

SUWANNEE RIVER WATER MANAGEMENT DISTRICT

# 2021 ANNUAL WATER USE REPORT

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# 2021 ANNUAL GROUNDWATER USE SUMMARY

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SUWANNEE RIVER WATER MANAGEMENT DISTRICT

## Introduction

The Suwannee River Water Management District (District) is one of five regional water management districts in Florida. The District encompasses all or part of 15 counties in north-central Florida and includes 7,640 square miles with 13 river basins. The District manages water and related natural resources by providing water quality and water use monitoring, planning, research, regulation, land acquisition and management, and flood protection.

In support of water supply planning, the District incorporates data from water use monitoring programs and produces estimates of water use across six categories. The District has compiled the 2021 Annual Groundwater Use Report to provide Districtwide estimates of groundwater use. This report includes estimates of rainfall as compared to groundwater withdrawals (Table 1), total groundwater withdrawals broken down by water use type and county (Table 2), as well as estimates of historical groundwater use over time.

## Data Sources/Methodology

Historical groundwater use data from 1965 through 2005 were obtained from the United States Geological Survey (Historical Groundwater Use Data 1965-2005). Water use estimates for 2010 came from estimates produced in support of the North Florida Regional Water Supply Plan (2015-2035) and the Water Supply Assessment (2015-2035). Estimates of 2015-2020 groundwater use are published in the Annual Groundwater Use Report which can be found on the District's website (Annual Groundwater Use Report, SRWMD 2015-2020). Estimates of 2021 groundwater use and population were prepared as described below and reflect the best available information presented at the time the report was produced for the District.

## Population

The District used population estimates published by the Bureau of Economic and Business Research (BEBR) to estimate county-wide population. To estimate water use and per person water usage rates, the District estimated populations served by a public water supplier, via self-supply (domestic well), and from an institutional supplier (e.g. prisoners). The population served by a public water supplier was estimated using the number of active residential connections and average parcel-level population within the service area boundaries. The number of residential connections was either reported by the public supply utility or estimated based on the best available information provided by the utility and the city population growth reported by BEBR between 2018 and 2021. Parcel-level population data was derived from small-area population projections developed by BEBR and GIS Associates. The institutional population was also estimated based on data reported by BEBR. Once a population served by public supply was estimated, it was subtracted from the county-wide BEBR population estimate along with the institutional population. The remaining population was considered the non-served population and was used to estimate the domestic self-supply water use. Parcel level data from the small-area population models was also used to estimate the percent of population residing in the District for counties shared with adjacent water management districts. This percentage was estimated using the percent of residential parcels located in the District's portion. These shared counties were Alachua, Baker, Bradford, Jefferson, and Levy counties. Table 3 shows the population breakout by County for 2021 and Table 4 displays the 2021 population and gross per capita rates for public supply utilities.

## Water Use Categories

Water use is summarized in six different categories: public supply, domestic self-supply and small public supply, agriculture, commercial/industrial/institutional and mining/dewatering, landscape/recreation, and thermoelectric power generation. Below is a description of each water use category, along with the source and/or methodology of the data used in this report. Figure 1 displays the groundwater use and rainfall through time and Figure 2 shows the estimated groundwater use in 2021 by water use category. Figure 9 displays the groundwater use split by County for 2021.

### Public Supply (PS)

The PS category includes all large municipal, public, and private systems that supply potable water to the public from a central water supply system for human consumption and other uses that have average annual permitted quantities of 0.1 million gallons per day (mgd) or more.

#### Data Sources/Methodology

Water use data in this category were obtained from EN-50 forms, which are reported directly to the District or Monthly Operating Reports (MORs), which are submitted to the Florida Department of Environmental Protection (DEP) by system operators at the utility. The MOR reports the volume of treated groundwater, which represents a reasonable approximation of total groundwater pumped for facilities in the District. Figure 3 displays the large public supply groundwater use through time.

### Domestic Self-Supply and Small Public Supply (DSS)

The DSS category includes domestic water uses generally associated with residential dwellings that are not served by a central public supply utility and water usage from small public supply systems that have average annual permitted quantities of less than 0.1 mgd in 2021.

#### Data Sources/Methodology

Water use data from small public suppliers were obtained from EN-50 forms, which are reported directly to the District or MORs, which are submitted to DEP by system operators at the utility. If no MORs were available, water use was set to the permitted allocation. Domestic water use was compiled using non-served population estimates for the county and county-level estimated residential per capita water use rates which were calculated from data provided by public utilities for each county. Figure 4 displays the domestic self-supply and small public supply groundwater use through time.

### Agriculture (AG)

The agricultural water use category includes the irrigation of crops, water used to raise livestock, and other miscellaneous water uses associated with agricultural production, such as aquaculture. These users typically obtain water from a dedicated, on-site well or surface water withdrawal and are not connected to a central utility. Irrigated acreage and projected water demands were determined for a variety of crop rotations as well as livestock water needs.

#### Data Sources/Methodology

The Balmoral Group (Balmoral) is contracted by the Florida Department of Agriculture and Consumer Services (FDACS) to develop the Florida Statewide Agricultural Irrigation Demand (FSAID) database. This FSAID database incorporates statewide agricultural monitoring from all five water management districts and produces base year agricultural water use estimates and

agricultural water demand projections for all irrigated agricultural parcels in the state. These estimates reflect average climate conditions. Future demand projections are updated on an annual basis to reflect producers' response to potential shifts in future market conditions such as changes in projected future irrigated acreages and/or mixture of crop types. Estimated average year water demand for 2021 base year of FSAID 10 was used for irrigation, livestock, and aquaculture (Florida Statewide Agricultural Irrigation Demand Estimated Agricultural Water Demand, 2021-2045). Groundwater is the primary water supply for agriculture in the District, therefore over 99 percent of the agricultural demand estimate was assumed to come from groundwater (Technical Memorandum, 2018). Figure 5 displays the agricultural irrigation, livestock, and aquaculture groundwater use through time.

## Commercial/Industrial/Institutional and Mining/Dewatering (CII/MD)

The Commercial, Industrial, and Institutional (CII) category represents water use associated with the production of goods or provisions of services by CII establishments, as well as water used at facilities such as hospitals, churches, prisons, schools, etc. The CII category also includes the use of water associated with mining and long-term dewatering operations (MD). This category does not include entities whose water needs are met by PS systems.

### Data Sources/Methodology

Large CII/MD users with a permitted groundwater withdrawal greater than or equal to 0.1 mgd or that have a well greater than eight inches in diameter, are required to report their water use to the District via an EN-50 form or another approved method. Water use for any user that is below the threshold for reporting is set to the allocation defined in the permit. MD permits that operate under a closed loop cycle are estimated at 30% of their allocation. This is because water that is not lost to evaporation is recycled. Figure 6 displays the commercial, industrial, institutional, and mining/dewatering groundwater use through time.

## Landscape/Recreation (LR)

The Landscape and Recreation (LR) category represents water use associated with the irrigation, maintenance, and operation of golf courses, cemeteries, parks, medians, attractions, and other large self-supplied green areas. This category does not include entities whose water needs are met by PS systems.

### Data Sources/Methodology

LR permits with drinking water wells were updated based on their MORs submitted to DEP by system operators. Large LR users that have a reporting requirement submit their water use to the District. Water use for any user that is below the threshold for reporting is set to the allocation defined in the permit. Figure 7 displays the landscape and recreation groundwater use through time.

## Thermoelectric Power Generation (PG)

The Thermoelectric Power Generation (PG) category represents the water use associated with power plant and power generation facilities. PG water use includes the consumptive use of water for steam generation, cooling, and replenishment of cooling reservoirs.

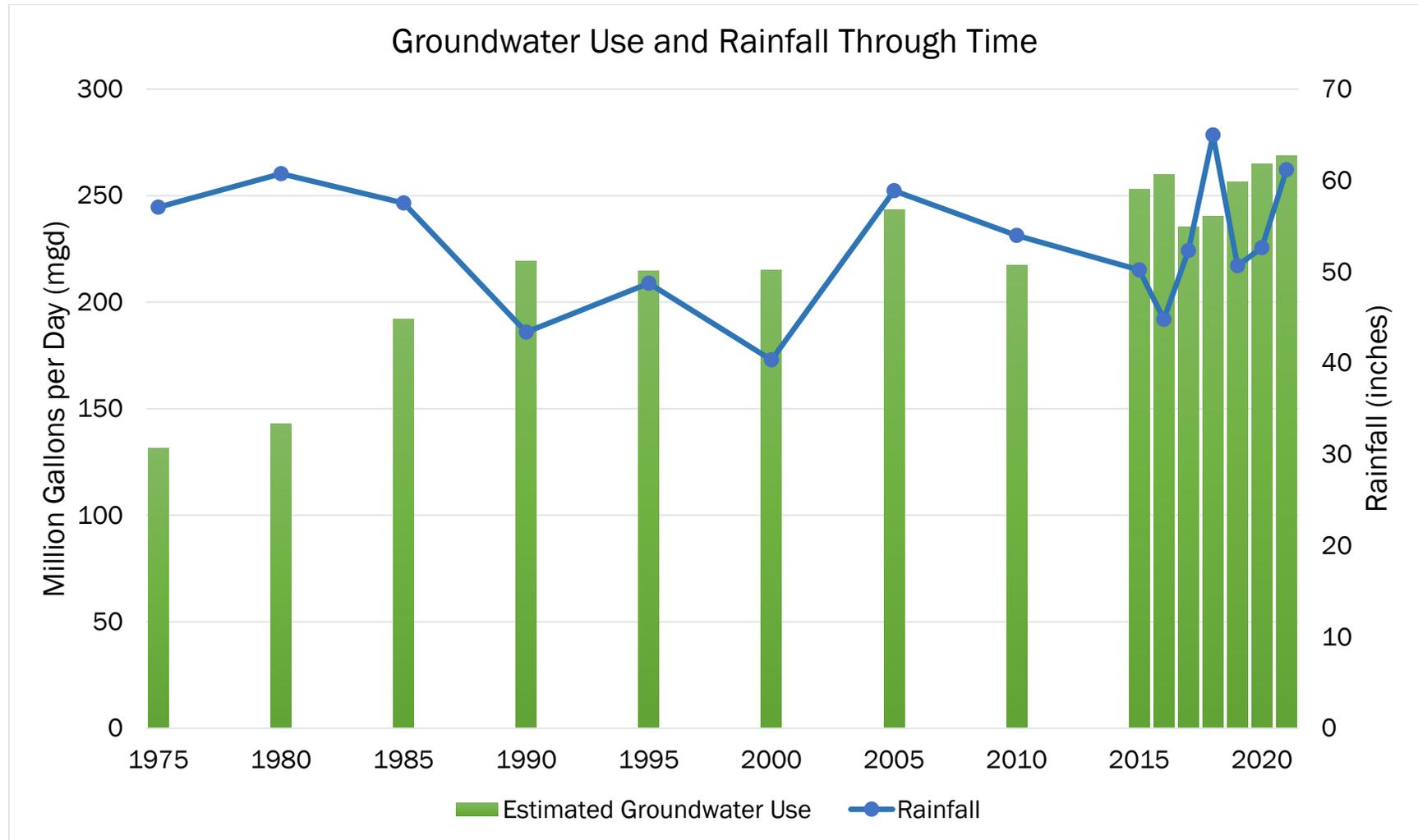
### Data Sources/Methodology

Water use data from power plant operations is reported to the District and included in this category. Figure 8 displays the thermoelectric power generation groundwater use through time.

## 2021 Rainfall

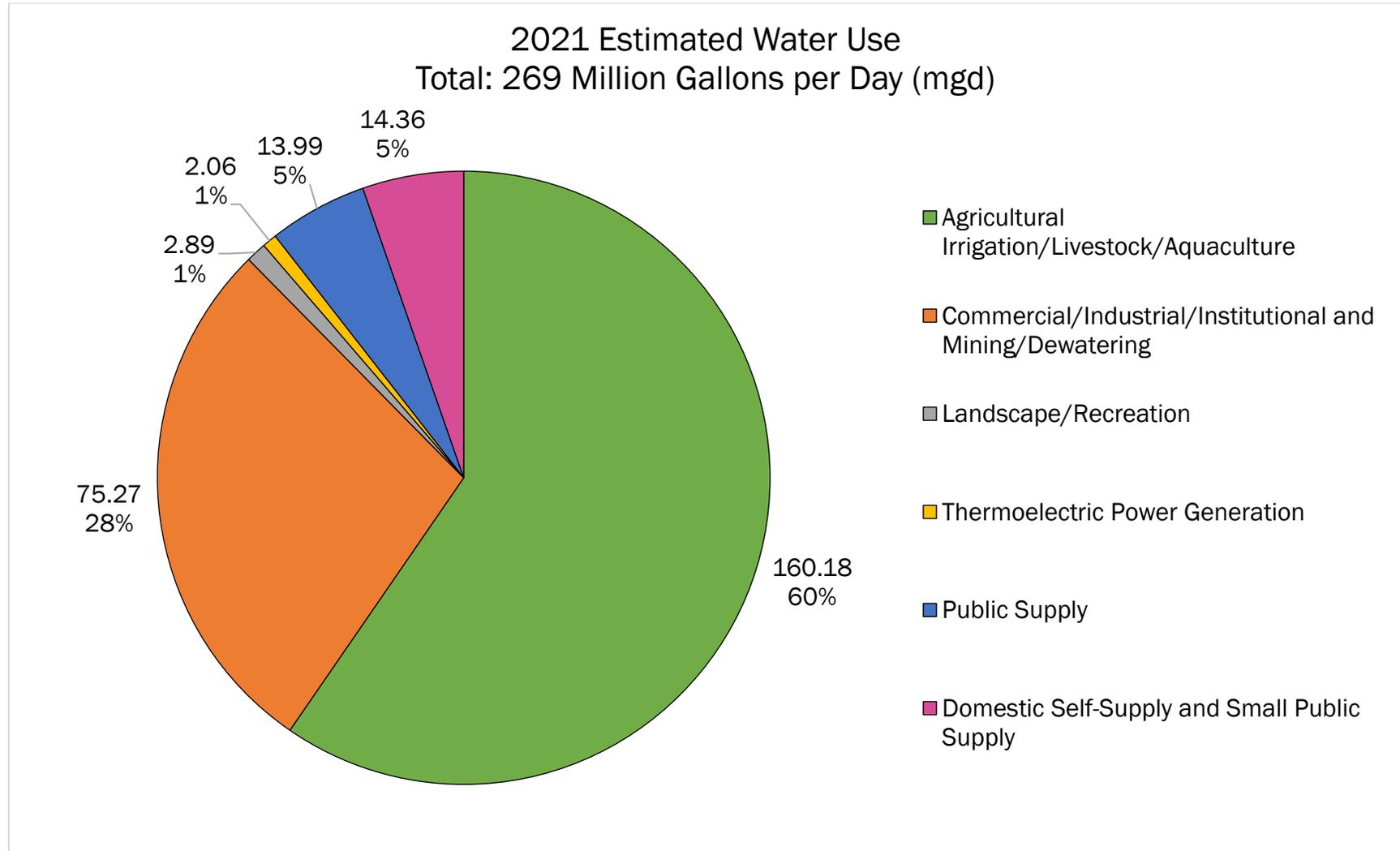
Figure 1: Groundwater Use and Rainfall Through Time

Total annual rainfall throughout the District was estimated to be about 61 inches in 2021. This is about 6.5 inches above the long term (1932-2020) District-wide average of 54.7 inches.



### 2021 Total Districtwide Groundwater Use

Figure 2: Estimated Groundwater Use in 2021 by Category

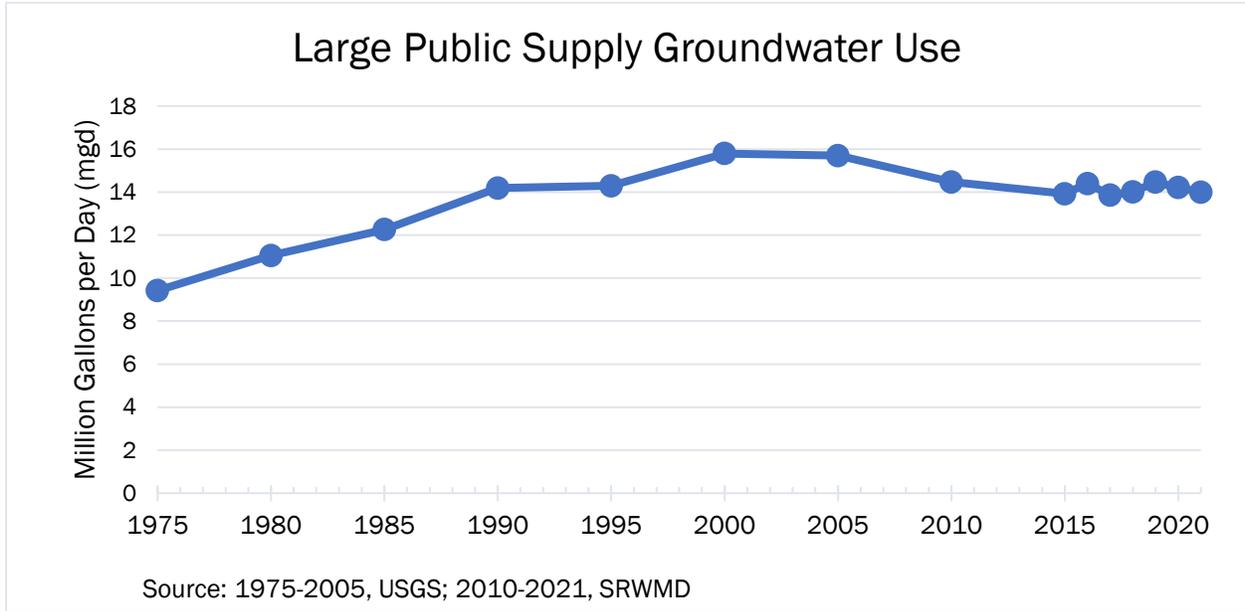


\*Putnam County projections are wholly incorporated and reported in SJRWMD.

## 2021 Public Supply

Figure 3: Large Public Supply Groundwater Use Through Time

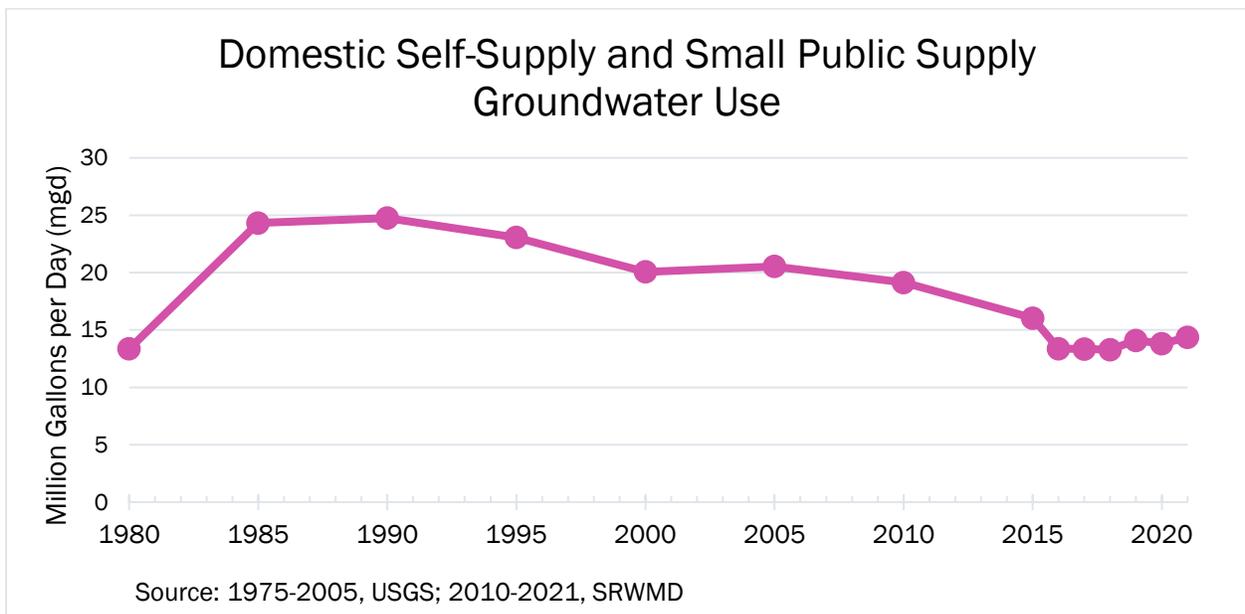
Between 2020 and 2021, public supply groundwater use had a decrease of about 0.22 mgd. There has been very minimal fluctuation in PS groundwater use over the past five years.



## 2021 Domestic Self-Supply and Small Public Supply (DSS)

Figure 4: Domestic Self-Supply and Small Public Supply Groundwater Use Through Time

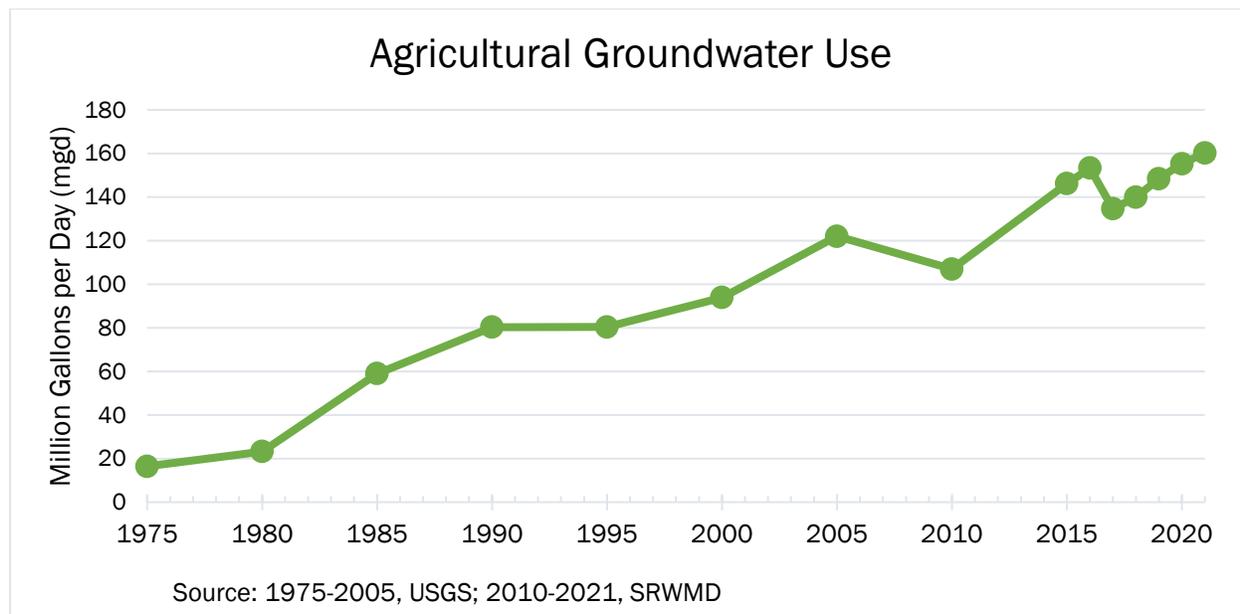
Domestic self-supply and small public supply water use is estimated to be about 14.4 mgd in 2021, which is about 0.6 mgd higher than in 2020.



## 2021 Agricultural Irrigation/Livestock/Aquaculture Use (AG)

Figure 5: Agricultural Irrigation/Livestock/Aquaculture Groundwater Use Through Time

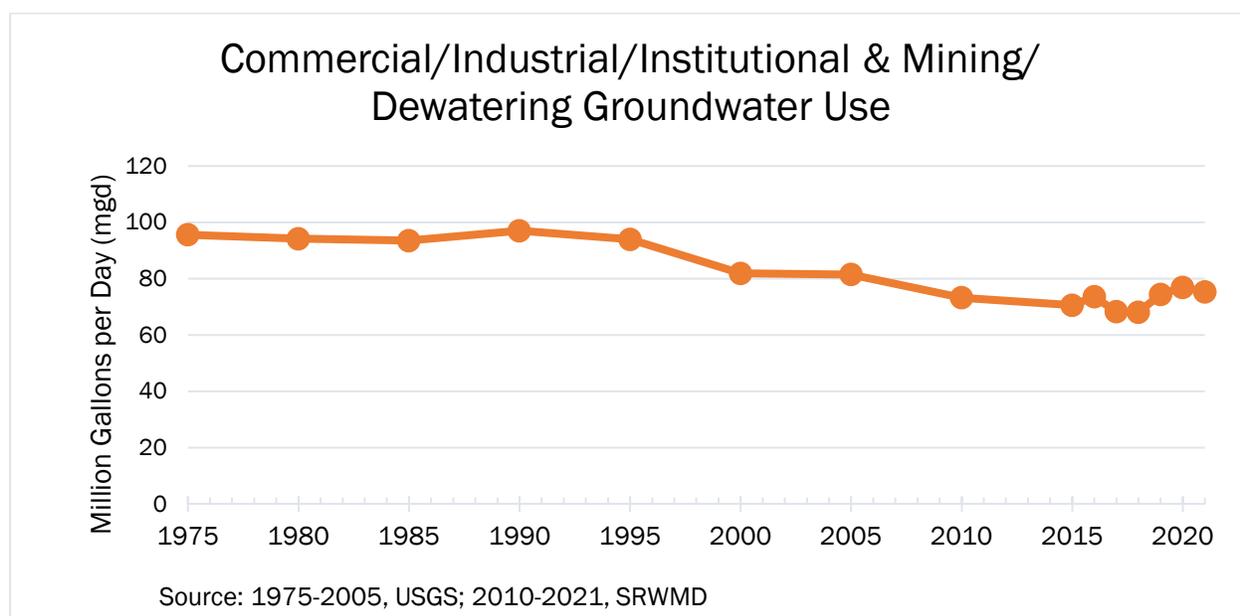
Agricultural irrigation, livestock, and aquaculture use accounts for majority of groundwater use throughout the District. From 2020 to 2021, use in this category increased by about 5 mgd. Estimates continue to fluctuate due to the assumptions of irrigation associated with the variety of crops grown.



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

Figure 6: Commercial/Industrial/Institutional & Mining/Dewatering Groundwater Use Through Time

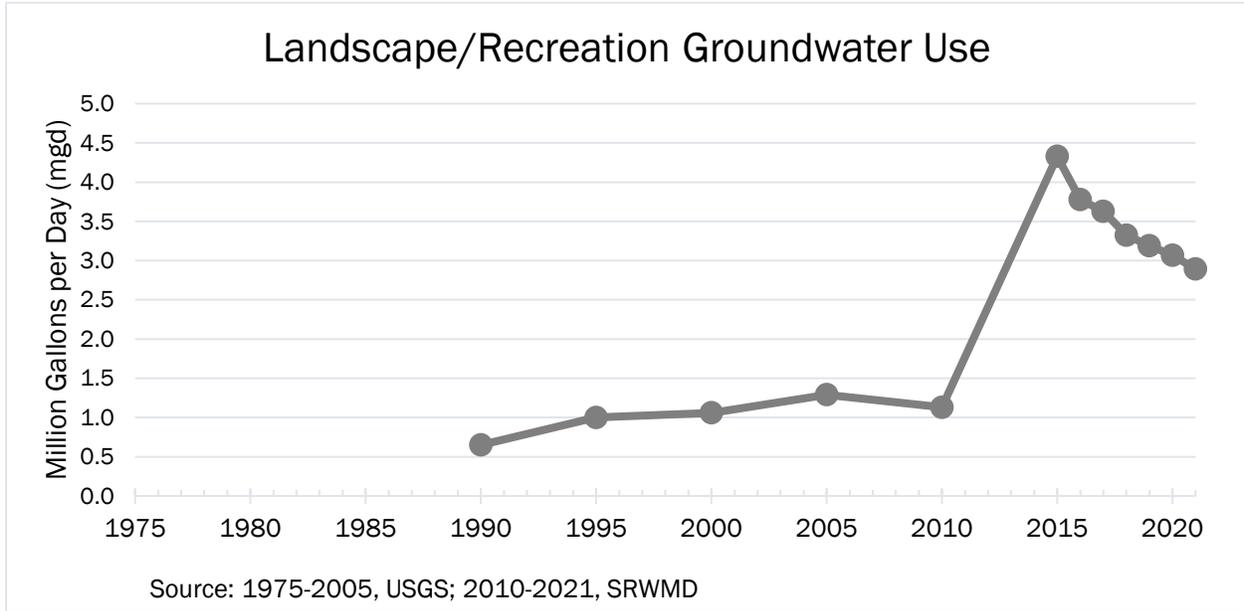
Groundwater use in the CII/MD category is the second largest use throughout the District. CII/MD groundwater use had an decrease of about 1.6 mgd from 2020 to 2021.



### 2021 Landscape/Recreation (LR)

Figure 7: Landscape/Recreation Groundwater Use Through Time

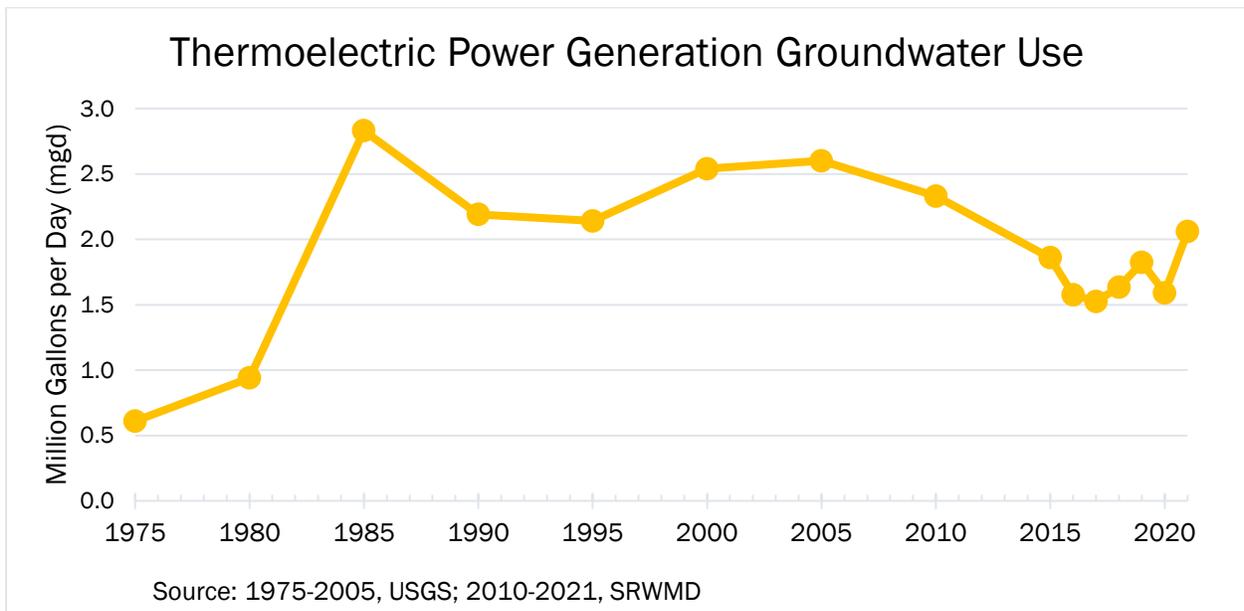
LR permits with water use below the reporting threshold were estimated at allocation for 2015-2021. There was a small decline of about 0.2 mgd from 2020 to 2021.



### 2021 Thermoelectric Power Generation Water Use (PG)

Figure 8: Thermoelectric Power Generation Groundwater Use Through Time

From 2020 to 2021, PG groundwater use increased by about 0.5 mgd.



## Total Water Use and Rainfall by County in 2021

Table 1: Total Water Use and Rainfall by County in 2021

County	2021 Water Use (mgd)	2021 Total Annual Rainfall (inches)
<b>Alachua</b> (SRWMD portion)	20.03	59.54
<b>Baker</b> (SRWMD portion)	0.34	58.53
<b>Bradford</b> (SRWMD portion)	4.81	60.82
<b>Columbia</b>	11.92	60.99
<b>Dixie</b>	8.49	69.23
<b>Gilchrist</b>	24.00	61.75
<b>Hamilton</b>	48.78	57.06
<b>Jefferson</b> (SRWMD portion)	3.40	53.16
<b>Lafayette</b>	13.93	67.61
<b>Levy</b> (SRWMD portion)	19.19	60.13
<b>Madison</b>	26.90	56.47
<b>Suwannee</b>	44.51	56.59
<b>Taylor</b>	39.93	63.93
<b>Union</b>	2.51	59.77
<b>District Total</b>	268.75	61.16

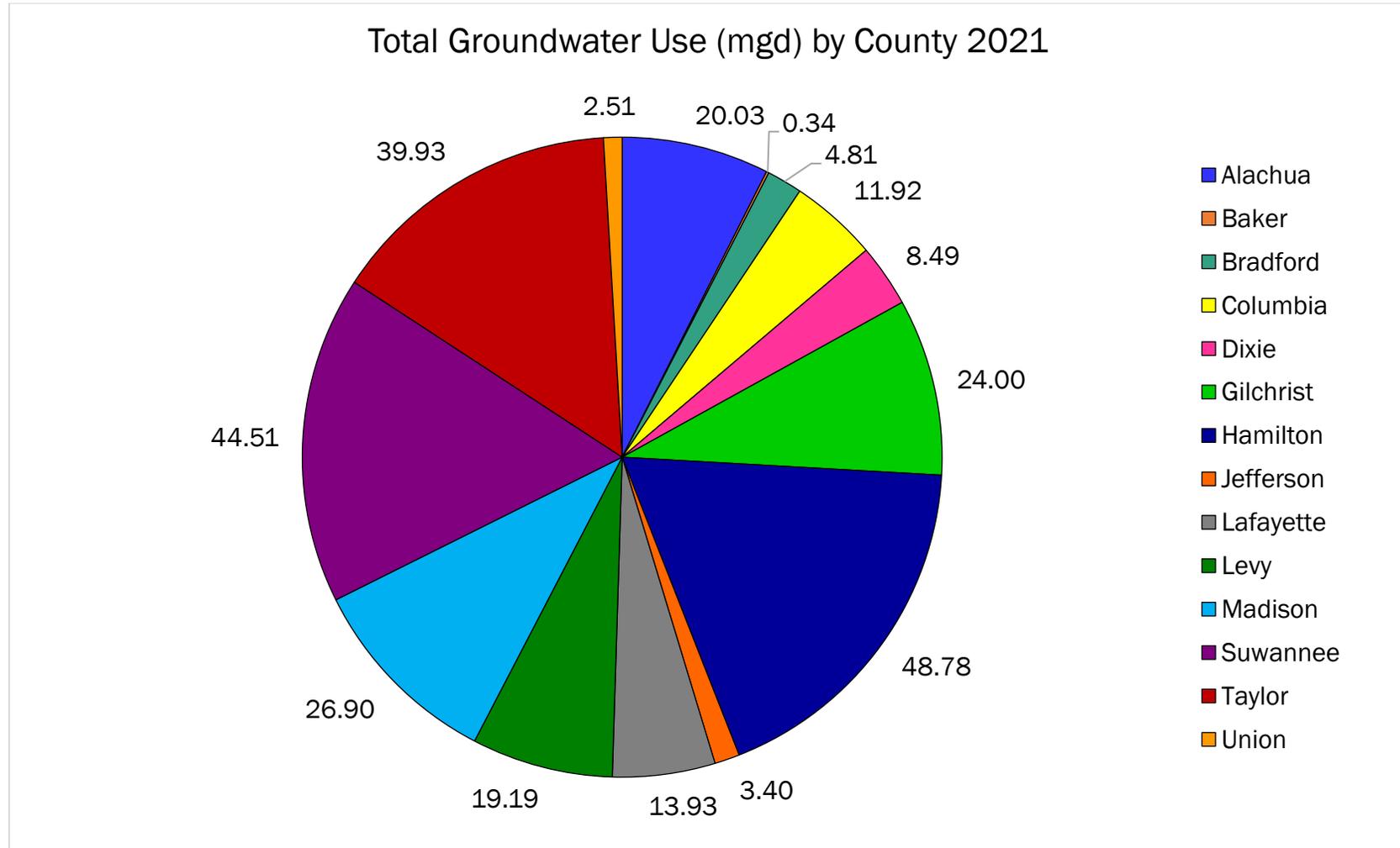
\*County rainfall estimates incorporate the total annual rainfall for whole counties.

\*\*The water use estimates for individual counties and total rainfall estimates include only the SRWMD portion of counties.

\*\*\*Putnam County projections are wholly incorporated and reported in SJRWMD.

### Groundwater Use by County

Figure 9: Groundwater Use Split by County



\*Putnam County projections are wholly incorporated and reported in SJRWMD.

### Total Groundwater Use by County and Category in 2021

Table 2: Total Groundwater Use (mgd) by County and Category in 2021

County	Planning Region	Agricultural Irrigation/Livestock/Aquaculture	Public Supply	Commercial/Industrial/Institutional and Mining/Dewatering	Thermoelectric Power Generation	Landscape/Recreation	Domestic Self-Supply and Small Public Supply	Total
<b>Alachua</b>	Eastern	12.44	2.73	0.27	2.05	0.88	1.66	20.03
<b>Baker</b>	Eastern	0.00	0.00	0.20	0.00	0.00	0.13	0.34
<b>Bradford</b>	Eastern	1.98	0.84	1.07	0.00	0.03	0.89	4.81
<b>Columbia</b>	Eastern	4.78	3.40	0.23	0.00	0.61	2.91	11.92
<b>Dixie</b>	Western	6.38	0.78	0.09	0.00	0.09	1.15	8.49
<b>Gilchrist</b>	Eastern	22.14	0.21	0.52	0.00	0.13	0.99	24.00
<b>Hamilton</b>	Eastern	15.11	0.74	32.45	0.00	0.08	0.39	48.78
<b>Jefferson</b>	Western	3.02	0.00	0.10	0.00	0.09	0.20	3.40
<b>Lafayette</b>	Western	12.82	0.16	0.27	0.00	0.02	0.65	13.93
<b>Levy</b>	Western	16.70	0.74	0.10	0.00	0.14	1.51	19.19
<b>Madison</b>	Western	24.16	1.04	0.72	0.00	0.29	0.69	26.90
<b>Suwannee</b>	Eastern	38.82	1.28	2.51	0.00	0.20	1.70	44.51
<b>Taylor</b>	Western	0.61	1.84	36.25	0.00	0.26	0.96	39.93
<b>Union</b>	Eastern	1.22	0.21	0.49	0.00	0.07	0.52	2.51
<b>Eastern Planning Region Total</b>	NA	96.49	9.42	37.74	2.06	2.00	9.19	156.91
<b>Western Planning Region Total</b>	NA	63.69	4.57	37.52	0.00	0.89	5.16	111.84
<b>District Total</b>	<b>NA</b>	<b>160.18</b>	<b>13.99</b>	<b>75.27</b>	<b>2.06</b>	<b>2.89</b>	<b>14.36</b>	<b>268.75</b>

\*Numbers may not add perfectly due to rounding.

\*\*Putnam County projections are wholly incorporated and reported in SJRWMD.

Population by County in 2021

Table 3: Population by County in 2021

County	Total BEBR County Population	Percent of County in District	Estimated District Population Less Institutional	Institutional Population in District	Large Public Supply Population in District	Small Public Supply Population in District	Domestic Self-Supply Population in District	Residential Per Capita Used to Estimate DSS
Alachua	283,538	25.99%	73,699	0	45,433	269	27,698	59
Baker	26,359	4.99%	1,314	2,333	0	0	1,314	102
Bradford	24,660	94.66%	23,343	3,295	6,850	951	15,384	53
Columbia	66,906	100.00%	66,906	2,903	18,128	2,335	45,562	59
Dixie	15,286	100.00%	15,286	1,518	4,804	1,206	11,571	98
Gilchrist	17,411	100.00%	17,411	715	2,215	0	15,293	65
Hamilton	11,845	100.00%	11,845	1,381	3,907	431	6,873	48
Jefferson	13,837	28.42%	3,932	753	0	969	2,973	59
Lafayette	6,950	100.00%	6,950	987	1,199	0	5,576	117
Levy	43,577	42.13%	18,359	0	6,274	1,375	13,312	102
Madison	17,022	100.00%	17,022	1,100	6,097	48	11,456	59
Suwannee	42,094	100.00%	42,094	1,582	7,198	932	33,387	49
Taylor	19,712	100.00%	19,712	1,245	12,385	96	10,536	90
Union	11,565	100.00%	11,565	4,234	1,650	93	9,574	53
<b>Total</b>	<b>600,762</b>	<b>NA</b>	<b>329,438</b>	<b>22,046</b>	<b>116,140</b>	<b>8,705</b>	<b>210,508</b>	<b>72</b>

\*Baker County - <https://www.sjrwm.com/documents/technical-reports/fact-sheets/>

\*\*Putnam County projections are wholly incorporated and reported in SJRWMD.

## Gross Per Capita Rates for Large and Small Public Supply Systems with Service Area Boundaries

Table 4: Gross Per Capita Rates for Large and Small Public Supply Systems with Service Area Boundaries

County	Public Supplier	Permit ID	Large/Small	2021 Population Served	Water Use (mgd)	Gross Per Capita Rate
<b>Alachua</b>	City of Alachua	220667	Large	8,692	1.30	149
<b>Alachua</b>	City of Archer	216647	Large	1,034	0.11	109
<b>Alachua</b>	City of High Springs	216833	Large	4,787	0.59	124
<b>Alachua</b>	City of Newberry	216450	Large	5,894	0.65	111
<b>Alachua</b>	City of Waldo	217300	Large	800	0.08	94
<b>Bradford</b>	City of Hampton	220481	Small	451	0.04	98
<b>Bradford</b>	City of Lawtey	218998	Large	838	0.20	236
<b>Bradford</b>	City of Starke	216650	Large	4,850	0.64	132
<b>Bradford</b>	Town of Brooker	216644	Small	452	0.04	77
<b>Columbia</b>	City of Lake City	217754	Large	18,940	3.32	175
<b>Columbia</b>	Town of Fort White	218347	Small	476	0.06	133
<b>Columbia</b>	Columbia County Board of Commissioners Ellisville Plant	220704	Large	46	0.08	1,794
<b>Dixie</b>	City of Cross City	216823	Large	2,153	0.65	300
<b>Dixie</b>	NCRWA Old Town	220310	Large	187	0.13	119
<b>Dixie</b>	Horseshoe Beach Water Utilities	217129	Large	206	0.05	251
<b>Dixie</b>	Suwannee Water & Sewer District	216831	Large	1,036	0.09	83
<b>Gilchrist</b>	Town of Trenton	216453	Large	1,750	0.21	121
<b>Gilchrist</b>	Fanning Springs	GILFSPR	Large	368	NA	NA
<b>Hamilton</b>	City of Jasper	220463	Large	2,820	0.53	187
<b>Hamilton</b>	City of White Springs	216651	Large	909	0.04	40
<b>Hamilton</b>	Town of Jennings	216567	Large	812	0.11	134
<b>Hamilton</b>	Hamilton County Water Facilities	220443	Large	0	0.07	NA
<b>Jefferson</b>	Jefferson Communities Water System - Lamont	218662	Small	208	0.02	102
<b>Lafayette</b>	Town of Mayo	216851	Large	1,374	0.16	118
<b>Levy</b>	City of Bronson	216830	Large	1,000	0.11	110
<b>Levy</b>	City of Chiefland	216826	Large	1,251	0.34	276
<b>Levy</b>	Fowlers Bluff Water Association	216642	Small	222	0.01	47
<b>Levy</b>	Town of Otter Creek	216656	Small	83	0.01	132

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<b>County</b>	<b>Public Supplier</b>	<b>Permit ID</b>	<b>Large/ Small</b>	<b>2021 Population Served</b>	<b>Water Use (mgd)</b>	<b>Gross Per Capita Rate</b>
<b>Levy</b>	Cedar Key Water & Sewer District	216821	Large	786	0.16	198
<b>Levy</b>	City of Fanning Springs	LEVFSPPR	Large	542	NA	NA
<b>Levy</b>	University Oaks MHP	220497	Small	307	0.04	133
<b>Levy</b>	Manatee Utilities	217177	Small	142	0.02	144
<b>Madison</b>	Cherry Lake Utilities	219588	Large	565	0.03	48
<b>Madison</b>	City of Madison	216506	Large	3,674	0.85	231
<b>Madison</b>	Town of Greenville	217127	Large	756	0.11	145
<b>Madison</b>	Town of Lee	218663	Large	523	0.06	106
<b>Suwannee</b>	Advent Christian Village	219527	Large	487	0.10	212
<b>Suwannee</b>	City of Live Oak	220612	Large	6,513	1.05	161
<b>Suwannee</b>	Town of Branford	216658	Large	775	0.09	111
<b>Suwannee</b>	Town of Wellborn	216507	Large	495	0.04	85
<b>Taylor</b>	Big Bend Water Authority	220484	Large	1,733	0.34	198
<b>Taylor</b>	City of Perry	216835	Large	6,539	1.45	222
<b>Taylor</b>	Taylor Coastal Water & Sewer District	221166	Large	808	0.05	64
<b>Union</b>	City of Lake Butler	220148	Large	1,898	0.21	113
<b>Total</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>114,812</b>	<b>14.24</b>	<b>124</b>

\*Numbers may not add perfectly due to rounding.

# 2021 ANNUAL SURFACE WATER SUMMARY

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SUWANNEE RIVER WATER MANAGEMENT DISTRICT

## Introduction

The majority of water use in the Suwannee River Water Management District is groundwater, however there are some surface water withdrawals being used for power generation, mining/dewatering, and agriculture.

## Data Sources

Surface water is either directly reported to the District or it is estimated based on knowledge of how it is being used. Table 5 below has a breakdown of surface water use in the District. The two different estimations reported are for consumptive and non-consumptive uses. The amount of surface water that is estimated to be consumptively used in mining/dewatering operations represents five percent of the total. This is to account for the loss of water in the mining product and evaporation. The remainder of the water is recirculated in the mining process and is considered non-consumptive. For power generation facilities, two percent of the water is considered to be consumptively used, while the rest is used for once-through cooling and is recycled.

## 2021 Surface Water Use Estimates by Permit

Table 5: Estimates of Consumptive, Non-Consumptive, and Total Surface Water use

County	Permit Name	Consumptive Use (mgd)	Non-consumptive Use (mgd)	Total (mgd)
<b>Alachua</b>	Thompson S. Baker Cement Plant	0.005	0.091	0.096
<b>Hamilton</b>	PCS - White Springs Eagle Lake	0.25	4.79	5.04
<b>Hamilton</b>	*PCS - White Springs - Total Permit	17.19	326.56	343.75
<b>Suwannee</b>	Suwannee River Power Plant	0.0002	0.0091	0.0092
<b>Taylor</b>	*Big Horse Aggregates Cabbage Grove Mine	0.01	1.81	1.91
<b>Taylor</b>	Martin Marietta Aggregates - Perry Quarry	0.004	0.083	0.088
<b>TOTAL</b>	<b>NA</b>	<b>17.46</b>	<b>333.34</b>	<b>350.89</b>

\*No reporting requirement for surface water, estimated at allocation, consumptive use estimated at 5% of allocation.

\*\*Numbers may not add perfectly due to rounding

There are two additional permits that have a surface water allocation however, neither was using surface water in 2021.

# 2021 ANNUAL WASTEWATER TREATMENT FACILITIES SUMMARY



SUWANNEE RIVER WATER MANAGEMENT DISTRICT

## Introduction

The State of Florida has formal state objectives listed in sections 403.064 and 373.250, Florida Statutes (F.S.) to conserve water and promote the reuse of reclaimed water. The Florida Department of Environmental Protection (DEP) monitors the reuse inventory throughout the state and provides annual updates. The purpose of this inventory is to encourage and promote the use of reclaimed water while also providing access to information on programs that have already been implemented by municipalities and utilities (Reuse Inventory Database and Annual Report).

## Data Sources

Annual reuse data was obtained from the DEP's Reuse Inventory Database. This database includes all active domestic wastewater treatment facilities that have a permitted capacity of 0.1 million gallons per day (mgd) or more. The Reuse Inventory Database includes both facilities that engage in reuse activities and those that do not engage in reuse activities.

## Results

### Reuse Facilities

There are 29 total domestic wastewater treatment facilities in the District with a permitted capacity greater than 0.1 mgd. Of these, 28 make reclaimed water available for reuse (Table 6). The total permitted capacity of all facilities in the District is approximately 22.03 mgd. Of the total, 9.39 mgd of reuse water was utilized. This accounts for about 43% of the total permitted capacity and about 82% of the total reported flow. Figure 10 shows a breakdown of 2021 reuse flows by county. The county with the largest reuse flow is Columbia County with about 2.6 mgd, followed by Bradford County with 1.7 mgd, and Taylor County with 1.2 mgd.

### Reuse Utilization Types

There is a variety of ways that reuse water is implemented throughout the District. These include agricultural irrigation, industrial, toilet flushing, groundwater recharge, landscape irrigation, and more. Many facilities used a mixture of two or more methods for reuse. Table 7 below has a breakdown of the utilization of reuse by facility, reuse type, and subtype.

### Disposal Facilities

There are three facilities that may use surface water as one method of disposal. The City of Starke had 0.68 mgd of effluent disposal in 2021. The City of Cedar Key and City of Perry did not have any effluent disposal in 2021. The City of Jasper WWTF is the only facility in the District that does not provide reuse of any kind.

Some reuse systems, such as Columbia Correctional Institution, Cross City, and Jefferson Correctional Institution, use other sources of water to supplement the reclaimed water supply, if there is not enough water available. Other sources may include surface water, groundwater, stormwater, or drinking water. This explains why some reuse flows may be larger than the total flow of the system. Additional information for supplemental water supplies can be found in Appendix C of DEP's Annual Reuse Report (2021 Reuse Inventory).

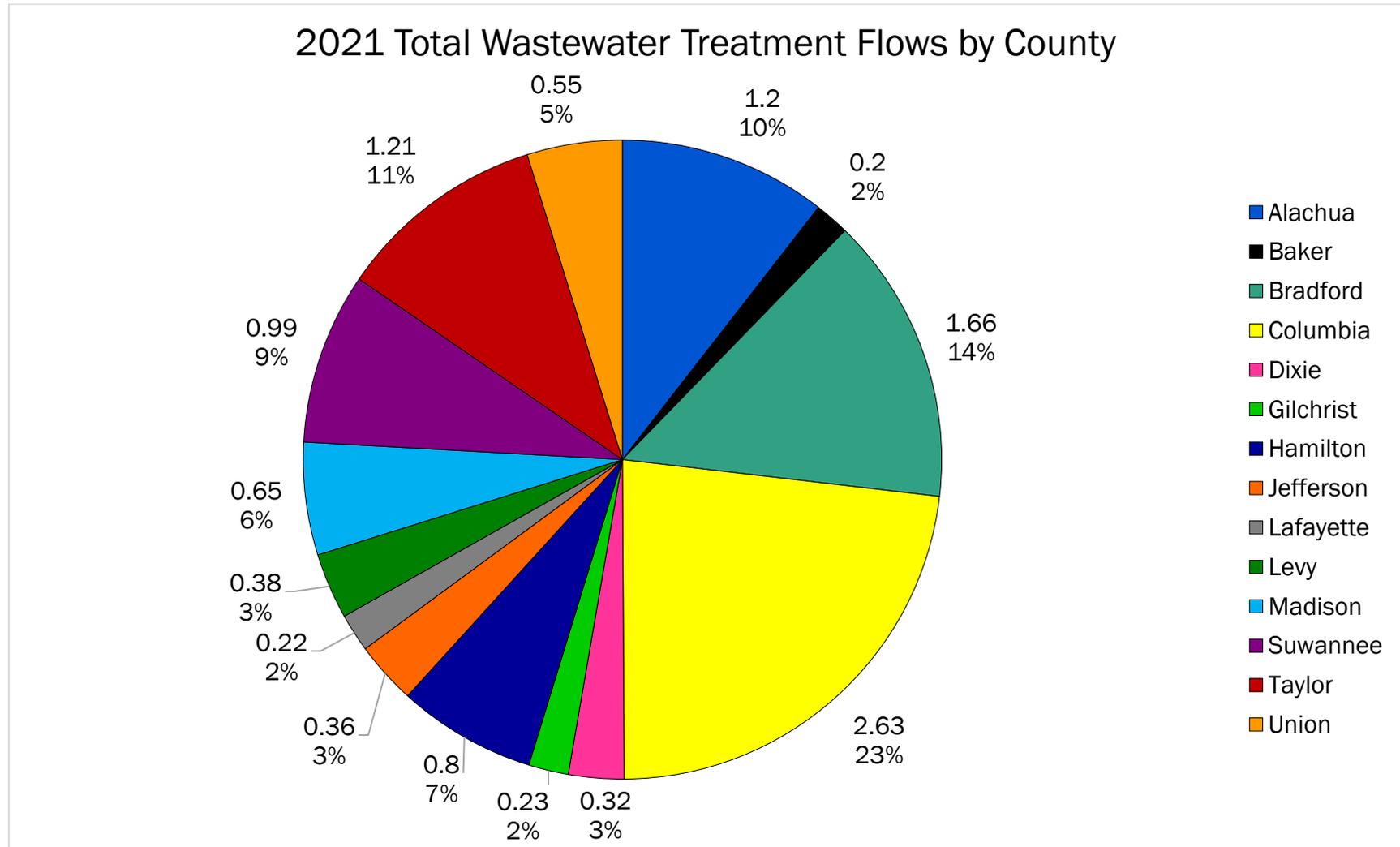
## 2021 Wastewater Treatment Flows by Facility

Table 6: 2021 Wastewater Treatment Flows by Facility

County	Planning Region	City	Facility Name	Facility ID	2021 Total Flow (mgd)	2021 Reuse Flow (mgd)	Capacity (mgd)
<b>Alachua</b>	Eastern	Alachua	City of Alachua	FLA011290	0.75	0.75	1.50
<b>Alachua</b>	Eastern	High Springs	City of High Springs	FLA286095	0.21	0.21	0.30
<b>Alachua</b>	Eastern	Newberry	Newberry WWTF	FLA011292	0.24	0.24	0.56
<b>Baker</b>	Eastern	Sanderson	Baker Correctional Institution	FLA011332	0.20	0.20	0.32
<b>Bradford</b>	Eastern	Raiford	Florida State Prison WWTF	FLA113450	0.94	0.94	1.58
<b>Bradford</b>	Eastern	Starke	City of Starke	FL0028126	0.72	0.04	0.98
<b>Columbia</b>	Eastern	Lake City	Columbia Correctional Institution	FLA011418	0.30	0.30	0.53
<b>Columbia</b>	Eastern	Lake City	Kicklighter WWTF	FLA758353	0.61	0.61	3.00
<b>Columbia</b>	Eastern	Lake City	St. Margaret	FLA113956	1.72	1.72	3.00
<b>Dixie</b>	Western	Cross City	Town of Cross City	FLA114201	0.32	0.32	0.64
<b>Gilchrist</b>	Eastern	Lancaster	Lancaster Correctional Institution	FLA011620	0.09	0.09	0.25
<b>Gilchrist</b>	Eastern	Trenton	City of Trenton	FLA011615	0.14	0.14	0.20
<b>Hamilton</b>	Eastern	Jasper	City of Jasper WWTF	FL0027880	0.63	0.00	1.20
<b>Hamilton</b>	Eastern	Jasper	Hamilton County (SR6/I-75)	FLA649163	0.01	0.01	0.13
<b>Hamilton</b>	Eastern	Jennings	Town of Jennings	FLA011623	0.12	0.12	0.18
<b>Hamilton</b>	Eastern	White Springs	Town of White Springs	FLA116220	0.04	0.00	0.15
<b>Jefferson</b>	Western	Monticello	Jefferson Correctional Institution	FLA011642	0.36	0.36	0.80
<b>Lafayette</b>	Western	Mayo	Mayo Correctional Institution	FLA011646	0.15	0.15	0.50
<b>Lafayette</b>	Western	Mayo	Town of Mayo	FLA011642	0.07	0.07	0.15
<b>Levy</b>	Western	Cedar Key	Cedar Key	FL0031216	0.11	0.11	0.17
<b>Levy</b>	Western	Chiefland	Chiefland	FLA011648	0.27	0.27	0.48
<b>Madison</b>	Western	Greenville	Town of Greenville	FLA011658	0.09	0.09	0.15
<b>Madison</b>	Western	Madison	City of Madison	FLA116572	0.56	0.56	1.37
<b>Suwannee</b>	Eastern	Dowling Park	Advent Christian Home	FLA011819	0.04	0.04	0.21
<b>Suwannee</b>	Eastern	Branford	Town of Branford	FLA011806	0.04	0.04	0.10
<b>Suwannee</b>	Eastern	Live Oak	City of Live Oak	FLA011805	0.91	0.91	2.21
<b>Taylor</b>	Western	Perry	City of Perry	FL0026387	1.11	1.11	1.25
<b>Taylor</b>	Western	Perry	Taylor Correctional Institution	FLA011831	0.10	0.10	0.40
<b>Union</b>	Eastern	Lake Butler	City of Lake Butler	FLA118338	0.55	0.55	0.70
<b>TOTAL</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>11.40</b>	<b>9.39</b>	<b>22.03</b>

## Wastewater Treatment Flows by County

Figure 10: Wastewater Treatment Flows by County



## 2021 Utilization of Reuse by Facility and Type

Table 7: 2021 Utilization of Reuse by Facility and Type

County	Planning Region	City	Reuse System Name	Reuse Type	Reuse Subtype	Capacity (mgd)	Flow (mgd)	Area (acres)
<b>Alachua</b>	Eastern	Alachua	City of Alachua	AI	OC	1.23	0.74	105
<b>Alachua</b>	Eastern	Alachua	City of Alachua	IND	AOF	1.50	0.01	0
<b>Alachua</b>	Eastern	Alachua	City of Alachua	PAA&LI	GCI	0.40	0.00	197
<b>Alachua</b>	Eastern	High Springs	City of High Springs	GWR&IPR	AF	0.00	0.21	NA
<b>Alachua</b>	Eastern	Newberry	Newberry WWTF	AI	OC	0.56	0.24	39.9
<b>Baker</b>	Eastern	Sanderson	Baker Correctional Institution	AI	OC	0.05	0.03	22.2
<b>Baker</b>	Eastern	Sanderson	Baker Correctional Institution	GWR&IPR	RIB	0.19	0.11	4.65
<b>Baker</b>	Eastern	Sanderson	Baker Correctional Institution	TF	NA	0.13	0.08	NA
<b>Bradford</b>	Eastern	Raiford	Florida State Prison WWTF	AI	OC	1.58	0.94	766
<b>Bradford</b>	Eastern	Starke	City of Starke	AI	OC	0.8	0.04	150
<b>Columbia</b>	Eastern	Lake City	Columbia Correctional Institution	AI	OC	0.28	0.19	36
<b>Columbia</b>	Eastern	Lake City	Columbia Correctional Institution	TF	NA	0.25	0.15	NA
<b>Columbia</b>	Eastern	Lake City	City of Lake City	NA	NA	NA	NA	NA
<b>Dixie</b>	Western	Cross City	Town of Cross City	AI	OC	0.32	0.58	76.9
<b>Gilchrist</b>	Eastern	Lancaster	Lancaster Correctional Institution	AI	OC	0.25	0.09	33.8
<b>Gilchrist</b>	Eastern	Trenton	City of Trenton	AI	OC	0.20	0.14	40
<b>Hamilton</b>	Eastern	Jasper	Hamilton County (SR6/I-75)	NA	NA	NA	NA	NA
<b>Hamilton</b>	Eastern	Jennings	Town of Jennings	AI	OC	0.18	0.12	44
<b>Hamilton</b>	Eastern	White Springs	Town of White Springs	NA	NA	NA	NA	NA
<b>Jefferson</b>	Western	Monticello	Jefferson Correctional Institution	AI	OC	0.12	0.07	17.5
<b>Jefferson</b>	Western	Monticello	Jefferson Correctional Institution	TF	NA	0.19	0.08	NA

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County	Planning Region	City	Reuse System Name	Reuse Type	Reuse Subtype	Capacity (mgd)	Flow (mgd)	Area (acres)
Lafayette	Western	Mayo	Mayo Correctional Institution	GWR&IPR	RIB	0.50	0.15	5.48
Lafayette	Western	Mayo	Town of Mayo	NA	NA	NA	NA	NA
Levy	Western	Cedar Key	Cedar Key	GWR&IPR	AF	0.17	0.11	1
Levy	Western	Chiefland	Chiefland	GWR&IPR	RIB	0.48	0.27	11
Madison	Western	Greenville	Town of Greenville	NA	NAN	NA	NA	NA
Madison	Western	Madison	City of Madison	NA	NA	NA	NA	NA
Suwannee	Eastern	Dowling Park	Advent Christian Village	GWR&IPR	RIB	0.17	0.04	2.07
Suwannee	Eastern	Branford	Town of Branford	NA	NA	NA	NA	NA
Suwannee	Eastern	Live Oak	City of Live Oak	AI	OC	1.37	0.519	142
Suwannee	Eastern	Live Oak	City of Live Oak	GWR&IPR	RIB	0.45	0.228	3.06
Suwannee	Eastern	Live Oak	City of Live Oak	OTH	OTH	0	0.0076	0
Suwannee	Eastern	Live Oak	City of Live Oak	PAA&LI	GCI	0.1	0.158	105
Suwannee	Eastern	Live Oak	City of Live Oak	PAA&LI	OPAA	0.29	0	40
Taylor	Western	Perry	City of Perry	AI	OC	1.25	0.90	185
Taylor	Western	Perry	City of Perry	GWR&IPR	AOF	0.8	0.21	NA
Taylor	Western	Perry	Taylor Correctional Institution	GWR&IPR	RIB	0.4	0.10	11.4
Union	Eastern	Lake Butler	City of Lake Butler	AI	OC	0.7	0.55	240

**Reuse Type Abbreviations**

AI – Agricultural Irrigation  
 GWR&IPR - Ground Water Recharge & Indirect Potable Reuse  
 IND – Industrial  
 PAA&LI - Public Access Areas & Landscape Irrigation  
 TF – Toilet Flushing

**Reuse Subtype Abbreviations**

AOF – At Other Facilities  
 AF – Absorption Fields  
 ATP - At Treatment Plant  
 GCI - Golf Course Irrigation  
 OC – Other Crops (sprayfields)  
 OPAA - Other Public Access Areas  
 RIB – Rapid Infiltration Basin

For more information on reuse, please visit DEP’s Water Reuse Program website  
<https://floridadep.gov/water/domestic-wastewater/content/water-reuse-program>

## References

- 2021 Reuse Inventory. Florida Department of Environmental Protection, March. 2022, <https://floridadep.gov/water/domestic-wastewater/documents/2021-reuse-inventory>.
- Annual Groundwater Use Report, SRWMD. 2015-2020. <http://mysuwanneeriver.com/DocumentCenter/View/17226/2015-Annual-Groundwater-Use-Report>
- December 2021 Hydrologic Conditions Report, 31 Dec. 2021. Suwannee River Water Management District. <https://www.mysuwanneeriver.com/DocumentCenter/View/18213/12-Dec-2021-Hydro-Report>
- Florida Estimates of Population 2021. Bureau of Economic and Business Research, University of Florida. [https://www.bebr.ufl.edu/wp-content/uploads/2022/02/estimates\\_2021.pdf](https://www.bebr.ufl.edu/wp-content/uploads/2022/02/estimates_2021.pdf)
- Florida Statewide Agricultural Irrigation Demand Estimated Agricultural Water Demand, 2021-2045, The Balmoral Group, June 2023. <https://ccmedia.fdacs.gov/content/download/113668/file/FSAID-10-Report.pdf>
- Gainesville Regional Utilities Small-Area Population Projection Methods and Results, 29 Nov. 2023. Bureau of Economic and Business Research, University of Florida.
- Historical Groundwater Use Data 1965-2005, U.S. Geological Survey. <https://fl.water.usgs.gov/infodata/wateruse/historical.html>
- North Florida Regional Water Supply Plan (2015-2035). <https://www.northfloridawater.com/watersupplyplan/index.html>
- Reuse Inventory Database and Annual Report. Florida Department of Environmental Protection, February 2024, <https://floridadep.gov/water/domestic-wastewater/content/reuse-inventory-database-and-annual-report>.
- Suwannee River Water Management District Small-Area Population Projection Methods and Results, 22 Apr. 2022. GIS Associates, Inc.
- Suwannee River Water Management District Small-Area Population Projection Methods and Results for the District's Seven Eastern Counties, 7 Aug. 2023. GIS Associates, Inc.
- Technical Memorandum, February 2018. Distributing FSAID IV ILG to GROBINSO.WUP Stations, Yassert A. Gonzalez, Water Use Analyst, Water Use Planning Bureau; George Robinson, Water Use Analyst, Water Use Planning Bureau
- Water Reuse Program. Florida Department of Environmental Protection, 27 September 2022, <https://floridadep.gov/water/domestic-wastewater/content/water-reuse-program>.
- Water Supply Assessment (2015-2035). <http://www.srwmd.state.fl.us/DocumentCenter/View/15162/2015-2035-Water-Supply-Assessment-PDF>.

Water Withdrawals in Florida, 2012: U.S. Geological Survey Open-File Report 2015-1156, 10 p., Marella, R.L., 2015, <http://dx.doi.org/10.3133/ofr20151156>.