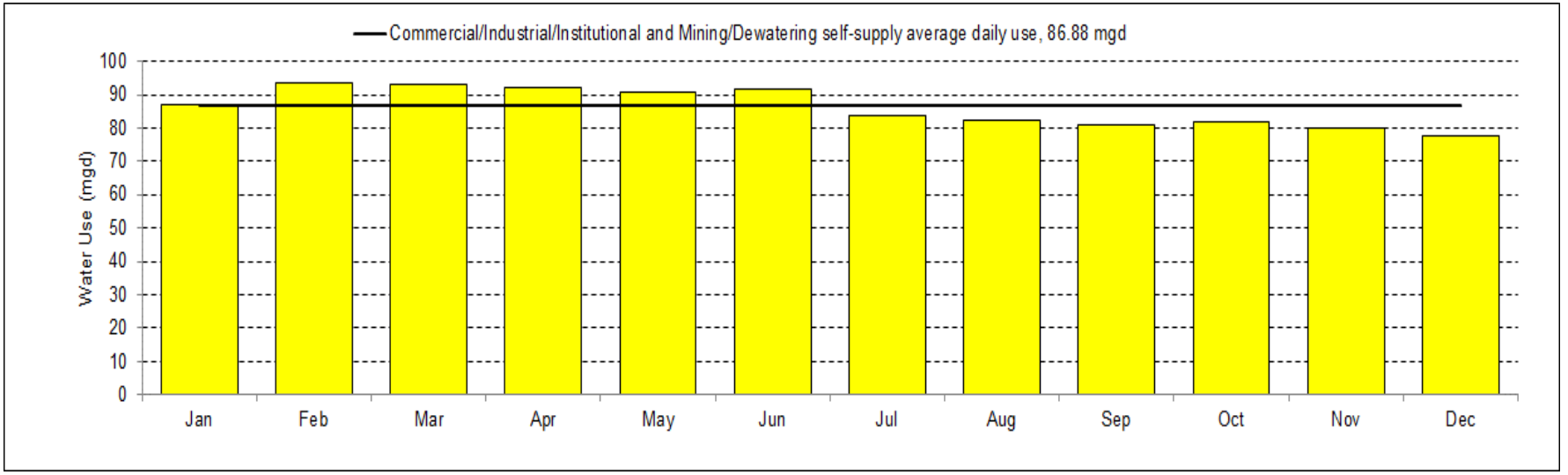

Figure 6. Average daily commercial/industrial/institutional and mining/dewatering self-supply freshwater use (mgd) by month, 2021

Note: Water use is in million gallons per day (mgd).
Amounts are based on best available data as of May 5, 2022.

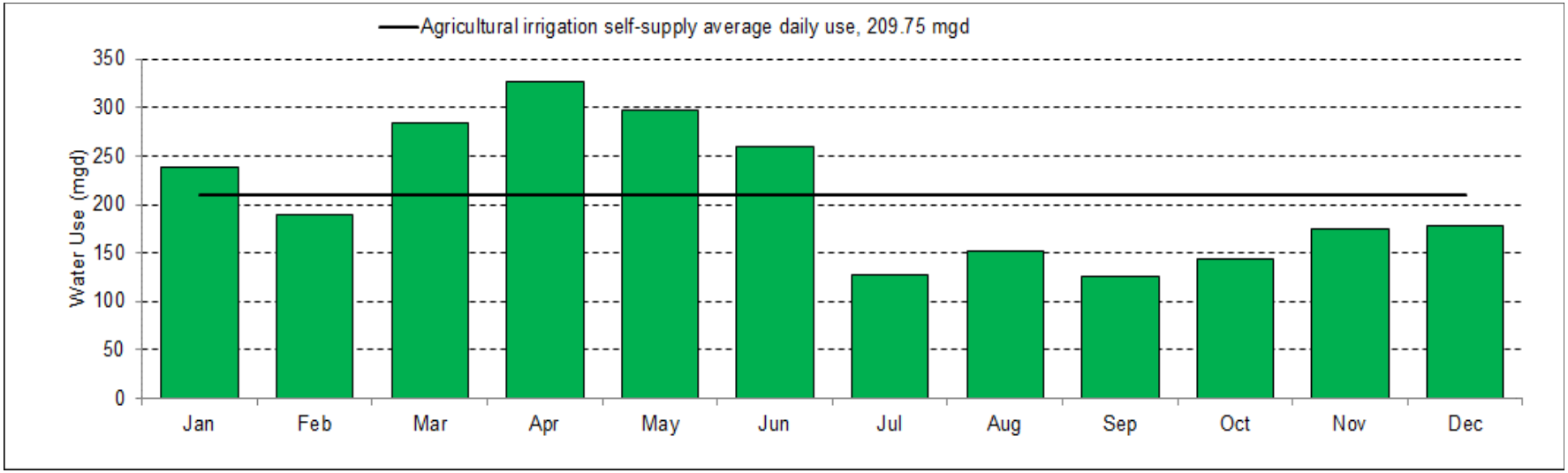

Figure 7. Average daily agricultural self-supply freshwater use (mgd) by month, 2021

Note: Water use is in million gallons per day (mgd).
Amounts are based on best available data as of May 5, 2022.

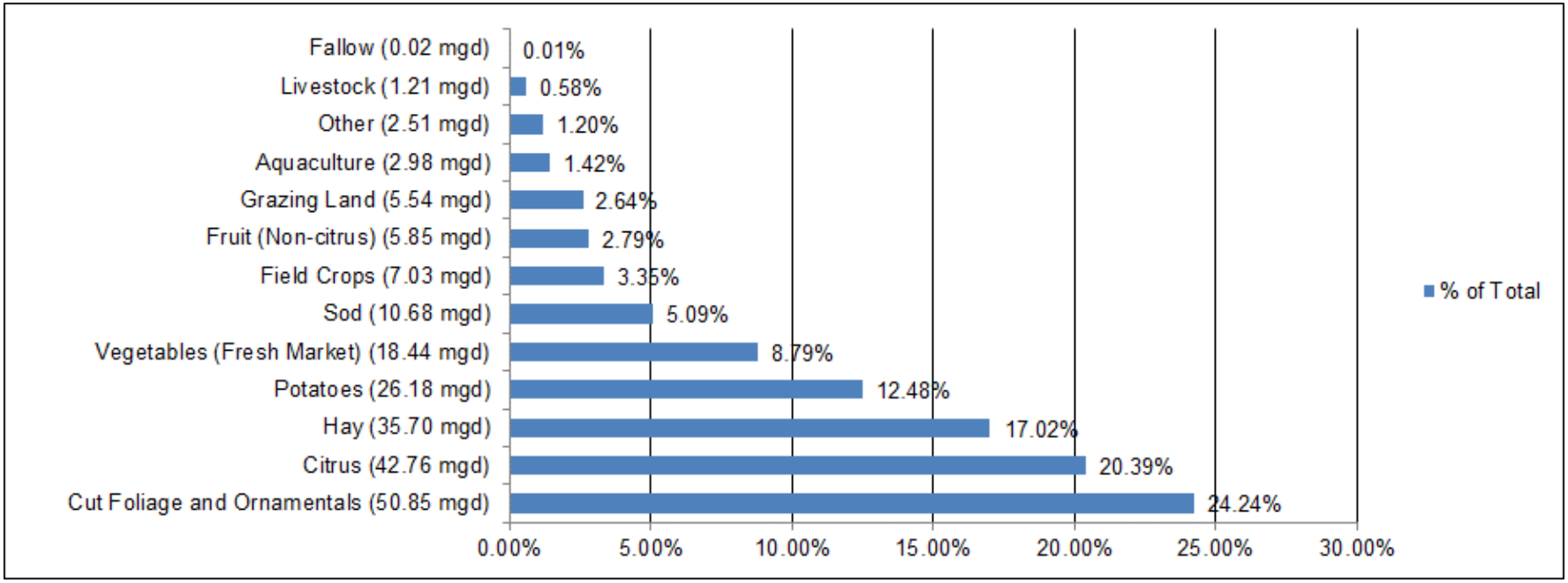

Figure 8. Agricultural freshwater use by crop, 2021

Note: Water use is in million gallons per day (mgd).
Amounts are based on best available data as of May 5, 2022.
Calculation anomalies due to rounding account for nominal discrepancies.
Total agricultural freshwater use in SJRWMD for 2021 was 209.75 mgd.

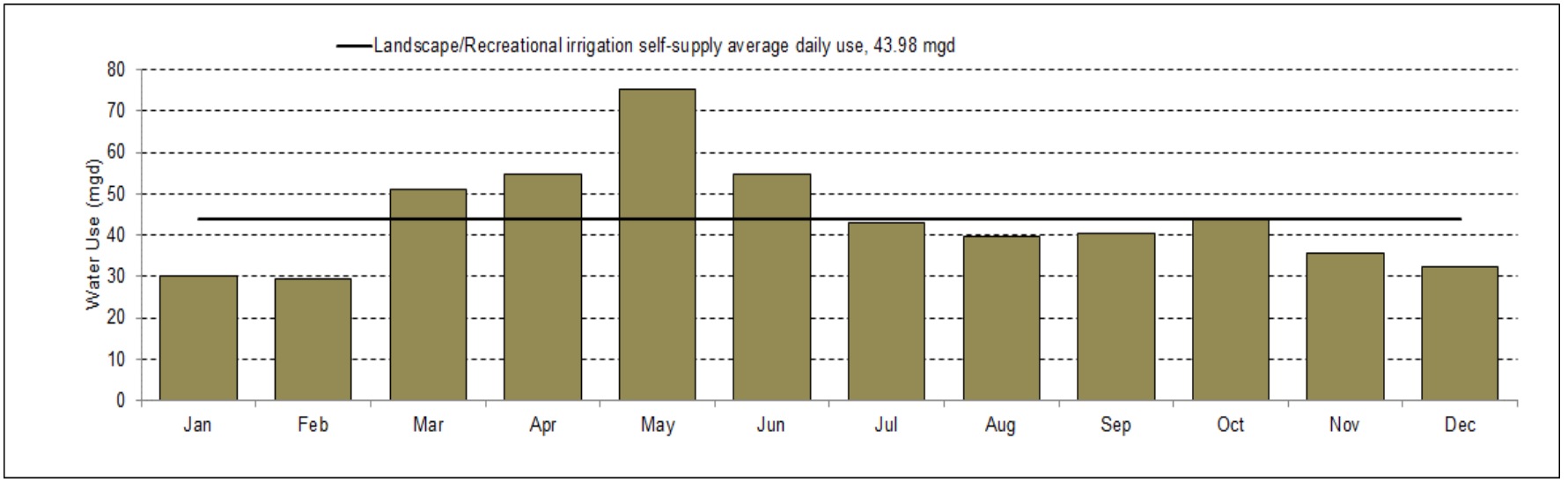

Figure 9. Average daily landscape/recreational irrigation self-supply freshwater use by month, 2021

Note: Water use is in million gallons per day (mgd).
Amounts are based on best available data as of May 5, 2022.

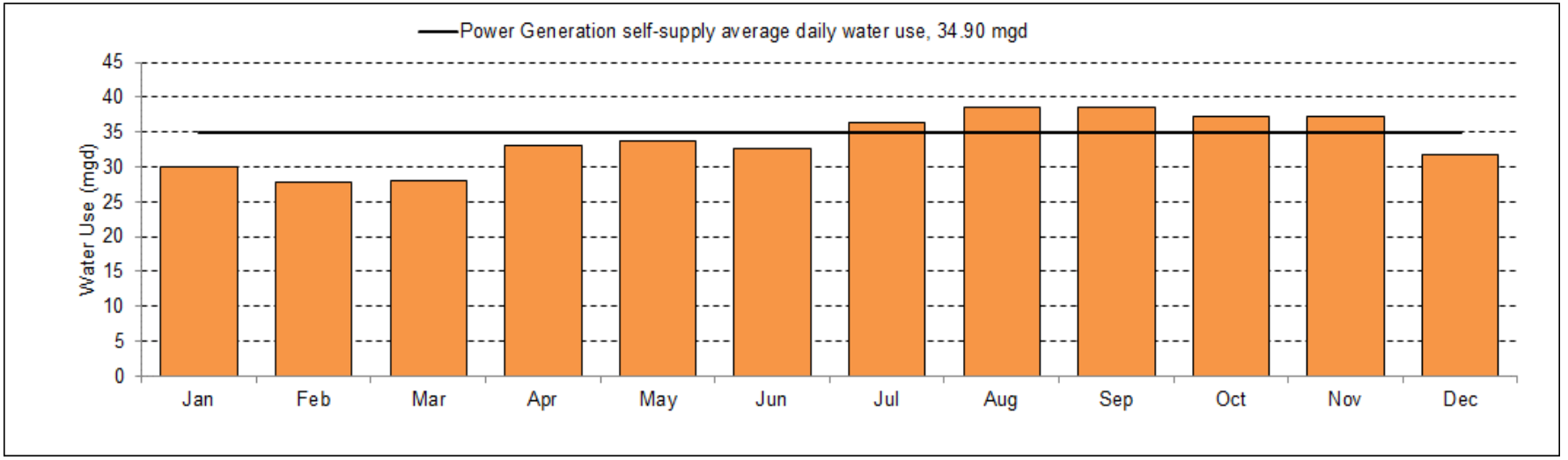

Figure 10. Average daily power generation self-supply freshwater use by month, 2021

Note: Water use is in million gallons per day (mgd).
Amounts of consumptive water use are based on best available data as of May 5, 2022.

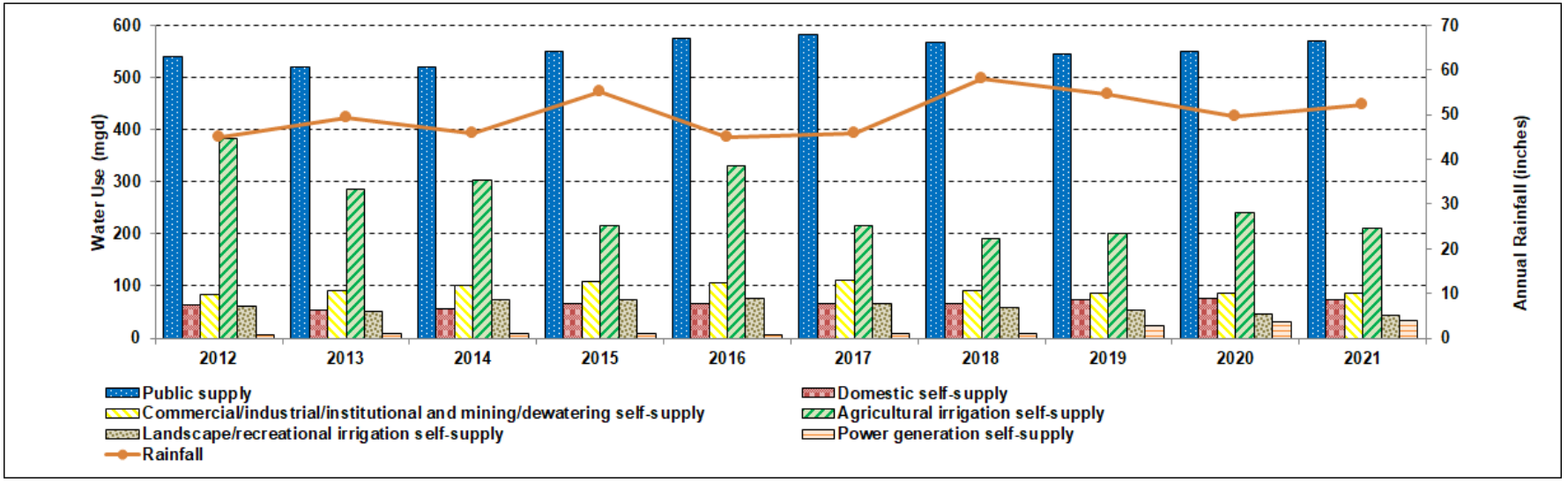

Figure 11. Annual rainfall and freshwater use by category, 2012–2021

Note: Water use is in million gallons per day (mgd); rainfall is measured in inches.
Amounts are based on best available data as of May 5, 2022.
Source of domestic self-supply is assumed to be groundwater.

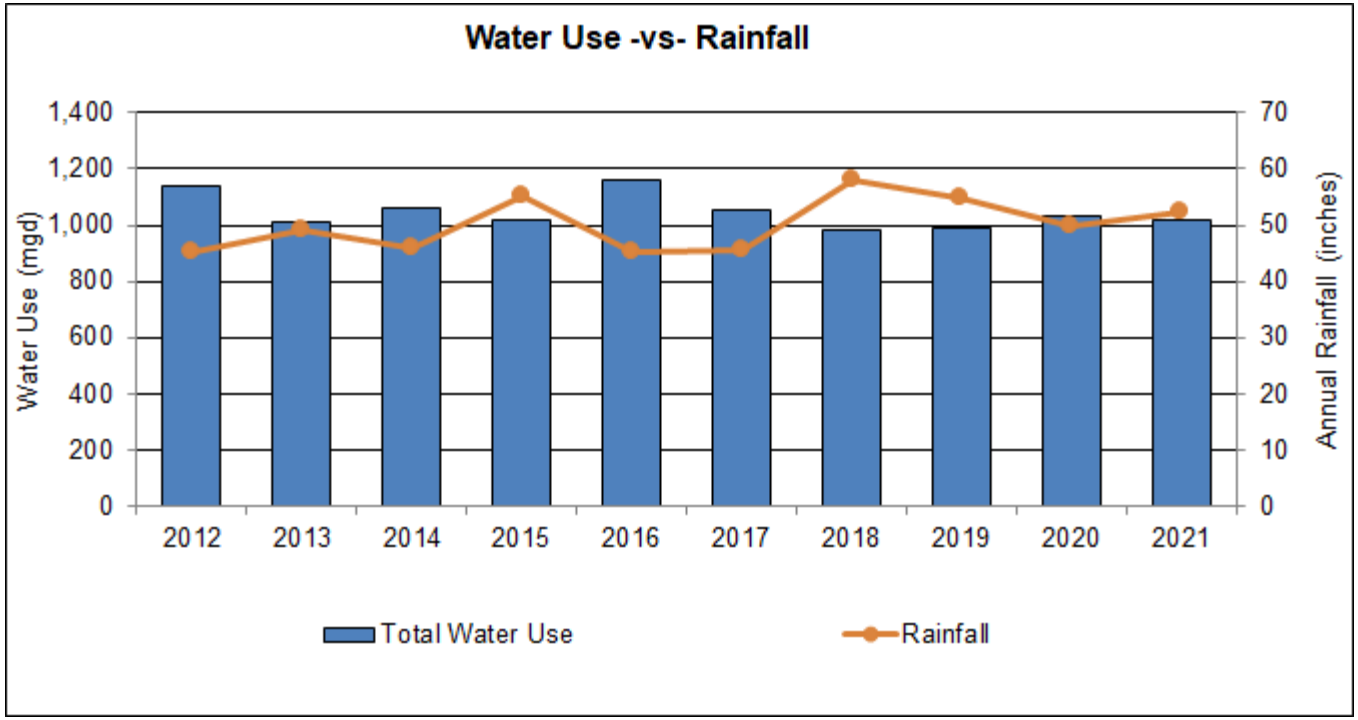

Figure 12. Annual rainfall and total freshwater use, 2012–2021

Note: Water use is in million gallons per day (mgd); rainfall is measured in inches.
Amounts are based on best available data as of May 5, 2022.
Source of domestic self-supply is assumed to be groundwater.

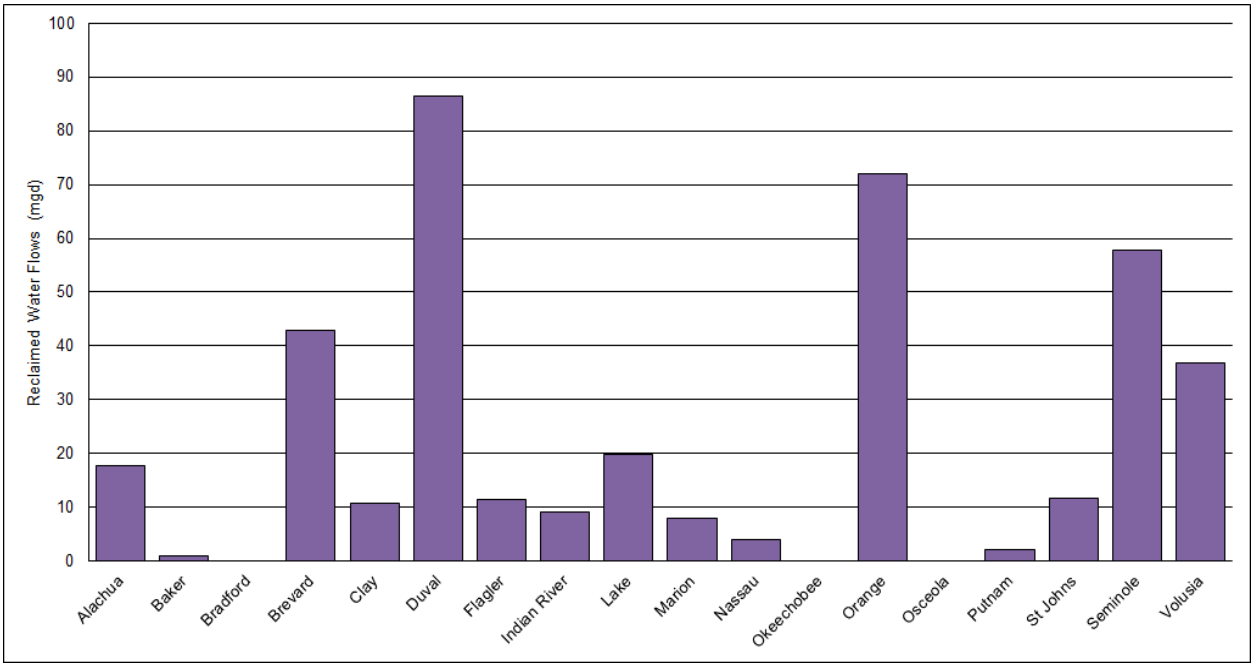

Figure 13. Reclaimed water flows, 2021

Note: Reclaimed water flows in million gallons per day (mgd).
Data obtained from the 2021 DEP Reuse Inventory.

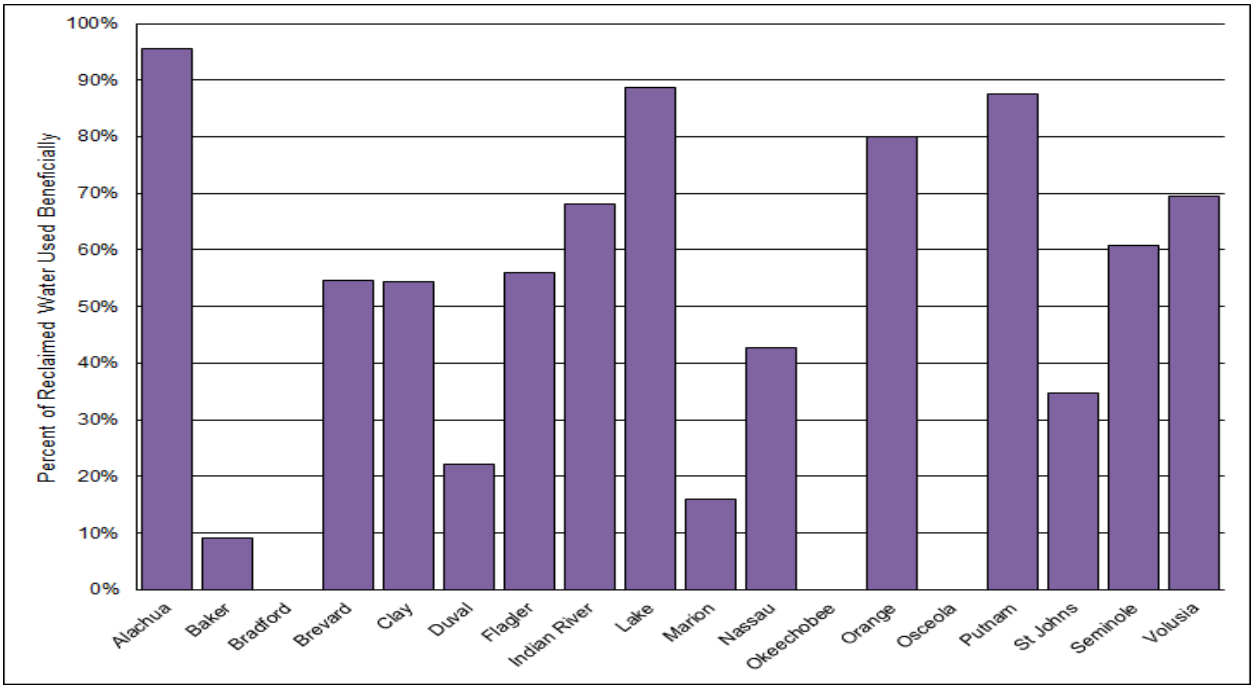

Figure 14. Percent of wastewater flows reused beneficially, 2021

Note: Data obtained from the 2021 DEP Reuse Inventory.

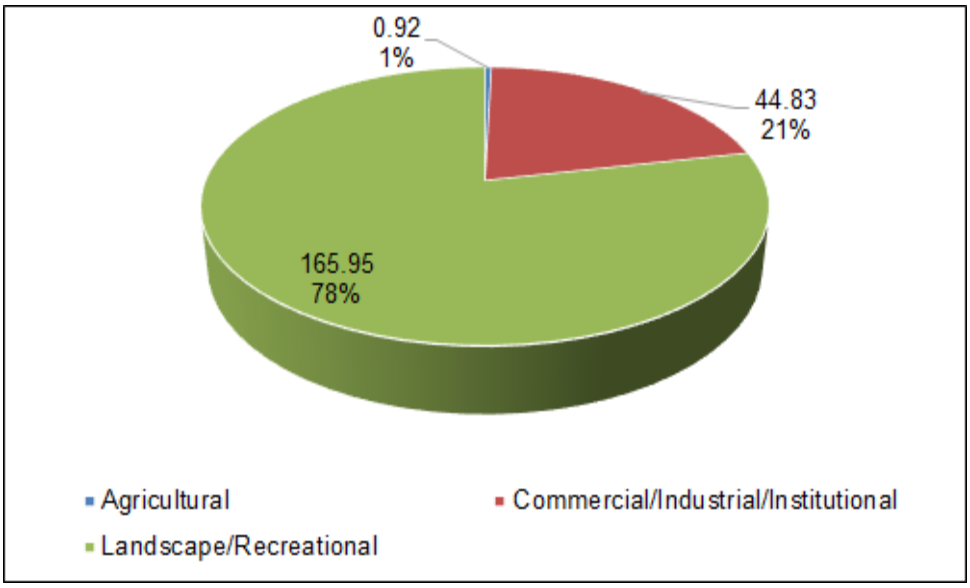

Figure 15. Beneficially used reclaimed water by use type, 2021

Note: Water use is in million gallons per day (mgd).
Data obtained from the 2021 DEP Reuse Inventory.
Reclaimed water used beneficially for recharge in Alachua County (10.83 mgd) is not shown in this pie chart.