

# **Appendix B**

## **Population and Water Demand Projections**

## Introduction

This Appendix contains information on the methodology and data developed for use in the development of the water demand estimates and projections for the 2023 Joint North Florida Regional Water Supply Plan (NFRWSP) for six water use categories, as well as future reclaimed water supply and estimates of potential conservation. It also describes the methodologies used to determine the spatial distribution of projected groundwater withdrawals used in the groundwater flow model scenarios.

The North Florida Southeast-Georgia (NFSEG) groundwater flow model extends beyond the NFRWSP area into the Northwest and Southwest Florida Water Management Districts (NFWWMD/SWFWMD), Georgia, and South Carolina. This Appendix also includes sources and information pertaining to the water use data and demand projections within the NFSEG model boundary outside of the NFRWSP area.

## Background and Water Use Categories

The planning horizon for the 2023 NFRWSP is 2020 to 2045. Population and water demand estimates and projections are a cornerstone for assessing the water needs and availability in regional water supply planning. The St. Johns River Water Management District (SJRWMD) and Suwannee River Water Management District (SRWMD) (Districts) develop water demand projections to evaluate “existing legal uses, anticipated future needs, and existing and reasonably anticipated sources of water and conservation efforts,” as set forth in subparagraph 373.036(2)(b)4a, Florida Statutes (F.S.). The Districts’ goals are to project water demands that are reasonable and based on the best information available at the time the projections were developed.

The baseline year, 2015 for the NFRWSP, is the year that acts as the starting point for water demand projections and is based on the best available data of reported and estimated water use. Water use in the baseline year is not a projection, but rather actual or estimated use. Both the SRWMD and the SJRWMD have specific requirements for monitoring and reporting of permitted withdrawals. For SRWMD, these requirements apply to wells with a primary casing inside diameter of eight inches or greater, as well as surface water pumps with a cumulative intake diameter of six inches or greater. The SJRWMD requires monitoring and reporting for average annual daily withdrawal equal to or exceeding 100,000 gallons per day on an average annual basis or withdrawals equipment or other facilities which have a capacity equal to or exceeding 1,000,000 gallons per day.

Five-Year Interval Intermediate Water Use Projections as required by subsection 62-40.531(1)(a), Florida Administrative Code (F.A.C.), must include water demand projections for five-year intervals during the planning period. The interval years should end on five or zero (e.g., 2020, 2025, 2030, etc.) as directed by the state format and guidelines for regional water supply planning (DEP 2019).

Water demands for this 2023 NFRWSP are estimated in 5-year increments (subsection 62-40.531(1)(a), F.A.C.) for the following six water use categories established by the Florida Department of Environmental Protection (DEP) and the state's five water management districts:

1. **Public Supply (PS)** - This category includes water provided by any municipality, county, regional water supply authority, special district, public or privately-owned water utility, or multijurisdictional water supply authority for human consumption and other purposes with average annual permitted quantities of 0.1 million gallons per day (mgd) or greater.
2. **Domestic Self-supply and Small Public Supply Systems (DSS)**
  - a. The DSS category consists of residential dwellings that are self-supplied water from a dedicated, on-site well and are not connected to a central utility.
  - b. The DSS category also includes centralized Small Public Supply Systems (SPSS) that provide water for human consumption with average annual permitted quantities of less than 0.1 mgd.
3. **Agricultural (AG)** - The AG category consists of water use associated with the irrigation of crops and other miscellaneous water uses associated with agricultural production (e.g., aquaculture, livestock).
4. **Landscape/Recreational (LR)** - The LR category consists of self-supplied water use associated with the irrigation, maintenance, and operation of golf courses, cemeteries, parks, medians, attractions, common areas in residential areas, and other large green areas. This category also includes water use associated with ornamental or decorative purposes, such as fountains and waterfalls.
5. **Commercial/Industrial/Institutional (CII) and Mining/Dewatering (MD)**
  - a. The CII category consists of self-supplied water use associated with the production of goods or provisions of services by CII establishments (e.g., general businesses, office complexes, commercial cooling and heating, bottled water, food and beverage processing, restaurants, gas stations, hotels, car washes, churches, hospitals, and prisons).
  - b. The MD category consists of water use associated with mining (extraction and processing of subsurface materials and minerals) and long-term dewatering (removal of water to control surface or groundwater levels during construction or excavation activities).
6. **Power Generation (PG)** - The PG category consists of self-supplied water use associated with power plant and power generation facilities, including but not limited to water for steam generation, cooling, and replenishment of cooling reservoirs.

Other than the PS category, all other water use categories obtain water from dedicated, on-site wells and pumps and are not connected to a central utility. In addition to the six water use categories listed above, projections are developed for future reclaimed water flows that could potentially be used to partially offset water demand. Reclaimed water is treated domestic wastewater that has received at least secondary treatment and basic disinfection and is reused for a beneficial purpose. Water demands, reclaimed water flows, and estimates of potential conservation are expressed in average million gallons per day unless otherwise noted.

Data for the baseline year consists of reported and estimated water usage for 2015, whereas data for the years 2020 through 2045 are projected water demands. Water use estimates and demand projections for the six water use categories were calculated for the years 2015, 2020, 2025, 2030, 2035, 2040, and 2045 based on average rainfall conditions, in addition to a 1-in-10 year drought event for 2045. The 1-in-10 year drought event is defined as a year in which rainfall occurs at below normal levels whose frequency has a 10% probability of occurring in any given year. These below normal rainfall conditions result in an increase in water demands for four of the six water use categories. Future reclaimed water flows and estimates of potential conservation were also calculated for the year 2045.

## **Methodology**

### **Data and Information Sources**

The methodology to develop population and water demand estimates and projections uses many data sources such as:

1. Finished water supplied by PS and SPSS collected by DEP through Monthly Operating Reports (MORs).
2. Water use estimates reported by permittees to the Districts through the respective Consumptive Use Permit (CUP) programs.
3. The Districts published annual water use reports (SJRWMD 2015-2016, 2017a, 2018b, 2019; SRWMD 2019, 2020a, 2020b, 2020c).
4. Agricultural water use estimates from the Florida Department of Agriculture and Consumer Services (FDACS) (FDACS 2017, 2020).
5. Permitted quantities and percentages of water use as reported in CUPs.
6. University of Florida's Bureau of Economic and Business Research (BEBR) publications (BEBR 2015-2016, 2017a, 2017b, 2018).
7. DEP Annual Reuse Inventory Report (DEP 2019a).
8. Power Plant 10-Year Site Plans collected by the Public Service Commission (PSC).

## **PS and DSS Population Estimates and Projections**

In developing RWSPs, the Districts must consider BEBR medium population projections pursuant to subparagraph 373.709(2)(a)1a, F.S. The population projections developed by BEBR are commonly used in planning efforts throughout Florida. These projections are made at the county-level only (Rayer, S. and Y. Wang. 2020) and require distribution among PS (and SPSS) service area boundaries (PSABs) and parcels and DSS parcels.

### **SJRWMD**

The SJRWMD has developed a model that distributes BEBR county-level estimates and projections to the individual parcel level (SJRWMD 2021). Using this model, the SJRWMD aggregated the parcel level population to each PS (and SPSS) service area in the NFRWSP area. This effort provided historic, future, and build-out permanent resident populations for each PS and SPSS. Because of the service area boundary characteristics, the estimated historic service area population may differ from estimates of utility population served. This difference can occur when a service area includes self-supplied populations that may be currently unserved by the respective utility. Stakeholder feedback resulted in adjustments to population projections for the utilities detailed in the attached Technical Memorandum “Documentation and Methodologies for Updating St. Johns River Water Management District 20202045 North Florida Regional Water Supply Plan Projections Resulting from Stakeholder Feedback” (SJRWMD, 2022).

DSS population was the population for all parcels outside of PS and SPSS PSABs, aggregated in five-year increments from 2015 to 2045. In some cases, a DSS population within PS and SPSS PSABs was identified through previously submitted account level billing data and well completion reports; this population was attributed to the DSS category. The DSS population by county (after adding the total population for each SPSS for each respective county) is shown in Table B-6.

### **SRWMD**

The SRWMD used BEBR county-level population estimates for 2014-2018. These estimates were distributed within the county based on data provided by PS and SPSS utilities, correctional institutions, and parcel level data (SRWMD, 2021). The SRWMD applied the population model created by the SJRWMD to distribute projected future population within the county (SJRWMD 2021). This population model also estimated the projected future served populations within PSABs. After meeting with utilities, estimates and projections were revised to include any feedback that was received.

The DSS population for 2014-2018 and projected years (2020-2045) was estimated by taking the total BEBR county-wide population estimate and subtracting institutional population, PS residential served population, and the SPSS residential served

population (SRWMD, 2021). The DSS and small public supply population by county is shown in Table B-6.

## **PS Water Demand**

### **Gross Per Capita Water Use**

For PS and SPSS, the gross per capita water use is defined as the total raw water withdrawn (including residential and non-residential uses) for each individual permittee or system divided by its respective service area residential population expressed in average gallons per capita per day (gpcd).

A PS/SPSS specific gross gpcd was applied to each respective PS/SPSS service area projected residential population to calculate future average-year water demands. The source of the data varied (metered/surveyed data or raw water withdrawals and MOR data or finished water withdrawals), however most of the treatment methods currently used in the NFRWSP area have minimal treatment losses and any differences are assumed to be negligible. Water demand projections were based on the most recent five-year (2014-2018) average gross per capita rate (at the time the projections were developed), which accounts for annual variations in water use with respect to rainfall and recent implementation of conservation programs. In cases where water use data were not available from the sources identified, the Districts estimated values from historical data and trends.

For this NFRWSP, it is assumed that current levels of water conservation and use of reclaimed water will continue through the year 2045 planning horizon; additional conservation and the use of additional reclaimed water will be effective in reducing future water demands.

The Districts have observed a reduction in per capita water use over the last decade that may be attributed to a variety of factors, including economic conditions, indoor and outdoor conservation, and source substitution with reclaimed water. The use of a five-year average gross per capita accounts for some variability in these factors.

Estimated and projected water demand for each individual PS is shown in Table B-5a (and by county in Table B-5) and includes five-year increments from 2015 to 2045. A water demand projection for 2045 during a 1-in-10 year drought is also shown. Water demand for SPSS (individually listed in Table B-6a) was aggregated for each county and was added to the respective county demand for the DSS category (shown in Table B-6).

To calculate the 1-in-10 year water demand projections, the average year water demands were multiplied by 1.06 (corresponding to a six percent increase). The 1-in-10 year Drought Subcommittee of the Water Planning Coordination Group (WPCG) concluded that a six percent increase in water demand would occur in such an event for the PS water use category (WDPS 1998).

## **Spatial Groundwater Distribution**

For groundwater modeling purposes, the projected groundwater demand and associated location of withdrawal needed to be determined. For example, there is one PS utility within the NFRWSP area that has surface water withdrawals (Manufactured Home Communities in Flagler County). For this CUP with surface water withdrawals, groundwater demand was estimated as the total water demand minus the permitted surface water withdrawal. The projected groundwater demand, specific to each PS and SPSS, was distributed evenly to their respective active or proposed wells/stations contained in their CUP. For those PS systems with multiple wellfields and/or specific wellfield allocations, the associated water demand was divided proportionally amongst the respective wellfields and then further to the wellfields' respective wells/stations.

## **DSS Water Demand**

As stated above, water demand and population projections for SPSS are calculated individually but are combined with the DSS category for reporting purposes at the county level.

## **Residential Per Capita Water Use**

For DSS, the residential per capita water use (also referred to as household) is defined as the water use for solely residential (indoor and outdoor) purposes. The residential gpcd was estimated from the county level residential population served and residential water use. To achieve this, the total water use for each year (2014-2018) for each PS and SPSS was reduced to reflect only the indoor and outdoor residential portion of the total PS and SPSS water use. This was calculated using data reported directly from PS and SPSS systems, as well as the percent of residential water use identified in a CUP. The resulting residential water use values for each PS and SPSS system were summed to the county level and divided by the total PS service area population (at county level) to obtain the county-level average 2014-2018 residential gpcd. The average 2014-2018 county level residential gpcd was then multiplied by the projected 2020, 2025, 2030, 2035, 2040, and 2045 DSS population (by county).

The DSS estimated and projected water demand by county (after adding the total water demand for SPSS) is shown in Table B-6 and includes five-year increments from 2015 to 2045. A water demand projection for 2045 during a 1-in-10 year drought is also included. Identical to PS, to calculate the 1-in-10 year water demand projections for DSS, the average year water demands were multiplied by 1.06.

## **Spatial Groundwater Distribution**

Each SPSS future groundwater demand and location of withdrawal was spatially distributed as defined in the PS section.

Outside of PS and SPSS service areas, parcels with residential housing units were identified using FDOR data; for these parcels a point was added to the centroid of each identified parcel to represent a well/station. Within PS and SPSS service areas, where available, account level billing data and well completion reports were used to determine DSS within those respective PSABs. For these parcels a point was added to the centroid of each identified parcel to represent a well/station. The DSS water demand for each five-year increment was then distributed evenly among the identified DSS parcels, for each county respectively. For counties located in more than one water management district (e.g., Alachua County), the projected DSS water demand specific to each of the Districts was only applied to the DSS parcels identified within the respective Districts' portion of the county.

## **Agricultural Water Demand**

Section 570.93, F.S., directs the FDACS to develop annual statewide agricultural acreage and water demand projections based on the same planning horizon used in water supply planning. Pursuant to paragraph 373.709(2)(a), F.S., the Districts are required to consider AG water demand projections produced by FDACS and that any adjustment or deviation from data provided by FDACS must be fully described, and the original data must be presented along with the adjusted data. FDACS publishes 20-year AG acreage and associated water demand projections in the annual Florida Statewide Agricultural Irrigation Demand (FSAID) reports, through a contract with The Balmoral Group. The fourth annual report (referred to as FSAID IV), which was published in June 2017 (FDACS 2017), was used for 2015 AG acreage estimates for the Districts and for 2015 AG water use in the SRWMD. The seventh annual report (referred to as FSAID VII), which was published in June 2020 (FDACS 2020), contains estimated and projected agricultural acreage and water demand projections for the State of Florida for five-year increments from 2020 to 2045, as well as a water demand projection for 2045 during a 1-in-10 year drought. Detailed methodology can be found in the FSAID VII Report.

### **Acreage**

As noted above, the 2015 acreage estimates and 2020-2045 acreage projections were taken directly from FSAID IV and FSAID VII, respectively. The estimated and projected irrigated agricultural acreage by county is shown in Table B-7 in five-year increments from 2015 to 2045. Acreage by crop type is included in Table B-7a.

### **Demand**

As stated above, water use estimates and water demand projections were taken directly from FSAID IV and FSAID VII, respectively. One exception for 2015 AG water use is where SJRWMD supplemented FSAID IV water use data with metered data for CUPs. Of note, for SJRWMD, 2015 was the second wettest year in the ten-year average of 2012-2021 (50.08") at 55.13". 2015 was 10.01% above the ten-year average. The estimated and projected agricultural water demand by county is shown in Table B-7 in



five-year increments from 2015 to 2045. Water demand for 2045 during a 1-in-10 year drought is also included. Water demand by crop type and miscellaneous type uses are included in Tables B-7a and B-7b.

### **Spatial Groundwater Distribution**

The FSAID IV and FSAID VII (FDACS 2017, 2020) deliverable contains the location, in polygon format, of all estimated future agricultural water demand in the five-year increments necessary for groundwater modeling. SJRWMD used the FSAID IV and FSAID VII (FDACS 2017, 2020) deliverables and refined the data to account for those agricultural areas using surface water and converted the delivered polygon layer to a point layer (tied to CUP station location) for use in groundwater modeling. Detailed methodology regarding the conversion of polygon water demands to point water demands and the conversion of total water demands to reflect groundwater and surface water demands is available from SJRWMD (SJRWMD 2018a).

### **Landscape/Recreational Water Demand**

Water demand for the LR category was projected at the county level using a respective historic LR average gpcd. The county specific LR average gpcd was calculated from LR average water use for 2014-2018 and BEBR estimates of county population for 2014-2018 (BEBR 2015-2016, 2017a, 2017b, 2018).

The average LR gpcd was applied to the additional population projected by BEBR (Rayer, S. and Y. Wang. 2020) for each five-year increment and the associated water demand was added to the 2015 baseline year water use.

The estimated and projected LR water demand by county is shown in Table B-8 in five-year increments from 2015 to 2045. Water demand for 2045 during a 1-in-10 year drought is also included.

The 1-in-10 year Drought Subcommittee of the WPCG, as stated in their final report, determined that values using agricultural (irrigation) models, historic data, and net irrigation ratios are acceptable when calculating the 1-in-10 year water demand projection. A factor was developed for each county, using the highest year water use from 2014-2018 and the percent increase from the 2014-2018 LR water use. For example, if water use in 2016 was X percent higher than the 2014-2018 five-year average, X percent was applied to the average 2045 water demand to project a 2045 1-in-10 year water demand.

### **Spatial Groundwater Distribution**

The projected water demand for the LR category is only estimated at the county level. For groundwater modeling purposes, the groundwater demand and associated location of withdrawal needed to be determined. Several LR CUPs have surface water withdrawals; future groundwater demand for the respective future years at the county

level was calculated using the 2015 percent split between groundwater and surface water (via reported CUP data and the SJRWMD's published report (SJRWMD 2016)). The county level groundwater demand for future year scenarios was then distributed to the CUP level using a percent share method of permitted allocation. For example, if an LR CUP's groundwater allocation represented 10% of the county's total groundwater allocation in 2015, then the LR CUP allocation also maintained 10% of the county groundwater allocation in 2045. The estimated projected groundwater demand specific to each LR CUP was then distributed evenly to their respective active or proposed stations. For counties located in more than one District (e.g., Alachua County), the projected LR water demand specific to each District was only applied to the respective LRA CUPs and stations identified within the respective Districts' portion of the county. While future land use and potential new locations of LR polygons was not taken into consideration, the method applied is generally accepted as a valid method for regional planning purposes.

## **Commercial/Industrial/Institutional and Mining/Dewatering Water Demand**

Water demands for the CII/MD category were projected at the county level using a respective historic CII/MD average gpcd. The county specific CII/MD average gpcd was calculated from CII/MD average water use for 2014-2018. CII/MD historic water use and water demand consists of only consumptive uses; recycled surface water and non-consumptive uses were removed. For this NFRWSP, surface water use by mining operations represents 5% of total surface water use, to account for the loss of water in mining products and evaporation. The remaining surface water was assumed to be recirculated in the mining process and, therefore, is considered non consumptive. For clarification, consumptive use for planning purposes is defined by the Districts as any use of water that reduces the supply from which it is withdrawn or diverted.

The CII/MD average gpcd was applied to the additional population projected by BEBR (Rayer, S. and Y. Wang. 2020) for each five-year increment and the associated water demand added to the 2015 baseline year water use. Three counties in the NFRWSP and one county in the western part of SRWMD have large CII users (e.g., paper and pulp mills) that are not impacted by population increases (Nassau, Putnam, Hamilton, and Taylor counties). The water use associated with these permits were removed from the average per capita calculations for future CII/MD water demands.

The estimated and projected CII/MD water demand by county is shown in Table B-9 in five-year increments from 2015 to 2045.

The 1-in-10 year Drought Subcommittee of the WPCG, as stated in their final report, determined that drought events do not have significant effects on water use in the CII/MD category. Water use for the CII category is related primarily to processing and production needs and therefore, the average water demands, and 1-in-10 water demands are assumed to be equal. Water use for the MD category is also not expected to increase during drought conditions.

## **Spatial Groundwater Distribution**

See the LR spatial groundwater distribution explanation above. The methodology for spatial distribution of future groundwater for the CII/MD category for modeling purposes is the same, using the projected CII/MD future groundwater demands.

## **Power Generation Water Demand**

Water demand was calculated for each PG facility and then summed to the county level for consumptive uses of water only; recycled surface water and non-consumptive uses were removed. Surface water use by PG facilities represents 2% of total surface water withdrawals to account for the loss of water due to evaporation and is included in the water demand projections. An example of this is surface water used for once-through cooling for power plants, which is recycled or returned to the withdrawal source.

The PSC requires that each PG facility produce detailed ten-year site plans for each of its facilities. These plans include planned facilities and generating capacity expansion. The 2020 ten-year site plans for each PG facility within the NFRWSP area were downloaded from the PSC website (<http://www.psc.state.fl.us>) and were used in developing the PG water demand projections.

In order to project future water demand, the NFRWSP utilized a methodology that incorporated historic and projected customers, historic and projected megawatts, and the average daily gallon per megawatt use for 2014-2018. Each ten-year site plan contains information regarding historic and projected customers and megawatts, as well as planned capacity expansions or facility closures. The majority of the ten-year site plans extended through year 2029. The average customer growth rate was used to extrapolate projected customers beyond the ten-year site plans through the planning period of 2045. Using the last year data in each ten-year site plan, a megawatt use per customer was calculated and then applied to the future customers to project future megawatts. Future groundwater demand for 2030-2045 was calculated by applying the (2014-2018) average gallons used per historic megawatt to the projected megawatts specific to each PG facility.

Water demands are very specific to each PG facility, as PG facilities are among the most efficient of freshwater users. The Districts contacted each PG facility located in the NFRWSP area to determine if the methodology employed and described above produced projections reflective of their future water needs. The Districts received responses back from both Duke and JEA; resulting in a reduction of the demand projections initially developed.

The estimated and projected PG water demand by county is shown in Table B-10 in five-year increments from 2015 to 2045. The projections for individual PG facilities is included in Table B-10a.

The 1-in-10 year Drought Subcommittee of the WPCG, as stated in their final report, determined that drought events do not have significant effects on water use in the PG category. Water use for this category is related primarily to processing and cooling needs and therefore, the average water demands and 1-in-10 water demands are assumed to be equal.

### **Spatial Groundwater Distribution**

Similar to the PS category, future water demand was projected in five-year increments through 2045 for each PG facility in the NFRWSP area. However, groundwater and surface water were projected separately for each facility based on the five-year (2014-2018) average gallons used per historic megawatt. The future groundwater demand, specific to each PG facility, was distributed evenly to their respective active or proposed wells/stations in their CUP or DEP power plant siting act plan.

### **Review of Population and Water Demand Projections**

Water provider specific water use estimates and water demand projections were distributed to each water provider for review and comment. Changes and comments have been incorporated where appropriate. Because this is a long-term planning effort, methodology changes based on short-term trends were not incorporated. However, additional refinements in the future may be considered as population and water use is continually monitored. Comments and suggested changes may be taken into consideration if they are justifiable, defensible, based on historical regression data and long-term trends, and supported by complete documentation.

### **Summary of Population and Water Demand Projections**

The methodologies for calculating population and water demand projections for the six water use categories, as well as future reclaimed water flows and conservation potential (described below) are consistent with the specific plans of major water users at the time projections were made. The projections in this NFRWSP assume that the current levels of water conservation efforts and the use of reclaimed water will continue through the year 2045 planning horizon. If water conservation efforts and the use of reclaimed water within the NFRWSP area are implemented at rates higher than historic rates, then 2045 actual water use will be less than projected under average climatic conditions.

### **2045 Reclaimed Water Projections**

Projections of future reclaimed water flows were made for domestic wastewater treatment facilities (WWTF) with 2018 permitted wastewater treatment capacities equal to or greater than 0.1 mgd (DEP 2019a).

## Existing Flows

The 2018 flows were separated by total WWTF flow and beneficial reuse. For this NFRWSP, beneficial reuse was considered to be only those uses in which reclaimed water takes the place of an existing or potential use of higher quality water for which reclaimed water is suitable, such as water used for landscape irrigation. Generally, delivery of reclaimed water to sprayfields, absorption fields, and rapid infiltration basins (RIBs) are not considered beneficial reuse, unless located in recharge areas (Table B-1 and Figure B-1).

Table B-1. Facilities in the NFRWSP area with reuse and disposal flows

Map ID	Facility	Total Treated Flow (mgd)	Actual Utilization (mgd)	Disposal Flow (mgd)
1	Plantation Bay WWTF	0.13	0.13	0.00
2	Green Cove Springs, City of - South WWTF	0.29	0.00	0.29
3	Sawgrass WWTF	0.81	0.37	0.44
4	Flagler Beach, City of WWTF	0.69	0.00	0.69
5	Hilliard, Town of WWTF	0.33	0.00	0.33
6	Matanzas Shores WWTF	0.11	0.00	0.11
7	Fleming Island Regional WWTF	5.68	5.06	0.62
8	Newberry, City of WWTF	0.21	0.21	0.00
9	Trenton WWTF	0.09	0.09	0.00
10	Southwest Water Reclamation	12.42	0.37	12.05
11	Ponce De Leon WWTF	0.04	0.00	0.04
12	SR - 6/I-75 WWTF	0.03	0.03	0.00
13	Northwest Wastewater Treatment Plant	1.61	1.61	0.00
14	Neptune Beach, City of WWTF	0.68	0.00	0.68
15	Hawthorne, City of WWTF	0.14	0.14	0.00
16	St. Augustine, City of - #1 WWTF	4.21	0.25	3.96
17	Jacksonville Beach WWTP	2.84	0.54	2.30
18	US Naval Station Mayport	0.69	0.00	0.69
19	Crescent City, City of WWTF	0.11	0.11	0.00
20	Nassau Regional WWTF	1.65	0.81	0.84
21	Fernandina Beach, City of WWTF	1.67	0.00	1.67
22	Bunnell, City of WWTF	0.55	0.39	0.16
23	Florida State Prison WWTF	1.01	1.01	0.00
24	SR-207 WWTF	0.17	0.17	0.00
25	Jasper, City of - WWTF	0.63	0.00	0.63
26	Anastasia Island WWTF	2.73	0.16	2.57
27	Hastings, Town of WWTF	0.11	0.00	0.11
28	Lake City, City of - WWTF	2.76	2.71	0.05
29	Orange Park, Town of - WWTF	0.99	0.00	0.99
30	Marsh Landing WWTF	0.56	0.23	0.33
31	Amelia Island WWTF	0.67	0.67	0.00
32	Baldwin WWTF	0.30	0.00	0.30
33	Columbia Correctional Institution WWTF	0.41	0.41	0.00

Map ID	Facility	Total Treated Flow (mgd)	Actual Utilization (mgd)	Disposal Flow (mgd)
34	GRU - Kanapaha WRF	11.63	11.63	0.00
35	Bulow Plantation	0.04	0.00	0.04
36	Buckman RMF	29.82	3.65	26.17
37	Jennings, Town of WWTF	0.14	0.14	0.00
38	Dunes Community Development District	2.09	2.09	0.00
39	Palm Coast Wastewater Treatment Facility	7.96	6.72	1.24
40	Lake Butler, City of WWTF	0.54	0.54	0.00
41	North Beach Utilities WWTF	0.28	0.00	0.28
42	GRU - Main St WRF	11.63	11.63	0.00
43*	Beach Haven WWTF	0.00	0.00	0.00
44	Innlet Beach WWTF	0.24	0.21	0.03
45	Palatka, City of WWTF	2.00	1.66	0.34
46	Green Cove Springs Harbor Road WWTF	0.50	0.25	0.25
47	Live Oak, City of WWTF	0.95	0.94	0.01
48	NAS Jacksonville WWTF	0.66	0.11	0.55
49	Fang - Camp Blanding WWTF	0.13	0.00	0.13
50	Blacks Ford WRF	35.63	11.34	24.29
51	High Springs, City of WWTF	0.16	0.16	0.00
52	Alachua, City of - AWWF	0.72	0.69	0.03
53	Branford, Town of WWTF	0.06	0.06	0.00
54	University of Florida WWTF	1.74	0.94	0.80
55	Normandy Village WWTF	0.35	0.00	0.35
56	Baker Correctional WWTF	0.21	0.21	0.00
57	Lancaster Correctional Institution WWTF	0.10	0.10	0.00
58	Macclenny, City of WWTF	0.87	0.00	0.87
59	Players Club South WWTF	0.43	0.15	0.28
60	Callahan, Town of WWTF	0.14	0.00	0.14
61	Advent Christian Village WWTF	0.04	0.04	0.00
62	District 2 Water Reclamation	5.79	1.34	4.45
63	Monterey WRF	1.64	0.00	1.64
64*	Peter's Creek WWTF (Green Cove West)	0.00	0.00	0.00
65*	Keystone Heights WWTF	0.00	0.00	0.00
66	Starke, City of WWTF	0.75	0.16	0.59
67	Atlantic Beach, City of - WWTF	1.81	0.00	1.81
68	East Putnam County RO WTP	0.14	0.00	0.14
69	White Springs, Town of WWTF	0.06	0.06	0.00
70	Ponte Vedra Water Reclamation Facility [WRF]	0.30	0.26	0.04
71	River Park Mobile Home Park WWTF	0.03	0.03	0.00
72	Spencer WWTF	2.99	0.00	2.99

\*Facilities with a total treated flow of zero mgd are not represented in Figure B-1.

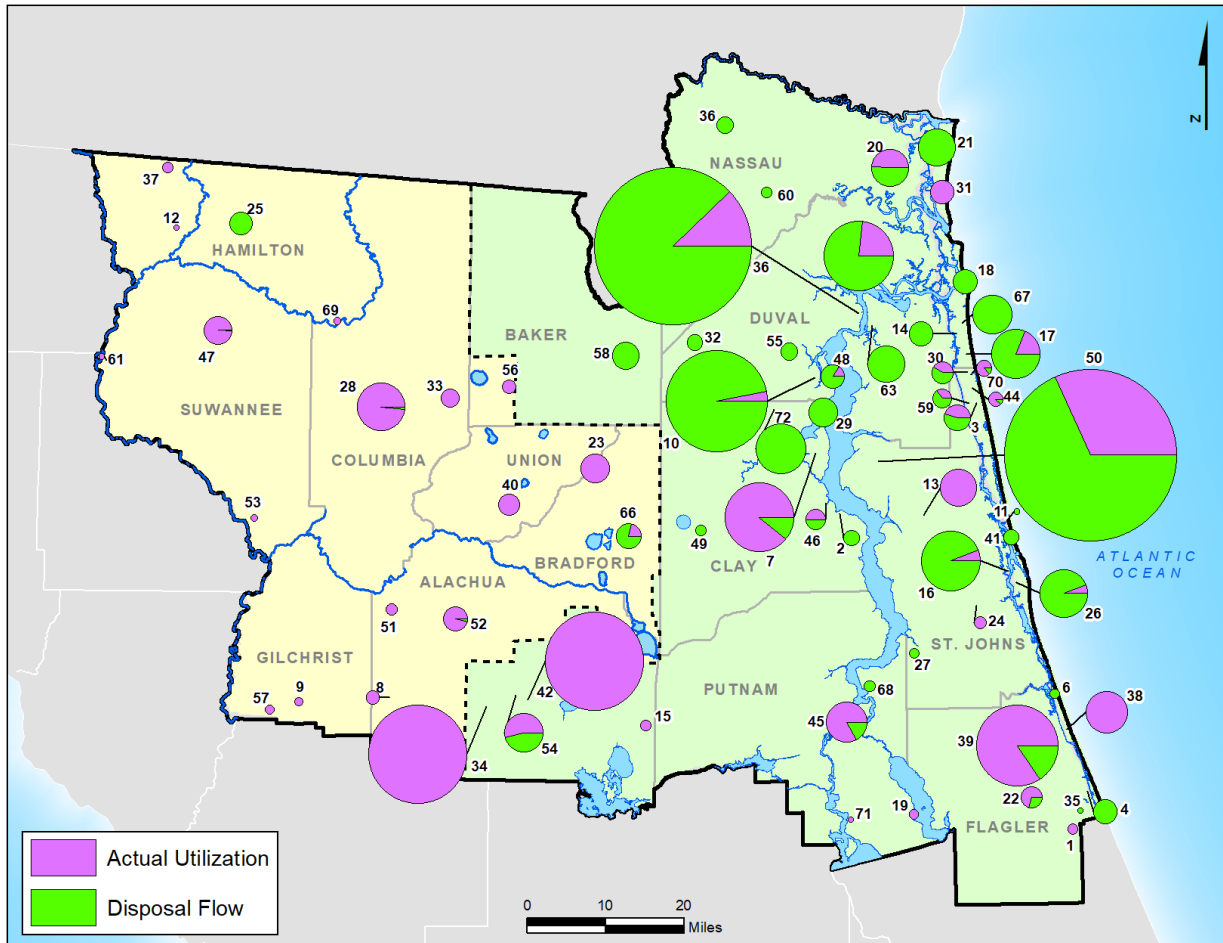


Figure B-1. Summary of 2018 WWTF reclaimed water and disposal flows in the NFRWSP area

The DEP regards several applications of reclaimed water as reuse that the Districts do not. Therefore, it is common for the Districts' beneficial reuse quantities to be lower than that of DEP. The Districts require the application to achieve a water resource benefit in order to qualify as reuse. 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. An application that does not meet any of these criteria is considered by the Districts to be disposal. Reclaimed water applications considered to be reuse by DEP, but disposal by the Districts are underground injection, absorption fields and RIBs located in discharge areas, surface water augmentation where not required, spray fields, and artificial wetlands. Reclaimed water applications for underground injection, absorption fields and rapid infiltration basins will be considered beneficial if they are located in recharge areas, as identified via studies or through consumptive use permitting.

The DEP has a statewide reuse utilization goal of 75% (DEP 2003). Typically for planning purposes, the amount of WWTF flow in the baseline year not being utilized

beneficially is multiplied by 75% and this amount is considered as potential existing additional reclaimed water that could be used for beneficial reuse. When determining how much WWTF flow can be utilized, it is recognized that each WWTF is unique and items such as system upgrades and treatment, additional storage, expansion of system, customer availability, and other factors have to be taken into consideration. Although 2015 is recognized as the base year, the Districts evaluated existing beneficial flows as of 2018 (DEP 2019a) because this was the most recent year of data that was within the scope of the plan. It was noted that many utilities in the NFRWSP area have implemented reclaimed water projects.

## **Future Flows**

Using PSABs and CUPs, the Districts identified areas that have the potential to be connected to central sewer systems as a result of population growth. The 2018-2045 increase in population associated for each WWTF service area identified was obtained using the parcel-level projections, as described above. It was assumed that 95% of the identified population increase will receive sewer service and thereby return wastewater for treatment to a WWTF. It is acknowledged that the percentage of population growth and resulting wastewater flows will vary for individual service providers due to a number of factors.

According to empirical sources, increased population will generate approximately 73 gpcd of wastewater flows to the local WWTF. The 73 gpcd represents an average of 58.6 gpcd of wastewater generated by residential customers (indoor use; AWWA, 2016, Vickers 2001, Mayer, P and W. DeOreo, 1999), and 15 gpcd of wastewater return flows for employees at a commercial/industrial facility according to chapter 64E-6, F.A.C., "Standards for Onsite Sewage Treatment and Disposal Systems", rule 64E-6.008 System Size Determinations, section (1)(B) Table I (effective date 6/25/2009) - System Design.

For the purposes of the NFRWSP, the Districts also created a future reclaimed water scenario using the 2018 percent beneficial reuse utilization for existing and future flows, which assumes that no changes to current treatment processes are made (e.g., WWTF upgrade).

Only a portion of the existing and future wastewater treated for reuse is actually used to offset water demands that would otherwise require the use of fresh groundwater. The amount of potable offset that is typically achieved utility-wide is approximately 65% to 75%; however, the potable offset can range from 50% to as much as 100%, depending on the type of use being replaced. While the amount of potable offset that is achieved by reuse is dependent upon the demographics of a particular WWTF's service area, the projected wastewater flows do not represent an amount equal to the water demand reduction due to system losses and inefficiencies of reuse by customers.

Reclaimed water systems are unique to each utility and the potential WWTF flow estimated for this NFRWSP may not necessarily represent the amount of reclaimed



water that could be used in projects. Current treatment processes, WWTF capacities, storage and infrastructure, and inflow and infiltration reduction programs should be considered and could potentially impact the utilization cost of additional or currently available reclaimed water. Likewise, future and existing reclaimed water utilization may be higher than the scenarios presented if the WWTF provided reclaimed water for reuse to more efficient customers. In addition, potential future wastewater flows could be less if additional residential indoor water conservation is achieved. For example, AWWA has identified on their website ([www.Drinktap.org](http://www.Drinktap.org)) that if residences installed, for every instance, more efficient water fixtures and regularly checked for leaks, daily indoor water use (and associated wastewater flow) could potentially be reduced to 45.2 gpcd (Vickers 2001).

Detailed flows and projections for 2018 and 2045 for each identified WWTF and county are included in Tables B-13 to B-15.

### Spatial Distribution

The Districts did not attempt to identify where future reclaimed water flows or beneficial reuse will occur.

### 2045 Estimated Water Conservation Potential

Current water conservation potential for the 2023 NFRWSP area was calculated in order to gauge the future benefit of effective water conservation. For the 2023 NFRWSP, all categories of water use, except agriculture, utilized the results in the 2020 Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP) as the basis for estimating water conservation potential (CFWI 2020). Table 1 is excerpted from page 50 of the 2020 CFWI RWSP which was developed in partnership with stakeholders and is based on an in-depth assessment of the conservation potential from implementing best management practices. More detailed information on how water conservation estimates were developed in the CFWI can be found at <https://cfwiwater.com/waterconservation.html> and in the 2020 CFWI RWSP (CFWI 2020).

Table 1. CFWI projected 2040 water demand and water conservation savings

Category	Projected 2040 Water Demand (mgd)	Projected 2040 Water Conservation Savings (mgd)
Public Supply	592.28	41.50 – 44.16
Domestic and Small Public Supply	24.59	0.86
Agriculture	163.49	4.19
Landscape/Recreational	46.96	2.22
Commercial/Industrial/Institutional	69.00	1.55 – 4.40
Power Generation	11.27	1.55 – 4.40
Total	907.59	50.32 – 55.83

For agriculture, water conservation savings were estimated from the FDACS - FSAID VII Final Report (FDACS 2020). Additionally, a second scenario of water conservation

potential based on per capita rates was estimated for the public supply and domestic self-supply (DSS) water use categories.

For the first water conservation scenario, the Districts used the low-end estimates from the 2020 CFWI RWSP plus the FSAID VII estimates (Table B-16). For the 2023 NFRWSP, the resulting percentage savings derived from the 2020 CFWI RWSP in Table 1 will be applied to all of the water use categories (except agriculture). See Table 2 for the estimated percentage savings.

Table 2. Percentage Savings Calculated from the 2020 CFWI RWSP

Category	Estimated Percent Savings
Public Supply	7.0
Domestic Self Supply and Small Public Supply	3.5
Agriculture*	N/A*
Landscape/Recreational	4.7
Commercial Industrial/Institutional	2.2
Power Generation	13.8

\*For agriculture, FSAID VII will be used to estimate water conservation potential.

The second water conservation scenario involved the public supply and DSS water use categories. For these two water use categories, the Districts calculated the average 2014-2018 gross per capita rates for the SJRWMD and SRWMD portions of the NFRWSP area (Table B-17 and B-18). If a public supply utility gross per capita was greater than the average 2014-2018 gross per capita, it was revised to reflect the demand based on the respective Districts' average 2014-2018 gross per capita multiplied by the public supply utility's 2045 population projections. This revised demand represents the water conservation potential for the public supply utility based on meeting the lower gross per capita average. For DSS, the corresponding percent reduction in the total public supply water demand by county using the per capita rate average was then applied to DSS 2045 water demand, resulting in the second scenario of DSS water conservation.

## NFWWMD and SWFWMD Water Use and Projections

The NFWWMD and SWFWMD provided their water use estimates and projections. These data were incorporated into the 2023 NFRWSP geodatabase. Details concerning the development of the NFWWMD and SWFWMD data and projections should be directed back to the respective water management districts.

## Georgia and South Carolina Water Use

Districts obtained water use data and projections through 2050 from the Georgia Environmental Protection Division (GEPD). The data were spatially distributed by staff and provided to GEPD for review. In June 2021, GEPD staff provided comments concerning surface water distribution which were addressed, and the resulting distribution was incorporated into the 2023 NFRWSP geodatabase. Additional

information on the Georgia data and projections can be obtained from the GEPD at: [Georgia Water Planning](#). South Carolina data was obtained from the US. Geological Survey at: [ScienceBase Catalog Home](#). Details on how the data were distributed can be found in the *Methodology for the Spatial Distribution of Historic Water Use and Projected Water Demand for Georgia and South Carolina* (SJRWMD 2020).

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Table B-3. Total Water Use for 2015 and 5-in-10 Year Water Demand Projections for 2020-2045, and 1-in-10 Year Water Demand Projections for 2045 by County in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	District	Water Use				Demand Projections (5-in-10)																				Percent Change 2015-2045	Demand Projections (1-in-10)						
		2015			2020				2025				2030				2035				2040				2045				2045				
		Ground	Surface	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground		Surface	Other	Total	Ground	Surface	Other	Total
Alachua	SJRWMD	26.89	0.08	26.97	28.22	0.08	0.00	28.30	29.44	0.09	0.00	29.53	30.72	0.09	0.00	30.81	31.71	0.09	0.00	31.80	32.65	0.09	0.00	32.74	33.37	0.10	0.00	33.47	24%	37.11	0.17	0.00	37.28
Alachua	SRWMD	19.25	0.00	19.25	19.02	0.00	0.00	19.02	19.28	0.00	0.00	19.28	19.43	0.00	0.00	19.43	19.97	0.00	0.00	19.97	20.27	0.00	0.00	20.27	20.60	0.00	0.00	20.60	7%	24.32	0.00	0.00	24.32
<b>Alachua</b>	<b>Total</b>	<b>46.14</b>	<b>0.08</b>	<b>46.22</b>	<b>47.24</b>	<b>0.08</b>	<b>0.00</b>	<b>47.32</b>	<b>48.72</b>	<b>0.09</b>	<b>0.00</b>	<b>48.81</b>	<b>50.15</b>	<b>0.09</b>	<b>0.00</b>	<b>50.24</b>	<b>51.68</b>	<b>0.09</b>	<b>0.00</b>	<b>51.77</b>	<b>52.92</b>	<b>0.09</b>	<b>0.00</b>	<b>53.01</b>	<b>53.97</b>	<b>0.10</b>	<b>0.00</b>	<b>54.07</b>	<b>17%</b>	<b>61.43</b>	<b>0.17</b>	<b>0.00</b>	<b>61.60</b>
Baker	SJRWMD	3.50	0.47	3.97	3.81	0.43	0.00	4.24	3.99	0.45	0.00	4.44	4.16	0.46	0.00	4.62	4.27	0.47	0.00	4.74	4.37	0.49	0.00	4.86	4.47	0.49	0.00	4.96	25%	4.74	0.52	0.00	5.26
Baker	SRWMD	0.26	0.00	0.26	0.28	0.00	0.00	0.28	0.29	0.00	0.00	0.29	0.30	0.00	0.00	0.30	0.31	0.00	0.00	0.31	0.33	0.00	0.00	0.33	0.34	0.00	0.00	0.34	31%	0.33	0.00	0.00	0.33
<b>Baker</b>	<b>Total</b>	<b>3.76</b>	<b>0.47</b>	<b>4.23</b>	<b>4.09</b>	<b>0.43</b>	<b>0.00</b>	<b>4.52</b>	<b>4.28</b>	<b>0.45</b>	<b>0.00</b>	<b>4.73</b>	<b>4.46</b>	<b>0.46</b>	<b>0.00</b>	<b>4.92</b>	<b>4.58</b>	<b>0.47</b>	<b>0.00</b>	<b>5.05</b>	<b>4.70</b>	<b>0.49</b>	<b>0.00</b>	<b>5.19</b>	<b>4.81</b>	<b>0.49</b>	<b>0.00</b>	<b>5.30</b>	<b>25%</b>	<b>5.07</b>	<b>0.52</b>	<b>0.00</b>	<b>5.59</b>
Bradford	SJRWMD	0.17	0.00	0.17	0.22	0.00	0.00	0.22	0.26	0.00	0.00	0.26	0.28	0.00	0.00	0.28	0.28	0.00	0.00	0.28	0.29	0.00	0.00	0.29	0.31	0.00	0.00	0.31	82%	0.33	0.00	0.00	0.33
Bradford	SRWMD	4.72	0.00	4.72	4.86	0.00	0.00	4.86	4.84	0.00	0.00	4.84	4.84	0.00	0.00	4.84	4.89	0.00	0.00	4.89	4.88	0.00	0.00	4.88	4.86	0.00	0.00	4.86	3%	5.50	0.00	0.00	5.50
<b>Bradford</b>	<b>Total</b>	<b>4.89</b>	<b>0.00</b>	<b>4.89</b>	<b>5.08</b>	<b>0.00</b>	<b>0.00</b>	<b>5.08</b>	<b>5.10</b>	<b>0.00</b>	<b>0.00</b>	<b>5.10</b>	<b>5.12</b>	<b>0.00</b>	<b>0.00</b>	<b>5.12</b>	<b>5.17</b>	<b>0.00</b>	<b>0.00</b>	<b>5.17</b>	<b>5.17</b>	<b>0.00</b>	<b>0.00</b>	<b>5.17</b>	<b>5.17</b>	<b>0.00</b>	<b>0.00</b>	<b>5.17</b>	<b>6%</b>	<b>5.83</b>	<b>0.00</b>	<b>0.00</b>	<b>5.83</b>
Clay	SJRWMD	20.71	0.33	21.04	20.48	0.36	0.00	20.84	25.28	0.41	0.00	25.69	27.70	0.45	0.00	28.15	30.41	0.50	0.00	30.91	31.74	0.52	0.00	32.26	32.91	0.55	0.00	33.46	59%	34.51	1.01	1.41	36.43
Columbia	SRWMD	11.75	0.00	11.75	11.72	0.00	0.00	11.72	15.31	0.00	0.00	15.31	16.51	0.00	0.00	16.51	17.66	0.00	0.00	17.66	19.01	0.00	0.00	19.01	20.36	0.00	0.00	20.36	73%	23.47	0.00	0.00	23.47
Duval	SJRWMD	143.35	17.82	161.17	155.28	18.92	0.00	174.20	165.36	19.48	0.00	184.84	175.26	20.22	0.00	195.48	183.57	21.46	1.51	206.54	184.88	22.79	10.07	217.74	185.75	24.16	18.60	228.51	42%	214.39	25.28	27.68	239.67
Flagler	SJRWMD	16.38	1.89	18.27	21.87	2.29	0.00	24.16	23.01	2.45	0.00	25.46	24.01	2.59	0.00	26.60	24.85	2.71	0.00	27.56	25.30	2.77	0.00	28.07	25.80	2.82	0.00	28.62	57%	30.88	3.43	0.00	34.31
Gilchrist	SRWMD	20.76	0.00	20.76	20.86	0.00	0.00	20.86	21.62	0.00	0.00	21.62	22.36	0.00	0.00	22.36	23.20	0.00	0.00	23.20	23.97	0.00	0.00	23.97	24.82	0.00	0.00	24.82	20%	30.67	0.00	0.00	30.67
Hamilton	SRWMD	40.69	17.19	57.88	38.65	17.19	0.00	55.84	39.40	17.19	0.00	56.59	40.08	17.19	0.00	57.27	40.82	17.19	0.00	58.01	41.58	17.19	0.00	58.77	42.28	17.19	0.00	59.47	3%	47.35	17.19	0.00	64.54
Nassau	SJRWMD	42.62	1.69	44.31	44.07	1.51	0.00	45.58	44.67	1.72	0.00	46.39	45.14	1.92	0.00	47.06	45.45	2.08	0.00	47.53	45.71	2.25	0.00	47.96	45.95	2.41	0.00	48.36	9%	46.98	2.92	0.00	49.90
Putnam	SJRWMD	25.01	24.90	49.91	25.84	25.77	0.00	51.61	26.85	25.85	0.00	52.70	27.79	25.88	0.00	53.67	28.65	25.91	0.00	54.56	29.57	25.97	0.00	55.54	30.52	26.01	0.00	56.53	13%	39.46	25.66	0.00	65.12
St. Johns	SJRWMD	41.43	4.39	45.82	56.51	6.50	0.00	63.01	59.64	7.46	0.00	67.10	61.50	8.19	0.00	69.69	63.10	8.92	0.00	72.02	64.48	9.57	0.00	74.05	65.68	10.27	0.00	75.95	66%	77.65	11.78	0.00	89.43
Suwannee	SRWMD	40.55	0.06	40.61	43.42	0.05	0.00	43.47	45.97	0.05	0.00	46.02	47.86	0.05	0.00	47.91	49.97	0.05	0.00	50.02	52.00	0.05	0.00	52.05	54.12	0.05	0.00	54.17	33%	66.94	0.05	0.00	66.99
Union	SRWMD	2.75	0.00	2.75	2.81	0.00	0.00	2.81	3.02	0.00	0.00	3.02	3.17	0.00	0.00	3.17	3.28	0.00	0.00	3.28	3.45	0.00	0.00	3.45	3.57	0.00	0.00	3.57	30%	4.29	0.00	0.00	4.29
<b>SJRWMD Region 1 Total</b>		<b>320.06</b>	<b>51.57</b>	<b>371.63</b>	<b>356.30</b>	<b>55.86</b>	<b>0.00</b>	<b>412.16</b>	<b>378.50</b>	<b>57.91</b>	<b>0.00</b>	<b>436.41</b>	<b>396.56</b>	<b>59.80</b>	<b>0.00</b>	<b>456.36</b>	<b>412.29</b>	<b>62.14</b>	<b>1.51</b>	<b>475.94</b>	<b>418.99</b>	<b>64.45</b>	<b>10.07</b>	<b>493.51</b>	<b>424.76</b>	<b>66.81</b>	<b>18.60</b>	<b>510.17</b>	<b>37%</b>	<b>486.05</b>	<b>70.77</b>	<b>29.09</b>	<b>557.73</b>
<b>SRWMD NFRWSP Total</b>		<b>140.73</b>	<b>17.25</b>	<b>157.98</b>	<b>141.62</b>	<b>17.24</b>	<b>0.00</b>	<b>158.86</b>	<b>149.73</b>	<b>17.24</b>	<b>0.00</b>	<b>166.97</b>	<b>154.55</b>	<b>17.24</b>	<b>0.00</b>	<b>171.79</b>	<b>160.10</b>	<b>17.24</b>	<b>0.00</b>	<b>177.34</b>	<b>165.49</b>	<b>17.24</b>	<b>0.00</b>	<b>182.73</b>	<b>170.95</b>	<b>17.24</b>	<b>0.00</b>	<b>188.19</b>	<b>19%</b>	<b>202.87</b>	<b>17.24</b>	<b>0.00</b>	<b>220.11</b>
<b>NFRWSP Total</b>		<b>460.79</b>	<b>68.82</b>	<b>529.61</b>	<b>497.92</b>	<b>73.10</b>	<b>0.00</b>	<b>571.02</b>	<b>528.23</b>	<b>75.15</b>	<b>0.00</b>	<b>603.38</b>	<b>551.11</b>	<b>77.04</b>	<b>0.00</b>	<b>628.15</b>	<b>572.39</b>	<b>79.38</b>	<b>1.51</b>	<b>653.28</b>	<b>584.48</b>	<b>81.69</b>	<b>10.07</b>	<b>676.24</b>	<b>595.71</b>	<b>84.05</b>	<b>18.60</b>	<b>698.36</b>	<b>32%</b>	<b>688.92</b>	<b>88.01</b>	<b>29.09</b>	<b>777.84</b>

Notes:  
1.) All water use is shown in million gallons per day.  
2.) Rounding errors account for nominal discrepancies.  
3.) The Other water source category represents water demand exceeding the permittee's groundwater withdrawal limit as identified in the Black Creek Water Resource Development Project Participation Agreement.





Table B-5a. 2014-2018 Water Use, Population Served, and Five-Year Gross Per Capita Averages for Public Supply Permitted Equal to or Greater than 0.10 mgd, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use					Population					2014-2018 Average Gross	Notes
					2014	2015	2016	2017	2018	2014	2015	2016	2017	2018		
1674	City of Hawthorne	City of Hawthorne		Alachua	0.158	0.139	0.159	0.092	0.118	1,508	1,508	1,508	1,510	1,530	88	
11339	Gainesville Regional Utilities	Gainesville Regional Utilities	GRU	Alachua	21.82	22.06	22.29	23.43	22.72	187,900	189,400	190,900	192,200	194,500	118	
11343	Kincaid Hills Water Company	Kincaid Hills Water Company	Kincaid Hills	Alachua	0.075	0.085	0.093	0.104	0.139	606	620	620	620	620	161	
11356	Town of Micanopy	Town of Micanopy		Alachua	0.060	0.059	0.061	0.060	0.051	824	824	824	824	824	71	
11364, 132141	Arredondo Utility Co / Aqua Source Utilities	Arredondo Utility Co / Aqua Source Utilities	Arredondo Farms	Alachua	0.079	0.085	0.102	0.090	0.099	1,266	1,266	1,195	1,195	1,195	74	
<b>SJRWMD Alachua Total</b>					<b>22.192</b>	<b>22.428</b>	<b>22.705</b>	<b>23.776</b>	<b>23.127</b>	<b>192,104</b>	<b>193,618</b>	<b>195,047</b>	<b>196,349</b>	<b>198,669</b>	<b>117</b>	
216450	City of Newberry	City of Newberry	PWS 2010207	Alachua	0.495	0.521	0.551	0.574	0.591	4,855	5,026	5,197	5,367	5,538	105	
216647	City of Archer	City of Archer	PWS 2010199	Alachua	0.110	0.135	0.117	0.114	0.128	1,246	1,273	1,282	1,284	1,303	95	
216833	City of High Springs Water Plant	City of High Springs Water Plant	PWS 2010201	Alachua	0.409	0.455	0.503	0.556	0.580	5,675	5,684	6,093	6,155	6,221	84	
217300	City of Waldo	City of Waldo	PWS 2010212	Alachua	0.065	0.062	0.067	0.071	0.073	966	947	955	947	960	71	
220667	City of Alachua	City of Alachua	PWS 2010017	Alachua	1.131	1.170	1.275	1.170	1.207	9,665	9,665	9,873	10,027	10,155	121	
<b>SRWMD Alachua Total</b>					<b>2.210</b>	<b>2.343</b>	<b>2.513</b>	<b>2.485</b>	<b>2.579</b>	<b>22,407</b>	<b>22,595</b>	<b>23,400</b>	<b>23,780</b>	<b>24,177</b>	<b>104</b>	
15	City of Macclenny	City of Macclenny		Baker	0.845	0.886	0.922	0.903	0.934	6,391	6,430	6,430	6,472	6,582	139	
24	Town of Glen St. Mary	Town of Glen St. Mary		Baker	0.031	0.031	0.032	0.033	0.034	428	435	435	440	449	74	
<b>SJRWMD Baker Total</b>					<b>0.876</b>	<b>0.917</b>	<b>0.954</b>	<b>0.936</b>	<b>0.968</b>	<b>6,819</b>	<b>6,865</b>	<b>6,865</b>	<b>6,912</b>	<b>7,031</b>	<b>135</b>	
216650	City of Starke	City of Starke	PWS 2040211	Bradford	0.696	0.748	0.645	0.707	0.680	6,591	6,585	6,541	6,538	6,700	105	
218998	City of Lawtey	City of Lawtey	PWS 2040648	Bradford	0.186	0.193	0.184	0.191	0.212	855	877	876	868	889	221	
<b>SRWMD Bradford Total</b>					<b>0.882</b>	<b>0.941</b>	<b>0.829</b>	<b>0.898</b>	<b>0.892</b>	<b>7,446</b>	<b>7,462</b>	<b>7,417</b>	<b>7,406</b>	<b>7,589</b>	<b>119</b>	
416, 431	Clay County Utility Authority	Clay County Utility Authority	Postmaster Village, Keystone Heights, CUA	Bradford, Clay	10.628	11.037	11.729	11.658	11.231	118,554	115,629	118,432	118,437	120,444	95	Clay County Utility served 939 people in SRWMD portion of Bradford County in 2015.
453	Town of Orange Park	Town of Orange Park		Clay	0.862	0.887	0.922	0.889	0.830	9,042	9,042	9,042	9,058	9,058	97	
499	City of Green Cove Springs	City of Green Cove Springs		Clay	0.970	0.996	1.127	1.158	1.049	6,500	6,500	6,500	6,630	6,763	161	
<b>SJRWMD Clay Total</b>					<b>12.460</b>	<b>12.920</b>	<b>13.778</b>	<b>13.705</b>	<b>13.110</b>	<b>134,096</b>	<b>131,171</b>	<b>133,974</b>	<b>134,125</b>	<b>136,265</b>	<b>99</b>	
217754	City of Lake City	City of Lake City	PWS 2120630 & 2124372	Columbia	3.231	3.280	3.413	3.362	3.345	18,604	18,697	18,752	18,912	19,097	177	
220704	Columbia County Board of Commissioners	Columbia County Board of Commissioners	PWS 2124413	Columbia	0.042	0.038	0.035	0.045	0.066	70	70	70	71	75	635	
239112	North Florida Mega Industrial Park Wellfield	North Florida Mega Industrial Park Wellfield		Columbia	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0	N/A	Permit issued in 2021
<b>SRWMD Columbia Total</b>					<b>3.273</b>	<b>3.318</b>	<b>3.448</b>	<b>3.407</b>	<b>3.411</b>	<b>18,674</b>	<b>18,767</b>	<b>18,822</b>	<b>18,983</b>	<b>19,172</b>	<b>179</b>	
756	CSWR - Florida Utility Operating Company, LLC	CSWR - Florida Utility Operating Company, LLC		Duval	0.075	0.079	0.087	0.083	0.068	1,015	1,015	1,015	1,015	1,015	77	Formerly Neighborhood Utilities, Inc.
784	City of Baldwin	City of Baldwin		Duval	0.242	0.217	0.231	0.242	0.199	1,411	1,385	1,392	1,407	1,419	161	
793	City of Jacksonville Beach	City of Jacksonville Beach		Duval	2.365	2.491	2.658	2.539	2.418	23,279	23,279	23,279	23,498	23,733	107	
810	Atlantic Beach Utility	Atlantic Beach Utility	Buccaneer / Atlantic Beach	Duval	2.101	2.179	2.400	2.324	2.319	22,530	22,674	23,024	23,313	23,585	98	
842	City of Neptune Beach	City of Neptune Beach		Duval	0.957	0.938	0.914	0.929	0.884	7,270	7,270	7,270	7,303	7,554	126	
50293	Normandy Villages Utilities	Normandy Villages Utilities		Duval	0.275	0.283	0.279	0.327	0.281	3,265	3,200	3,200	3,202	3,235	90	
88271	JEA	JEA		Clay, Duval, Nassau, St. Johns	100.428	104.625	109.845	113.288	110.158	815,762	823,308	833,065	844,347	857,673	129	
<b>SJRWMD Duval Total</b>					<b>106.443</b>	<b>110.812</b>	<b>116.414</b>	<b>119.732</b>	<b>116.327</b>	<b>874,532</b>	<b>882,131</b>	<b>892,245</b>	<b>904,085</b>	<b>918,214</b>	<b>127</b>	
59	City of Flagler Beach	City of Flagler Beach		Flagler	0.819	0.649	0.673	0.643	0.541	4,507	4,621	4,630	4,677	4,677	144	
1947	City of Palm Coast	City of Palm Coast	Include Beverly Beach Area	Flagler	6.565	7.074	7.606	7.660	7.452	79,903	79,819	81,182	82,137	89,548	88	
1960	Plantation Bay Utility Company	Plantation Bay Utility Company		Flagler, Volusia	0.175	0.169	0.223	0.263	0.236	3,000	3,000	3,000	3,174	3,174	69	
1982	City of Bunnell	City of Bunnell		Flagler	0.352	0.329	0.401	0.486	0.337	2,835	2,875	2,910	2,934	2,999	131	
2002	Manufactured Home Communities Dunes Community Development District	Manufactured Home Communities Dunes Community Development District	Bulow Village Campground	Flagler	0.128	0.135	0.098	0.049	0.135	1,284	1,284	1,284	1,284	1,284	85	Includes Golf Course. Per capita of 188 for just PS.
51136	Dunes Community Development District	Dunes Community Development District		Flagler	2.475	0.692	0.860	0.912	0.800	4,017	4,017	4,017	4,091	4,153	283	
<b>SJRWMD Flagler Total</b>					<b>10.514</b>	<b>9.048</b>	<b>9.861</b>	<b>10.013</b>	<b>9.501</b>	<b>95,546</b>	<b>95,616</b>	<b>97,023</b>	<b>98,297</b>	<b>105,835</b>	<b>99</b>	
216453	City of Trenton Water Treatment Plant	City of Trenton Water Treatment Plant	PWS 2211188	Gilchrist	0.231	0.218	0.220	0.195	0.204	2,042	2,040	2,038	2,041	2,100	104	
220310	Fanning Springs	Fanning Springs		Gilchrist	0.000	0.000	0.000	0.000	0.000	86	85	96	98	101	0	Wells are outside of Gilchrist County
<b>SRWMD Gilchrist Total</b>					<b>0.231</b>	<b>0.218</b>	<b>0.220</b>	<b>0.195</b>	<b>0.204</b>	<b>2,128</b>	<b>2,125</b>	<b>2,134</b>	<b>2,139</b>	<b>2,201</b>	<b>100</b>	
216567	Town of Jennings	Town of Jennings	PWS 2240579	Hamilton	0.161	0.135	0.140	0.141	0.143	699	699	688	669	699	208	
216651	Town of White Springs	Town of White Springs	PWS 2241264	Hamilton	0.043	0.035	0.035	0.046	0.060	757	754	754	741	777	58	
220443	Hamilton County Water Facilities	Hamilton County Water Facilities	PWS 2244150	Hamilton	0.074	0.067	0.047	0.052	0.060	0	0	0	0	0	N/A	
220463	City of Jasper	City of Jasper	PWS 2240570	Hamilton	0.611	0.658	0.735	0.686	0.716	3,635	3,623	3,598	3,574	3,735	188	
<b>SRWMD Hamilton Total</b>					<b>0.889</b>	<b>0.895</b>	<b>0.957</b>	<b>0.925</b>	<b>0.979</b>	<b>5,091</b>	<b>5,076</b>	<b>5,040</b>	<b>4,984</b>	<b>5,211</b>	<b>183</b>	

Table B-5a, Continued. 2014-2018 Water Use, Population Served, and Five-Year Gross Per Capita Averages for Public Supply Permitted Equal to or Greater than 0.10 mgd, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use					Population					2014-2018 Average Gross	Notes
					2014	2015	2016	2017	2018	2014	2015	2016	2017	2018		
122	City of Fernandina Beach	City of Fernandina Beach		Nassau	3.057	2.956	3.273	3.288	3.393	18,661	18,661	18,797	19,020	19,249	169	
922	Town of Callahan	Town of Callahan		Nassau	0.152	0.157	0.168	0.181	0.201	1,609	1,609	1,658	1,672	1,719	104	
948	Town of Hilliard	Town of Hilliard		Nassau	0.221	0.232	0.213	0.231	0.272	3,000	3,000	3,166	3,178	3,189	75	
50087	Nassau County Board of County Commissioners	Nassau Amelia Utilities	Amelia Island	Nassau	1.264	1.309	1.407	1.418	1.385	8,946	9,242	9,290	9,344	9,401	147	
88271	JEA	JEA	Nassau Regional (Old 942)	Nassau	2.185	2.257	2.651	2.890	3.167	16,185	17,253	18,875	20,553	22,170	138	
<b>SJRWMD Nassau Total</b>					<b>6.879</b>	<b>6.911</b>	<b>7.712</b>	<b>8.008</b>	<b>8.418</b>	<b>48,401</b>	<b>49,765</b>	<b>51,786</b>	<b>53,767</b>	<b>55,728</b>	<b>146</b>	
1624, 8150	Town of Interlachen	Town of Interlachen		Putnam	0.080	0.082	0.080	0.101	0.071	930	935	938	943	959	88	
1627	City of Crescent City	City of Crescent City		Putnam	0.176	0.166	0.171	0.178	0.171	1,800	1,800	1,800	1,804	1,805	96	
7961	Melrose Water Association	Melrose Water Association		Putnam	0.100	0.151	0.113	0.107	0.108	1,286	1,286	1,286	1,293	1,304	90	Service area covers Putnam, Clay, Alachua, and Bradford Counties.
7981	River Park Utility Mgt. Assoc.	River Park Utilities Management Assoc.		Putnam	0.062	0.098	0.065	0.069	0.050	1,000	1,000	1,000	1,001	1,001	69	
8114	City of Palatka	City of Palatka		Putnam	1.326	1.307	1.206	1.526	0.961	11,900	11,941	11,985	12,053	12,053	106	
8168	Town of Welaka	Town of Welaka		Putnam	0.094	0.098	0.088	0.114	0.094	1,781	1,781	1,781	1,785	1,790	55	
92165	Putnam County BOCC	Putnam County BOCC	East Putnam County Water System, East Palatka & San Mateo	Putnam	0.243	0.269	0.274	0.271	0.261	2,393	2,479	2,842	2,851	2,857	98	
<b>SJRWMD Putnam Total</b>					<b>2.081</b>	<b>2.171</b>	<b>1.997</b>	<b>2.366</b>	<b>1.716</b>	<b>21,090</b>	<b>21,222</b>	<b>21,632</b>	<b>21,730</b>	<b>21,769</b>	<b>96</b>	
157	North Beach Utilities	North Beach Utilities		St. Johns	0.415	0.449	0.493	0.498	0.535	3,295	3,295	3,445	3,702	3,789	136	
324	Wildwood Water Company	Wildwood Water Company		St. Johns	0.061	0.060	0.058	0.059	0.057	858	858	858	858	891	68	
1142	St. Johns County Utilities	St. Johns County Utilities	Was previously Intercoastal Utilities CUP 1213 (consolidated)	Duval, St. Johns	3.665	4.017	4.535	4.763	4.010	25,353	25,353	25,707	26,176	27,197	144	
1198	St. Johns County Utilities	St. Johns County Utilities	Serves Eagle Creek - PWSID interconnection 2554353	St. Johns	6.818	6.895	7.922	7.846	7.684	62,675	70,395	70,395	75,016	75,016	96	
1392	St. Johns County Utilities	St. Johns County Utilities	Town of Hastings	St. Johns	0.080	0.084	0.086	0.083	0.089	593	682	682	695	708	126	
50299	City of St. Augustine Utilities	City of St. Augustine Utilities		St. Johns	2.951	3.231	3.409	3.578	3.460	28,207	28,207	29,490	30,190	32,088	112	
<b>SJRWMD St. Johns Total</b>					<b>13.990</b>	<b>14.736</b>	<b>16.503</b>	<b>16.827</b>	<b>15.835</b>	<b>120,981</b>	<b>128,790</b>	<b>130,577</b>	<b>136,637</b>	<b>139,689</b>	<b>119</b>	
216507	Town of Wellborn	Town of Wellborn	PWS 2611246	Suwannee	0.042	0.035	0.037	0.038	0.039	493	483	485	478	490	79	
216658	Town of Branford	Town of Branford	PWS 2610109	Suwannee	0.075	0.073	0.082	0.094	0.084	666	664	683	683	700	120	
219527	Advent Christian Village	Advent Christian Village	PWS 2610012	Suwannee	0.137	0.136	0.136	0.146	0.127	563	563	753	761	780	199	
220612	City of Live Oak	City of Live Oak	PWS 2610203	Suwannee	1.188	1.065	1.150	1.068	1.056	5,627	5,781	5,750	5,779	6,005	191	
<b>SRWMD Suwannee Total</b>					<b>1.442</b>	<b>1.309</b>	<b>1.405</b>	<b>1.346</b>	<b>1.306</b>	<b>7,349</b>	<b>7,491</b>	<b>7,671</b>	<b>7,701</b>	<b>7,975</b>	<b>178</b>	
220148	City of Lake Butler	City of Lake Butler	PWS 2630202	Union	0.219	0.260	0.213	0.222	0.223	1,743	1,742	1,742	1,729	1,850	129	
<b>SRWMD Union Total</b>					<b>0.219</b>	<b>0.260</b>	<b>0.213</b>	<b>0.222</b>	<b>0.223</b>	<b>1,743</b>	<b>1,742</b>	<b>1,742</b>	<b>1,729</b>	<b>1,850</b>	<b>129</b>	
<b>SJRWMD Region 1 Total</b>					<b>175.435</b>	<b>179.943</b>	<b>189.924</b>	<b>195.363</b>	<b>189.002</b>	<b>1,493,569</b>	<b>1,509,178</b>	<b>1,529,149</b>	<b>1,551,902</b>	<b>1,583,200</b>	<b>121</b>	
<b>SRWMD NFRWSP Total</b>					<b>9.146</b>	<b>9.284</b>	<b>9.585</b>	<b>9.478</b>	<b>9.594</b>	<b>64,838</b>	<b>65,258</b>	<b>66,226</b>	<b>66,722</b>	<b>68,175</b>	<b>142</b>	
<b>NFRWSP Total</b>					<b>184.581</b>	<b>189.227</b>	<b>199.509</b>	<b>204.841</b>	<b>198.596</b>	<b>1,558,407</b>	<b>1,574,436</b>	<b>1,595,375</b>	<b>1,618,624</b>	<b>1,651,375</b>	<b>122</b>	

Notes:

- 1.) All water use is shown in million gallons per day.
- 2.) Rounding errors account for nominal discrepancies.
- 3.) 2014 - 2018 water use data source is NFSEG master geodatabase with metered and estimated public supply water use.
- 4.) 2014 - 2018 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Basic Facility Report Data, parcel data, and permittee surveys.











Table B-6c, Continued. 2014-2018 Water Use, Population Served, and Five-Year Gross Per Capita Averages for Public Supply Permitted Smaller than 0.10 mgd in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use 2014	Water Use 2015	Water Use 2016	Water Use 2017	Water Use 2018	Population 2014	Population 2015	Population 2016	Population 2017	Population 2018	2014-2018 Avg GPCD	Notes
	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc. (formerly 7984 & 7988)	CUPs 7984 (Hermits Cove - PWSID 2540482) and 7988 (St Johns Highlands / Hermits Cove - PWSID 2540482) expired in 1992 and were not renewed - "No permit required." St Johns River Club Utilities PWSID 2544266 does not have any record of a CUP.	Putnam	0.040	0.040	0.040	0.040	0.040	211	211	211	211	211	190	
	Mr. W. Herrington	River Villas Inc.	CUP 8129 was closed in 2003, no permit required.	Putnam	0.005	0.005	0.005	0.005	0.005	60	60	60	60	60	83	
<b>SJRWMD Putnam Total</b>					<b>0.202</b>	<b>0.203</b>	<b>0.206</b>	<b>0.215</b>	<b>0.218</b>	<b>2,996</b>	<b>2,996</b>	<b>2,996</b>	<b>2,998</b>	<b>3,003</b>	<b>70</b>	
1190	Pinkham Pacetti	Pinkham Pacetti	Pacetti's Marina & Campground	St. Johns	0.010	0.010	0.010	0.010	0.010	345	345	345	345	345	29	
1381	Comachee Cove Yacht Harbor	Comachee Cove Yacht Harbor		St. Johns	0.023	0.021	0.022	0.025	0.024	378	378	411	411	411	58	
1386	Homeowners Utilities	Homeowners Utilities	Porpoise Point	St. Johns	0.041	0.035	0.048	0.052	0.033	237	237	237	237	237	176	
1423	St. Johns County Board of County Commissioners	Fruit Cove Utilities	owned by Fruit Cove Properties Joint Venture.	St. Johns	0.042	0.044	0.043	0.043	0.043	369	369	369	369	369	117	
<b>SJRWMD St. Johns Total</b>					<b>0.116</b>	<b>0.110</b>	<b>0.123</b>	<b>0.130</b>	<b>0.110</b>	<b>1,329</b>	<b>1,329</b>	<b>1,362</b>	<b>1,362</b>	<b>1,362</b>	<b>87</b>	
217345	Wayne Friar Mobile Home Park	Wayne Friar Mobile Home Park	PWS ID 2611239	Suwannee	0.026	0.020	0.015	0.013	0.037	320	320	320	320	320	69	
216536	Oak Breeze Mobile Home Park	Oak Breeze Mobile Home Park		Suwannee	0.003	0.003	0.003	0.003	0.003	21	21	21	21	21	143	
219144	Bembry's Trailer Park	Bembry's Trailer Park		Suwannee	0.006	0.006	0.006	0.006	0.006	39	39	39	39	39	154	
219174	Morgan's Trailer Park	Morgan's Trailer Park		Suwannee	0.009	0.009	0.009	0.009	0.009	57	57	57	57	57	158	
234720	CR 136/I-75 Water Treatment Plant	CR 136/I-75 Water Treatment Plant		Suwannee	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0	0	Permit issued in 2019
<b>SRWMD Suwannee Total</b>					<b>0.044</b>	<b>0.038</b>	<b>0.033</b>	<b>0.031</b>	<b>0.055</b>	<b>437</b>	<b>437</b>	<b>437</b>	<b>437</b>	<b>437</b>	<b>92</b>	
215835	Carl Griffis TRS -052118	Carl Griffis TRS -052119		Union	0.002	0.002	0.002	0.002	0.002	12	12	12	12	12	167	
218586	Glenn S. Howard	Glenn S. Howard		Union	0.008	0.008	0.008	0.008	0.008	42	42	42	42	42	190	
221370	S. M. Brown, Jr. Mobile Home Park	S. M. Brown, Jr. Mobile Home Park		Union	0.003	0.003	0.003	0.003	0.003	18	18	18	18	18	167	
221567	Wallace Johns Mobile Home Park	Wallace Johns Mobile Home Park		Union	0.003	0.003	0.003	0.003	0.003	21	21	21	21	21	143	
<b>SRWMD Union Total</b>					<b>0.016</b>	<b>0.016</b>	<b>0.016</b>	<b>0.016</b>	<b>0.016</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>93</b>	<b>172</b>	
<b>SJRWMD Region 1 Total</b>					<b>0.502</b>	<b>0.482</b>	<b>0.521</b>	<b>0.542</b>	<b>0.497</b>	<b>6,516</b>	<b>6,516</b>	<b>6,549</b>	<b>6,553</b>	<b>6,560</b>	<b>78</b>	
<b>SRWMD NFRWSP Total</b>					<b>0.479</b>	<b>0.492</b>	<b>0.499</b>	<b>0.442</b>	<b>0.518</b>	<b>4,383</b>	<b>4,385</b>	<b>4,389</b>	<b>4,391</b>	<b>4,432</b>	<b>111</b>	
<b>NFRWSP Total</b>					<b>0.981</b>	<b>0.974</b>	<b>1.020</b>	<b>0.984</b>	<b>1.015</b>	<b>10,899</b>	<b>10,901</b>	<b>10,938</b>	<b>10,944</b>	<b>10,992</b>	<b>91</b>	

Notes:

- 1.) All water use is shown in million gallons per day.
- 2.) Rounding errors account for nominal discrepancies.
- 3.) 2014 - 2018 water use data source is NFSEG master geodatabase with metered and estimated small public supply water use.
- 4.) 2014 - 2018 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Basic Facility Report Data, parcel data, and permittee surveys.







Table B-7a, Continued. Agricultural Irrigation Self-supply Water Use (Including Miscellaneous Water Use) and Acreage for 2015, 5-in-10 Year Water Demand Projections and Acreage Projections for 2020-2045, and 1-in-10 Year Water Demand Projections for 2045, by Crop Category by County, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	Crop Category	2015 Estimated Agriculture		2020 Projected Agriculture		2025 Projected Agriculture		2030 Projected Agriculture		2035 Projected Agriculture		2040 Projected Agriculture		2045 Projected Agriculture		Percent Change 2015-2045		2045 (1-in-10) Demand
		Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acreage	MGD	
Columbia - SRWMD	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	15	0.29	141	0.27	221	0.41	307	0.56	427	0.78	536	0.97	611	1.11	3973%	283%	1.56
	Potatoes	0	0.03	26	0.03	40	0.05	82	0.09	109	0.12	117	0.13	117	0.13	N/A	333%	0.19
	Vegetables (Fresh Market)	87	0.26	196	0.24	482	0.60	874	1.10	1,125	1.42	1,469	1.85	1,758	2.22	1921%	754%	2.91
	Field Crops	3,196	2.59	3,232	2.41	3,447	2.59	3,617	2.74	4,000	3.06	4,175	3.22	4,372	3.40	37%	31%	4.31
	Greenhouse/Nursery	201	0.61	232	0.57	415	0.97	415	0.97	437	1.02	591	1.36	771	1.76	284%	189%	1.99
	Hay	383	0.50	463	0.47	524	0.50	678	0.60	684	0.60	702	0.61	792	0.67	107%	34%	0.91
	Sod	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	0.38	0	0.35	0	0.35	0	0.35	0	0.35	0	0.35	0	0.35	N/A	-8%	0.35
<b>Total</b>		<b>3,882</b>	<b>4.66</b>	<b>4,290</b>	<b>4.34</b>	<b>5,129</b>	<b>5.47</b>	<b>5,973</b>	<b>6.41</b>	<b>6,782</b>	<b>7.35</b>	<b>7,590</b>	<b>8.49</b>	<b>8,421</b>	<b>9.64</b>	<b>117%</b>	<b>107%</b>	<b>12.22</b>
Duval - SJRWMD	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	1	0.00	0%	N/A	0.00
	Potatoes	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Field Crops	146	0.10	146	0.09	146	0.09	146	0.10	146	0.10	146	0.10	146	0.10	0%	0%	0.15
	Greenhouse/Nursery	304	0.80	304	0.73	304	0.73	304	0.74	304	0.74	304	0.75	304	0.75	0%	-6%	0.86
	Hay	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sod	836	0.63	837	0.57	837	0.58	837	0.57	837	0.56	837	0.56	837	0.55	0%	-13%	0.72
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	0.23	0	0.21	0	0.21	0	0.21	0	0.21	0	0.21	0	0.21	N/A	-9%	0.21
<b>Total</b>		<b>1,287</b>	<b>1.76</b>	<b>1,288</b>	<b>1.60</b>	<b>1,288</b>	<b>1.61</b>	<b>1,288</b>	<b>1.62</b>	<b>1,288</b>	<b>1.61</b>	<b>1,288</b>	<b>1.62</b>	<b>1,288</b>	<b>1.61</b>	<b>0%</b>	<b>-9%</b>	<b>1.94</b>
Flagler - SJRWMD	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	23	0.02	23	0.04	23	0.05	23	0.05	23	0.05	7	0.02	7	0.02	-70%	0%	0.03
	Potatoes	3,492	2.82	3,816	4.61	3,816	4.64	3,665	4.50	3,552	4.39	3,552	4.42	3,490	4.37	0%	55%	6.68
	Vegetables (Fresh Market)	2,030	1.62	2,030	2.66	2,030	2.70	2,030	2.74	2,030	2.77	2,030	2.81	2,013	2.81	-1%	73%	3.77
	Field Crops	283	0.15	284	0.25	284	0.26	284	0.26	284	0.26	284	0.26	284	0.27	0%	80%	0.39
	Greenhouse/Nursery	515	0.70	499	1.15	499	1.16	499	1.16	499	1.17	484	1.14	484	1.15	-6%	64%	1.31
	Hay	834	0.38	636	0.62	636	0.61	636	0.59	636	0.62	578	0.56	540	0.49	-35%	29%	0.81
	Sod	2,327	1.12	2,120	1.83	1,924	1.65	1,924	1.63	1,924	1.65	1,826	1.57	1,826	1.59	-22%	42%	2.08
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	0.04	0	0.07	0	0.07	0	0.07	0	0.07	0	0.07	0	0.07	N/A	75%	0.07
<b>Total</b>		<b>9,504</b>	<b>6.86</b>	<b>9,408</b>	<b>11.23</b>	<b>9,212</b>	<b>11.14</b>	<b>9,061</b>	<b>11.00</b>	<b>8,948</b>	<b>10.98</b>	<b>8,761</b>	<b>10.85</b>	<b>8,644</b>	<b>10.77</b>	<b>-9%</b>	<b>57%</b>	<b>15.14</b>
Gilchrist - SRWMD	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	59	0.07	39	0.07	102	0.18	176	0.32	196	0.35	228	0.41	228	0.41	286%	486%	0.57
	Potatoes	0	0.00	0	0.00	8	0.01	8	0.01	8	0.01	47	0.05	125	0.14	N/A	N/A	0.21
	Vegetables (Fresh Market)	1,459	2.55	1,906	2.55	2,018	2.72	2,200	2.99	2,390	3.27	2,425	3.34	2,497	3.46	71%	36%	4.54
	Field Crops	11,811	12.00	15,828	11.99	15,962	12.19	16,088	12.38	16,214	12.65	16,443	12.98	16,604	13.25	41%	10%	16.83
	Greenhouse/Nursery	174	0.42	174	0.42	225	0.53	225	0.53	306	0.71	409	0.94	555	1.26	219%	200%	1.42
	Hay	2,057	1.84	1,987	1.84	2,063	1.89	2,126	1.94	2,157	1.94	2,182	1.93	2,182	1.92	6%	4%	2.62
	Sod	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	2.13	0	2.13	0	2.13	0	2.13	0	2.13	0	2.13	0	2.13	N/A	0%	2.13
<b>Total</b>		<b>15,560</b>	<b>19.01</b>	<b>19,934</b>	<b>19.00</b>	<b>20,378</b>	<b>19.65</b>	<b>20,823</b>	<b>20.30</b>	<b>21,271</b>	<b>21.06</b>	<b>21,734</b>	<b>21.78</b>	<b>22,191</b>	<b>22.57</b>	<b>43%</b>	<b>19%</b>	<b>28.32</b>

Table B-7a, Continued. Agricultural Irrigation Self-supply Water Use (Including Miscellaneous Water Use) and Acreage for 2015, 5-in-10 Year Water Demand Projections and Acreage Projections for 2020-2045, and 1-in-10 Year Water Demand Projections for 2045, by Crop Category by County, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	Crop Category	2015 Estimated Agriculture		2020 Projected Agriculture		2025 Projected Agriculture		2030 Projected Agriculture		2035 Projected Agriculture		2040 Projected Agriculture		2045 Projected Agriculture		Percent Change 2015-2045		2045 (1-in-10) Demand
		Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acreage	MGD	
Hamilton - SRWMD	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	0	0.07	32	0.06	90	0.16	143	0.26	167	0.30	234	0.42	261	0.47	N/A	571%	0.66
	Potatoes	241	0.36	276	0.31	276	0.31	276	0.31	317	0.36	317	0.36	317	0.37	32%	3%	0.53
	Vegetables (Fresh Market)	3,734	5.47	3,667	4.74	3,883	5.07	4,072	5.35	4,192	5.55	4,331	5.78	4,516	6.05	21%	11%	7.93
	Field Crops	8,610	7.88	8,931	6.83	9,020	6.97	9,153	7.16	9,376	7.46	9,580	7.75	9,816	8.05	14%	2%	10.22
	Greenhouse/Nursery	440	1.26	440	1.09	498	1.22	537	1.30	600	1.44	642	1.54	672	1.61	53%	28%	1.82
	Hay	667	0.82	650	0.71	716	0.75	778	0.77	796	0.78	847	0.80	847	0.79	27%	-4%	1.08
	Sod	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	0.24	0	0.21	0	0.21	0	0.21	0	0.21	0	0.21	0	0.21	N/A	-13%	0.21
<b>Total</b>		<b>13,692</b>	<b>16.10</b>	<b>13,996</b>	<b>13.95</b>	<b>14,483</b>	<b>14.69</b>	<b>14,959</b>	<b>15.36</b>	<b>15,448</b>	<b>16.10</b>	<b>15,951</b>	<b>16.86</b>	<b>16,429</b>	<b>17.55</b>	<b>20%</b>	<b>9%</b>	<b>22.45</b>
Nassau - SJRWMD	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	33	0.04	33	0.05	33	0.06	33	0.06	33	0.06	33	0.06	33	0.06	0%	50%	0.09
	Potatoes	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	18	0.01	18	0.02	18	0.02	18	0.02	18	0.02	18	0.02	18	0.02	0%	100%	0.03
	Field Crops	681	0.33	681	0.47	681	0.47	681	0.47	681	0.47	681	0.47	681	0.47	0%	42%	0.70
	Greenhouse/Nursery	93	0.16	89	0.22	89	0.23	89	0.23	89	0.24	89	0.24	89	0.25	-4%	56%	0.28
	Hay	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sod	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	0.13	0	0.19	0	0.19	0	0.19	0	0.19	0	0.19	0	0.19	N/A	46%	0.19
<b>Total</b>		<b>825</b>	<b>0.67</b>	<b>821</b>	<b>0.95</b>	<b>821</b>	<b>0.97</b>	<b>821</b>	<b>0.97</b>	<b>821</b>	<b>0.98</b>	<b>821</b>	<b>0.98</b>	<b>821</b>	<b>0.99</b>	<b>0%</b>	<b>48%</b>	<b>1.29</b>
Putnam - SJRWMD	Citrus	233	0.12	199	0.13	199	0.14	199	0.14	199	0.14	199	0.15	199	0.14	-15%	17%	0.23
	Fruit (Non-citrus)	619	1.05	611	1.13	663	1.24	877	1.64	939	1.77	1,015	1.92	1,015	1.94	64%	85%	2.79
	Potatoes	4,672	5.64	4,675	6.09	4,681	6.19	4,681	6.26	4,695	6.31	4,702	6.39	4,752	6.52	2%	16%	9.97
	Vegetables (Fresh Market)	1,365	1.80	1,546	1.95	1,797	2.29	1,959	2.53	2,117	2.76	2,298	3.02	2,487	3.29	82%	83%	4.41
	Field Crops	322	0.23	343	0.25	424	0.32	550	0.41	841	0.64	1,106	0.85	1,337	1.03	315%	348%	1.53
	Greenhouse/Nursery	2,623	5.65	2,508	6.10	2,624	6.43	2,624	6.43	2,665	6.60	2,735	6.83	2,860	7.19	9%	27%	8.20
	Hay	1,108	0.51	563	0.55	650	0.61	744	0.71	772	0.73	772	0.72	782	0.71	-29%	39%	1.17
	Sod	207	0.31	356	0.33	356	0.33	356	0.33	356	0.33	356	0.34	356	0.34	72%	10%	0.45
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	0.46	0	0.50	0	0.50	0	0.50	0	0.50	0	0.50	0	0.50	N/A	9%	0.50
<b>Total</b>		<b>11,149</b>	<b>15.76</b>	<b>10,801</b>	<b>17.03</b>	<b>11,394</b>	<b>18.05</b>	<b>11,990</b>	<b>18.95</b>	<b>12,584</b>	<b>19.78</b>	<b>13,183</b>	<b>20.72</b>	<b>13,788</b>	<b>21.66</b>	<b>24%</b>	<b>37%</b>	<b>29.25</b>
St. Johns - SJRWMD	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Potatoes	12,772	10.92	12,620	15.47	12,399	15.32	11,932	14.83	11,527	14.45	11,224	14.14	11,019	13.95	-14%	28%	21.34
	Vegetables (Fresh Market)	4,777	4.39	4,721	6.22	4,641	6.18	4,630	6.23	4,564	6.19	4,432	6.07	4,284	5.91	-10%	35%	7.92
	Field Crops	2,210	1.28	2,071	1.81	2,071	1.83	2,071	1.81	2,071	1.87	1,953	1.74	1,819	1.61	-18%	26%	2.39
	Greenhouse/Nursery	292	0.36	195	0.51	158	0.44	158	0.44	133	0.38	133	0.38	133	0.37	-54%	3%	0.43
	Hay	549	0.30	405	0.43	405	0.44	405	0.43	405	0.43	405	0.44	382	0.41	-30%	37%	0.67
	Sod	1,444	0.89	1,362	1.26	1,172	1.08	1,172	1.07	1,172	1.08	1,172	1.09	1,172	1.10	-19%	24%	1.44
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	0.04	0	0.06	0	0.06	0	0.06	0	0.06	0	0.06	0	0.06	N/A	50%	0.06
<b>Total</b>		<b>22,044</b>	<b>18.18</b>	<b>21,374</b>	<b>25.76</b>	<b>20,846</b>	<b>25.35</b>	<b>20,368</b>	<b>24.87</b>	<b>19,872</b>	<b>24.46</b>	<b>19,319</b>	<b>23.92</b>	<b>18,809</b>	<b>23.41</b>	<b>-15%</b>	<b>29%</b>	<b>34.25</b>

Table B-7a, Continued. Agricultural Irrigation Self-supply Water Use (Including Miscellaneous Water Use) and Acreage for 2015, 5-in-10 Year Water Demand Projections and Acreage Projections for 2020-2045, and 1-in-10 Year Water Demand Projections for 2045, by Crop Category by County, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	Crop Category	2015 Estimated Agriculture		2020 Projected Agriculture		2025 Projected Agriculture		2030 Projected Agriculture		2035 Projected Agriculture		2040 Projected Agriculture		2045 Projected Agriculture		Percent Change 2015-2045		2045 (1-in-10) Demand
		Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acreage	MGD	
Suwannee - SRWMD	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	110	0.59	311	0.63	475	0.93	579	1.10	652	1.23	721	1.36	923	1.72	739%	192%	2.42
	Potatoes	1,294	1.65	1,617	1.77	1,617	1.77	1,631	1.80	1,681	1.86	1,705	1.89	1,705	1.90	32%	15%	2.76
	Vegetables (Fresh Market)	4,317	6.01	5,080	6.45	5,609	7.18	6,061	7.82	6,622	8.60	7,102	9.27	7,540	9.88	75%	64%	12.94
	Field Crops	17,067	16.04	22,944	17.22	23,201	17.56	23,504	17.93	23,862	18.46	24,313	19.04	24,684	19.52	45%	22%	24.79
	Greenhouse/Nursery	780	2.24	946	2.40	1,235	3.05	1,235	3.05	1,398	3.41	1,568	3.80	1,793	4.31	130%	92%	4.87
	Hay	4,366	5.11	5,693	5.49	5,737	5.55	6,117	5.87	6,172	5.85	6,233	5.86	6,294	5.82	44%	14%	7.91
	Sod	68	0.06	86	0.06	86	0.06	86	0.05	86	0.06	86	0.06	86	0.06	26%	0%	0.07
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	2.21	0	2.37	0	2.37	0	2.37	0	2.37	0	2.37	0	2.37	N/A	7%	2.37
<b>Total</b>	<b>28,002</b>	<b>33.90</b>	<b>36,677</b>	<b>36.39</b>	<b>37,960</b>	<b>38.47</b>	<b>39,213</b>	<b>39.99</b>	<b>40,473</b>	<b>41.84</b>	<b>41,728</b>	<b>43.65</b>	<b>43,025</b>	<b>45.58</b>	<b>54%</b>	<b>34%</b>	<b>58.13</b>	
Union - SRWMD	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	203	0.35	222	0.38	263	0.46	263	0.46	263	0.46	300	0.53	300	0.53	48%	51%	0.74
	Potatoes	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	343	0.57	456	0.62	502	0.68	589	0.80	615	0.84	644	0.88	706	0.96	106%	68%	1.26
	Field Crops	46	0.00	6	0.00	33	0.03	33	0.03	97	0.07	109	0.08	137	0.10	198%	N/A	0.13
	Greenhouse/Nursery	25	0.03	25	0.03	40	0.07	40	0.07	47	0.08	47	0.08	54	0.10	116%	233%	0.11
	Hay	97	0.12	161	0.13	161	0.13	168	0.16	174	0.16	205	0.21	205	0.21	111%	75%	0.28
	Sod	41	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	-100%	N/A	0.00
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	0.15	0	0.16	0	0.16	0	0.16	0	0.16	0	0.16	0	0.16	N/A	7%	0.16
<b>Total</b>	<b>755</b>	<b>1.22</b>	<b>870</b>	<b>1.32</b>	<b>999</b>	<b>1.53</b>	<b>1,093</b>	<b>1.68</b>	<b>1,196</b>	<b>1.77</b>	<b>1,305</b>	<b>1.94</b>	<b>1,402</b>	<b>2.06</b>	<b>86%</b>	<b>69%</b>	<b>2.68</b>	
SRWMD Region 1 Total	Citrus	253	0.12	199	0.13	199	0.14	199	0.14	199	0.14	199	0.15	199	0.14	-21%	17%	0.23
	Fruit (Non-citrus)	1,797	3.29	1,791	3.50	1,843	3.67	2,057	4.08	2,128	4.27	2,188	4.40	2,188	4.42	22%	34%	6.38
	Potatoes	20,936	19.38	21,111	26.17	20,896	26.15	20,278	25.59	19,774	25.15	19,478	24.95	19,261	24.84	-8%	28%	37.99
	Vegetables (Fresh Market)	8,344	7.97	8,450	11.01	8,630	11.36	8,781	11.70	8,911	11.97	9,005	12.21	9,049	12.35	8%	55%	16.55
	Field Crops	3,902	2.22	3,786	3.00	3,867	3.11	4,115	3.28	4,414	3.58	4,561	3.67	4,658	3.73	19%	68%	5.53
	Greenhouse/Nursery	4,470	8.98	4,220	10.18	4,299	10.49	4,299	10.50	4,315	10.66	4,397	10.96	4,522	11.36	1%	27%	12.95
	Hay	3,139	1.69	2,202	2.13	2,289	2.17	2,383	2.23	2,411	2.26	2,353	2.20	2,302	2.09	-27%	24%	3.42
	Sod	4,814	2.95	4,675	3.99	4,289	3.64	4,289	3.60	4,289	3.62	4,191	3.56	4,191	3.58	-13%	21%	5.14
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	1.22	0	1.39	0	1.39	0	1.39	0	1.39	0	1.39	0	1.39	N/A	14%	1.39
<b>Total</b>	<b>47,655</b>	<b>47.82</b>	<b>46,434</b>	<b>61.50</b>	<b>46,312</b>	<b>62.12</b>	<b>46,401</b>	<b>62.51</b>	<b>46,441</b>	<b>63.04</b>	<b>46,372</b>	<b>63.49</b>	<b>46,370</b>	<b>63.90</b>	<b>-3%</b>	<b>34%</b>	<b>89.58</b>	
SRWMD NFRWSP Total	Citrus	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	1,005	2.84	1,357	2.77	1,763	3.51	2,080	4.06	2,317	4.52	2,631	5.09	2,951	5.67	194%	100%	8.18
	Potatoes	1,535	2.04	1,919	2.11	1,941	2.14	1,997	2.21	2,115	2.35	2,186	2.43	2,264	2.54	47%	25%	3.69
	Vegetables (Fresh Market)	10,670	15.83	12,070	15.54	13,309	17.26	14,627	19.11	15,859	20.85	16,932	22.35	18,039	23.90	69%	51%	31.31
	Field Crops	46,175	43.22	56,701	42.81	57,468	43.77	58,228	44.73	59,420	46.30	60,542	47.78	61,631	49.16	33%	14%	62.42
	Greenhouse/Nursery	2,517	6.74	2,650	6.52	3,246	7.86	3,285	7.94	3,630	8.71	4,099	9.79	4,702	11.15	87%	65%	12.60
	Hay	11,293	12.04	12,722	12.12	13,040	12.32	13,727	12.82	13,843	12.79	14,052	12.85	14,203	12.81	26%	6%	17.42
	Sod	109	0.06	86	0.06	86	0.06	86	0.05	86	0.06	86	0.06	86	0.06	-21%	0%	0.07
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	6.15	0	6.21	0	6.21	0	6.21	0	6.21	0	6.21	0	6.21	N/A	1%	6.21
<b>Total</b>	<b>73,304</b>	<b>88.92</b>	<b>87,505</b>	<b>88.14</b>	<b>90,853</b>	<b>93.13</b>	<b>94,030</b>	<b>97.13</b>	<b>97,270</b>	<b>101.79</b>	<b>100,528</b>	<b>106.56</b>	<b>103,876</b>	<b>111.50</b>	<b>42%</b>	<b>25%</b>	<b>141.90</b>	



Table B-7a, Continued. Agricultural Irrigation Self-supply Water Use (Including Miscellaneous Water Use) and Acreage for 2015, 5-in-10 Year Water Demand Projections and Acreage Projections for 2020-2045, and 1-in-10 Year Water Demand Projections for 2045, by Crop Category by County, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	Crop Category	2015 Estimated Agriculture		2020 Projected Agriculture		2025 Projected Agriculture		2030 Projected Agriculture		2035 Projected Agriculture		2040 Projected Agriculture		2045 Projected Agriculture		Percent Change 2015-2045		2045 (1-in-10) Demand
		Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acreage	MGD	
<b>NFRWSP Total</b>	Citrus	253	0.12	199	0.13	199	0.14	199	0.14	199	0.14	199	0.15	199	0.14	-21%	17%	0.23
	Fruit (Non-citrus)	2,802	6.13	3,148	6.27	3,606	7.18	4,137	8.14	4,445	8.79	4,819	9.49	5,139	10.09	83%	65%	14.56
	Potatoes	22,471	21.42	23,030	28.28	22,837	28.29	22,275	27.80	21,889	27.50	21,664	27.38	21,525	27.38	-4%	28%	41.68
	Vegetables (Fresh Market)	19,014	23.80	20,520	26.55	21,939	28.62	23,408	30.81	24,770	32.82	25,937	34.56	27,088	36.25	42%	52%	47.86
	Field Crops	50,077	45.44	60,487	45.81	61,335	46.88	62,343	48.01	63,834	49.88	65,103	51.45	66,289	52.89	32%	16%	67.95
	Greenhouse/Nursery	6,987	15.72	6,870	16.70	7,545	18.35	7,584	18.44	7,945	19.37	8,496	20.75	9,224	22.51	32%	43%	25.55
	Hay	14,432	13.73	14,924	14.25	15,329	14.49	16,110	15.05	16,254	15.05	16,405	15.05	16,505	14.90	14%	9%	20.84
	Sod	4,923	3.01	4,761	4.05	4,375	3.70	4,375	3.65	4,375	3.68	4,277	3.62	4,277	3.64	-13%	21%	5.21
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Miscellaneous	0	7.37	0	7.60	0	7.60	0	7.60	0	7.60	0	7.60	0	7.60	N/A	3%	7.60
<b>Total</b>		<b>120,959</b>	<b>136.74</b>	<b>133,939</b>	<b>149.64</b>	<b>137,165</b>	<b>155.25</b>	<b>140,431</b>	<b>159.64</b>	<b>143,711</b>	<b>164.83</b>	<b>146,900</b>	<b>170.05</b>	<b>150,246</b>	<b>175.40</b>	<b>24%</b>	<b>28%</b>	<b>231.48</b>

Notes:

- 1.) All water use is shown in million gallons per day.
- 2.) Rounding errors account for nominal discrepancies.
- 3.) 2015 total water use data source is NFSEG master geodatabase with metered and estimated agricultural water use. The 2015 water use by crop was estimated using 2020 FSAID VII ratios.
- 4.) 2015 acreage source is FSAID IV published June 30, 2017 by The Balmoral Group for the Florida Department of Agriculture and Consumer Services.
- 5.) 2020 - 2045 acreage projections and 2020 - 2045 average and 1-in-10 water demand projections derived from FSAID VII published June 30, 2020 by The Balmoral Group for the Florida Department of Agriculture and Consumer Services.

Table B-7b. Miscellaneous Agricultural Self-supply Water Use for 2015, 5-in-10 Year Demand Projections for 2020-2045, and 1-in-10 Year Demand Projections for 2045 by County, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	District	2015 Water Use				2020-2045 Demand Projections				Percent Change 2015-2045
		Dairy	Livestock	Aquaculture	Total	Dairy	Livestock	Aquaculture	Total	
Alachua	SJRWMD	0.06	0.13	0.00	0.19	0.06	0.14	0.00	0.20	5%
Alachua	SRWMD	0.21	0.47	0.09	0.76	0.19	0.43	0.08	0.70	-8%
<b>Alachua</b>	<b>Total</b>	<b>0.27</b>	<b>0.60</b>	<b>0.09</b>	<b>0.95</b>	<b>0.25</b>	<b>0.57</b>	<b>0.08</b>	<b>0.90</b>	<b>-5%</b>
Baker	SJRWMD	0.00	0.06	0.02	0.08	0.00	0.07	0.03	0.10	25%
Baker	SRWMD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
<b>Baker</b>	<b>Total</b>	<b>0.00</b>	<b>0.06</b>	<b>0.02</b>	<b>0.08</b>	<b>0.00</b>	<b>0.07</b>	<b>0.03</b>	<b>0.10</b>	<b>25%</b>
Bradford	SJRWMD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Bradford	SRWMD	0.00	0.13	0.15	0.28	0.00	0.13	0.16	0.29	4%
<b>Bradford</b>	<b>Total</b>	<b>0.00</b>	<b>0.13</b>	<b>0.15</b>	<b>0.28</b>	<b>0.00</b>	<b>0.13</b>	<b>0.16</b>	<b>0.29</b>	<b>4%</b>
Clay	SJRWMD	0.00	0.05	0.00	0.05	0.00	0.06	0.00	0.06	20%
Columbia	SRWMD	0.00	0.37	0.02	0.38	0.00	0.34	0.02	0.35	-8%
Duval	SJRWMD	0.00	0.09	0.14	0.23	0.00	0.08	0.13	0.21	-9%
Flagler	SJRWMD	0.00	0.04	0.00	0.04	0.00	0.07	0.00	0.07	75%
Gilchrist	SRWMD	1.78	0.45	0.00	2.13	1.78	0.45	0.00	2.13	0%
Hamilton	SRWMD	0.00	0.24	0.00	0.24	0.00	0.21	0.00	0.21	-13%
Nassau	SJRWMD	0.03	0.05	0.05	0.13	0.04	0.08	0.07	0.19	46%
Putnam	SJRWMD	0.13	0.14	0.19	0.46	0.14	0.15	0.21	0.50	9%
St. Johns	SJRWMD	0.00	0.03	0.01	0.04	0.00	0.04	0.02	0.06	50%
Suwannee	SRWMD	1.04	1.16	0.01	2.21	1.12	1.24	0.01	2.37	7%
Union	SRWMD	0.00	0.15	0.00	0.15	0.00	0.15	0.16	0.16	7%
<b>SJRWMD Region 1 Total</b>		<b>0.22</b>	<b>0.59</b>	<b>0.41</b>	<b>1.22</b>	<b>0.24</b>	<b>0.69</b>	<b>0.46</b>	<b>1.39</b>	<b>14%</b>
<b>SRWMD NFRWSP Total</b>		<b>3.03</b>	<b>2.97</b>	<b>0.27</b>	<b>6.15</b>	<b>3.09</b>	<b>2.95</b>	<b>0.43</b>	<b>6.21</b>	<b>1%</b>
<b>NFRWSP Total</b>		<b>3.25</b>	<b>3.56</b>	<b>0.68</b>	<b>7.37</b>	<b>3.33</b>	<b>3.64</b>	<b>0.89</b>	<b>7.60</b>	<b>3%</b>

Notes:

- 1.) All water use is shown in million gallons per day.
- 2.) Rounding errors account for nominal discrepancies.
- 3.) 2015 total water use data source is NFSEG master geodatabase with metered and estimated agricultural water use. The 2015 water use by category was estimated using 2020 FSAID VII ratios.
- 4.) 2020 - 2045 projected water demand derived from FSAID VII AG layer, published June 30, 2020 by the Balmoral Group for the Florida Department of Agriculture and Consumer Services.
- 5.) FSAID VII AG layer, published June 30, 2020 by the Balmoral Group for the Florida Department of Agriculture and Consumer Services assumes no increase for 1-in-10 year drought conditions.





Table B-9. Commercial / Industrial / Institutional and Mining / Dewatering Self-supply Water Use for 2015 and 5-in-10 Year Demand Projections for 2020-2045, by County, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	District	Water Use			Demand Projections (5-in-10)																				Percent Change 2015-2045				
		2015			2020				2025				2030				2035				2040					2045			
		Ground	Surface	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total		Ground	Surface	Other	Total
Alachua	SJRWMD	0.11	0.00	0.11	0.12	0.00	0.00	0.12	0.13	0.00	0.00	0.13	0.14	0.00	0.00	0.14	0.15	0.00	0.00	0.15	0.16	0.00	0.00	0.16	0.17	0.00	0.00	0.17	55%
Alachua	SRWMD	0.36	0.00	0.36	0.41	0.00	0.00	0.41	0.42	0.00	0.00	0.42	0.42	0.00	0.00	0.42	0.43	0.00	0.00	0.43	0.43	0.00	0.00	0.43	0.43	0.00	0.00	0.43	19%
<b>Alachua</b>	<b>Total</b>	<b>0.47</b>	<b>0.00</b>	<b>0.47</b>	<b>0.53</b>	<b>0.00</b>	<b>0.00</b>	<b>0.53</b>	<b>0.55</b>	<b>0.00</b>	<b>0.00</b>	<b>0.55</b>	<b>0.56</b>	<b>0.00</b>	<b>0.00</b>	<b>0.56</b>	<b>0.58</b>	<b>0.00</b>	<b>0.00</b>	<b>0.58</b>	<b>0.59</b>	<b>0.00</b>	<b>0.00</b>	<b>0.59</b>	<b>0.60</b>	<b>0.00</b>	<b>0.00</b>	<b>0.60</b>	<b>28%</b>
Baker	SJRWMD	0.15	0.27	0.42	0.15	0.28	0.00	0.43	0.16	0.29	0.00	0.45	0.17	0.30	0.00	0.47	0.17	0.31	0.00	0.48	0.17	0.32	0.00	0.49	0.18	0.32	0.00	0.50	19%
Baker	SRWMD	0.21	0.00	0.21	0.22	0.00	0.00	0.22	0.23	0.00	0.00	0.23	0.24	0.00	0.00	0.24	0.25	0.00	0.00	0.25	0.26	0.00	0.00	0.26	0.27	0.00	0.00	0.27	29%
<b>Baker</b>	<b>Total</b>	<b>0.36</b>	<b>0.27</b>	<b>0.63</b>	<b>0.37</b>	<b>0.28</b>	<b>0.00</b>	<b>0.65</b>	<b>0.39</b>	<b>0.29</b>	<b>0.00</b>	<b>0.68</b>	<b>0.41</b>	<b>0.30</b>	<b>0.00</b>	<b>0.71</b>	<b>0.42</b>	<b>0.31</b>	<b>0.00</b>	<b>0.73</b>	<b>0.43</b>	<b>0.32</b>	<b>0.00</b>	<b>0.75</b>	<b>0.45</b>	<b>0.32</b>	<b>0.00</b>	<b>0.77</b>	<b>22%</b>
Bradford	SJRWMD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A
Bradford	SRWMD	1.04	0.00	1.04	1.06	0.00	0.00	1.06	1.06	0.00	0.00	1.06	1.06	0.00	0.00	1.06	1.07	0.00	0.00	1.07	1.07	0.00	0.00	1.07	1.07	0.00	0.00	1.07	1%
<b>Bradford</b>	<b>Total</b>	<b>1.04</b>	<b>0.00</b>	<b>1.04</b>	<b>1.06</b>	<b>0.00</b>	<b>0.00</b>	<b>1.06</b>	<b>1.06</b>	<b>0.00</b>	<b>0.00</b>	<b>1.06</b>	<b>1.06</b>	<b>0.00</b>	<b>0.00</b>	<b>1.06</b>	<b>1.07</b>	<b>0.00</b>	<b>0.00</b>	<b>1.07</b>	<b>1.07</b>	<b>0.00</b>	<b>0.00</b>	<b>1.07</b>	<b>1.05</b>	<b>0.00</b>	<b>0.00</b>	<b>1.05</b>	<b>1%</b>
Clay	SJRWMD	0.31	0.00	0.31	0.33	0.00	0.00	0.33	0.36	0.00	0.00	0.36	0.39	0.00	0.00	0.39	0.42	0.00	0.00	0.42	0.44	0.00	0.00	0.44	0.46	0.00	0.00	0.46	48%
Columbia	SRWMD	0.41	0.00	0.41	0.42	0.00	0.00	0.42	0.44	0.00	0.00	0.44	0.46	0.00	0.00	0.46	0.47	0.00	0.00	0.47	0.48	0.00	0.00	0.48	0.49	0.00	0.00	0.49	20%
Duval	SJRWMD	14.16	0.79	14.95	16.65	0.93	0.00	17.58	17.30	0.97	0.00	18.27	17.93	1.00	0.00	18.93	18.53	1.03	0.00	19.56	19.12	1.07	0.00	20.19	19.65	1.10	0.00	20.75	39%
Flagler	SJRWMD	0.26	0.00	0.26	0.27	0.00	0.00	0.27	0.28	0.00	0.00	0.28	0.29	0.00	0.00	0.29	0.30	0.00	0.00	0.30	0.31	0.00	0.00	0.31	0.31	0.00	0.00	0.31	19%
Gilchrist	SRWMD	0.38	0.00	0.38	0.41	0.00	0.00	0.41	0.43	0.00	0.00	0.43	0.45	0.00	0.00	0.45	0.47	0.00	0.00	0.47	0.48	0.00	0.00	0.48	0.49	0.00	0.00	0.49	29%
Hamilton	SRWMD	22.93	17.19	40.12	22.93	17.19	0.00	40.12	22.93	17.19	0.00	40.12	22.93	17.19	0.00	40.12	22.93	17.19	0.00	40.12	22.93	17.19	0.00	40.12	22.93	17.19	0.00	40.12	0%
Nassau	SJRWMD	33.06	0.05	33.11	33.02	0.05	0.00	33.07	33.06	0.05	0.00	33.11	33.10	0.05	0.00	33.15	33.13	0.05	0.00	33.18	33.16	0.05	0.00	33.21	33.19	0.05	0.00	33.24	0%
Putnam	SJRWMD	3.69	23.85	27.54	3.69	23.87	0.00	27.56	3.69	23.88	0.00	27.57	3.70	23.88	0.00	27.58	3.70	23.89	0.00	27.59	3.70	23.90	0.00	27.60	3.70	23.91	0.00	27.61	0%
St. Johns	SJRWMD	0.56	0.20	0.76	0.74	0.27	0.00	1.01	0.85	0.30	0.00	1.15	0.93	0.33	0.00	1.26	1.00	0.36	0.00	1.36	1.08	0.38	0.00	1.46	1.15	0.41	0.00	1.56	105%
Suwannee	SRWMD	2.72	0.00	2.72	2.87	0.00	0.00	2.87	3.03	0.00	0.00	3.03	3.17	0.00	0.00	3.17	3.28	0.00	0.00	3.28	3.37	0.00	0.00	3.37	3.45	0.00	0.00	3.45	27%
Union	SRWMD	0.51	0.00	0.51	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	-2%
<b>SJRWMD Region 1 Total</b>		<b>52.30</b>	<b>25.16</b>	<b>77.46</b>	<b>54.97</b>	<b>25.40</b>	<b>0.00</b>	<b>80.37</b>	<b>55.83</b>	<b>25.49</b>	<b>0.00</b>	<b>81.32</b>	<b>56.65</b>	<b>25.56</b>	<b>0.00</b>	<b>82.21</b>	<b>57.40</b>	<b>25.64</b>	<b>0.00</b>	<b>83.04</b>	<b>58.14</b>	<b>25.72</b>	<b>0.00</b>	<b>83.86</b>	<b>58.81</b>	<b>25.79</b>	<b>0.00</b>	<b>84.60</b>	<b>9%</b>
<b>SRWMD NFRWSP Total</b>		<b>28.56</b>	<b>17.19</b>	<b>45.75</b>	<b>28.82</b>	<b>17.19</b>	<b>0.00</b>	<b>46.01</b>	<b>29.04</b>	<b>17.19</b>	<b>0.00</b>	<b>46.23</b>	<b>29.23</b>	<b>17.19</b>	<b>0.00</b>	<b>46.42</b>	<b>29.40</b>	<b>17.19</b>	<b>0.00</b>	<b>46.59</b>	<b>29.52</b>	<b>17.19</b>	<b>0.00</b>	<b>46.71</b>	<b>29.61</b>	<b>17.19</b>	<b>0.00</b>	<b>46.80</b>	<b>2%</b>
<b>NFRWSP Total</b>		<b>80.86</b>	<b>42.35</b>	<b>123.21</b>	<b>83.79</b>	<b>42.59</b>	<b>0.00</b>	<b>126.38</b>	<b>84.87</b>	<b>42.68</b>	<b>0.00</b>	<b>127.55</b>	<b>85.88</b>	<b>42.75</b>	<b>0.00</b>	<b>128.63</b>	<b>86.80</b>	<b>42.83</b>	<b>0.00</b>	<b>129.63</b>	<b>87.66</b>	<b>42.91</b>	<b>0.00</b>	<b>130.57</b>	<b>88.42</b>	<b>42.98</b>	<b>0.00</b>	<b>131.40</b>	<b>7%</b>

- Notes:
- 1.) All water use is shown in million gallons per day.
  - 2.) Rounding errors account for nominal discrepancies.
  - 3.) 2015 water use data source is NFSEG master geodatabase with metered and estimated commercial/industrial/institutional and mining/dewatering water use.
  - 4.) 2020 - 2045 projected surface water demand was interpolated based on 2015 percentages.
  - 5.) The commercial/industrial/institutional and mining/dewatering water use category is not impacted by drought conditions, therefore the 5-in-10 2045 water demand also serves as the 1-in-10 water demand.
  - 6.) The Other water source category represents water demand exceeding the permittee's groundwater withdrawal limit as identified in the Black Creek Water Resource Development Project Participation Agreement.





Table B-10a. Power Generation Self-supply water use for 2015 and 5-in-10 Year Demand Projections for 2020-2045, by County and Facility, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	Facility	District	Water Use			Demand Projections (5-in-10)																				Percent Change 2015-2045	Non-consumptive Saline and Fresh Surface Water Use for Cooling										
			2015			2020				2025				2030				2035				2040					2045				2015	2020	2025	2030	2035	2040	2045
			Ground	Surface	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total		Ground	Surface	Other	Total							
Alachua	Gainesville Regional Utilities - J R Kelly (11374)	SJRWMD	0.51	0.00	0.51	0.53	0.00	0.00	0.53	0.55	0.00	0.00	0.55	0.56	0.00	0.00	0.56	0.59	0.00	0.00	0.59	0.61	0.00	0.00	0.61	0.63	0.00	0.00	0.63	24%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Deerhaven Renewable Plant (220496)	SRWMD	0.28	0.00	0.28	0.28	0.00	0.00	0.28	0.27	0.00	0.00	0.27	0.27	0.00	0.00	0.27	0.28	0.00	0.00	0.28	0.30	0.00	0.00	0.30	0.31	0.00	0.00	0.31	11%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Gainesville Regional Utilities - Deerhaven Power Plant (PA 74-04)	SRWMD	1.49	0.00	1.49	1.48	0.00	0.00	1.48	1.40	0.00	0.00	1.40	1.44	0.00	0.00	1.44	1.50	0.00	0.00	1.50	1.56	0.00	0.00	1.56	1.62	0.00	0.00	1.62	9%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	<b>Total</b>		<b>2.28</b>	<b>0.00</b>	<b>2.28</b>	<b>2.29</b>	<b>0.00</b>	<b>0.00</b>	<b>2.29</b>	<b>2.22</b>	<b>0.00</b>	<b>0.00</b>	<b>2.22</b>	<b>2.27</b>	<b>0.00</b>	<b>0.00</b>	<b>2.27</b>	<b>2.37</b>	<b>0.00</b>	<b>0.00</b>	<b>2.37</b>	<b>2.47</b>	<b>0.00</b>	<b>0.00</b>	<b>2.47</b>	<b>2.56</b>	<b>0.00</b>	<b>0.00</b>	<b>2.56</b>	<b>12%</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Duval	JEA - Northside (721)	SJRWMD	0.26	12.18	12.44	0.28	12.56	0.00	12.84	0.29	12.91	0.00	13.20	0.30	13.44	0.00	13.74	0.32	14.47	0.00	14.79	0.35	15.57	0.00	15.92	0.37	16.75	0.00	17.12	38%	609.08	628.18	645.28	672.24	723.55	778.49	837.57
	JEA - Brandy Branch (140370)	SJRWMD	2.03	0.00	2.03	2.02	0.00	2.02	2.08	0.00	2.08	2.17	0.00	2.17	2.33	0.00	2.33	2.51	0.00	2.51	2.70	0.00	2.70	2.70	0.00	2.70	2.70	0.00	2.70	33%	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	SJR Power Park (140634)	SJRWMD	3.48	0.00	3.48	2.74	0.52	3.26	2.81	0.53	3.34	2.93	0.55	3.48	3.15	0.60	3.75	3.39	0.64	4.03	3.65	0.69	4.34	3.65	0.69	4.34	3.65	0.69	4.34	25%	0.00	25.83	26.52	27.65	29.75	32.00	34.43
	Cedar Bay Generating Facility (PA 88-24G)	SJRWMD	0.60	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-100%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
<b>Total</b>		<b>6.37</b>	<b>12.18</b>	<b>18.55</b>	<b>5.04</b>	<b>13.08</b>	<b>0.00</b>	<b>18.12</b>	<b>5.18</b>	<b>13.44</b>	<b>0.00</b>	<b>18.62</b>	<b>5.40</b>	<b>13.99</b>	<b>0.00</b>	<b>19.39</b>	<b>5.80</b>	<b>15.07</b>	<b>0.00</b>	<b>20.87</b>	<b>6.25</b>	<b>16.21</b>	<b>0.00</b>	<b>22.46</b>	<b>6.72</b>	<b>17.44</b>	<b>0.00</b>	<b>24.16</b>	<b>30%</b>	<b>609.08</b>	<b>654.01</b>	<b>671.80</b>	<b>699.89</b>	<b>753.30</b>	<b>810.49</b>	<b>872.00</b>	
Putnam	Florida Power & Light - Puntam (PA 74-01)	SJRWMD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Seminole Electric Cooperative - Palatka (140536)	SJRWMD	0.45	0.30	0.75	0.48	0.32	0.80	0.51	0.34	0.85	0.54	0.36	0.90	0.56	0.37	0.93	0.57	0.38	0.95	0.58	0.39	0.97	0.58	0.39	0.97	0.58	0.39	0.97	29%	14.98	15.90	17.06	18.02	18.48	18.95	19.44
	<b>Total</b>		<b>0.45</b>	<b>0.30</b>	<b>0.75</b>	<b>0.48</b>	<b>0.32</b>	<b>0.80</b>	<b>0.51</b>	<b>0.34</b>	<b>0.85</b>	<b>0.54</b>	<b>0.36</b>	<b>0.90</b>	<b>0.56</b>	<b>0.37</b>	<b>0.93</b>	<b>0.57</b>	<b>0.38</b>	<b>0.95</b>	<b>0.58</b>	<b>0.39</b>	<b>0.97</b>	<b>0.58</b>	<b>0.39</b>	<b>0.97</b>	<b>0.58</b>	<b>0.39</b>	<b>0.97</b>	<b>29%</b>	<b>14.98</b>	<b>15.90</b>	<b>17.06</b>	<b>18.02</b>	<b>18.48</b>	<b>18.95</b>	<b>19.44</b>
Suwannee	Duke - Ellaville (219872)	SRWMD	0.10	0.06	0.16	0.07	0.05	0.12	0.07	0.05	0.12	0.07	0.05	0.12	0.07	0.05	0.12	0.07	0.05	0.12	0.07	0.05	0.12	0.07	0.05	0.12	0.07	0.05	0.12	-25%	3.00	2.25	2.25	2.25	2.25	2.25	2.25
	<b>Total</b>		<b>0.10</b>	<b>0.06</b>	<b>0.16</b>	<b>0.07</b>	<b>0.05</b>	<b>0.12</b>	<b>0.07</b>	<b>0.05</b>	<b>0.12</b>	<b>0.07</b>	<b>0.05</b>	<b>0.12</b>	<b>0.07</b>	<b>0.05</b>	<b>0.12</b>	<b>0.07</b>	<b>0.05</b>	<b>0.12</b>	<b>0.07</b>	<b>0.05</b>	<b>0.12</b>	<b>0.07</b>	<b>0.05</b>	<b>0.12</b>	<b>0.07</b>	<b>0.05</b>	<b>0.12</b>	<b>-25%</b>	<b>3.00</b>	<b>2.25</b>	<b>2.25</b>	<b>2.25</b>	<b>2.25</b>	<b>2.25</b>	<b>2.25</b>
	<b>SJRWMD Region 1 Total</b>		<b>7.33</b>	<b>12.48</b>	<b>19.81</b>	<b>6.05</b>	<b>13.40</b>	<b>0.00</b>	<b>19.45</b>	<b>6.24</b>	<b>13.78</b>	<b>0.00</b>	<b>20.02</b>	<b>6.50</b>	<b>14.35</b>	<b>0.00</b>	<b>20.85</b>	<b>6.95</b>	<b>15.44</b>	<b>0.00</b>	<b>22.39</b>	<b>7.43</b>	<b>16.59</b>	<b>0.00</b>	<b>24.02</b>	<b>7.93</b>	<b>17.83</b>	<b>0.00</b>	<b>25.76</b>	<b>30%</b>	<b>624.06</b>	<b>669.91</b>	<b>688.86</b>	<b>717.91</b>	<b>771.78</b>	<b>829.44</b>	<b>891.44</b>
	<b>SRWMD NFRWSP Total</b>		<b>1.87</b>	<b>0.06</b>	<b>1.93</b>	<b>1.83</b>	<b>0.05</b>	<b>1.88</b>	<b>1.74</b>	<b>0.05</b>	<b>1.79</b>	<b>1.78</b>	<b>0.05</b>	<b>1.83</b>	<b>1.85</b>	<b>0.05</b>	<b>1.90</b>	<b>1.93</b>	<b>0.05</b>	<b>1.98</b>	<b>2.00</b>	<b>0.05</b>	<b>2.05</b>	<b>2.00</b>	<b>0.05</b>	<b>2.05</b>	<b>2.00</b>	<b>0.05</b>	<b>2.05</b>	<b>6%</b>	<b>3.00</b>	<b>2.25</b>	<b>2.25</b>	<b>2.25</b>	<b>2.25</b>	<b>2.25</b>	<b>2.25</b>
<b>NFRWSP Total</b>		<b>9.20</b>	<b>12.54</b>	<b>21.74</b>	<b>7.88</b>	<b>13.45</b>	<b>0.00</b>	<b>21.33</b>	<b>7.98</b>	<b>13.83</b>	<b>0.00</b>	<b>21.81</b>	<b>8.28</b>	<b>14.40</b>	<b>0.00</b>	<b>22.68</b>	<b>8.80</b>	<b>15.49</b>	<b>0.00</b>	<b>24.29</b>	<b>9.36</b>	<b>16.64</b>	<b>0.00</b>	<b>26.00</b>	<b>9.93</b>	<b>17.88</b>	<b>0.00</b>	<b>27.81</b>	<b>28%</b>	<b>627.06</b>	<b>672.16</b>	<b>691.11</b>	<b>720.16</b>	<b>774.03</b>	<b>831.69</b>	<b>893.69</b>	

Notes:

- 1.) All water use is shown in million gallons per day.
- 2.) Rounding errors account for nominal discrepancies.
- 3.) 2015 water use data source is NFSEG master geodatabase with metered and estimated power generation water use.
- 4.) Consumptive surface water is assumed to be 2 percent of total surface water to account for losses.
- 5.) The power generation water use category is not impacted by drought conditions, therefore the 5-in-10 2045 water demand also serves as the 1-in-10 water demand.
- 6.) The Other water source category represents water demand exceeding the permittee's groundwater withdrawal limit as identified in the Black Creek Water Resource Development Project Participation Agreement.





Table B-11. Public Supply and Domestic Self-supply and Small Public Supply 2015 Water Use, 5-in-10 Year Water Demand Projections for 2020-2045, and 1-in-10 Year Water Demand Projections for 2045, by County, in Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	District	2015 Water Use			2020 Demand Projections (5-in-10)			2025 Demand Projections (5-in-10)			2030 Demand Projections (5-in-10)			2035 Demand Projections (5-in-10)			2040 Demand Projections (5-in-10)			2045 Demand Projections (5-in-10)			Percent Change 2015-2045			2045 Demand Projections (1-in-10)		
		Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total
Alachua	SJRWMD	22.44	0.65	23.09	23.57	0.67	24.24	24.68	0.70	25.38	25.71	0.83	26.54	26.53	0.83	27.36	27.23	0.90	28.13	27.78	1.00	28.78	24%	54%	25%	29.45	1.06	30.51
Alachua	SRWMD	2.35	1.51	3.86	2.68	1.74	4.42	2.71	1.82	4.53	2.87	1.89	4.56	3.04	1.70	4.74	3.10	1.68	4.78	3.13	1.65	4.78	33%	9%	24%	3.33	1.75	5.08
<b>Alachua Total</b>		<b>24.79</b>	<b>2.16</b>	<b>26.95</b>	<b>26.25</b>	<b>2.41</b>	<b>28.66</b>	<b>27.39</b>	<b>2.52</b>	<b>29.91</b>	<b>28.58</b>	<b>2.52</b>	<b>31.10</b>	<b>29.57</b>	<b>2.53</b>	<b>32.10</b>	<b>30.33</b>	<b>2.58</b>	<b>32.91</b>	<b>30.91</b>	<b>2.65</b>	<b>33.56</b>	<b>25%</b>	<b>23%</b>	<b>25%</b>	<b>32.78</b>	<b>2.81</b>	<b>35.59</b>
Baker	SJRWMD	0.92	2.07	2.99	0.95	2.43	3.38	0.99	2.56	3.55	1.06	2.64	3.70	1.08	2.73	3.81	1.09	2.81	3.90	1.09	2.90	3.99	18%	40%	33%	1.15	3.07	4.22
Baker	SRWMD	0.00	0.05	0.05	0.00	0.06	0.06	0.00	0.06	0.06	0.00	0.06	0.06	0.00	0.06	0.06	0.00	0.07	0.07	0.00	0.07	0.07	N/A	40%	40%	0.00	0.07	0.07
<b>Baker Total</b>		<b>0.92</b>	<b>2.12</b>	<b>3.04</b>	<b>0.95</b>	<b>2.49</b>	<b>3.44</b>	<b>0.99</b>	<b>2.62</b>	<b>3.61</b>	<b>1.06</b>	<b>2.70</b>	<b>3.76</b>	<b>1.08</b>	<b>2.79</b>	<b>3.87</b>	<b>1.09</b>	<b>2.88</b>	<b>3.97</b>	<b>1.09</b>	<b>2.97</b>	<b>4.06</b>	<b>18%</b>	<b>40%</b>	<b>34%</b>	<b>1.15</b>	<b>3.14</b>	<b>4.29</b>
Bradford	SJRWMD	0.04	0.13	0.17	0.01	0.21	0.22	0.01	0.25	0.26	0.01	0.27	0.28	0.01	0.27	0.28	0.01	0.28	0.29	0.01	0.30	0.31	-75%	131%	82%	0.01	0.32	0.33
Bradford	SRWMD	0.94	0.62	1.56	1.04	0.57	1.61	1.05	0.56	1.61	1.07	0.56	1.63	1.08	0.56	1.64	1.09	0.55	1.64	1.11	0.54	1.65	18%	-13%	6%	1.17	0.53	1.70
<b>Bradford Total</b>		<b>0.98</b>	<b>0.75</b>	<b>1.73</b>	<b>1.05</b>	<b>0.78</b>	<b>1.83</b>	<b>1.06</b>	<b>0.81</b>	<b>1.87</b>	<b>1.08</b>	<b>0.83</b>	<b>1.91</b>	<b>1.09</b>	<b>0.83</b>	<b>1.92</b>	<b>1.10</b>	<b>0.83</b>	<b>1.93</b>	<b>1.12</b>	<b>0.84</b>	<b>1.96</b>	<b>14%</b>	<b>12%</b>	<b>13%</b>	<b>1.18</b>	<b>0.85</b>	<b>2.03</b>
Clay	SJRWMD	12.89	6.20	19.09	13.72	4.76	18.48	18.33	4.77	23.10	20.64	4.77	25.41	23.22	4.78	28.00	24.47	4.77	29.24	25.57	4.77	30.34	98%	-23%	59%	27.51	5.06	32.57
Columbia	SRWMD	3.32	2.63	5.95	3.47	2.73	6.20	5.74	2.87	8.61	5.84	2.98	8.82	5.94	3.06	9.00	6.05	3.13	9.18	6.16	3.19	9.35	86%	21%	57%	6.53	3.33	9.86
Duval	SJRWMD	106.34	14.74	121.08	115.27	15.92	131.19	124.03	16.37	140.40	132.85	16.53	149.38	141.55	16.58	158.13	150.44	16.45	166.89	158.97	16.25	175.22	49%	10%	45%	168.51	17.23	185.74
Flagler	SJRWMD	9.05	0.26	9.31	10.29	0.30	10.59	11.45	0.30	11.75	12.45	0.38	12.83	13.26	0.39	13.65	13.79	0.39	14.18	14.33	0.40	14.73	58%	54%	58%	15.18	0.42	15.60
Gilchrist	SRWMD	0.22	0.99	1.21	0.22	1.06	1.28	0.25	1.11	1.36	0.27	1.15	1.42	0.28	1.19	1.47	0.28	1.22	1.50	0.28	1.26	1.54	27%	27%	27%	0.30	1.34	1.64
Hamilton	SRWMD	0.91	0.65	1.56	1.03	0.64	1.67	1.03	0.65	1.68	1.03	0.66	1.69	1.03	0.66	1.69	1.03	0.66	1.69	1.03	0.67	1.70	13%	3%	9%	1.09	0.71	1.80
Nassau	SJRWMD	6.92	1.11	8.03	7.85	1.49	9.34	8.05	1.72	9.77	8.24	1.85	10.09	8.24	2.03	10.27	8.26	2.16	10.42	8.26	2.28	10.54	19%	105%	31%	8.60	2.42	11.02
Putnam	SJRWMD	2.18	2.82	5.00	2.11	3.24	5.35	2.12	3.24	5.36	2.13	3.24	5.37	2.15	3.24	5.39	2.16	3.24	5.40	2.18	3.24	5.42	0%	15%	8%	2.31	3.43	5.74
St. Johns	SJRWMD	19.21	2.96	22.17	25.10	4.58	29.68	28.43	4.56	32.99	30.60	4.53	35.13	32.51	4.50	37.01	34.28	4.47	38.75	35.86	4.44	40.30	87%	50%	82%	36.20	4.70	40.90
Suwannee	SRWMD	1.32	2.22	3.54	1.45	2.34	3.79	1.61	2.48	4.09	1.73	2.58	4.31	1.79	2.66	4.45	1.84	2.73	4.57	1.87	2.80	4.67	42%	28%	32%	1.96	2.96	4.94
Union	SRWMD	0.26	0.66	0.92	0.24	0.65	0.89	0.24	0.65	0.89	0.24	0.65	0.89	0.25	0.66	0.91	0.25	0.66	0.91	0.25	0.66	0.91	-4%	0%	-1%	0.27	0.70	0.97
<b>SJRWMD Region 1 Total</b>		<b>179.99</b>	<b>30.94</b>	<b>210.93</b>	<b>198.87</b>	<b>33.60</b>	<b>232.47</b>	<b>218.09</b>	<b>34.47</b>	<b>252.56</b>	<b>233.69</b>	<b>35.04</b>	<b>268.73</b>	<b>248.55</b>	<b>35.35</b>	<b>283.90</b>	<b>261.73</b>	<b>35.47</b>	<b>297.20</b>	<b>274.05</b>	<b>35.58</b>	<b>309.63</b>	<b>52%</b>	<b>15%</b>	<b>47%</b>	<b>288.92</b>	<b>37.71</b>	<b>326.63</b>
<b>SRWMD NFRWSP Total</b>		<b>9.32</b>	<b>9.33</b>	<b>18.65</b>	<b>10.13</b>	<b>9.79</b>	<b>19.92</b>	<b>12.63</b>	<b>10.20</b>	<b>22.83</b>	<b>13.05</b>	<b>10.33</b>	<b>23.38</b>	<b>13.41</b>	<b>10.55</b>	<b>23.96</b>	<b>13.64</b>	<b>10.70</b>	<b>24.34</b>	<b>13.83</b>	<b>10.84</b>	<b>24.67</b>	<b>48%</b>	<b>16%</b>	<b>32%</b>	<b>14.67</b>	<b>11.39</b>	<b>26.06</b>
<b>NFRWSP Total</b>		<b>189.31</b>	<b>40.27</b>	<b>229.58</b>	<b>209.00</b>	<b>43.39</b>	<b>252.39</b>	<b>230.72</b>	<b>44.67</b>	<b>275.39</b>	<b>246.74</b>	<b>45.37</b>	<b>292.11</b>	<b>261.96</b>	<b>45.90</b>	<b>307.86</b>	<b>275.37</b>	<b>46.17</b>	<b>321.54</b>	<b>287.88</b>	<b>46.42</b>	<b>334.30</b>	<b>52%</b>	<b>15%</b>	<b>46%</b>	<b>303.58</b>	<b>49.10</b>	<b>352.69</b>

Notes:  
1.) All water use is shown in million gallons per day.  
2.) Rounding errors account for nominal discrepancies.  
3.) Water use for the Public Supply category includes groundwater, surface water, and water from the Other category.









Table B-12 (14 - Union County). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2045 and 1-in-10 Year Water Demand Projections for 2045, by Category of Use in Union County in the Suwannee River Water Management District for the North Florida Regional Water Supply Plan.

Category	District	Demand Projections (5-in-10)																								Percent Change 2015-2045	Demand Projections (1-in-10)						
		Water Use			2020				2025				2030				2035				2040				2045				2045				
		Ground	Surface	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground	Surface	Other	Total	Ground		Surface	Other	Total	Ground	Surface	Other	Total
Public Supply	SRWMD	0.26	0.00	0.26	0.24	0.00	0.00	0.24	0.24	0.00	0.00	0.24	0.24	0.00	0.00	0.24	0.25	0.00	0.00	0.25	0.25	0.00	0.00	0.25	0.25	0.00	0.00	0.25	-4%	0.27	0.00	0.00	0.27
Domestic Self-supply and Small Public Supply Systems	SRWMD	0.66	0.00	0.66	0.65	0.00	0.00	0.65	0.65	0.00	0.00	0.65	0.65	0.00	0.00	0.65	0.66	0.00	0.00	0.66	0.66	0.00	0.00	0.66	0.66	0.00	0.00	0.66	0%	0.70	0.00	0.00	0.70
Agricultural Irrigation Self-supply	SRWMD	1.22	0.00	1.22	1.32	0.00	0.00	1.32	1.53	0.00	0.00	1.53	1.68	0.00	0.00	1.68	1.77	0.00	0.00	1.77	1.94	0.00	0.00	1.94	2.06	0.00	0.00	2.06	69%	2.68	0.00	0.00	2.68
Landscape / Recreational Self-supply	SRWMD	0.10	0.00	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.00	0.10	0.10	0.00	0.00	0.10	0%	0.14	0.00	0.00	0.14
Commercial / Industrial / Institutional Self-supply	SRWMD	0.51	0.00	0.51	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	0.50	0.00	0.00	0.50	-2%	0.50	0.00	0.00	0.50
Power Generation Self-supply	SRWMD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00
<b>Union County Total</b>		<b>2.75</b>	<b>0.00</b>	<b>2.75</b>	<b>2.81</b>	<b>0.00</b>	<b>0.00</b>	<b>2.81</b>	<b>3.02</b>	<b>0.00</b>	<b>0.00</b>	<b>3.02</b>	<b>3.17</b>	<b>0.00</b>	<b>0.00</b>	<b>3.17</b>	<b>3.28</b>	<b>0.00</b>	<b>0.00</b>	<b>3.28</b>	<b>3.45</b>	<b>0.00</b>	<b>0.00</b>	<b>3.45</b>	<b>3.57</b>	<b>0.00</b>	<b>0.00</b>	<b>3.57</b>	<b>30%</b>	<b>4.29</b>	<b>0.00</b>	<b>0.00</b>	<b>4.29</b>

Notes:

- 1.) All water use is shown in million gallons per day.
- 2.) Rounding errors account for nominal discrepancies.
- 3.) The Other water source category represents water demand exceeding the permittee's groundwater withdrawal limit as identified in the Black Creek Water Resource Development Project Participation Agreement.







Notes:

- 1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
- 2.) Rounding anomalies account for nominal discrepancies.
- 3.) 2018 Total facility treatment flow obtained from DEP 2018 Annual Reuse Inventory.
- 4.) Beneficial reuse for SJRWMD and SRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
- 5.) Potential existing additional reclaimed water for reuse calculated using 75 percent beneficial utilization of the 2018 total facility treatment flow minus the 2018 total beneficial reuse.
- 6.) Additional population hooked up to the sewer system calculated as 95 percent of the additional population growth within a service area from 2018 to 2045.
- 7.) New waste water flow calculated as additional population hooked up to the sewer system times 73 gpcd (58.6 gpcd for residential flow, AWWA indoor standard and 15 gpcd for commercial flow, National Engineering Handbook per employee).
- 8.) Potential new additional reclaimed water for reuse calculated using 75 percent beneficial utilization of the new waste water flow.
- 9.) Total potential additional reclaimed water for reuse calculated as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
- 10.) 2045 Total facility treatment flow calculated as 2018 total facility treatment flow plus 2045 new waste water flow.
- 11.) Projections are grouped by population expected to growth within a public supply service area. Therefore, the projections by wastewater facility (WWTF) may not be specific to the WWTF, but as the region as a whole.
- 12.) Projections are not included for those service areas that do not currently have waste water treatment facilities.





Table B-15. 2045 Reclaimed Water Projections for the St. Johns River Water Management District and Suwannee River Water Management District.

County	District	Estimates Using WWTF 2018 Percent Beneficial Utilization Rate						Estimates Using DEP Beneficial Utilization Rate of 75 Percent							
		2018 Total Facility Treatment Flow	2018 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2045 New Waste Water Flow	2045 Potential New Additional Reclaimed Water for Reuse	2045 Total Potential Additional Reclaimed Water for Reuse	2045 Total Facility Treatment Flow	2018 Total Facility Treatment Flow	2018 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2045 New Waste Water Flow	2045 Potential New Additional Reclaimed Water for Reuse	2045 Total Potential Additional Reclaimed Water for Reuse	2045 Total Facility Treatment Flow
Alachua	SJRWMD	20.21	19.41	0.77	2.55	2.45	3.21	22.76	20.21	19.41	0.60	2.55	1.91	2.51	22.76
Alachua	SRWMD	1.09	1.06	0.03	0.36	0.35	0.38	1.45	1.09	1.06	0.02	0.36	0.27	0.29	1.45
<b>Alachua</b>	<b>Total</b>	<b>21.30</b>	<b>20.47</b>	<b>0.80</b>	<b>2.91</b>	<b>2.80</b>	<b>3.59</b>	<b>24.21</b>	<b>21.30</b>	<b>20.47</b>	<b>0.62</b>	<b>2.91</b>	<b>2.18</b>	<b>2.80</b>	<b>24.21</b>
Baker	SJRWMD	0.87	0.00	0.00	0.07	0.00	0.00	0.94	0.87	0.00	0.65	0.07	0.05	0.70	0.94
Baker	SRWMD	0.21	0.21	0.00	0.00	0.00	0.00	0.21	0.21	0.21	0.00	0.00	0.00	0.00	0.21
<b>Baker</b>	<b>Total</b>	<b>1.08</b>	<b>0.21</b>	<b>0.17</b>	<b>0.07</b>	<b>0.01</b>	<b>0.18</b>	<b>1.14</b>	<b>1.08</b>	<b>0.21</b>	<b>0.65</b>	<b>0.07</b>	<b>0.05</b>	<b>0.70</b>	<b>1.14</b>
Bradford	SJRWMD	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bradford	SRWMD	1.76	1.17	0.39	0.14	0.09	0.48	1.90	1.76	1.17	0.44	0.14	0.10	0.54	1.90
<b>Bradford</b>	<b>Total</b>	<b>1.76</b>	<b>1.17</b>	<b>0.39</b>	<b>0.14</b>	<b>0.09</b>	<b>0.48</b>	<b>1.90</b>	<b>1.76</b>	<b>1.17</b>	<b>0.44</b>	<b>0.14</b>	<b>0.10</b>	<b>0.54</b>	<b>1.90</b>
Clay	SJRWMD	10.58	5.31	2.64	7.65	3.84	6.48	18.23	10.58	5.31	3.95	7.65	5.73	9.69	18.23
Columbia	SRWMD	3.18	3.12	0.06	0.22	0.21	0.27	3.39	3.18	3.12	0.04	0.22	0.16	0.21	3.39
Duval	SJRWMD	92.63	17.35	14.10	15.26	2.86	16.96	107.89	92.63	17.35	56.46	15.26	11.44	67.90	107.89
Flagler	SJRWMD	11.57	9.33	1.81	3.06	2.47	4.28	14.63	11.57	9.33	1.68	3.06	2.30	3.98	14.63
Gilchrist	SRWMD	0.19	0.19	0.00	0.04	0.04	0.04	0.23	0.19	0.19	0.00	0.04	0.03	0.03	0.23
Hamilton	SRWMD	0.86	0.23	0.17	0.01	0.00	0.17	0.86	0.86	0.23	0.47	0.01	0.01	0.47	0.86
Nassau	SJRWMD	4.46	1.48	0.99	2.88	0.96	1.95	7.34	4.46	1.48	2.24	2.88	2.16	4.40	7.34
Putnam	SJRWMD	2.28	1.80	0.38	0.00	0.00	0.38	2.28	2.28	1.80	0.36	0.00	0.00	0.36	2.28
St. Johns	SJRWMD	11.79	3.67	2.53	7.16	2.23	4.76	17.04	11.79	3.67	6.09	7.16	5.37	11.46	17.04
Suwannee	SRWMD	1.05	1.04	0.01	0.16	0.16	0.17	1.22	1.05	1.04	0.01	0.16	0.12	0.13	1.22
Union	SRWMD	0.54	0.54	0.00	0.00	0.00	0.00	0.54	0.54	0.54	0.00	0.00	0.00	0.00	0.54
<b>SJRWMD Total</b>		<b>154.39</b>	<b>58.35</b>	<b>36.30</b>	<b>38.63</b>	<b>14.60</b>	<b>50.90</b>	<b>191.11</b>	<b>154.39</b>	<b>58.35</b>	<b>72.03</b>	<b>38.63</b>	<b>28.97</b>	<b>101.00</b>	<b>191.11</b>
<b>SRWMD Total</b>		<b>8.87</b>	<b>7.55</b>	<b>1.12</b>	<b>0.93</b>	<b>0.79</b>	<b>1.91</b>	<b>9.80</b>	<b>8.87</b>	<b>7.55</b>	<b>0.99</b>	<b>0.93</b>	<b>0.70</b>	<b>1.68</b>	<b>9.59</b>
<b>Total</b>		<b>163.26</b>	<b>65.90</b>	<b>39.30</b>	<b>39.56</b>	<b>15.97</b>	<b>55.27</b>	<b>200.90</b>	<b>163.26</b>	<b>65.90</b>	<b>73.02</b>	<b>39.56</b>	<b>29.67</b>	<b>102.68</b>	<b>200.70</b>

Notes:

- 1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
- 2.) Rounding anomalies account for nominal discrepancies.
- 3.) 2018 Total facility treatment flow obtained from DEP 2018 Annual Reuse Inventory.
- 4.) Beneficial reuse for SJRWMD and SRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
- 5.) Total potential additional reclaimed water for reuse calculated as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
- 6.) 2045 Total facility treatment flow calculated as 2018 total facility treatment flow plus 2045 new waste water flow.
- 7.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

Table B-16. First Scenario of Potential Water Conservation for Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

Category	District	Projected 2045 Water Demand	First Conservation Scenario	
			Percent Conservation	Projected 2045 Water Conservation
Public Supply	SJRWMD	274.05	7.0%	19.18
Public Supply	SRWMD	13.83	7.0%	0.97
Domestic Self-supply and Small Public Supply Systems	SJRWMD	35.58	3.5%	1.25
Domestic Self-supply and Small Public Supply Systems	SRWMD	10.84	3.5%	0.38
Agricultural Irrigation Self-supply	SJRWMD	63.90	N/A	11.86 **
Agricultural Irrigation Self-supply	SRWMD	111.5	N/A	18.31 **
Landscape / Recreational Self-supply	SJRWMD	26.28	4.7%	1.24
Landscape / Recreational Self-supply	SRWMD	3.17	4.7%	0.15
Commercial / Industrial / Institutional Self-supply	SJRWMD	84.60	2.2%	1.86
Commercial / Industrial / Institutional Self-supply	SRWMD	46.80	2.2%	1.03
Power Generation Self-supply	SJRWMD	25.76	13.8%	3.55
Power Generation Self-supply	SRWMD	2.05	13.8%	0.28
<b>SJRWMD Region 1 Total</b>		<b>510.17</b>	<b>31.0%</b>	<b>38.94</b>
<b>SRWMD NFRWSP Total</b>		<b>188.19</b>	<b>31.0%</b>	<b>21.12</b>
<b>NFRWSP Total</b>		<b>698.36</b>	<b>62.0%</b>	<b>60.06</b>

Notes:

- 1.) First Conservation Scenario - Percent of potential conservation for public supply, domestic self-supply, landscape/recreational self-supply, commercial/industrial/institutional self-supply, and power generation self-supply were based on the 2020 CFWI estimated percent savings.
- 2.) First Conservation Scenario - Agriculture is based on the Florida Department of Agriculture and Consumer Services Florida Statewide Agricultural Irrigation Demand VII Balmoral deliverable.
- 3.) Projected 2045 water demand and 2045 conservation potential are shown in million gallons per day.

\*\*Interactive FSAID Power BI Conservation Slide 5

<https://app.powerbi.com/view?r=eyJrIjo1NzBkZm10YiY1YThY100OWY0LTJlZjgtNTk1NTNjNjRmYTMxIiwidCI6ImNkZjJlZmQ4LTUzYzgtNDA5ZC1hZDVlTM4NDVmNjJiYjY2ZC1smMIOj9>

Table B-17. Average Gross Per Capita Scenario for Potential Public Supply Conservation for Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

County	Utility	CUP Number	2045 Population Projection	2045 Water Demand Projection	Utility-Level 2014 2018 Average Gross Per Capita	2014-2018 Average Gross Per Capita for Part I	New 2045 Water Demand if Utility Level Average Gross Per Capita is limited to the Average Gross for Part I	Potential Reduction in 2045 Water Demand	Potential Reduction in 2045 Water Demand (Percent)
Alachua - SJRWMD	City of Hawthorne	1674	2,426	0.21	88	121	0.21	0.00	0.0%
	Gainesville Regional Utilities (includes SRWMD)	11339	231,295	27.29	118	121	27.29	0.00	0.0%
	Kincaid Hills Water Company	11343	654	0.11	161	121	0.08	-0.03	-28.1%
	Town of Micanopy	11356	1,073	0.08	71	121	0.08	0.00	0.0%
	Arredondo Utility Co / Aqua Source Utilities	11364, 132141	1,227	0.09	74	121	0.09	0.00	0.0%
<b>SJRWMD Alachua Total</b>			<b>236,675</b>	<b>27.78</b>	<b>N/A</b>	<b>N/A</b>	<b>27.75</b>	<b>-0.03</b>	<b>-0.1%</b>
Alachua - SRWMD	City Of Newberry	216450	7,973	0.84	105	142	0.84	0.00	0.0%
	City Of Archer	216647	1,576	0.15	95	142	0.15	0.00	0.0%
	City Of High Springs Water Plant	216833	7,230	0.61	84	142	0.61	0.00	0.0%
	City Of Waldo	217300	1,230	0.09	71	142	0.09	0.00	0.0%
	City Of Alachua	220667	11,925	1.44	121	142	1.44	0.00	0.0%
<b>SRWMD Alachua Total</b>			<b>29,934</b>	<b>3.13</b>	<b>N/A</b>	<b>N/A</b>	<b>3.13</b>	<b>0.00</b>	<b>0.0%</b>
Baker - SJRWMD	City of Macclenny	15	7,528	1.05	139	121	0.91	-0.14	-13.2%
	Town of Glen St Mary	24	502	0.04	74	121	0.04	0.00	0.0%
	<b>SJRWMD Baker Total</b>			<b>8,030</b>	<b>1.09</b>	<b>N/A</b>	<b>N/A</b>	<b>0.95</b>	<b>-0.14</b>
Bradford - SJRWMD	Clay County Utility Authority	431	155	0.01	102	121	0.01	0.00	0.0%
	<b>SJRWMD Bradford Total</b>			<b>155</b>	<b>0.01</b>	<b>N/A</b>	<b>N/A</b>	<b>0.01</b>	<b>0.00</b>
Bradford - SRWMD	City of Starke	216650	8,653	0.91	105	142	0.91	0.00	0.0%
	City of Lawtey	218998	889	0.20	221	142	0.13	-0.07	-36.9%
	<b>SRWMD Bradford Total</b>			<b>9,542</b>	<b>1.11</b>	<b>N/A</b>	<b>N/A</b>	<b>1.04</b>	<b>-0.07</b>
Clay - SJRWMD	Clay County Utility Authority	416, 431, 137335	227,726	23.19	102	121	23.19	0.00	0.0%
	Town of Orange Park	453	10,076	0.98	97	121	0.98	0.00	0.0%
	City of Green Cove Springs	499	8,702	1.40	161	121	1.05	-0.35	-24.8%
	JEA (Also in Duval, Nassau, St. Johns)	88271	27,114	0.00	0	121	0.00	N/A	N/A
<b>SJRWMD Clay Total</b>			<b>273,618</b>	<b>25.57</b>	<b>N/A</b>	<b>N/A</b>	<b>25.22</b>	<b>-0.35</b>	<b>-1.4%</b>
Columbia - SRWMD	City of Lake City	217754	22,252	3.94	177	142	3.16	-0.78	-19.8%
	Columbia County Board of Commissioners	220704	94	0.06	635	142	0.01	-0.05	-77.8%
	North Florida Mega Industrial Park Wellfield	239112	0	2.16	N/A	142	2.16	0.00	0.0%
<b>SRWMD Columbia Total</b>			<b>22,346</b>	<b>6.16</b>	<b>N/A</b>	<b>N/A</b>	<b>5.33</b>	<b>-0.83</b>	<b>-13.4%</b>
Duval - SJRWMD	CSWR - Florida Utility Operating Company, LLC	756	1,015	0.08	77	121	0.08	0.00	0.0%
	City of Baldwin	784	2,260	0.36	161	121	0.27	-0.09	-24.0%
	City of Jacksonville Beach	793	26,195	2.80	107	121	2.80	0.00	0.0%
	Atlantic Beach Utility	810	31,857	3.12	98	121	3.12	0.00	0.0%
	City of Neptune Beach	842	7,283	0.92	126	121	0.88	-0.04	-4.2%
	St Johns County Utilities / Intercoastal (Also in St. Johns)	1142	85	0.00	N/A	121	0.00	N/A	N/A
	Normandy Villages Utilities	50293	3,313	0.30	90	121	0.30	0.00	0.0%
	JEA (Also in Clay, Nassau, St. Johns)	88271	998,910	151.39	152	121	120.87	-30.52	-20.2%
<b>SJRWMD Duval Total</b>			<b>1,070,918</b>	<b>158.97</b>	<b>N/A</b>	<b>N/A</b>	<b>128.32</b>	<b>-30.65</b>	<b>-19.3%</b>
Flagler - SJRWMD	City of Flagler Beach	59	7,044	1.01	144	121	0.85	-0.16	-15.6%
	City of Palm Coast	1947	125,437	11.04	88	121	11.04	0.00	0.0%
	Plantation Bay Utility Company (Also in Volusia)	1960	1,784	0.24	69	121	0.24	0.00	0.0%
	City of Bunnell	1982	8,174	1.07	131	121	0.99	-0.08	-7.6%
	Manufactured Home Communities	2002	1,284	0.11	85	121	0.11	0.00	0.0%
	City of Ormond Beach (Also in Volusia)	8932	622	0.00	N/A	121	0.00	N/A	N/A
	Volusia County Utilities (Also in Volusia)	50157, 50659, 86278	459	0.00	N/A	121	0.00	N/A	N/A
	Dunes Community Development District	51136	4,551	0.86	188	121	0.55	-0.31	-36.0%
<b>SJRWMD Flagler Total</b>			<b>149,355</b>	<b>14.33</b>	<b>N/A</b>	<b>N/A</b>	<b>13.78</b>	<b>-0.55</b>	<b>-3.8%</b>
Gilchrist - SRWMD	City of Trenton Water Treatment Plant	216453	2,710	0.28	104	142	0.28	0.00	0.0%
	Fanning Springs (Also in Dixie and Levy)	220310	170	0.00	0	142	0.00	N/A	N/A
<b>SRWMD Gilchrist Total</b>			<b>2,880</b>	<b>0.28</b>	<b>N/A</b>	<b>N/A</b>	<b>0.28</b>	<b>0.00</b>	<b>0.0%</b>

Table B-17, Continued. Average Gross Per Capita Scenario for Potential Public Supply Conservation for Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District.

Hamilton - SRWMD	Town of Jennings	216567	699	0.15	208	142	0.10	-0.05	-33.8%
	Town of White Springs	216651	877	0.05	58	142	0.05	0.00	0.0%
	Hamilton County Water Facilities	220443	0	0.13	N/A	142	0.13	0.00	0.0%
	City of Jasper	220463	3,736	0.70	188	142	0.53	-0.17	-24.2%
	<b>SRWMD Hamilton Total</b>		<b>5,312</b>	<b>1.03</b>	<b>N/A</b>	<b>N/A</b>	<b>0.81</b>	<b>-0.22</b>	<b>-21.4%</b>
Nassau - SJRWMD	City of Fernandina Beach	122	20,476	3.46	169	121	2.48	-0.98	-28.4%
	Town of Callahan	922	2,861	0.30	104	121	0.30	0.00	0.0%
	Town of Hilliard	948	4,889	0.37	75	121	0.37	0.00	0.0%
	Nassau Amelia Utilities	50087	9,775	1.44	147	121	1.18	-0.26	-17.9%
	JEA (Also in Clay, Duval, St. Johns / Old 942)	88271	59,307	2.69	45	121	2.69	0.00	0.0%
<b>SJRWMD Nassau Total</b>		<b>97,308</b>	<b>8.26</b>	<b>N/A</b>	<b>N/A</b>	<b>7.02</b>	<b>-1.24</b>	<b>-15.0%</b>	
Putnam - SJRWMD	Town of Interlachen	1624, 8150	959	0.08	88	121	0.08	0.00	0.0%
	City of Crescent City	1627	1,805	0.17	96	121	0.17	0.00	0.0%
	Melrose Water Association	7961	1,650	0.15	90	121	0.15	0.00	0.0%
	River Park Utilities Management Assoc.	7981	1,001	0.07	69	121	0.07	0.00	0.0%
	City of Palatka	8114	12,053	1.28	106	121	1.28	0.00	0.0%
	Town of Welaka	8168	2,668	0.15	55	121	0.15	0.00	0.0%
	Putnam County BOCC	92165	2,857	0.28	98	121	0.28	0.00	0.0%
<b>SJRWMD Putnam Total</b>		<b>22,993</b>	<b>2.18</b>	<b>N/A</b>	<b>N/A</b>	<b>2.18</b>	<b>0.00</b>	<b>0.0%</b>	
St. Johns - SJRWMD	North Beach Utilities	157	5,077	0.69	136	121	0.61	-0.08	-11.0%
	Wildwood Water Company	324	933	0.06	68	121	0.06	0.00	0.0%
	St. Johns County Utilities / Intercoastal (Also in Duval)	1142	33,776	8.40	249	121	4.09	-4.31	-51.3%
	St. Johns County Utilities	1198	195,538	15.20	78	121	15.20	0.00	0.0%
	St. Johns County Utilities	1392	2,862	0.08	28	121	0.08	0.00	0.0%
	City of St. Augustine Utilities	50299	43,975	4.93	112	121	4.93	0.00	0.0%
	JEA (Also in Clay, Duval, Nassau)	88271	155,377	6.50	42	121	6.50	0.00	0.0%
<b>SJRWMD St. Johns Total</b>		<b>437,538</b>	<b>35.86</b>	<b>N/A</b>	<b>N/A</b>	<b>31.47</b>	<b>-4.39</b>	<b>-12.2%</b>	
Suwannee - SRWMD	Town of Wellborn	216507	613	0.05	79	142	0.05	0.00	0.0%
	Town of Branford	216658	927	0.11	120	142	0.11	0.00	0.0%
	Advent Christian Village	219527	1,579	0.31	199	142	0.22	-0.09	-27.7%
	City of Live Oak	220612	7,319	1.40	191	142	1.04	-0.36	-25.8%
	<b>SRWMD Suwannee Total</b>		<b>10,438</b>	<b>1.87</b>	<b>N/A</b>	<b>N/A</b>	<b>1.42</b>	<b>-0.45</b>	<b>-23.9%</b>
Union - SRWMD	City of Lake Butler	220148	1,905	0.25	129	142	0.25	0.00	0.0%
	<b>SRWMD Union Total</b>		<b>1,905</b>	<b>0.25</b>	<b>N/A</b>	<b>N/A</b>	<b>0.25</b>	<b>0.00</b>	<b>0.0%</b>
<b>Region I Total</b>			<b>2,378,947</b>	<b>287.88</b>	<b>N/A</b>	<b>N/A</b>	<b>248.97</b>	<b>-38.91</b>	<b>-13.5%</b>
			<b>Region I SJRWMD 2014-2018 Average Gross Per Capita</b>		<b>121</b>				
			<b>Region I SRWMD 2014-2018 Average Gross Per Capita</b>		<b>142</b>				

Notes:

- 1.) Projected 2045 water demand and potential reduction is shown in million gallons per day.
- 2.) Due to feedback from stakeholders, 2045 demand projections have been updated to reflect what was modeled for the Black Creek Settlement Agreement and therefore don't reflect the 2014-2018 average per capita. The per capitas have been recalculated in this table based on the updated 2045 populations and demand.



Table B-18. Range of Potential Water Conservation for Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District

County	Category	Projected 2045 Water Demand	Second Conservation Scenario	
			Percent Conservation	Projected 2045 Water Conservation
Alachua - SJRWMD	Public Supply	27.78	0.11%	0.03
	Domestic Self-supply and Small Public Supply Systems	1.00	0.11%	0.00
	<b>Total</b>	<b>28.78</b>	<b>0.11%</b>	<b>0.03</b>
Alachua - SRWMD	Public Supply	3.13	0.00%	0.00
	Domestic Self-supply and Small Public Supply Systems	1.65	0.00%	0.00
	<b>Total</b>	<b>4.78</b>	<b>0.00%</b>	<b>0.00</b>
Baker - SJRWMD	Public Supply	1.09	12.76%	0.14
	Domestic Self-supply and Small Public Supply Systems	2.90	12.76%	0.37
	<b>Total</b>	<b>3.99</b>	<b>12.76%</b>	<b>0.51</b>
Baker - SRWMD	Public Supply	0.00	N/A	N/A
	Domestic Self-supply and Small Public Supply Systems	0.07	N/A	N/A
	<b>Total</b>	<b>0.07</b>	<b>N/A</b>	<b>N/A</b>
Bradford - SJRWMD	Public Supply	0.01	0.00%	0.00
	Domestic Self-supply and Small Public Supply Systems	0.30	0.00%	0.00
	<b>Total</b>	<b>0.31</b>	<b>0.00%</b>	<b>0.00</b>
Bradford - SRWMD	Public Supply	1.11	6.65%	0.07
	Domestic Self-supply and Small Public Supply Systems	0.54	6.65%	0.04
	<b>Total</b>	<b>1.65</b>	<b>6.65%</b>	<b>0.11</b>
Clay - SJRWMD	Public Supply	25.57	1.36%	0.35
	Domestic Self-supply and Small Public Supply Systems	4.77	1.36%	0.06
	<b>Total</b>	<b>30.34</b>	<b>1.36%</b>	<b>0.41</b>
Columbia - SRWMD	Public Supply	6.16	13.42%	0.83
	Domestic Self-supply and Small Public Supply Systems	3.19	13.42%	0.43
	<b>Total</b>	<b>9.35</b>	<b>13.42%</b>	<b>1.26</b>
Duval - SJRWMD	Public Supply	158.97	19.28%	30.65
	Domestic Self-supply and Small Public Supply Systems	16.25	19.28%	3.13
	<b>Total</b>	<b>175.22</b>	<b>19.28%</b>	<b>33.78</b>
Flagler - SJRWMD	Public Supply	14.33	3.82%	0.55
	Domestic Self-supply and Small Public Supply Systems	0.40	3.82%	0.02
	<b>Total</b>	<b>14.73</b>	<b>3.82%</b>	<b>0.56</b>
Gilchrist - SRWMD	Public Supply	0.28	0.00%	0.00
	Domestic Self-supply and Small Public Supply Systems	1.26	0.00%	0.00
	<b>Total</b>	<b>1.54</b>	<b>0.00%</b>	<b>0.00</b>
Hamilton - SRWMD	Public Supply	1.03	21.38%	0.22
	Domestic Self-supply and Small Public Supply Systems	0.67	21.38%	0.14
	<b>Total</b>	<b>1.70</b>	<b>21.38%</b>	<b>0.36</b>
Nassau - SJRWMD	Public Supply	8.26	15.01%	1.24
	Domestic Self-supply and Small Public Supply Systems	2.28	15.01%	0.34
	<b>Total</b>	<b>10.54</b>	<b>15.01%</b>	<b>1.58</b>
Putnam - SJRWMD	Public Supply	2.18	0.00%	0.00
	Domestic Self-supply and Small Public Supply Systems	3.24	0.00%	0.00
	<b>Total</b>	<b>5.42</b>	<b>0.00%</b>	<b>0.00</b>

Table B-18, Continued. Range of Potential Water Conservation for Region 1 of the St. Johns River Water Management District and the North Florida Regional Water Supply Planning Region of the Suwannee River Water Management District

St. Johns - SJRWMD	Public Supply	35.86	12.24%	4.39
	Domestic Self-supply and Small Public Supply Systems	4.44	12.24%	0.54
	<b>Total</b>	<b>40.30</b>	<b>12.24%</b>	<b>4.93</b>
Suwannee - SRWMD	Public Supply	1.87	23.88%	0.45
	Domestic Self-supply and Small Public Supply Systems	2.80	23.88%	0.67
	<b>Total</b>	<b>4.67</b>	<b>23.88%</b>	<b>1.12</b>
Union - SRWMD	Public Supply	0.25	0.00%	0.00
	Domestic Self-supply and Small Public Supply Systems	0.66	0.00%	0.00
	<b>Total</b>	<b>0.91</b>	<b>0.00%</b>	<b>0.00</b>
<b>NFRWSP Total</b>	<b>Public Supply</b>	<b>287.88</b>	<b>13.52%</b>	<b>38.91</b>
	<b>Domestic Self-supply and Small Public Supply Systems</b>	<b>46.42</b>	<b>12.38%</b>	<b>5.75</b>
	<b>Total</b>	<b>334.30</b>	<b>13.36%</b>	<b>44.65</b>

Notes:

- 1.) Second Conservation Scenario - Public supply is based on savings achieved if each Part 2014-2018 average gross per capita rate was met by respective utilities. The same percent savings are applied to the domestic self-supply category
- 2.) Projected 2045 water demand and 2045 water conservation potential are shown in million gallons per day

# Population Estimation and Projection Technical Memorandum (2014-2018)

## Overview

The Suwannee River Water Management District (SRWMD) estimated population for 2014-2018 and developed population projections from 2020-2045 which will be used for upcoming water supply planning efforts. Estimating an accurate population for the SRWMD is important for planning purposes because it forms the foundation of estimating and projecting water use for different categories within each county. This technical memorandum provides information on the data sources used, methodology and results of the population estimation process.

## Data

This section explains the data that were used to estimate population, where the data came from, and how or why data were used.

### Bureau of Economic and Business Research (BEBR)

BEBR publishes estimates of population and persons per household in Florida on a county-wide basis. These data are updated and published annually. They also publish population projections by county on a 25-year planning horizon. The SRWMD uses the annual and projected populations (medium series) to estimate population. Additional data sources described below are used to estimate residential populations within the county as well as prepare estimates of residential population on public supply versus self-supply.

### Public Supply Utility Data

The SRWMD sent out a public supply (PS) data request in October 2019 to utilities inquiring about estimated population served by the utility, annual water use by category (residential, commercial, institutional, other), water connections by category, per capita rates (if known), and any additional information related to public supply service area boundaries (PSAB) and/or water lines. These data were used to estimate the 2018 residential population being served by the utility's water system and to calculate gross and residential per capita rates.

### Public Supply Service Area Boundary (PSAB)

The SRWMD used the existing PSAB data collected for the 2017 North Florida Regional Water Supply Partnership (NFRWSP) Plan and made updates to the boundaries based on information provided by utilities. These data are in a shapefile format and show the extent of public supply service areas. The boundaries are used to estimate the potential served population. The potential served population is estimated to evaluate the maximum number of people that could be served by the utility using parcel data and published estimates of persons per household. This estimate is used to project population growth within the county.

### Parcel Layer

The parcel layer data originates from each individual county property appraiser and is sent to the Florida Department of Revenue (FDOR) once a year. The SRWMD's contractors, Quantum Spatial and Panda Consultants, gather the data from the FDOR, compile it, and deliver it back to the SRWMD. Later in the year, they make updates from data received from each property appraiser. All water

management districts (districts) individually contract with Quantum Spatial who uses Panda Consultants to process the data. All districts use the same specifications to ensure a consistent and complete dataset. The SRWMD used these data to estimate population served where utility data was not available, to estimate population distribution within counties served by two districts, and to calculate the potential served population inside of a PSAB.

## Methodology

This section describes the methods used for estimating split counties, or counties that are shared with adjacent water management districts, as well as estimating served, non-served, institutional, and projected population.

### Total County-wide Population

The BEBR county-wide population estimates, without institutional population, for 2014-2018 were used for the estimation of the total residential population (BEBR 2014, 2015, 2016, 2017, 2018). For split counties in the Western Region, a percent share was used to calculate the total population residing in the SRWMD's portion of the county.

### Split Counties

The SRWMD shares five counties with adjacent districts. These counties are Alachua, Baker, Bradford, Jefferson, and Levy counties. For counties in the NFRWSP area, population estimates and projections for Alachua, Baker, and Bradford counties were developed in coordination with the St. Johns River Water Management District (SJRWMD). The total county-wide population estimates came from BEBR. The population model created by the SJRWMD was applied to estimate the population in the SJRWMD portion of NFRWSP counties for 2014-2018. The remainder of the population was assumed to be residing in the SRWMD's portion of shared counties.

For counties that are not located in the NFRWSP area, the SRWMD used the parcel layer to calculate the percent of dwelling units located in the SRWMD's portion of the counties. These counties include Jefferson and Levy counties. The percent share was calculated by taking the number of dwelling units in the SRWMD's portion of the county, dividing it by the total number of dwelling units in the county, and multiplying it by 100. For SRWMD planning efforts, this percent share was calculated annually for 2014-2018 to consider any shifts in dwelling units.

### Public Supply and Small Public Supply (Served Population)

The served population is defined as the number of people receiving their water use from a public supply utility. The served population for 2018 was provided by many utilities from the public supply utility data request. For utilities that did not have an estimate of their served population, the SRWMD estimated the population by using the number of residential connections reported by the utility in the 2018 data request and multiplied them by BEBR's estimated persons per household for the corresponding county in which the public supply utility was located.

The potential served population was calculated to estimate the number of people served by a public supply utility from 2014-2017. The potential served population was estimated to evaluate the maximum number of people that could be served by the utility using parcel data and published estimates of persons per household. To calculate the potential served population, the number of residential dwelling units in a PSAB was multiplied by BEBR's estimated persons per household for the corresponding county and year. The percent change of potential served from one year to the next was used to estimate the served population from 2014-2017. To calculate the served population, the potential served population estimates for a given year were divided by the 2018 potential served

population and multiplied by the 2018 utility reported population. Below shows an example of the formula used to calculate the served population for 2017.

$$2017 \text{ served population} = \frac{2017 \text{ potential served}}{2018 \text{ potential served}} \times 2018 \text{ utility reported population}$$

There are two utilities for which additional data was used to estimate the served population. First, the City of Lake City provided additional data on residential connections that was used to calculate the served population for 2015-2018. The number of residential connections was multiplied by an estimate of 2.5 persons per household.

The second utility that provided additional information was Jefferson Communities Water System (JCWS). JCWS has two different systems located in the SRWMD; the Lloyd system which is split between the SRWMD and the Northwest Florida Water Management District (NFWMD), and the Lamont system which is wholly encompassed in the SRWMD. To estimate the served population for Lloyd portion of JCWS, the SRWMD calculated the percent of parcels in the PSAB that fell within the SRWMD boundary. The 2018 served population was then multiplied by this percent to estimate the 2018 population served in the SRWMD's portion of the Lloyd system. The formula above was then used to estimate the served population for 2014-2017. JCWS provided estimates of population served for the Lamont system.

Population estimates for the SRWMD's portion of Gainesville Regional Utilities (GRU), Clay County Utility Authority, and Melrose Water Association were provided by the SJRWMD. These estimates were incorporated into the served population estimates for Alachua and Bradford counties and used to more accurately estimate the non-served population.

For small public supply permits that did not have a PSAB (i.e., mobile home parks), the served population was estimated based on the information provided in the permit. This estimate of population was held constant for current and projected years (2014-2018, 2020-2045).

### Domestic Self Supply (Non-served Population)

The non-served population is defined as the number of people getting their water use from their own domestic self-supply well. This population was estimated by taking the total BEBR county-wide population estimate, less institutional population, and subtracting the served population.

### Institutional Population

Correctional facilities and prisons located in the SRWMD are either connected to a public supply utility or are self-supplied and have an institutional water use permit that is required to report use. This institutional use is therefore already being accounted for in the water use estimates for either the public supply (PS) or commercial/industrial/institutional category (CII). Accounting for the institutional population separately enables the SRWMD to more accurately estimate the non-served population and the water use associated with the DSS category. The SRWMD used the 2014-2018 BEBR published inmate population estimates to determine the institutional population by county. To be consistent with BEBR Volume 53, Bulletin 186, which was used for projections, the 2019 institutional population was used as the projected population and held constant through the 2020-2045 planning period (Rayer, S. and Y. Wang. 2020).

## Projections

County population projection estimates published by BEBR in January 2020 were used for estimating population from 2020-2045 (Rayer, S. and Y. Wang. 2020). The percent split calculated for 2018 was used to estimate the future populations of shared counties in the Western Region. In the NFRWSP, the county population estimated for the SRWMD is the difference between the BEBR estimate and the SJRWMD projected estimate for each projected year (2020, 2025, 2030, 2035, 2040, and 2045). Because BEBR's projection estimates include both residential and institutional population, the institutional population was subtracted out to be able to get an accurate estimate of the non-served residential population in the future. The institutional population was held constant through the projection period.

In some counties, the 2020 projected population was less than the estimated 2018 population, therefore there was a negative projection estimate due to the variability in the estimation of the institutional population. For counties with a negative projected population for 2020, the estimated total population was set equal to the 2018 total population and grown by the number of people BEBR projected for each time increment. Counties adjusted included Hamilton, Madison, and Union counties. Counties that had a positive 2020 projected residential population estimate were grown by the BEBR reported population projections, less the estimate of institutional population.

The SRWMD applied the population model created by the SJRWMD to distribute projected future population within the county (SJRWMD. 2021). This model also estimated the projected future served populations within PSABs. The projected future served population estimates were subtracted from the county-wide residential projections to get an estimate of the non-served projected population.

## Stakeholder Outreach

The SRWMD summarized each utility's population and water use estimates and projections. We reached out to individual utilities to discuss the data and further refine our estimates. We made updates to the served population estimates for 2014-2018 for utilities that provided comments. If documentation was provided to substantiate higher growth estimates than the model predicted, then estimates were updated. For example, the City of Newberry provided the SRWMD with a citywide Equivalent Residential Unit (ERU) water use study with estimates and projections for their utility to substantiate a different growth rate.

## References

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Rayer, S. and Y. Wang. 2020. Projections of Florida Population by County, 2020 – 2045, with Estimates for 2019. Volume 53, Bulletin 186. BEBR, University of Florida. Gainesville, FL.

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# St. Johns River

## Water Management District

Ann B. Shortelle, Ph.D., Executive Director

### **Technical Memorandum**

### **Methodology for Generating Utility Level Projections and Buildout Estimates Using Parcel Data**

### **June 25, 2021**

Through: Tammy Bader-Gibbs, Technical Program Manager  
Clay Coarsey, P.E., Bureau Chief

From: Rebecca May, Water Use Analyst

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#### **Background**

The earliest St. Johns River Water Management District's (District) efforts to distribute the Bureau of Economic and Business Research (BEBR) population estimates and projections to parcels were led by Dr. Nitesh Tripathi and Dr. Eugene Agyei and used Visual Basic software. The current model, refined by Yassert Gonzalez and James Walters, uses Python to distribute BEBR estimates and projections to parcels. The land use parcel layer is compiled by Panda Consultants and contains data from tax property appraiser databases. The data in the parcel layer relevant to this project are as follows: use class designations for all parcels (e.g., which parcels are considered single family or multi-family), year built, and residential unit counts. If there were null or zero values in necessary fields of this layer, estimations were made (described below). All examples of calculations in this technical memorandum were derived in 2019 and do not reflect the most recent data.

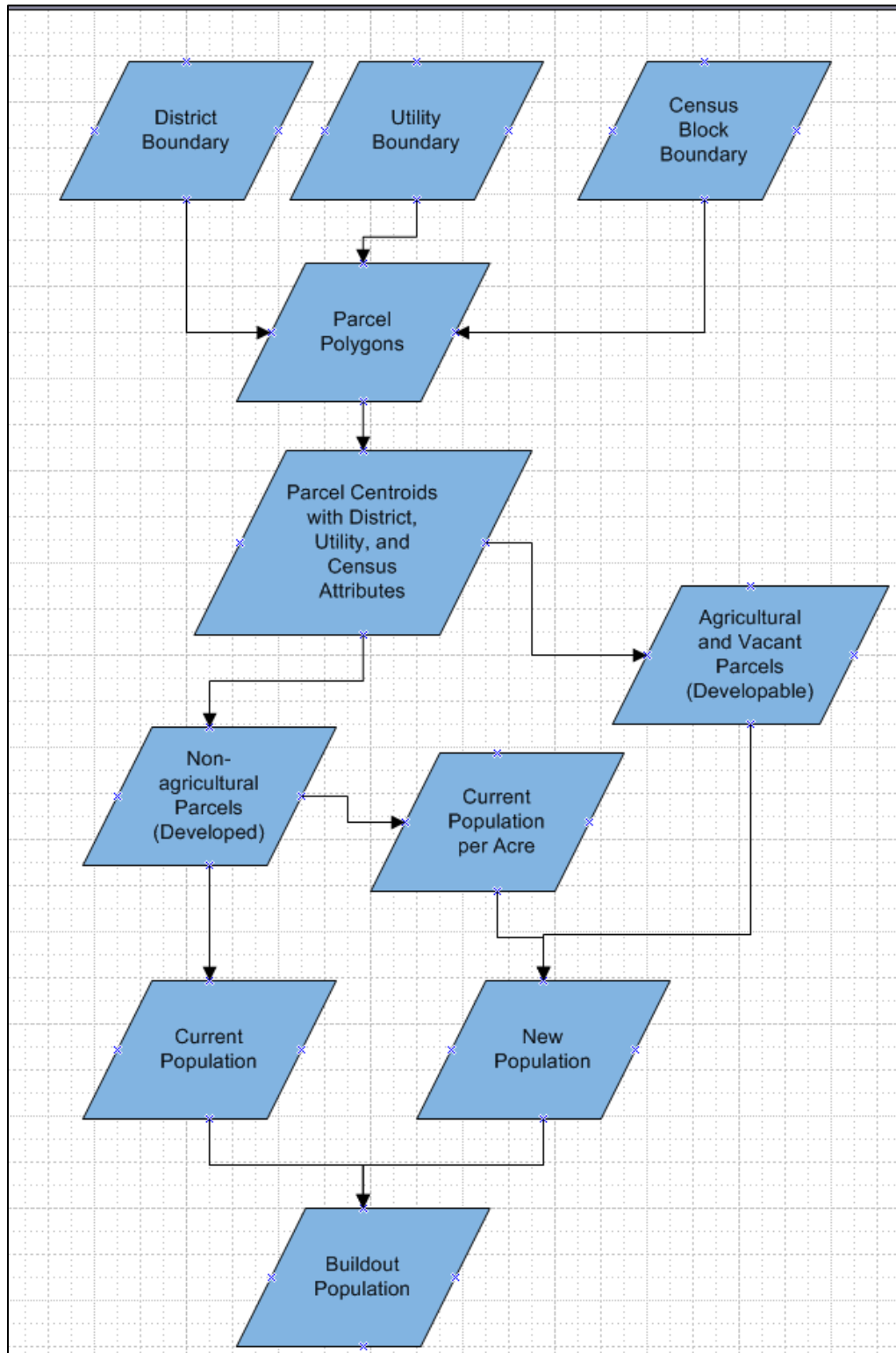
#### **Overview**

The tasks described in this memorandum are as follows:

- 1) Added district, utility, and census attributes to parcel centroids
- 2) Identified developed and developable parcels
- 3) Distributed current population to developed residential parcels
- 4) Calculated persons per acre from developed acreage
- 5) Generated buildout estimates
- 6) Ranked developable parcels
- 7) Generated projections for the period 2020 through 2045

The above tasks were performed using python scripts written in PyCharm. See Figure 1 for a simplified graphical.





**Figure 1.** Overview of the buildout population estimation process

## Data Sources

The datasets used were:

- 1) Parcel centroids generated from the land use parcel polygon dataset provided by Panda Consulting. Water management district, planning region, utility, and census block information were assigned to these centroids.
- 2) Utility-level served population estimates (if available)
- 3) BEBR's countywide population estimates
- 4) BEBR's countywide medium projections (2020-2045)
- 5) Parcel development rank table
- 6) Public Supply service area boundaries (PSABs)

## Parcel Classification for Historical Data

Assumptions:

- 1) Parcels classified as "CENTRALLY ASSESSED (098)" were excluded from "developable" parcels. These are parcels owned by railroads and other large industrial businesses.
- 2) Developed residential parcels were classified as follows:
  - a. Single Family
    - i. Customer class category is comprised of Single Family and Mobile Homes
    - ii. Zero or null values were replaced with the consumptive use permit (CUP) level average residential units for single family residences.
      1. Through conducting QA/QC of the data, single family parcels were reviewed using basemap imagery in ArcMap to verify if there were residential units present despite the null or zero values in the property appraiser data.
  - b. Multi-Family
    - i. Customer class category includes condominiums, cooperatives, multi-family, mobile home parks, and undefined (see 3.h. definition below for undefined).
    - ii. Zero or null values were replaced with the CUP-level average residential units for multi-family residences.
      1. If CUP-level data was not available, county-level data was used.
      2. Through conducting QA/QC of the data, multi-family parcels were reviewed using basemap imagery in ArcMap to verify if there were residential units present despite the null or zero values in the property appraiser data.
- 3) Parcel use types and codes for Single Family and Multi-Family residential parcels:
  - a. CONDOMINIA (004) – Condominium developments. The units are owned individually. Classified as Multi-Family.
  - b. COOPERATIVES (005) – Condominium developments. The units are owned cooperatively. Classified as Multi-Family.
  - c. MOBILE HOMES (002) – Individual mobile homes. Classified as Single Family.
  - d. MULTI-FAMILY - 10 UNITS OR MORE (003) – Large apartment complexes with at least 10 residential units. Classified as Multi-Family.
  - e. MULTI-FAMILY - LESS THAN 10 UNITS (008) – Smaller apartment complexes with less than 10 residential units. Classified as Multi-Family.
  - f. PARKING LOTS (COMMERCIAL OR PATRON) MOBILE HOME PARKS (028) – Mobile home parks. Classified as Multi-Family.
  - g. SINGLE FAMILY (001) – Single family homes. Classified as Single Family.
  - h. UNDEFINED - RESERVED FOR USE BY DEPARTMENT OF REVENUE (009) –

Condominium developments. The units are owned cooperatively. Classified as Multi-Family.

- 4) It was assumed that the persons per acre ratio does not change over the planning horizon.
- 5) The buildout figures only apply to the current public service area boundary. If PSAB changes occur, the buildout analysis needs to be redone.

### **Calculating Residential Unit Share**

The data provided in the property appraiser layer contained missing or zero values for some single family and multi-family parcels. Therefore, the original residential unit counts were modified by replacing the nulls and zeroes where applicable. The residential unit share for each utility was derived by dividing the number of residential units within a given PSAB by the total for the county. The non-served population outside PSABs was also derived in this manner: the residential units that did not fall within a service area were divided by the countywide total number of residential units.

### **Estimating Served and Non-Served Population**

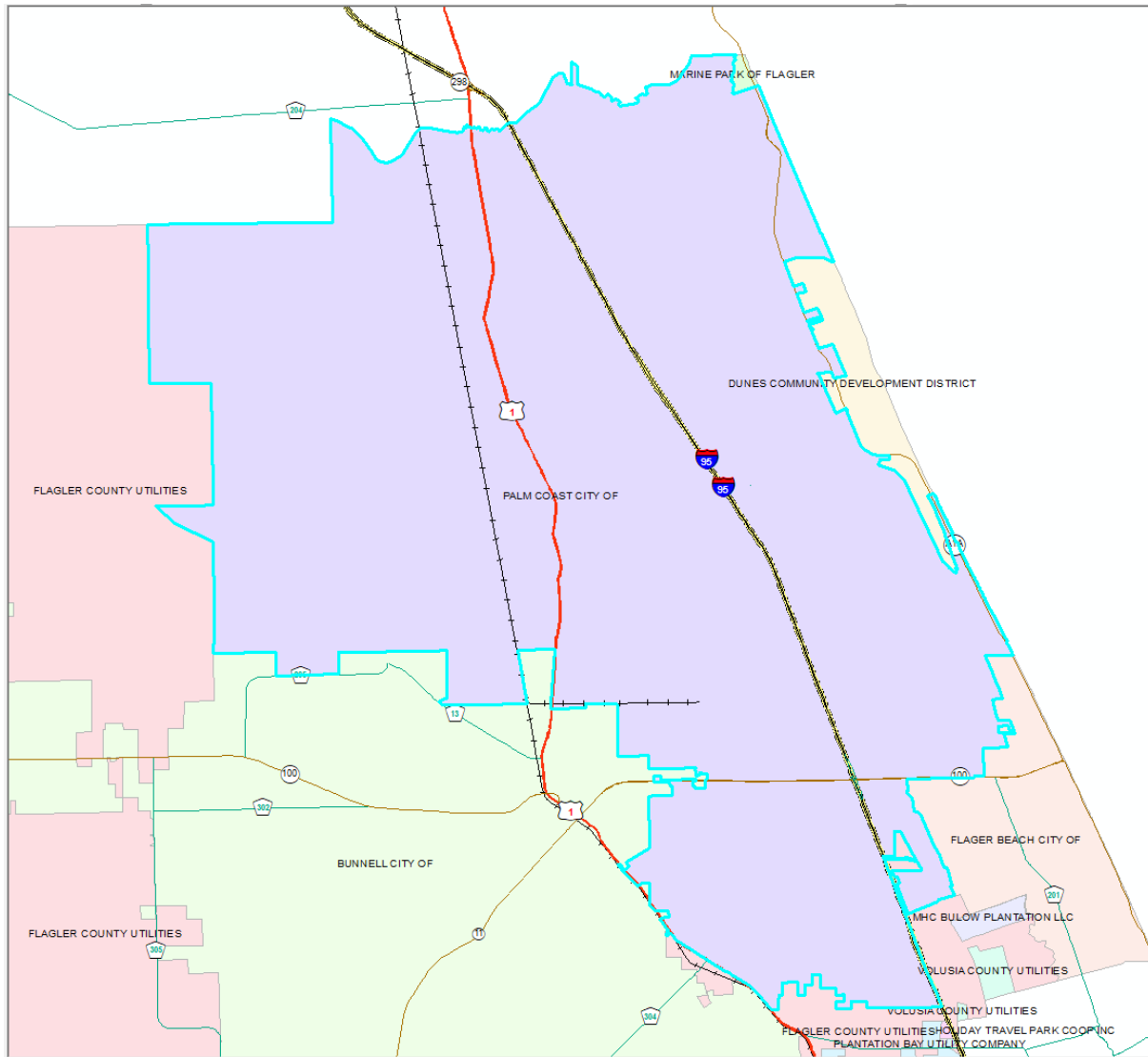
The total population within each PSAB was estimated by multiplying the countywide BEBR population by the share of residential units. If the population estimated from the share of residential units was greater than the reported served population, the difference was assumed to be the non-served population within the public service area boundary. If the utility did not report a population estimate, it was assumed that the entire population estimated by the share of residential units was served. For areas outside PSABs, the population was calculated by multiplying the residential unit share by the countywide BEBR population estimate. Historical population was distributed to residential parcels evenly by dividing the population by the number of single family/multi-family residential units.

### **Population Calculation Example Using Palm Coast (CUP# 1947)**

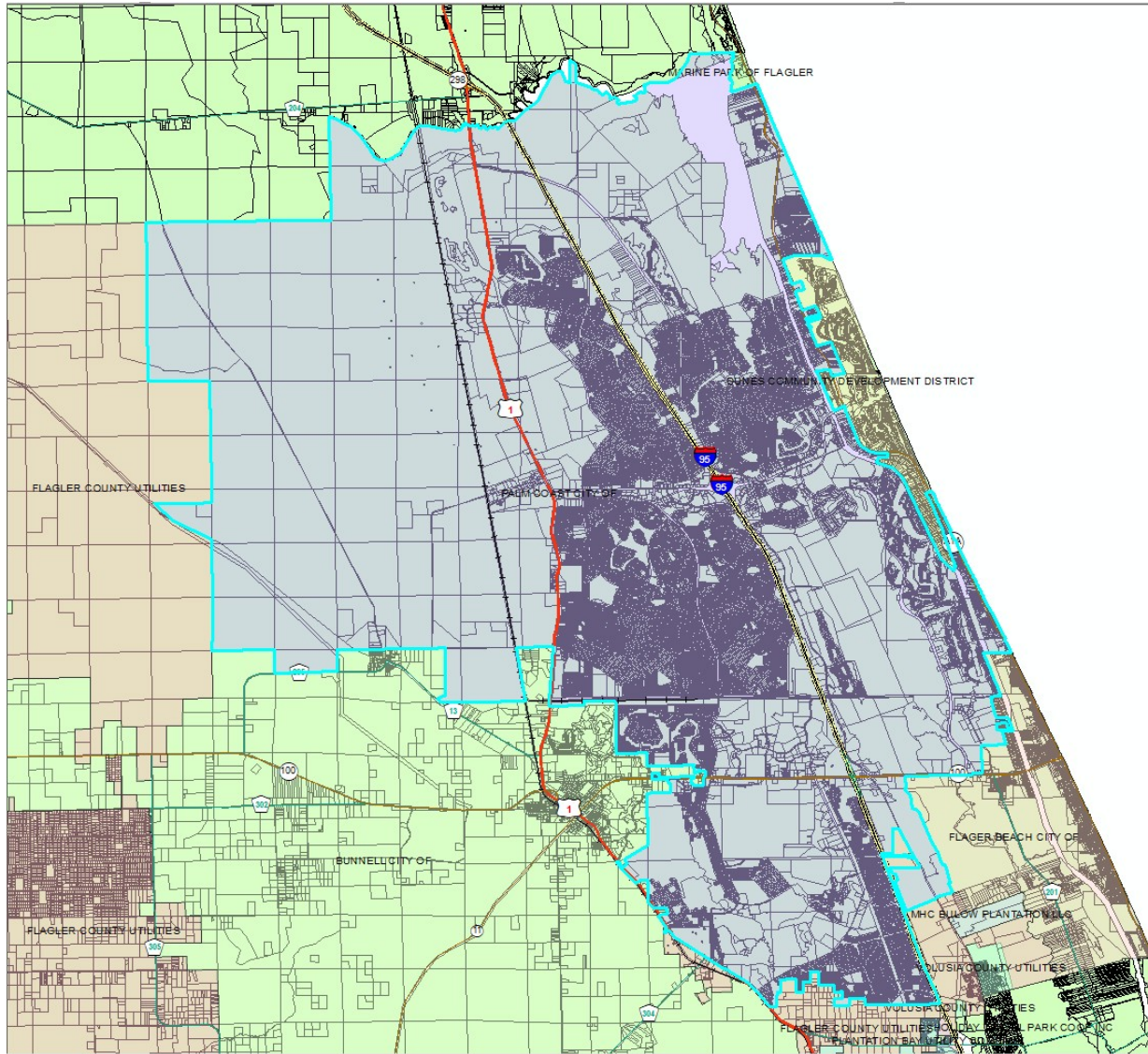
After infilling null and missing values in the residential unit counts from the original layer, residential units for single and multi-family homes in Palm Coast increased 6.52% (Table 1). There were 40,357 single and multi-family residential units in Palm Coast in 2019. There were 51,170 single and multi-family residential units in Flagler County. Thus, the share of residential units inside the Palm Coast's PSAB was approximately 78.87% (i.e.,  $40,357/51,170$ ). The BEBR 2017 countywide population for Flagler County was 105,157 persons, which was used to calculate the total population for each served and non-served region. Therefore, in Palm Coast the total population was 82,936 persons (i.e.,  $105,157 * 78.87\%$ ). The estimated 2017 served population for Palm Coast was 82,137 persons. Therefore, the non-served population within Palm Coast's service area was 799 persons (i.e.,  $82,936 - 82,137$ ). Due to multiple public supply utilities exceeding their residential share (i.e., CUPs 1982, 1979, 1953, 8932, and Flagler County Utilities), the Flagler countywide total population for 2017 exceeds the published BEBR county estimate ( $108,309 > 105,157$ ).

### **Calculating Buildout Population**

Once the served and non-served populations were determined for the historical period, the buildout value for the public service area boundary was calculated. The buildout is a theoretical maximum population that a PSAB can contain if all developable land is developed for residential uses. The average person per acre was calculated and then multiplied by the sum of developed and developable acres. The following sections and figures use Palm Coast (CUP# 1947) as an example for how the Python script works and applies the buildout concept to a public supply utility. The PSAB and the parcels intersecting the PSAB are shown in Figures 2 and 3, below.



**Figure 2.** Public service area boundary served by Palm Coast (Consumptive Use Permit 1947)



**Figure 3.** Parcels intersecting the public service area boundary served by Palm Coast (Consumptive Use Permit 1947)

### **Estimating Buildout Population for Palm Coast (CUP# 1947)**

For Palm Coast, the average person per acre in 2017 was 6.87 (i.e., 82,936 persons/12,079 residential acres). The average served and non-served persons per acre were calculated by dividing the served or non-served populations by the residential acreage. Therefore, the served persons per acre was 6.8 (82,136 persons/12,079 residential acres), and the non-served persons per acre was 0.07 (799 persons/12,079 residential acres).

Palm Coast is comprised of 81,412 acres (Table 2). There were 40,912 acres zoned agricultural or vacant residential, which were considered developable in the future.

The buildout population was 360,787 persons (Table 3). This theoretical number is the sum of the current population in developed parcels (82,136 persons) and the potential population in developable parcels 278,651 persons (i.e., 6.8 persons/acre \* 40,912 developable acres).

### **Parcel Classification for Projections**

Parcel centroids were classified as follows:

- 1) Unavailable
  - a. CAMPS (036) – Campgrounds
  - b. CENTRALLY ASSESSED (098) – Acreage owned by railroad and other large industrialists. At some point in the future these parcels may be developed, however, the present analysis excludes them.
  - c. FOREST, PARKS, RECREATIONAL AREAS (082)
  - d. STATE, OTHER THAN MILITARY, FORESTS, PARKS, RECREATIONAL AREAS (087)
- 2) Developed – Parcels that have already been developed (e.g., “SINGLE FAMILY (001)”, “STORES, ONE STORY (011)”, and “SUPERMARKETS (014)”).
- 3) Developable – Acres that are most likely to be developed in future.
  - a. Residential
    - i. VACANT RESIDENTIAL (000)
    - ii. MISCELLANEOUS RESIDENTIAL (MIGRANT CAMPS, BOARDING HOMES, ETC.) (007)
  - b. Agricultural
    - i. IMPROVED AGRICULTURAL (050)
    - ii. CROPLAND SOIL CAPABILITY CLASS I (051)
    - iii. CROPLAND SOIL CAPABILITY CLASS II (052)
    - iv. CROPLAND SOIL CAPABILITY CLASS III (053)
    - v. TIMBERLAND - SITE INDEX 90 AND ABOVE (054)
    - vi. TIMBERLAND - SITE INDEX 80 TO 89 (055)
    - vii. TIMBERLAND - SITE INDEX 70 TO 79 (056)
    - viii. TIMBERLAND - SITE INDEX 60 TO 69 (057)
    - ix. TIMBERLAND - SITE INDEX 50 TO 59 (058)
    - x. TIMBERLAND NOT CLASSIFIED BY SITE INDEX TO PINES (059)
    - xi. GRAZING LAND SOIL CAPABILITY CLASS I (060)
    - xii. GRAZING LAND SOIL CAPABILITY CLASS II (061)
    - xiii. GRAZING LAND SOIL CAPABILITY CLASS III (062)
    - xiv. GRAZING LAND SOIL CAPABILITY CLASS IV (063)
    - xv. GRAZING LAND SOIL CAPABILITY CLASS V (064)
    - xvi. GRAZING LAND SOIL CAPABILITY CLASS VI (065)
    - xvii. ORCHARD GROVES, CITRUS, ETC. (066)

- xviii. POULTRY, BEES, TROPICAL FISH, RABBITS, ETC. (067)
- xix. DAIRIES, FEED LOTS (068)
- xx. ORNAMENTALS, MISCELLANEOUS AGRICULTURAL (069)
- c. Miscellaneous
  - i. MINING LANDS, PETROLEUM LANDS, OR GAS LANDS (092)
- d. Non-Agricultural Acreage
  - i. ACREAGE NOT ZONED AGRICULTURAL (099)

**Table 1.** Residential units by parcel type for Palm Coast (consumptive use permit 1947) using 2019 parcels.

Parcel Use Description (PARUSEDESC)	Parcels	Percent of Total Parcels	Original Residential Units	Corrected Residential Units	Percent of Total Residential Units	Percent Change in Residential Units
CONDOMINIA	2,422	6.27%	2,418	2,443	6.05%	1.04%
COOPERATIVES	234	0.61%	0	468	1.16%	N/A
MOBILE HOMES	205	0.53%	74	211	0.52%	185.14%
MULTI-FAMILY - 10 UNITS OR MORE	7	0.02%	43	524	1.30%	1,118.99%
MULTI-FAMILY - LESS THAN 10 UNITS	820	2.12%	824	1,145	2.84%	38.95%
PARKING LOTS (COMMERCIAL OR PATRON) MOBILE HOME PARKS	14	0.04%	25	124	0.31%	397.37%
SINGLE FAMILY	34,485	89.22%	34,499	34,502	85.49%	0.01%
UNDEFINED - RESERVED FOR USE BY DEPARTMENT OF REVENUE	465	1.20%	4	940	2.33%	23,380.55%
<b>Total</b>	<b>38,652</b>	<b>100.00</b>	<b>37,887</b>	<b>40,357</b>	<b>100.00%</b>	<b>6.52%</b>

Note: Nominal discrepancies accounted for by rounding anomalies.

**Table 2.** Acreage by parcel use code for Palm Coast (consumptive use permit 1947) using 2019 parcels.

Parcel Use Description (PARUSEDESC)	Parcels	Percent of Total Parcels	Acreage	Percent of Total Acreage
NONE	446	0.74%	318.27	0.39%
ACREAGE NOT ZONED AGRICULTURAL	32	0.05%	4,079.61	5.01%
AIRPORTS (PRIVATE OR COMMERCIAL),BUS TERMINALS,MARINE TERMINALS,PIERS,MARINAS	2	0.00%	14.42	0.02%
AUTO SALES,AUTO REPAIR AND STORAGE,AUTO SERVICE SHOPS,BODY AND FENDER SHOPS,COMMERCIAL GARAGES	19	0.03%	53.74	0.07%
BOWLING ALLEYS,SKATING RINKS,POOL HALLS,ENCLOSED ARENAS	2	0.00%	7.97	0.01%
CENTRALLY ASSESSED	1	0.00%	207.81	0.26%
CHURCHES	27	0.04%	165.93	0.20%
CLUBS,LODGES,UNION HALLS	7	0.01%	28.23	0.03%
COLLEGES	1	0.00%	98.57	0.12%
COMMUNITY SHOPPING CENTERS	39	0.06%	152.16	0.19%
CONDOMINIA	2,422	4.03%	447.49	0.55%
COOPERATIVES	234	0.39%	18.90	0.02%
COUNTIES (OTHER THAN PUBLIC SCHOOLS,COLLEGES,HOSPITALS) INCLUDING NON-MUNICIPAL GOVERNMENT	190	0.32%	8,517.41	10.46%
DEPARTMENT STORES	2	0.00%	17.24	0.02%
DRIVE-IN RESTAURANTS	15	0.02%	19.03	0.02%
ENCLOSED THEATERS,ENCLOSED AUDITORIUMS	1	0.00%	18.48	0.02%
FEDERAL,OTHER THAN MILITARY,FORESTS,PARKS,RECREATIONAL AREAS	10	0.02%	83.86	0.10%
FINANCIAL INSTITUTIONS (BANKS,SAVING AND LOAN COMPANIES,MORTGAGE COMPANIES,CREDIT SERVICES)	19	0.03%	26.66	0.03%
FLORIST,GREENHOUSES	2	0.00%	3.06	0.00%
FOREST,PARKS,RECREATIONAL AREAS	11	0.02%	440.94	0.54%
GOLF COURSES,DRIVING RANGES	7	0.01%	1,595.03	1.96%
GRAZING LAND SOIL CAPABILITY CLASS I	7	0.01%	548.39	0.67%
GRAZING LAND SOIL CAPABILITY CLASS IV	3	0.00%	44.48	0.05%
HEAVY INDUSTRIAL,HEAVY EQUIPMENT MANUFACTURING,LARGE MACHINE SHOPS,FOUNDRIES,STEEL FABRICATING PLANT	2	0.00%	43.87	0.05%
HOMES FOR THE AGED	67	0.11%	80.56	0.10%
HOSPITALS	1	0.00%	93.96	0.12%
HOTELS,MOTELS	11	0.02%	38.99	0.05%



Parcel Use Description (PARUSEDESC)	Parcels	Percent of Total Parcels	Acreage	Percent of Total Acreage
IMPROVED AGRICULTURAL	6	0.01%	163.30	0.20%
LIGHT MANUFACTURING,SMALL EQUIPMENT MANUFACTURING PLANTS,SMALL MACHINE	28	0.05%	95.11	0.12%
MISCELLANEOUS RESIDENTIAL (MIGRANT CAMPS,BOARDING HOMES,ETC.)	188	0.31%	104.21	0.13%
MIXED USE - STORE AND OFFICE OR STORE AND RESIDENTIAL OR RESIDENTIAL COMBINATION	18	0.03%	25.66	0.03%
MOBILE HOMES	205	0.34%	56.80	0.07%
MORTUARIES,CEMETERIES,CREMATORIUMS	5	0.01%	17.01	0.02%
MULTI-FAMILY - 10 UNITS OR MORE	7	0.01%	162.00	0.20%
MULTI-FAMILY - LESS THAN 10 UNITS	820	1.36%	216.46	0.27%
MUNICIPAL,OTHER THAN PARKS,RECREATIONAL AREAS,COLLEGES,HOSPITALS	830	1.38%	4,653.59	5.72%
OFFICE BUILDINGS,NON-PROFESSIONAL SERVICE BUILDINGS,MULTI-STORY	17	0.03%	28.65	0.04%
OFFICE BUILDINGS,NON-PROFESSIONAL SERVICE BUILDINGS,ONE STORY	492	0.82%	70.12	0.09%
OPEN STORAGE,NEW AND USED BUILDING SUPPLIES,JUNK YARDS,AUTO WRECKING,FUEL STORAGE	13	0.02%	20.83	0.03%
ORPHANAGES,OTHER NON-PROFIT OR CHARITABLE SERVICES	1	0.00%	19.46	0.02%
PARKING LOTS (COMMERCIAL OR PATRON) MOBILE HOME PARKS	14	0.02%	71.71	0.09%
PRIVATE SCHOOLS AND COLLEGES	2	0.00%	4.54	0.01%
PROFESSIONAL SERVICE BUILDINGS	70	0.12%	44.80	0.06%
PUBLIC COUNTY SCHOOLS - INCLUDE ALL PROPERTY OF BOARD OF PUBLIC INSTRUCTION	21	0.03%	586.02	0.72%
REPAIR SERVICE SHOPS (EXCLUDING AUTOMOTIVE),RADIO AND T.V. REPAIR,REFRIGERATION SERVICE,ELECTRIC REP	2	0.00%	0.85	0.00%
RESTAURANTS,CAFETERIAS	11	0.02%	14.22	0.02%
RIGHT-OF-WAY,STREETS,ROADS,IRRIGATION CHANNEL,DITCH	161	0.27%	416.20	0.51%
RIVERS AND LAKES,SUBMERGED LANDS	56	0.09%	483.65	0.59%
SEWAGE DISPOSAL,SOLID WASTE,BORROW PITS,DRAINAGE RESERVOIRS,WASTE LAND	20	0.03%	174.46	0.21%
SINGLE FAMILY	34,485	57.34%	9,293.39	11.42%
STATE,OTHER THAN MILITARY,FORESTS,PARKS,RECREATIONAL AREAS	60	0.10%	3,901.99	4.79%
STORES,ONE STORY	48	0.08%	152.56	0.19%
SUPERMARKETS	2	0.00%	9.50	0.01%
TIMBERLAND - SITE INDEX 70 TO 79	36	0.06%	7,100.02	8.72%
TIMBERLAND - SITE INDEX 80 TO 89	117	0.19%	22,384.60	27.50%
TIMBERLAND - SITE INDEX 90 AND ABOVE	1	0.00%	79.47	0.10%
TIMBERLAND NOT CLASSIFIED BY SITE INDEX TO PINES	9	0.01%	1,090.98	1.34%
TOURIST ATTRACTIONS,PERMANENT EXHIBITS,OTHER ENTERTAINMENT FACILITIES,FAIRGROUNDS (PRIVATELY OWNED)	3	0.00%	113.07	0.14%
UNDEFINED - RESERVED FOR USE BY DEPARTMENT OF REVENUE	465	0.77%	1,812.48	2.23%
UTILITY,GAS AND ELECTRICITY,TELEPHONE AND TELEGRAPH,LOCALLY ASSESSED RAILROADS,WATER AND SEWER SERVICE	32	0.05%	318.68	0.39%
VACANT	3	0.00%	8.59	0.01%
VACANT COMMERCIAL	400	0.67%	4,740.54	5.82%
VACANT INDUSTRIAL	52	0.09%	369.63	0.45%
VACANT RESIDENTIAL	17,839	29.66%	5,316.81	6.53%
WAREHOUSING,DISTRIBUTION TERMINALS,TRUCKING TERMINALS,VAN AND STORAGE WAREHOUSING	26	0.04%	124.51	0.15%
<b>Total</b>	<b>60,145</b>	<b>100.00%</b>	<b>81,412</b>	<b>100.00%</b>

Parcel Use Description (PARUSEDESC)	Parcels	Percent of Total Parcels	Acreage	Percent of Total Acreage
<b>Total Developable</b>	<b>18,238</b>	<b>30.32%</b>	<b>40,912</b>	<b>50.25%</b>

Note: Nominal discrepancies accounted for by rounding anomalies.

**Table 3.** Current population estimates and buildout population served and non-served areas in Flagler County.

Utility Name	Consumptive Use Permit	Number of Residential Parcels	Heated Square Footage	Number of Residential Buildings	Number of Residential Units	Served Buildout Population	Non-Served Buildout Population	Total Buildout Population	2015 Served Population Estimate	2015 Non-Served Population Estimate	2015 Total Population Estimate	2017 Served Population Estimate	2017 Non-Served Population Estimate	2017 Total Population Estimate
BUNNELL CITY OF	1982	3,082	5,304,353	1,783	1,338	137,733	0	137,733	2,875	0	2,875	2,934	0	2,934
DUNES COMMUNITY DEVELOPMENT	51136	3,303	7,310,078	2,576	2,860	4,548	1,780	6,329	4,017	1,476	5,493	4,091	1,601	5,692
FLAGLER BEACH CITY OF	59	4,824	7,440,260	3,568	3,523	8,616	4,622	13,238	4,621	2,382	7,003	4,677	2,509	7,186
FLAGLER COUNTY UTILITIES	UtilityID_43	6,389	4,045,638	2,112	1,988	84,524	0	84,254	4,577	0	4,577	4,772	0	4,772
HOLIDAY TRAVEL PARK COOP INC	1979	1	9,786	6	5	380	0	380	380	0	380	380	0	380
MARINE PARK OF FLAGLER	1953	13	105,505	23	9	13	0	17	17	0	17	17	0	17
MHC BULOW PLANTATION LLC	2002	3	50,426	16	24	1,284	0	1,284	1,284	0	1,284	1,284	0	1,284
ORMOND BEACH CITY OF	8932	285	237,146	92	138	4,314	0	4,314	239	0	239	316	0	316
OUTSIDE SERVICE AREA BOUNDARY	NO_CUP	15	115,119	18	21	0	43	43	0	43	43	0	43	43
PALM COAST CITY OF	1947	60,145	99,618,193	40,340	40,992	360,787	3,508	364,295	79,819	216	80,035	82,137	799	82,936
PLANTATION BAY UTILITY COMPANY	1960	1,446	2,770,059	1,027	1,121	4,226	1,794	6,020	1,532	588	2,120	1,617	686	2,304
ST. JOHNS COUNTY UTILITIES	1198	25	0	0	0	0	0	0	0	0	0	0	0	0
VOLUSIA COUNTY UTILITIES	50157	239	683,724	200	217	512	17	528	430	10	440	432	14	446
<b>Total</b>		<b>79,770</b>	<b>127,690,287</b>	<b>51,761</b>	<b>52,235</b>	<b>606,940</b>	<b>11,764</b>	<b>618,704</b>	<b>99,791</b>	<b>4,715</b>	<b>104,506</b>	<b>102,656</b>	<b>5,653</b>	<b>108,309</b>

## Population Projections for Flagler County Example

After calculating buildout, the BEBR population projection growth was distributed to the developable parcels in Flagler County. The development was prioritized using a ranking system. Each developable parcel was assigned a rank based on parcel use type, ZIP Code population density, and the built-year of the newest-built parcel in each ZIP Code. As seen in Table 4, Vacant Residential parcels (Rank = 27) were considered more readily developable than Timberland Not Classified by Site Index to Pines parcels (Rank = 2). The other two components of the ranking system were ZIP Code density and the ZIP Code newest year built. The highest ranked developable parcel in Flagler County was a vacant residential parcel in a ZIP Code with a density of 2.02 persons per acre and the newest year built was 2017. Thus, the development priority for this parcel is 2,046.02 (i.e.,  $27+2017+2.02$ ). Alternatively, the lowest ranked parcel was improved agricultural. It was in a ZIP Code with a low population density and the built year of the most recently developed parcel is 2005. Thus, the development priority for this parcel is 2,015.00 (i.e.,  $10+2,005+0.00$ ). As noted, vacant residential parcels in densely populated ZIP Codes will have the highest development priority score. There were 18,238 developable parcels inside Palm Coast (CUP# 1947) that comprised 40,912 acres (Table 5).

After ranking all the parcels in a county, BEBR's medium projected growth was distributed in 5-year increments through 2045. As seen in Table 6 below, BEBR expected 4,989 people would move to Flagler County by 2020. With parcels sorted by development priority rank, the first parcels were selected whose combined population was less than or equal to 4,989. In the specific case of Palm Coast (CUP# 1947), 2,638 vacant residential parcels (724 acres) would be developed by 2020 to house 4,934 new residents. The next group of sorted parcels whose total population was less than or equal to 11,400 was selected, etc. See Table 7 for projections and buildout for all PSABs in Flagler County. The future growth was distributed to developable parcels based on the buildout population calculated in the previous step. In the case of Palm Coast (CUP# 1947), the served and non-served persons per acre (6.8 and 0.07, respectively) were multiplied by the acreage of the parcel to determine the parcel-level persons per household. The most recent year's calculated persons per household for single family and multi-family parcels were kept constant through the planning horizon. See Table 8 using Palm Coast (CUP# 1947) as an example of the historical and projected population distribution at the parcel level.

## Parcel Projection Methodology and BEBR Considerations

The SJRWMD considers published BEBR population estimates and medium population projections. In many cases, since the method takes into account residential units at the parcel layer for the base year, the base year estimates of population and projected population for the planning horizon may differ than the actual published BEBR values. It should be noted that the parcel projection method does grow population using the additional population growth from BEBR medium population projections.

### Additional Methodology Considerations:

- 1) Used in SJRWMD Public Supply CUP reviews.
- 2) Provides for incorporation of utility feedback in currently served population.
  - a. Never results in negative DSS
  - b. Leads to more consistent DSS estimates from year to year, because DSS does not need to be modified as a direct result of served population reported.
- 3) Allows utilities to grow at different rates due to population density and recent parcel development (i.e., development rank).
  - a. For example, in the case of Flagler County, all growth was attributed to Palm Coast

and Bunnell in 2020 because they had the highest ranked parcels. In 2030, Dunes Community Development, the City of Flagler Beach, Flagler County Utilities, and Volusia County Utilities also had population distributed to their areas, as they had the next-highest ranked parcels.

- 4) Approach allows for and incorporates buildout/real world “on the ground” look at residential parcels and units built.
- 5) Transparent and documented methodology
  - a. Similar methods have been used in the approved Central Florida Water Initiative Regional Water Supply Plan (BEER/Rich Doty parcel method) and Central Springs/East Coast Regional Water Supply Plan (SJRWMD parcel methodology).
  - b. The Southwest Florida Water Management District hires BEER/Rich Doty every year to develop parcel-level projections that vary from published BEER estimates (includes functional population cohorts and utility served data). 2020 Regional Water Supply Plan, Appendix 3-3: Demand Projections for Public Supply [Appendix 3 3 PS Demands Tech Memo \(state.fl.us\)](#).
    - i. “In the case of Manatee and Pinellas counties, the sum of the projections for all utilities exceeds the projected county population. Thus, the county population was increased enough to cover the deficit plus allow for self-supplied population.”

**Table 4.** Parcels ranked according to likelihood of development. Higher rank equals increased likelihood of development.

Parcel Use Description	Parcel Use Code	Rank
VACANT RESIDENTIAL	000	27
CROPLAND SOIL CAPABILITY CLASS III	053	26
CROPLAND SOIL CAPABILITY CLASS II	052	25
CROPLAND SOIL CAPABILITY CLASS I	051	24
GRAZING LAND SOIL CAPABILITY CLASS VI	065	23
GRAZING LAND SOIL CAPABILITY CLASS V	064	22
GRAZING LAND SOIL CAPABILITY CLASS IV	063	21
GRAZING LAND SOIL CAPABILITY CLASS III	062	20
GRAZING LAND SOIL CAPABILITY CLASS II	061	19
GRAZING LAND SOIL CAPABILITY CLASS I	060	18
TIMBERLAND - SITE INDEX 90 AND ABOVE	054	17
TIMBERLAND - SITE INDEX 80 TO 89	055	16
TIMBERLAND - SITE INDEX 70 TO 79	056	15
TIMBERLAND - SITE INDEX 60 TO 69	057	14
TIMBERLAND - SITE INDEX 50 TO 59	058	13
ACREAGE NOT ZONED AGRICULTURAL	099	12
DAIRIES,FEED LOTS	068	11
IMPROVED AGRICULTURAL	050	10
LUMBER YARDS,SAWMILLS,PLANING MILLS	043	9
MINERAL PROCESSING,PHOSPHATE PROCESSING,CEMENT PLANTS,REFINERIES,CLAY PLANTS	047	8
MINING LANDS,PETROLEUM LANDS,OR GAS LANDS	092	7
MISCELLANEOUS RESIDENTIAL (MIGRANT CAMPS,BOARDING HOMES,ETC.)	007	6
ORCHARD GROVES,CITRUS,ETC.	066	5
ORNAMENTALS,MISCELLANEOUS AGRICULTURAL	069	4
POULTRY, BEES, TROPICAL FISH, RABBITS, ETC.	067	3
TIMBERLAND NOT CLASSIFIED BY SITE INDEX TO PINES	059	2
UNDEFINED - RESERVED FOR FUTURE USE	080	1

**Table 5.** Developable acreage by parcel use code description for Palm Coast, consumptive use permit 1947.

Parcel Use Description (PARUSEDESC)	Parcels	Percent of Total Parcels	Acreage	Percent of Total Acreage
ACREAGE NOT ZONED AGRICULTURAL	32	0.18%	4,080	9.97%
GRAZING LAND SOIL CAPABILITY CLASS I	7	0.04%	548	1.34%
GRAZING LAND SOIL CAPABILITY CLASS IV	3	0.02%	44	0.11%
IMPROVED AGRICULTURAL	6	0.03%	163	0.40%
MISCELLANEOUS RESIDENTIAL (MIGRANT CAMPS,BOARDING HOMES, ETC.)	188	1.03%	104	0.25%
TIMBERLAND - SITE INDEX 70 TO 79	36	0.20%	7,100	17.25%
TIMBERLAND - SITE INDEX 80 TO 89	117	0.64%	22,385	54.71%
TIMBERLAND - SITE INDEX 90 AND ABOVE	1	0.01%	79	0.19%
TIMBERLAND NOT CLASSIFIED BY SITE INDEX TO PINES	9	0.05%	1,091	2.67%
VACANT RESIDENTIAL	17,839	97.81%	5,317	13.00%
<b>Total</b>	<b>18,238</b>	<b>100.00%</b>	<b>40,912</b>	<b>100.00%</b>

Note: Nominal discrepancies accounted for by rounding anomalies.

**Table 6.** New population expected in Flagler County from BEBR’s medium projections published in 2019.

Year	2018	2020	2025	2030	2035	2040	2045
Population	107,511	112,500	123,900	134,400	143,600	151,600	159,000
Increase in Population	0	4,989	11,400	10,500	9,200	8,000	7,400

Note: Population projections source: Bureau of Economic and Business Research. Volume 52, Bulletin 183, April 2019.

**Table 7.** Population estimates, projections, and buildout for Flagler County.

Utility	Consumptive Use Permit	Number of Parcels	Buildout	2015	2017	2020	2025	2030	2035	2040	2045
BUNNELL CITY OF	1982	3,082	137,733	2,875	2,934	2,940	2,955	2,961	2,961	2,961	6,386
DUNES COMMUNITY DEVELOPMENT	51136	3,303	6,329	5,493	5,692	5,692	5,733	6,036	6,302	6,302	6,302
FLAGLER BEACH CITY OF	59	4,824	13,238	7,003	7,186	7,186	7,186	10,998	10,998	10,998	10,998
FLAGLER COUNTY UTILITIES	UtilityID_43	6,389	84,254	4,577	4,772	4,772	4,772	5,086	6,224	7,418	11,207
HOLIDAY TRAVEL PARK COOP INC	1979	1	380	380	380	380	380	380	380	380	380
MARINE PARK OF FLAGLER	1953	13	17	17	17	17	17	17	17	17	17
MHC BULOW PLANTATION LLC	2002	3	1,284	1,284	1,284	1,284	1,284	1,284	1,284	1,284	1,284
ORMOND BEACH CITY OF	8932	285	4,314	239	316	316	316	316	316	603	636
OUTSIDE SERVICE AREA BOUNDARY	NO_CUP	15	43	43	43	43	43	43	43	43	43
PALM COAST CITY OF	1947	60,145	364,295	80,030	82,936	87,918	99,276	105,604	113,281	119,446	119,459
PLANTATION BAY UTILITY COMPANY	1960	1,446	6,020	2,120	2,304	2,304	2,304	2,304	2,304	2,456	2,585
ST. JOHNS COUNTY UTILITIES	1198	25	0	0	0	0	0	0	0	0	0
VOLUSIA COUNTY UTILITIES	50157	239	528	440	446	446	446	490	490	490	490
<b>Total</b>		<b>79,770</b>	<b>618,705</b>	<b>104,506</b>	<b>108,310</b>	<b>113,298</b>	<b>124,671</b>	<b>135,198</b>	<b>144,334</b>	<b>152,398</b>	<b>159,787</b>

**Table 8.** Distribution of population estimates and projections at the parcel level for Palm Coast, consumptive use permit 1947.

Parcel Number	CUSTCLASS	Number of Residential Units on Parcel	Number of SF_MF Residential Units in PSAB	2017 Served Population Estimate for PSAB	2017 Served for Parcel	2017 Non-Served Population Estimate for PSAB	2017 Non-Served for Parcel	Parcel Acreage	2017 Served Persons Per Acre	2017 Non-Served Persons Per Acre	Build-out Served for Parcel	Build-out Non-Served for Parcel	2020 Served for Parcel	2020 Non-Served for Parcel
07-11-31-7033-00480-0020	Single Family	1	40,356	82,137	2.04	799	0.02	0.24	-	-	2.04	0.02	2.04	0.02
05-11-31-4075-00000-0002	Multi-Family	2	40,356	82,137	4.07	799	0.04	0.60	-	-	4.07	0.04	4.07	0.04
07-11-31-7032-00880-0040	Vacant Residential	Null	40,356	82,137	0.00	0	0.00	0.23	6.79	0.07	1.56	0.02	1.56	0.02

Notes: PSAB – public supply service area boundary.

2017 Served for Parcel is based on served persons per residential unit:  $(82,137/40,356) = 2.04$ ; for Multi-Family, it is multiplied by the Number of Residential Units on Parcel:  $(82,137/40,356) = 2.04 * 2 = 4.07$

2017 Non-Served for Parcel is based on non-served persons per residential unit  $(799/40,356) = 0.02$ ; for Multi-Family, it is multiplied by the Number of Residential Units on Parcel:  $(799/40,356) = 0.02 * 2 = 0.04$



# St. Johns River Water Management District

Michael A. Register, P.E., Executive Director

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## Technical Memorandum

### Documentation and Methodologies for Updating St. Johns River Water Management District 2020-2045 North Florida Regional Water Supply Plan Projections Resulting from Stakeholder Feedback May 23, 2022

To: NFRWSP Stakeholders

Through: Tammy Bader  
Technical Program Manager, Bureau of Water Supply Planning

John Fitzgerald  
Bureau Chief, Bureau of Water Supply Planning

From: Rebecca May  
Senior Water Use Analyst, Bureau of Water Supply Planning

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## JEA

### Background

During the current iteration of the 2023 North Florida Regional Water Supply Plan (NFRWSP), feedback was provided regarding projections for utilities in the North Florida Utility Coordination Group (NFUCG). This section explains the methodology for incorporating feedback to adjust the population and water demand projections for JEA.

### Overview

The tasks described in this section are as follows:

- 1) Splitting the provided historical annual connections by county using a service grid shapefile.
- 2) Deriving population using Bureau of Economic and Business Research (BEBR) persons per household.
- 3) Projecting connections, population, and water demands.
- 4) Domestic self-supply (DSS) conversion.

### Data Sources

The datasets used were:

- 1) Parcel centroids generated from the land use parcel polygon dataset provided by Panda Consulting (Spring 2020).
- 2) BEBR's countywide persons per household estimates (BEBR 2019).
- 3) BEBR's projections of Florida population by county (2020-2045; BEBR 2020).
- 4) JEA\_Future\_Water\_Grid.shp



### Splitting historical connections

JEA provided data to the St. Johns River Water Management District (SJRWMD) regarding historical and projected number of connections, population, and water use by service grid. To derive population, the value of 2.55 persons per household was used across all service grids as this value was the Census 2015-2019 average for Duval County. The SJRWMD, for consistency, uses county-specific data, so residential units from single family and multi-family parcels were totaled for each currently existing service grid and then percentages for each county and year were obtained using the year built (Table 1).

**Table 1.** Example of residential units split by county for the North Service Grid of JEA

County	2014 Residential Units	2014 Percent	2014 Number of Connections
Duval	170,856	97.8	142,906
Clay	3,856	2.2	3,226
<b>Total</b>	<b>174,712</b>	<b>100</b>	<b>146,132</b>

BEBR county-specific persons per household values were multiplied by the number of connections to derive the population for each year. Annual increases in connections were calculated and the 2014-2018 average number of new connections was used to project for each 5-year increment (2020-2045; Table 2).

**Table 2.** Example of projected population calculations for Duval County in the North Service Grid of JEA using BEBR’s persons per household of 2.43 (BEBR 2019)

Year	2013	2014	2015	2016	2017	2018	2014-2018 Average	2020
Connections	142,226	142,906	143,479	143,974	145,170	146,953	N/A	148,843
Increase in Connections	N/A	680	573	495	1,196	1,783	945	
Population	345,609	347,262	348,654	349,857	352,763	357,096	N/A	361,688

Populations were then summed to the county totals across the service grids. Historical populations were updated based on the data provided, with SJRWMD adjustments, which updated the gross per capita rates. The updated 5-year average (2014-2018) gross per capita was used to project water demands through the end of the planning horizon (2045).

### DSS conversion

In areas of high growth and development there is often conversion of DSS to public supply. The fastest growing counties in which JEA’s service boundary extends are Clay, Duval, and St. Johns. Therefore, it can be assumed that there would be a DSS conversion rate of 1% per year to public supply in these counties. Similar conversion rates have been used in other planning efforts throughout the state such as the 2020 Central Florida Water Initiative Regional Water Supply Plan (available at cfwiwater.com) and the 2015 NFRWSP (available at northfloridawater.com). The DSS within the service area was derived as the difference between the number of residential units and the number of connections using provided data. The result was multiplied by 5% (as there are 5 years in each projected increment) and then multiplied by the county specific BEBR persons per household. This value was then removed from DSS and added into the public supply. See the following example for Clay County in Tables 3a and 3b.

**Table 3a.** Calculation to derive the domestic self-supplied population available for conversion to public supply in 2020 for Clay County in the North Service Grid of JEA

Residential Units - Connections	DSS * 1%/year	Population
4970 - 4536 = 434	434 * 5% = 22	22 * 2.7 = 59

**Table 3b.** Populations within the Clay County portion of JEA’s North Service Grid before and after DSS conversion

Year	2020	2025	2030	2035	2040	2045
JEA Population Before Conversion	12,247	15,150	18,052	20,955	23,857	26,760
DSS Population Before Conversion	67,682	74,518	84,148	84,148	84,148	84,148
DSS Conversion	59	118	177	236	295	354
DSS After Conversion	67,623	74,400	83,971	83,912	83,853	83,794
JEA Population After Conversion	12,306	15,268	18,229	21,191	24,152	27,114

Based on the SJRWMD’s adjustments described in this technical memorandum, the recommended population and water demand projections for JEA are below (Table 4). The SJRWMD’s recommended 2045 water demand projections are within three percent of what was proposed by JEA.

**Table 4.** Comparison of the proposed projected population and water demands by JEA and the SJRWMD

Entity	Population						Water Demand					
	2020	2025	2030	2035	2040	2045	2020	2025	2030	2035	2040	2045
JEA	N/A	1,028,933	1,107,626	1,186,319	1,265,004	1,321,256	N/A	129.27	139.24	149.20	159.17	166.22
SJRWMD	911,434	977,404	1,043,290	1,109,147	1,174,926	1,240,708	117.80	126.37	134.93	143.49	152.04	160.59

Note: Water demand in this table is shown as million gallons per day.

## **SJCUD**

### **Background**

This section explains the methodology for incorporating feedback to adjust the population and water demand projections for St. Johns County Utilities Department (SJCUD). SJCUD utilized a parcel-based population model developed by GIS and Associates, Inc. (GISA) to derive population and water demand through the end of the planning horizon (2045). Due to a reduction in gross per capita rates, the water demand projections produced by GISA and SJCUD were lower than what was originally projected by the SJRWMD, despite having greater population growth.

### **Overview**

The task described in this section is:

- 1) Adjusting historic gross per capita rates.

### **Data Sources**

The datasets used were:

- 1) 2018.06.21\_WaterDemand\_TechnicalMemo.pdf.
- 2) SJC\_Water Projection\_Summary - Eval for Black Creek Ag.xlsx.
- 3) BEBR's projections of Florida population by county (2020-2045; BEBR 2020).

### **Adjusting historic gross per capita rates**

SJCUD provided data that were used to generate water demand projections for the Black Creek Agreement. These data, and the data from the Water Demand Technical Memorandum, were considered in the SJRWMD's calculations. Historical populations were only provided for 2017, so the historical 5-year average (2014-2018) could not be re-adjusted. Gross per capita rates were calculated based on the available 2045 water demand and population data (Table 5). These gross per capita rates were 96 and 144 gallons per person per day for the Main and Ponte Vedra Systems, respectively.

**Table 5.** A comparison of the proposed projected population and water demands by SJCUD and the SJRWMD

Entity	Population						Water Demands					
	2020	2025	2030	2035	2040	2045	2020	2025	2030	2035	2040	2045
SJCUD	134,814	158,261	178,464	196,678	213,231	229,314	14.78	16.97	18.87	20.52	22.05	23.53
SJRWMD	134,814	158,261	178,464	196,678	213,231	229,314	14.13	16.54	18.71	20.62	22.30	23.60

Note: Water demand in this table is shown as million gallons per day. Town of Hastings (CUP 1392) population and demand are not included in the above figures.

## **GRU**

### **Background**

This section explains the methodology for incorporating feedback to adjust the population and water demand projections for Gainesville Regional Utilities (GRU). GRU is proposing that 80% of Alachua County's projected growth will occur within their service area. GRU is proposing to use a more recent version of BEBR estimates (January 2022) and to use a fixed number of additional people per year through the end of the planning horizon (2045).

### **Overview**

The task described in this section is:

- 1) Adjusting projected population and water demands.

### **Data Sources**

- 1) 2022.01.27 GRU Water Forecast3.xlsx.
- 2) 2022.02.18 GRU Water Projections.pdf.
- 3) BEBR's projections of Florida population by county (2020-2045; BEBR 2020).

### **Adjusting projected population**

SJRWMD recognizes that the majority of growth in Alachua County will likely be in GRU's service area. Based on the historical 5-year average (2014-2018) of data, approximately 70% of the countywide growth occurred in GRU. When the provided historical water use and population data were incorporated, the 2020 version of BEBR projections was used (BEBR 2020), and 80% of the growth was applied to GRU, the following projections were derived (Table 6).

**Table 6.** A comparison of the proposed projected population and water demands by GRU and the SJRWMD

Entity	Population						Water Demand					
	2020	2025	2030	2035	2040	2045	2020	2025	2030	2035	2040	2045
GRU	N/A	210,931	223,331	235,731	248,131	260,531	N/A	24.81	26.27	27.72	29.18	30.64
SJRWMD	196,495	205,855	213,935	220,815	226,575	231,295	23.19	24.29	25.24	26.06	26.74	27.29

Note: Water demand in this table is shown as million gallons per day.

## **CCUA**

### **Background**

This section explains the methodology for incorporating feedback to adjust the population and water demand projections for Clay County Utility Authority (CCUA). CCUA provided documentation to support numerous new developments that have been approved, particularly along the First Coast Expressway. The SJRWMD has adjusted the projections to incorporate these approved developments.

### **Overview**

The task described in this section is:

- 1) Adjusting projected population and water demands.

### **Data Sources**

- 1) CCUA Population and Demand Projection Information.pdf.
- 2) BEBR's projections of Florida population by county (2020-2045; BEBR 2020).

### **Adjusting projected population and water demands**

The SJRWMD recognizes the rapid growth and development of regions within CCUA's service area. The additional population CCUA attributed to these developments has been factored into the SJRWMD's projections. In addition, 1.95 million gallons per day (mgd) has been added to the water demand beginning in 2025 for the Niagara Bottling facility. Table 7 provides a comparison of the population and water demand projections proposed by the SJRWMD that incorporates these changes.

**Table 7.** A comparison of the proposed projected population and water demands by CCUA and the SJRWMD

Entity	Population						Water Demand					
	2020	2025	2030	2035	2040	2045	2020	2025	2030	2035	2040	2045
CCUA	124,004	145,929	171,602	198,671	214,389	227,920	13.70	15.80	18.20	20.80	22.30	23.60
SJRWMD	126,966	149,238	173,816	201,719	214,888	227,726	11.65	16.07	18.32	20.88	22.09	23.19

Note: Water demand in this table is shown as million gallons per day. CCUA Reclaimed Water Supplementation (CUP 51227) demand is not included in the above figures.



### **Incorporation of Additional Stakeholder Feedback**

Additional feedback was provided regarding the population and demand projections for the Cities of Neptune and Atlantic Beach. The City of Neptune Beach provided data from a recent Revision to their Comprehensive Plan using BEBR data. The projections were provided in 10-year increments through 2050, so the SJRWMD interpolated to obtain the years in between. The City of Atlantic Beach requested to use the projections from their recent consumptive use permit renewal (2020).

### **Additional Considerations**

#### **County-level data adjustments**

The SJRWMD is required by statute to consider BEBR Medium Projections [Section 373.709(2)(a)1a, F.S.], as such, the SJRWMD used these projections to assess county totals once utility feedback was incorporated. Data were provided by utilities that justifies exceedance of the medium projections. Based on those additional data, adjustments were made to the DSS populations in Clay, Duval, and St. Johns Counties to accommodate the public supply growth trends.

For Clay County, there are numerous new developments planned near the First Coast Expressway in CCUA’s service area. Based on this information, the SJRWMD has adjusted the DSS projected populations to be held constant from 2015 through 2045, as the majority of growth is projected to be on Public Supply. That DSS growth was then added to CCUA (population and water demand are included in Table 7). The county-level totals are exceeding BEBR High projections from 2035 through 2045 but are within three percent.

For Duval County, the 2020 published Annual Water Use Survey DSS estimate was used, and the SJRWMD’s initially projected growth was applied to each 5-year increment. The county-level total is exceeding BEBR High projections in 2020 but is within one percent.

For St. Johns County, there is also large growth and development in Public Supply predicted. Therefore, the DSS population was held constant from 2020 through 2045. The county-level totals are exceeding BEBR High projections in 2020 and 2025 but are within eight percent.

Due to the nature of the extreme growth in these areas, the slight exceedance of BEBR High in a few projected years reflects the latest trends observed. In addition, more recently published BEBR reports have indicated higher projection estimates (Table 8).

**Table 8.** A comparison of BEBR’s published projections for Clay, Duval, Nassau, and St. Johns Counties

County	Bulletin 186, 2020		Bulletin 192, 2022	
	2045 BEBR Medium	2045 BEBR High	2045 BEBR Medium	2045 BEBR High
Clay	285,100	334,100	278,300	335,300
Duval	1,216,200	1,413,100	1,249,500	1,505,700
Nassau	118,900	148,000	131,100	162,000
St. Johns	434,900	529,700	465,500	563,800

## References

- [BEBR 2019] Bureau of Economic and Business Research. 2019. *Households and Average Household Size in Florida: April 2019. Volume 53, Bulletin 185, December 2019*. Gainesville, Fla.: Bureau of Economic Business and Research, Univ. of Florida.
- [BEBR 2020] Bureau of Economic and Business Research. 2020. *Projections of Florida Population by County, 2020–2045, with Estimates for 2019. January 2020*. Gainesville, Fla.: Bureau of Economic Business and Research, Univ. of Florida.