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TO: Interested Parties

THROUGH: Jay Hoecker, Manager, Water Supply Section, Water Resources Bureau

FROM: Kevin Wills, Senior Economist, Water Resources Bureau
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SUBJECT: 2020 Regional Water Supply Plan: Public Water Supply Demand Projections

Introduction

Chapter 373, Florida Statutes (F.S.) sets forth the requirement for regional water supply planning. Under the provisions of this chapter, the Governing Board of each water management district shall develop a Regional Water Supply Plan (RWSP) for regions within the district where existing sources of water are not adequate to supply water for all existing and future reasonable-beneficial uses and to sustain the water resources and related natural systems for the 20-year planning period. This plan shall be reevaluated every five years. In support of this effort, the Southwest Florida Water Management District (District) participated in the development of the RWSP for the Central Florida Water Initiative (CFWI) in conjunction with representatives from the Florida Department of Environmental Protection (FDEP), major public supply stakeholders and the South Florida and St. John's River water management districts. The CFWI region includes portions of Lake and Polk Counties which are under District jurisdiction. Consequently, the population and water demands for Lake and Polk County are from Draft Central Florida Water Initiative Demand Projections as of October 2018.

Purpose

This memo explains the assumptions, methodologies, and sources used to develop the projections for the Public Supply component. The Public Supply sector includes:

- Domestic self-supply (residential dwellings systems that are provided water from a dedicated, on-site well and are not connected to a central utility)
- Water supply permittees with permitted water uses for:
    - Residential Single Family
    - Residential Multi-family
    - Residential Mobile Home
- Residential irrigation wells (on-site wells that serve the outdoor needs of individual residential dwellings that are connected to a central water utility system for their indoor needs).

Data and Information Sources

The methodology to develop public supply water demand projections utilizes many data sources. The District's Estimated Water Use Reports (2011-2015) were used to gather base information for public supply water utility populations, water use, and per capita water use rates (SWFWMD, 2011-2015). The University of Florida's Bureau of Economic and Business Research (BEBR) publications (2017) were used to gather base year population and future county population projections. The District's geographic information system (GIS) model also incorporates a large amount of data gathered from stakeholders, enabling the District to project population at the utility service area level (GIS Associates, Inc., 2017).

Methodology

2015 Base Year Population Methods and Assumptions

The base year for these public supply water demand projections is 2015. The 2015 population was generated by extrapolating back from the GIS Associates, Inc. (GISA) 2016 population estimate using the compound annual growth rate between 2016 and 2020. This was performed to keep the base year consistent with the subsequent projected years. For example:

a) Utility X's 2016 population estimate is 5,704

b) Utility X's 2020 population projection is 5,984

c) Annual growth percentage over the four year period was calculated using Microsoft® Excel's Rate formula: RATE(4,,-5704,5984)= 1.21%

d) Utility X's 2015 population estimate = 5,704 * (100%–1.21%) = 5,635

Utilities with permitted quantities less than 100,000 gallons per day are not required to report population or submit service area information. Consequently, the base year population for these permits was obtained from the application information related to the last issued permit revision.

Domestic self-supply is defined as that portion of the county population not served by a utility. County domestic self-supply population estimates and projections were calculated as the difference between the total county population estimate or projection and the total population served by the utilities. For those counties not fully contained within the District boundaries, only that portion of the population within the District was included (Table 1 and Table 2).

2015 Base Year Water Use

The 2015 Public Supply base year water use for each large utility is derived by multiplying the average 2011-2015 unadjusted gross per capita rate, if applicable, by the 2015 estimated population for each individual utility. In the case of small utilities, per capita information was obtained from the application information related to the last issued permit revision. If no per capita information was found in the last permit, the per capita is assumed to equal the average county unadjusted gross per capita.

Base year water use for small utilities is derived by multiplying the per capita from the last issued permit times the 2015 estimated population from the last issued permit.

Base year water use for domestic self-supply is calculated by multiplying the 2015 domestic self-supply population for each county by the average 2011-2015 residential countywide per capita water use as defined below.

2011-2015 Average per Capita Water Use Rate

Precipitation in the years 2011-2015 (avg 52.35") was in line with the historic District average (52.76"). Rainfall between 2011-2013 was below the long-term District average, whereas higher than average precipitation in 2014 and 2015 brought the 2011-2015 average close to the historic average. Typically, there is an inverse relationship between public supply water use and annual precipitation (i.e., less rain results in increased water use, largely due to outdoor water use). This inverse relationship is demonstrated by a lower Districtwide average gross per capita per day (gpcd) water use rate in 2015 of 97 gpcd than the Districtwide average per capita water use rate of 101 gpcd in 2011. The per capita water use rate is the factor applied to projected population to project water demand (described below). Therefore, it is necessary for the base year per capita rate to represent water use in an average year. To address this situation, the District has calculated average five-year per capita use rates using data provided by utilities in their Public Supply Annual Reports and published in the Estimated Water Use Reports for the years 2011 through 2015. The unadjusted gross per capita rate used is calculated as *Withdrawals + Imports – Exports – Treatment Losses* divided by the *Served Functional Population.* For large utilities, this information is published in Table A-1 of the "Estimated Water Use Report" for years 2011-2015. For small utilities, the per capita is assumed to equal the per capita from the last issued permit or the five-year average unadjusted gross per capita for the county. Domestic self-supply per capita was taken from the countywide residential per capita provided in Table A-2 of the "Estimated Water Use Report" for the years 2011-2015.

Population Projections

The population projections made by the University of Florida's Bureau of Economic and Business Research (BEBR) are generally accepted as the standard throughout the State of Florida (University of Florida Bureau of Bureau of Economic and Business Research, 2017). However, these projections are made at the county level only. Accurately projecting future water demand requires more spatially precise data than the county-level BEBR projections. Consequently, the District's projections are BEBR projections disaggregated to land parcel level, which is the smallest area of geography possible for population studies. In turn, these parcel-level projections are normalized to the BEBR medium projection for the counties. Using this methodology, the District contracted with GISA to provide small-area population projections for the 16 counties entirely or partly within the District.

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. Thus, county total population was recalculated as follows:

Original county total + deficit + GISA self-supplied population estimate.

GIS Model Overview

This geographic information system (GIS) based model projects future Census Population Cohort population growth at the parcel level and normalizes those projections to BEBR county projections. First, a Countywide Build-Out Model is developed from the base parcel dataset. Current permanent population is estimated and then the maximum population growth is determined at the parcel level. Areas which cannot physically or lawfully sustain residential development (built-out areas, water bodies, public lands, commercial areas, etc.) are excluded from the Countywide Build-Out Model. Conversely, the model identifies areas where growth is more likely to occur based on proximity to existing infrastructure and available services such as schools, shopping centers and entertainment opportunities.

Next, population growth is modeled between the current estimated population and the build-out population. Projections are based on a combination of historic growth trends and spatial constraints and influences, which restrict or direct growth.

BEBR develops three projections for each county: “low”, “medium”, and “high”. BEBR’s medium projection is widely considered to be the most likely scenario. For this reason, the District’s small area projections by year are controlled by BEBR’s medium projection for each county.

The base year for the projection model is 2016. Projections were made through the year 2040 in the following five-year increments: 2020 through 2025, 2025 through 2030, 2030 through 2035, and 2035 through 2040.

Finally, the parcel level projections are easily aggregated by any set of boundaries desired (Public Supply utility service areas, municipalities, watersheds, etc.). For the District’s planning efforts, parcel projections are summarized by Public Supply utility service areas. Complete methodology, references, tables, and data sources can be found by referring to the published technical memorandums supporting the GIS Model: “The Small-Area Population Projection Methodology of The Southwest Florida Water Management District,” and “Updates to The Southwest Florida Water Management District’s Small-Area Population Projection Model,” both dated January 24, 2018, GIS Associates, Inc.

Countywide Build-Out Models

The Countywide Build-Out Models are composed of multiple GIS data elements. Each model is based on the county’s property appraiser GIS parcel database, including the associated tax roll information. Other elements incorporated into each build-out model include the 2010 U.S. Census data, District wetland data, local government future land use maps (FLU), and Development of Regional Impact (DRI) plans for the county of interest.

A. Parcels

GIS parcel layers and county tax roll databases were obtained from each county’s property appraiser office. Parcel geometry was checked for irregular topology, particularly overlaps and fragments. Parcel tables were checked for errors, particularly non-unique parcel identifiers and missing values. Required tax roll table fields include actual year built, Florida Department of Revenue (DOR) land use code, and the total number of existing residential units for each unique parcel. In cases where values or fields were missing, other information was extrapolated and used as a surrogate. For example, data reported by the State of Florida was

used to identify the number of residential units (and population) in large group quarters facilities.

2010 U.S. Census Data

Some of the essential attribute information contained in the Countywide Build-Out Models was derived from data from the 2010 Decennial Census. Average population per housing unit by census tract was calculated and then transferred to each county's parcel data. No additional adjustment for vacant units was required, as the calculation was made using total housing units (not limited to occupied units). However, slight adjustments were made using trends in average household size and unit occupancy from the U.S. Census Bureau's American Community Survey (ACS) data. This average population per housing unit enabled parcel-level estimation of population from parcel-based housing unit estimates.

In cases where property appraiser data were missing or incomplete, other data were used. For example, because mobile home parks without individually platted parcels may not contain the number of units within the property appraiser data, the number of residential units for some of the parks larger than five acres had to be estimated using a hand count from recent imagery.

B. Water Management District Boundaries

Each parcel in the Countywide Build-Out Models was also attributed with the District boundaries, which enable the countywide models for any counties split between two or more districts to be summarized by the District.

C. Wetlands

Wetlands play a large role in modeling a county's build-out. The District, along with the FDEP, has been given regulatory powers over private and public lands and is required by Chapter 373, F.S., to protect water resources of the state. However, the District and FDEP, under the auspices of the U.S. Army Corps of Engineers, have a permit process by which wetlands can be altered for development. The Countywide Build-Out Models consider the impact wetlands have on residential development.

The District maintains detailed GIS databases of wetland areas and wetland mitigation areas within its boundaries. These databases contain the location and spatial extent of the wetlands and wetland mitigation areas, as well as the specific types of wetlands, as defined by the District's land use and land cover classification system. Certain wetland types were identified that would be difficult and expensive to convert to residential development. These areas were identified in the District's wetland database and applied to the build-out model. The wetland types include streams and waterways, lakes, marshy lakes, reservoirs, bays and estuaries, slough waters, wetland hardwood forests, mangrove swamp, mixed wetland hardwoods, cabbage palm wetland, cabbage palm hammock, wetland coniferous forest, cypress, pond pine, hydric pine flatwoods, wetland forested mixed, freshwater marshes, saltwater marshes, wet prairies, emergent aquatic vegetation, mixed scrub-shrub wetland, and non-vegetated wetland.

Using GIS techniques, the area of wetlands within parcels were calculated and recorded as the water area for that parcel. If the area covered by water within a parcel exceeded 0.5 acres, it was subtracted from the total area of the parcel feature to determine the relative developable area in that parcel.

There were exceptions to this rule. In some cases, parcels with little or no developable area after wetlands were removed were already developed, thus the estimated unit total was not reduced by the wetland acreage. In other cases, inaccurate wetland delineations were overridden, such as when a newly platted residential parcel was shown to be covered by a wetland. In such a case, the parcel was considered developable by the submodel.

D. Future Land Use

Future Land Use (FLU) maps are essential elements of each county's build-out model, as they help guide where and at what density residential development will occur within a county. FLU maps are a part of the Local Government Comprehensive Plans required by Chapter 163, Part II, F.S. They are typically developed by the local government's planning department, or, in some cases, a regional planning council with guidance from the local government. The latest available FLU map is obtained annually and applied to the build-out model.

FLU classifications for residential land uses are assigned maximum dwelling unit densities (per acre) or density ranges. These ranges are intended to guide the type and density of development. However, development does not always occur at FLU guided densities. For this reason, the County Build-out Submodels reflect the median density of recent development for each future land use category in the specific incorporated place. For example, if a city's medium density residential future land use designation allows up to 8 housing units per acre, but the median density of units built over the last 20 years is 5.7 housing units per acre, the submodel assumed future densities at 5.7 housing units per acre for that future land use designation in that city. The median density calculation was typically limited to the last 20 years of development within each unique combination of land use and jurisdiction, as more recent development was deemed a better proxy for future densities than older development.

In some cases, limiting the historical data to the last 20 years resulted in too small a sample, so either county average values were used (extended beyond the jurisdiction) or all historical development was used (not limited to the last 20 years). In those cases, the determination of which sample to use depended upon the heterogeneity of the category across county jurisdictions and the heterogeneity of historical densities prior to the last 20 years. Also, vacant or open parcels less than one acre in size were typically considered single family residential, with one housing unit as the maximum allowable density

E. Build-out Density Calculation

Using GIS overlay techniques, attributes of the census, political boundary, wetlands, and future land use data were attributed to each county's parcel data to develop the County Build-out Submodels. These submodels forecast the maximum residential population by parcel at buildout.

Census tracts where the 2010 population was zero, and therefore the average persons per housing unit was zero, were assigned the county's average persons per housing unit. Also, if there were tracts with 2010 census values for persons per housing unit greater than zero that were based on a small number of homes with greater than five persons per housing unit, the county's average persons per housing unit was typically used.

F. Large Planned Developments

The final step in the development of the County Build-out Submodels was adjusting build-out densities within large planned developments (such as Developments of Regional Impact, Sector Plans, and Rural Land Stewardship Areas) to correspond with approved development plans wherever their boundaries are available in a GIS format. Although large planned developments often do not develop as originally planned by the developer, the total number of units planned (regardless of timing) is likely to be a better forecast of the units at build-out than one based on the median historic densities. Therefore, in each of the County Build-out Submodels, parcels with centroids within a large planned development were attributed with the name of the development. The build-out densities for those parcels were adjusted so that the total build-out for the development was consistent with the development plan, and the build-out population for that area was recalculated.

Growth Drivers Model

The Growth Drivers Model is a raster (cell-based) dataset representing development potential as determined by incorporating a GIS suitability model. This model is a continuous surface of 10-meter cells containing relative values of 1-10, with 10 having the highest development potential and 1 having the lowest development potential. It influences the Population Projection Model by factoring in the attraction of certain spatial features, or growth drivers, have on development. These drivers are defined from transportation features and land use/cover types including:

1. Proximity to roads and interchanges prioritized by level of use (with each road type modeled separately)
2. Proximity to existing residential development
3. Proximity to existing commercial development (based on parcels with commercial land use codes deemed attractors to residential growth)
4. Proximity to coastal and inland waters
5. Proximity to large planned developments

Each of the drivers listed above were used as independent variables in a logistic regression equation. Dependent variables included existing residential units built during or after 1995 as the measure of "presence", and large undeveloped vacant parcels outside of large planned developments were used to measure "absence". The resulting equation could then be applied back to each of the regional grids resulting in a single regional grid with values 0 through 100, for which a value of 0 represented the lowest relative likelihood of development, and a value of 100 represented the highest relative likelihood of development.

This seamless, "regional" model covers the counties whose boundaries are all or partially within the District, plus a one-county buffer to eliminate "edge effects". In this case, the edge effects refer to the presence or absence of growth drivers outside the District that could influence growth within the District. This model was then used by the Population Projection Model to rank parcels in undeveloped Census blocks based on their development potential.

Population Projection Model
The Population Projection Model integrates the Countywide Build-Out Models and the Regional Growth Drivers Model with historic growth trends and county-level population controls from BEBR.

A. Historic Growth Trends

Historic growth trends were derived from historic census population estimates for 1990, 2000, and 2010. For 1990 and 2000, census block population estimates from the Florida House of Representatives Redistricting Data were summarized at the 2010 tract level and combined with the 2010 tract population estimates. These estimates are used to produce twelve projection calculations using six different methods. The highest four and lowest four calculations are discarded, and the remaining four are averaged.

The six methods utilized by the model include: Linear, Exponential, Constant Population, Constant Share, Share of Growth, and Shift Share. The Linear, Exponential, and Constant Population techniques employ a "bottom-up" approach, extrapolating the historic growth trends of each census tract with no consideration for the county's overall growth. The Constant Share, Share of Growth, and Shift Share techniques employ a "top-down" approach, allocating a portion of the total projected county growth to each census tract based on that census tract's percentage of county growth over the historical period. Each of the six methods is a good predictor of growth in different situations and growth patterns, so using a combination of all six was the best way to avoid the largest possible errors resulting from the least appropriate techniques for each census tract within the 16-county area.

This methodology is patterned after that used by BEBR, and is well suited for small area population projections. The details of the methods are as follows:

Linear Projection Method
The Linear Projection Method assumes that future population change for each Census block will be the same as over the base period. Three linear growth rate calculations were made, one from 1990 through 2020, one from 1990 through 2000, and one from 2000 through 2010.

Exponential Projection Method
The Exponential Projection Method assumes that population will continue to change at the same annual growth rate as over the base period.

Constant Population Method
The Constant Population Method assumes that future population will remain constant at its present value.

Constant Share Projection Method
The Constant Share Projection Method assumes that each census tract's percentage of the county's total population will be the same as over the base period.

Share of Growth Projection Method
The Share of Growth Projection Method assumes that each Census tract's percentage of the county's total growth will be the same as over the base period. Three share of growth rate calculations were made, one from 1990 through 2010, one from 1990 through 2000, and one from 2000 through 2010.

Shift Share Projection Method
The Shift Share Projection Method assumes that each Census tract's percentage of the county's total annual growth will change by the same annual amount as over the base period. Three shift share calculations were made, one from 1990 through 2010, one from 1990 through 2000, and one from 2000 through 2010.

Average of the Projection Extrapolations
The four minimum and four maximum of the twelve calculations for each census tract are removed to eliminate the most extreme results of the thousands of heterogeneous census tracts within the 16-county area. The four remaining calculations are then averaged to account for the considerable variation in growth rates and patterns over all of the census tracts within the 16-county area. All four remaining methods are weighted equally.

B. Growth Calculation Methodology

The methodology for calculating growth within the Population Model includes the following steps:

1. Apply Census tract-level average historical growth rate to parcels within a particular tract.
2. Check growth projections against build-out population, and reduce any projections exceeding build-out to the build-out numbers.
3. After projecting growth for all Census tracts within the particular county, summarize the resulting growth and compare against the Countywide BEBR target growth.
   a. If the Model's projections exceed the BEBR target (which is unlikely), reduce the projected growth for all Census tracts by the percentage that the projections exceeded the BEBR target, and go on to the next time increment.
   b. If the Model's projections are less than the BEBR target (which is typical due to high growth areas building out), continue growing the county using the Growth Drivers.
4. Select parcels in undeveloped Census tracts with the highest Growth Driver value and develop them. (Note: Most parcels are projected to completely build out in this step, which represents a five-year interval; however, some large parcels may require two or more five-year intervals to build out.) Summarize growth and check against build-out. Continue this process until the county build-out growth target is reached.

Non-Permanent Population Projections
In addition to the permanent population projections generated by the Population Projection Model, projections of non-permanent population were also made. Those projections include peak seasonal population, permanent plus seasonal population (or functionalized seasonal population), tourist population and net commuter population. The methods derived by the District and implemented by GISA for projecting those population types are described in this section. For a more detailed explanation of these methods, see the District's SWUCA II Population Guidelines.

A. Peak Population

Seasonal population is estimated using a combination of 2010 U.S. Census data (at the Zip Code Tabulation Area or ZCTA level) and hospital admissions data. Average 2009-2011

emergency room admissions data was utilized for a population cohort typical of seasonal residents (between the ages of 45 and 74).

A “Seasonal Resident Ratio” was calculated by ZCTA to estimate the proportion of peak (including seasonal) to permanent population. This 2010 U.S. Census-era ratio is held constant over time when applied to future projections of population, but it will be updated with each **decennial Census**. The ratio was derived using the following generalized steps:

1. Subtract total 2009–2011 total third quarter (Q3, or July, August and September) hospital admissions from first quarter (Q1, or January, February and March) admissions.
2. Calculate the average annual difference between Q1 and Q3 by dividing above result by three.
3. Calculate a seasonal population estimate for ZCTA by dividing above difference by the general population’s probability of being admitted to the emergency room (approximately 2.23%).
4. Calculate the Seasonal Resident Ratio by adding the seasonal population to the permanent population and dividing that total by the permanent population.

This ratio can then be applied to future projections of permanent population to derive peak population projections.

B. Permanent plus Seasonal Population or Functionalized Seasonal Population

The functionalized seasonal population is the peak seasonal resident population adjusted downward to account for the percentage of the year seasonal residents typically reside elsewhere, and the lack of indoor water use during that time. It was calculated using the following generalized steps:

1. Determine the appropriate proportion of the year seasonal residents spend in Florida. This varies from beach destination counties (44.2%) to non-beach destination counties (56.7%).

2. Develop a seasonal resident adjustment based on average per capita water use.

    a. The six-year (1996–2006) districtwide average per capita use is 132 gallons per person per day, and 69.3 is estimated indoor per capita use; (Alliance for Water Efficiency, 1999).

    b. The adjustment factor is calculated using the following equation for “beach destination” counties (Charlotte, Manatee, Pinellas and Sarasota):

    ((0.442 x 132 gpd) + ((1 – 0.442) x (132 gpd – 69.3 gpd)/132 gpd = 0.707

    c. The adjustment factor is calculated using the following equation for “non-beach destination counties”:

    ((0.567 x 132 gpd) + ((1 – 0.567) x (132 gpd – 69.3 gpd)/132 gpd = 0.773

3. Calculate “functionalized” seasonal population by multiplying the seasonal population by the appropriate seasonal resident adjustment factor for the particular county (0.707 or 0.773).

4. Calculate total functional population by adding the functionalized seasonal population to the permanent population.

5. Calculate ratio of Census-era functional population to permanent population.

6. Apply above ratio to future projections of permanent population to derive functional population projections.

C. Tourist Population

The tourist population projections were based on 20 years (1997-2016) of county level lodging room data from the Florida Department of Business and Professional Regulation (DBPR). The SWFWMD methodology for projecting future tourist rooms by county utilizes two different methods and averages the two results for each county.

The first method projects the increase in rooms by county by extrapolating the linear trend using the least squares method derived from the last 20 years of county total room estimates. This was the method used by the District for the past several years.

A second method projects future rooms based on projections of employment in the Accommodation and Food Services industries (from data from Woods and Poole). This is also an extrapolation of a linear trend using the least squares method, but rooms by county are projected as a function of a county’s employment projections rather than time.

SWFWMD staff previously tested both methods by projecting values for the years 2007-2013 using room estimates from 1996-2006. Based on the differences between actual room estimates and projected values for 2007-2013, neither method was clearly superior to the other. For that reason, SWFWMD staff opted to use both methods. The results of both methods were averaged, but only after adjusting for the average 2007-2013 error for each projection in each county.

These projections of future rooms were then converted to “functionalized” tourist population by applying various county level average unit occupancy and party size ratios. These ratios were provided by SWFWMD, who also updated the values associated with locations identified as short-term rentals for this projection set based on SWFWMD research.

These projections of tourist population were joined to the existing lodging facility locations. No attempt was made to project future locations of lodging facilities, as:

1. The precise locations would be highly speculative.

2. It was assumed that lodging facilities often are built in the general vicinity of existing lodging facilities, or at least in close enough proximity to be within the same utility service area.

D. Net Commuter Population

The net commuter population projections were based on special tabulations from the American Community Surveys conducted in the years 2006-2010. For each 2010 U.S. Census tract, the ratio of net commuters to permanent population was calculated. This ratio was then applied to future projections of permanent population to derive projections for net commuter population. That population was then "functionalized" with the following ratios:

1. 8/24 (typical working hours per day)

2. 5/7 (typical working days per week)

By applying both of these ratios to the net commuter population, the resulting functional net commuter population is 23.8 percent of the actual net commuter population. This functional number better reflects the water use that is expected for net commuters.

Note that the net commuter population projection summaries by utility service area were often negative, as many utilities serve "bedroom communities" and other areas where more residents work outside the utility service area than the population (residents and non-residents) employed within it. Only positive net commuter populations were included in a utility's total functional population.

Summarize By Utility Service Areas

The parcel-level results are then summarized by public supply service area boundaries for all utilities districtwide that average at least 0.1 million gallons per day (mgd) of total water use. These boundaries, maintained by the District, are overlaid with the districtwide parcel-level population projection GIS layer, and each parcel within a service area is assigned a unique identifier for that service area. The projected population can then be summarized by that identifier and joined to the District's potable service area database to produce tabular or GIS output. Note that these service areas change over time, so for any future use of these deliverables, it is important to match this projection set only with the service areas included in the GIS deliverables.

Spatial Incongruity of Boundaries

Due to mapping errors, the service area boundaries do often bisect parcel boundaries. In the present modeling activity, parcels are deemed to be within a given service area if their center points (or "centroids") fell inside the service area boundaries. The error associated with this spatial incongruity at the parcel level was much smaller than would be the case with census tract level data. This is one of the primary benefits of disaggregating census tract level data to the parcel level. The percentage of parcels erroneously attributed or excluded from a service area by this process is insignificant.

Final Results

The final results are provided in tabular format (Microsoft Excel spreadsheet) and GIS format (ESRI's file geodatabase). The utility-level spreadsheets were distributed by District staff to utilities for comparison with their own and/or other projections for their service areas. If there are discrepancies, the spatial results (each county's parcel-level population layer) may be used in part to depict projected patterns of future growth. The spatial data is available for download from the District's Demographics website.

The population projections detailed in Tables 3 through 19, except for Lake and Polk County (Tables 10 and 16) are the sum of the functionalized permanent, seasonal, net commuter, and tourist populations. It should be noted that only positive net commuters were aggregated. Service areas with negative net commuters were not penalized. For Lake and Polk County (Tables 10 and 14), the population projections represent permanent populations and are from Draft Central Florida Water Initiative Demand Projections as of October 2018.

There are some uncertainties with the model projections. In some instances, the projections detailed in Tables 3 through 19 may not match the raw model output in the tabular format (Microsoft Excel spreadsheet) and the GIS format (ESRI's file based geodatabase). As the parcel level projections are summarized by public supply service area boundaries and the service area is incorrect or includes domestic self-supply population that is not delineated as self-served, the aggregated population could be less than or greater than what the utility is actually projected to serve. Upon review and identification of such cases (including stakeholder input), the functional population for such instances was revised to reflect the correct service area boundaries and/or reduction of domestic self-supply.

Adjusting Population Projections using 2016 Estimated Water Use

Many public supply service areas include a significant number of self-supplied and vacant parcels within their boundaries. In most cases, the service area layer does not include information on self-supplied or not-yet-served areas. The population projections generated by GISA's parcel projection model include self-supplied persons or population in parcels not yet served. GISA generates projections for 297 service areas. One hundred six of these service areas had a 2016 population estimate that was at least ±5 percent different from the 2016 population served estimate from the Estimated Water Use Report. Here is an example on how population estimate and projection was adjusted using the 2016 population served estimate:

a) Results from GISA's parcel level model for utility Z:

Total Functional Population 2016	Total Functional Population 2020	Total Functional Population 2025	Total Functional Population 2030	Total Functional Population 2035	Total Functional Population 2040
1,452	1,494	1,578	1,791	2,125	2,432

b) In 2016, the utility reported a population served estimate of 1,316 people

c) This population estimate is 9 percent lower than the GISA projection

d) Thus, new projections are generated by applying the GISA growth rates to the 2016 population served estimate:

Adjusted Total Functional Population 2016	Adjusted Total Functional Population 2020	Adjusted Total Functional Population 2025	Adjusted Total Functional Population 2030	Adjusted Total Functional Population 2035	Adjusted Total Functional Population 2040
1,316	1,353	1,430	1,623	1,926	2,204

Water Demand Projections

Water demand projections are calculated for the years 2020, 2025, 2030, 2035, and 2040. To develop these projections, the District used the 2011-2015 average unadjusted gross per capita water use rate and applied it to the projected populations, described above. In the case of small utilities (utilities permitted for less than 100,000 gallons per day), the 2011-2015 per capita is the per capita stated in the last issued permit or the average unadjusted gross per capita of the county.

One-in-Ten Drought Event

The one-in-ten "is an event that results in an increase in water demand of a magnitude that would have a 10 percent probability of occurring during any given year" (SWFWMD, 2001). The One-in-Ten Year Drought Subcommittee of the Water Planning Coordination Group, as stated in their final report, determined that a 6.0 percent increase in demand will occur in such an event for public supply water use. Therefore, the one-in-ten year water demand projections are the average year demands times 1.06.

Residential Irrigation Wells

These are defined as private wells smaller than 6" which do not require a Water Use Permit (WUP); however, for this analysis, wells less than 5” in diameter were selected because of the unlikely scenario that any residential unit has irrigation wells greater than 4” in diameter. These wells are used primarily for outdoor irrigation purposes at residences that are connected to a central utility system and receive potable water service for indoor use. Using the methodology described below, District staff has estimated the number of domestic irrigation wells by county and their associated water demand. This information was updated and incorporated into the attached Public Supply demand projections (See Table 23 in Appendix A). Currently, the District estimates that approximately 332 gallons per day are used for each irrigation well[1].

Using the District’s well construction permit GIS feature class, the following selection criteria are necessary to capture residential irrigation wells:

- Use Type equal to ‘Irrigation’
- Diameter less than 5”
- Only include wells that lie inside public supply service areas
- Site status description of active, inactive, proposed, or blank
- Exclude wells that lie within WUP Control Areas - Permitted

[1] Determination of Landscape Irrigation Water Use in Southwest Florida, May 31, 2018, Michael Dukes & Mackenzie Boyer

- Include only those wells permitted by the District (do not include those within the St. John's River Water Management District boundary)

For select utilities, the existence of domestic wells utilized for irrigation purposes necessitated additional analysis. To ensure that the domestic wells were also served by utilities, billing data were provided and spatially joined in GIS to create a feature class. From there, a 50-foot buffer was formed around each address in order to identify domestic wells within served property boundaries. Similar to residential irrigation wells, the selection criteria for the domestic wells was:

- Located within public supply service areas
- Use Type equal to 'Domestic'
- Diameter less than 5"
- Site status description of active, inactive, proposed, or blank
- Exclude wells that lie within WUP Control Areas - Permitted
- Permit issuance on or before 2015

Wells identified from this analysis were subsequently incorporated into additional irrigation demand.

Review
The District will be providing this technical memorandum and demand projection tables to WUP staff and public supply use sector stakeholders for review and comment, as each permitting staff and stakeholder may have a much more intimate understanding of the permits for which they are responsible. Upon receiving stakeholder comments, the District will review suggested changes and, if appropriate, included updates. It is important to note that this is a long-term planning effort, methodology changes based on short term trends will unlikely be taken into account. Comments and suggested changes will be taken into consideration if they were justifiable, defensible, based on historical regression data and long-term trends, and supported by complete documentation. The projections contained herein were presented to District staff and the Public Supply Advisory Committee (August 14, 2018).

The District understands and shares stakeholder's concerns of how critically important accurate demand projections are; however, the District must comply with Chapter 373.0361, F.S., which sets forth requirements for regional water supply planning. *("Population projections used for determining public water supply needs must be based upon the best available data. In determining the best available data, the district shall consider the University of Florida's Bureau of Economic and Business Research (BEBR) medium population projections and any population projection data and analysis submitted by a local government pursuant to the public workshop described in subsection if the data and analysis support the local government's comprehensive plan.")*

Tables and Figures
Tables 1 through 2 provide permanent and functional future populations for each county. Tables 3 through 19 provide county population and public supply water demand estimates and projections on a countywide basis. Both average year demand and the one-in-ten year drought demands are reflected in these tables. Table 20 presents county-level demands. Tables 21 and

22 show population and water demands by region and caution areas. Lastly, Table 23 summarizes the existing irrigation wells and the exponential growth rate used to project future irrigation wells.

Summary

Overall, for the public supply sector, the District is expecting an increase in average demand of 188 mgd from 577 mgd in 2015 to 765 mgd in 2040 for the 16-county area. The 188 mgd increase by 2040 is distributed as follows: 33 mgd increase in the Heartland Planning Region, 37 mgd increase in the Northern Planning Region, 31 mgd in the Southern Planning Region, and 87 mgd increase in the Tampa Bay Planning Region. Appendix A; Tables 1 through 23 start on page 16 and provide data by county, utility, and planning region.

References

Chapter 373.709, F.S., 2001; *Final Report: 1-in-10-year Drought Requirement in Florida's Water Supply Planning Process*

GIS & Associates, Inc., 2018. *Small-Area Population Methodology of the SWFWMD* (January, 2018). Prepared for the Southwest Florida Water Management District.

SWFWMD, 2011-2015. *Estimated Water Use Reports* for the years 2011-2015.

SWFWMD, 2018. *Summary Rainfall Data by Region*. 2018 www.swfwmd.state.fl.us/data/hydrologic/rainfall_data_summaries.

University of Florida Bureau of Economic and Business Research, 2017. *Projections of Florida Population by County*

U.S. Census Place Data, 2010; www.census.gov/geo/www/2010census/gtc/gtc_place.html.

Appendix A

Public Supply Data Tables

Population and Demand Projections

Irrigation Well Projections

Table 1. Countywide Permanent Population Estimates and Projections

	BEBR Medium Permanent Population[1]						Permanent Population in SWFWMD[2]					
	Population inside and outside District boundaries.						Population Inside District boundaries only.					
County	2015	2020	2025	2030	2035	2040	2015	2020	2025	2030	2035	2040
Charlotte	168,087	180,100	191,000	200,400	208,400	215,600	165,572	177,447	188,236	197,535	205,440	212,545
Citrus	141,736	148,400	154,500	159,600	163,800	167,100	141,736	148,400	154,500	159,600	163,800	167,100
DeSoto	34,953	35,900	36,700	37,500	38,200	38,700	34,953	35,900	36,700	37,500	38,200	38,700
Hardee	27,596	27,800	27,900	28,100	28,200	28,300	27,596	27,800	27,900	28,100	28,200	28,300
Hernando	176,671	191,100	204,600	216,300	227,000	236,200	176,671	191,100	204,600	216,300	227,000	236,200
Highlands	100,577	105,400	109,600	113,000	115,600	117,600	92,539	96,472	99,898	102,673	104,800	106,434
Hillsborough	1,325,132	1,466,900	1,602,900	1,722,900	1,824,900	1,919,900	1,325,132	1,466,900	1,602,900	1,722,900	1,824,900	1,919,900
Lake	316,425	355,300	391,600	422,800	451,300	478,400	1,059	1,296	1,579	1,853	2,122	2,383
Levy	40,269	41,700	43,000	44,100	44,900	45,600	22,368	23,189	23,934	24,566	25,029	25,434
Manatee	350,055	388,700	425,700	458,700	487,700	511,800	350,055	388,700	425,700	458,700	487,700	511,800
Marion	340,435	367,500	392,800	414,800	434,700	452,000	106,534	117,373	127,280	135,840	143,993	151,675
Pasco	486,409	534,800	579,800	618,300	653,900	686,000	486,409	534,800	579,800	618,300	653,900	686,000
Pinellas	951,377	967,400	982,400	995,700	1,007,900	1,012,800	951,377	967,400	982,400	995,700	1,007,900	1,012,800
Polk	634,597	698,000	757,200	806,800	853,700	896,400	597,981	658,283	714,001	760,328	804,277	844,431
Sarasota	394,325	420,800	444,600	464,000	480,000	492,200	394,325	420,800	444,600	464,000	480,000	492,200
Sumter	113,352	140,900	168,100	192,600	216,000	236,400	113,352	140,900	168,100	192,600	216,000	236,400
Total	**5,601,998**	**6,070,700**	**6,512,400**	**6,895,600**	**7,236,200**	**7,535,000**	**4,988,790**	**5,396,760**	**5,782,127**	**6,116,495**	**6,413,261**	**6,672,302**

Reference Sources for Countywide Permanent and Permanent Population Projections

[1] 2016-2040 projections are based on The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2040, Florida Population Studies, Volume 50, Bulletin 177, April 2017.
2 Permanent population estimates and projections were generated by GIS Associates. Source File: GISA SWFWMD PSSA Population Summaries, 2018-01-12.xlsx.Tab Name: County & WMD Summary.

Table 2. Countywide Permanent and Total Functional population

	Total Functional Population in SWFWMD[1,2,3,4,5]					
	Total Functional Population = Permanent + Seasonal+ Tourist + Net Commuters					
County	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
Charlotte	191,446	205,401	217,978	228,875	238,188	246,609
Citrus	154,717	161,834	168,447	173,991	178,568	182,185
DeSoto	36,508	37,551	38,401	39,260	40,015	40,554
Hardee	28,360	28,617	28,736	28,959	29,077	29,196
Hernando	182,854	197,648	211,555	223,654	234,719	244,274
Highlands	102,783	107,458	111,216	114,265	116,606	118,409
Hillsborough	1,438,767	1,589,177	1,731,457	1,856,960	1,961,869	2,059,559
Lake[4]	1,059	1,296	1,579	1,853	2,122	2,383
Levy	23,732	24,585	25,356	26,010	26,489	26,908
Manatee[5]	423,741	466,041	507,393	544,241	576,900	604,543
Marion	112,040	123,467	133,759	142,657	151,129	159,115
Pasco	515,412	565,764	612,750	652,965	690,156	723,710
Pinellas[5]	1,207,943	1,222,356	1,240,929	1,257,345	1,272,410	1,278,592
Polk[4]	597,981	658,283	714,001	760,328	804,277	844,431
Sarasota	472,188	501,783	528,324	549,621	567,149	580,570
Sumter	125,529	156,397	185,527	211,678	236,768	258,670
Total	**5,615,061**	**6,047,660**	**6,457,409**	**6,812,661**	**7,126,441**	**7,399,709**

Reference Sources for Countywide Permanent in SWFWMD and Functional Population Projections

[1]Total functional population comprises permanent population, functional seasonal population, functional tourist, and functional net commuters population.

[2]2016 Estimate was generated from the population projections calculated using the latest GIS Associates, Inc.'s population projection model data (October 2017) and the PS_SERVICEAREAS GIS layer (dated: 02FEB2018). Population estimates and projections were adjusted using the 2016 Public Supply Annual Report population served estimate. The 2015 estimate had to be extrapolated using the 2016-2020 growth rate for each utility. The GISA projections are based on The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2040, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

[3]The 2020-2040 projections were generated from the latest GIS Associates, Inc.'s population projection model data (October 2017) and the PS_SERVICEAREAS GIS layer (dated: 02FEB2018). Population estimates and projections were adjusted using the 2016 Public Supply Annual Report population served estimate. The GISA projections are based on The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2040, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

[4] This total includes estimates and projections from District portion of county from draft 2020 Regional Water Supply Plan for the Central Florida Water Initiative (April 2018)

[5]For Manatee and Pinellas County, the sum of adjusted functional population exceeds original county total. Thus, county total was recalculated as original county total plus deficit plus EWU self-supplied population estimate (ex. 2020 Pinellas County Total = 1,078,741 + 138,003 + 5,611 = 1,222,356).

TABLE 3. CHARLOTTE COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD MGD	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS MGD 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	7,640	0.482	8,295	9,137	9,872	10,518	11,087	63	0.524	0.577	0.623	0.664	0.700
	718	Gasparilla Island Water Assoc.	6,012	1.104	6,438	6,497	6,553	6,605	6,658	184	1.183	1.193	1.204	1.213	1.223
	871	City of Punta Gorda	35,742	4.254	37,512	39,216	40,588	41,660	42,461	119	4.465	4.668	4.831	4.959	5.054
	1512	Charlotte Harbor Water Assoc.	3,501	0.292	3,987	4,455	4,874	5,237	5,570	83	0.332	0.371	0.406	0.436	0.464
	3522	Charlotte County Utilities / Burnt Store	6,646	0.404	7,406	8,128	8,773	9,327	9,820	61	0.450	0.494	0.533	0.567	0.597
	7104	Charlotte County Utilities	127,046	9.948	136,795	145,437	152,969	159,479	165,556	78	10.712	11.388	11.978	12.488	12.964
(9)	8626	Homeowners of Alligator Park	915	0.079	915	915	915	915	915	86	0.079	0.079	0.079	0.079	0.079
(10)	99913	El Jobean Water Association	1,454	0.151	1,473	1,501	1,529	1,553	1,572	104	0.153	0.156	0.159	0.161	0.163
(10)	99916	Riverwood Development	2,492	0.259	2,579	2,692	2,801	2,894	2,969	104	0.268	0.280	0.291	0.301	0.309
(8)		Additional Irrigation Demand		2.233							2.395	2.542	2.669	2.778	2.876
	Total County		**191,446**	**19.206**	**205,401**	**217,978**	**228,875**	**238,188**	**246,609**		**20.561**	**21.748**	**22.774**	**23.646**	**24.429**
(7)	1-10 Drought Year Demand										21.794	23.053	24.140	25.065	25.894

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per day per well.

(9) This utility has a small general permit and is identified in the PS_SERVICEAREAS layer. The per capita is listed in the permit document.

(10) This service area is a wholesale importer. There is no water use permit associated with this service area. Per capita is assumed to equal to the average county per capita.

TABLE 4. CITRUS COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4), (11), (12) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	54,633	5.204	57,755	60,604	62,982	64,939	66,465	95	5.501	5.773	5.999	6.186	6.331
	207	City of Crystal River	5,639	0.740	5,659	5,718	5,773	5,824	5,872	131	0.742	0.750	0.757	0.764	0.770
	419	City of Inverness	9,449	1.082	9,806	10,138	10,420	10,655	10,843	115	1.123	1.161	1.194	1.220	1.242
(9)	729	Citrus Co. Utilities - Point O' Woods	838	0.072	842	845	848	850	852	86	0.072	0.073	0.073	0.073	0.073
(9)	872	Inverness Village	264	0.029	264	264	264	264	264	110	0.029	0.029	0.029	0.029	0.029
	1118	Floral City Water Association Inc	5,047	0.295	5,197	5,334	5,449	5,544	5,620	59	0.304	0.312	0.319	0.324	0.329
(10)	1345	Royal Oaks of Citrus HOA	443	0.044	443	443	443	443	443	100	0.044	0.044	0.044	0.044	0.044
	2842	Citrus Co. Utilities - Citrus Springs/Pin	17,211	2.329	18,769	20,195	21,387	22,367	23,138	135	2.540	2.733	2.894	3.027	3.131
(10)	4008	Inverness Park	218	0.030	218	218	218	218	218	138	0.030	0.030	0.030	0.030	0.030
	4153	Rolling Oaks Utilities Inc	11,301	1.507	11,301	11,302	11,304	11,306	11,308	133	1.507	1.507	1.507	1.507	1.508
	4406	Homosassa Special Water District	5,668	0.741	5,783	5,911	6,022	6,115	6,193	131	0.756	0.773	0.788	0.800	0.810
(9)	4753	Constate Utilities	621	0.070	632	642	650	656	662	112	0.071	0.072	0.073	0.074	0.074
(9)	6291	Citrus Co. Utilities - Rosemont/Rolling	331	0.050	331	332	332	333	333	150	0.050	0.050	0.050	0.050	0.050
	6691	Gulf Highway Land Corporation	578	0.073	579	579	579	579	579	126	0.073	0.073	0.073	0.073	0.073
	7121	Citrus Co. Utilities - Charles A. Black	24,281	3.562	25,258	26,159	26,905	27,515	27,988	147	3.705	3.837	3.947	4.036	4.106
(9)	7295	Citrus Co. Utilities - Golden Terrace	260	0.026	261	261	261	261	261	100	0.026	0.026	0.026	0.026	0.026
(9)	7784	Citrus Co. Utilities - Water Oaks	310	0.040	310	310	310	310	310	130	0.040	0.040	0.040	0.040	0.040
(10)	8147	Oak Pond LLC	98	0.010	98	98	98	98	98	97	0.010	0.010	0.010	0.010	0.010
(10)	8623	River Lodge Resort	0	0.000	21	44	63	78	90	116	0.002	0.005	0.007	0.009	0.010
(10)	9097	Tarawood Utilities LLC	140	0.020	144	147	149	152	153	140	0.020	0.021	0.021	0.021	0.021
(10)	9532	Greenbriar One of Citrus Hills	416	0.062	416	416	416	416	416	150	0.062	0.062	0.062	0.062	0.062
	9791	Citrus Co. Utilities - Sugarmill Woods	11,068	2.146	11,827	12,528	13,120	13,615	14,020	194	2.293	2.429	2.544	2.640	2.718
	11839	GCP Walden Woods One, LLC and GI	1,021	0.145	1,021	1,021	1,021	1,021	1,021	142	0.145	0.145	0.145	0.145	0.145
	20230	Ozello Water Association Inc	4,882	0.446	4,902	4,941	4,977	5,009	5,039	91	0.448	0.451	0.455	0.458	0.460
(8)		Additional Irrigation Demand		1.223							1.280	1.332	1.376	1.412	1.441
	Total County		**154,717**	**19.945**	**161,834**	**168,447**	**173,991**	**178,568**	**182,185**		**20.874**	**21.737**	**22.462**	**23.060**	**23.534**
(7)	1-10 Drought Year Demand										22.126	23.042	23.809	24.444	24.946

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

(9) Small general water use permits are not required to submit annual information on their per capita. Consequently, per capita information for the following small general WUPs was obtained as follows:

a) CCU - Point of Woods (WUP# 729): Per capita information obtained from permit issued in 2017.

b) Constate Utilities (WUP# 4753): Per capita information obtained from permit issued in 2017.

c) CCU - Rosemont (WUP# 6291): Per capita information was obtained from permit issued in 1997.

d) CCU - Golden Terrace (WUP# 7295): Per capita information was obtained from application submitted in 2013.

e) Inverness Village (WUP# 872): Per capita information was obtained from permit issued in 2012.

f) Citrus Co. Utilities - Water Oaks (WUP# 7784): Per capita and population information was obtained from permit issued in 2011.

g) River Lodge Resort (WUP# 8623): Per capita information was obtained from permit issued in 2009.

(10) These are small general public supply permits listed in the PS_SERVICEAREAS layer. If available, the permit per capita was used. Otherwise, it was assumed that the per capita was equal to the 2015 unadjusted gross per capita for the county.

TABLE 5. DESOTO COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	19,960	1.305	20,815	21,520	22,191	22,771	23,201	65	1.361	1.407	1.451	1.489	1.517
(10)	3318	Cross Creek Country Club	1,112	0.056	1,112	1,112	1,112	1,112	1,112	50	0.056	0.056	0.056	0.056	0.056
	4725	Arcadia WTP	10,005	0.798	10,088	10,158	10,244	10,323	10,373	80	0.805	0.810	0.817	0.823	0.827
(10)	6483	DeSoto Village Mobile Home Park	266	0.029	266	266	266	266	266	110	0.029	0.029	0.029	0.029	0.029
(9)	20457	DeSoto County Utilities	5,165	0.505	5,270	5,345	5,447	5,543	5,602	98	0.515	0.522	0.532	0.541	0.547
(8)		Additional Irrigation Demand		0.073							0.075	0.077	0.079	0.080	0.082
	Total County		**36,508**	**2.765**	**37,551**	**38,401**	**39,260**	**40,015**	**40,554**		**2.840**	**2.901**	**2.963**	**3.019**	**3.057**
(7)	1-10 Drought Year Demand										3.011	3.075	3.141	3.200	3.241

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

(9) This is wholesale permit that imports supply from the PRMRWSA. The County also holds an Industrial/Commercial WUP (#6841) for the DeSoto Annex Correctional Facility which houses an average 1,540 persons. The correctional facility's population has been deducted from the wholesale permit's population

(10) Small general water use permits are not required to submit annual information on their per capita. Consequently, per capita information for the following small general WUPs was obtained as follows:

a) Cross Creek Country Club (WUP# 3318): Population and per capita information were obtained from permit issued in 2010.

b) DeSoto Village Mobile Home Park (WUP# 6483): Per capita information was obtained from permit issued in 2007.

TABLE 6. HARDEE COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	9,563	0.451	9,730	9,807	9,919	9,994	10,009	47	0.459	0.463	0.468	0.472	0.472
	30	City Of Bowling Green Municipal Wat	4,616	0.292	4,628	4,640	4,696	4,709	4,773	63	0.293	0.294	0.297	0.298	0.302
(9)	2402	Orange Blossom RV Park	305	0.021	305	305	305	305	305	70	0.021	0.021	0.021	0.021	0.021
	4461	City Of Wauchula	6,396	0.646	6,415	6,423	6,446	6,454	6,474	101	0.648	0.649	0.651	0.652	0.654
(9)	7022	MHC Peace River	11	0.002	11	11	11	11	11	150	0.002	0.002	0.002	0.002	0.002
	7658	Town Of Zolfo Springs	2,493	0.137	2,494	2,494	2,494	2,495	2,495	55	0.137	0.137	0.137	0.137	0.137
(10)	9550	Hardee Correctional Institution	1,963	0.251	1,963	1,963	1,963	1,963	1,963	128	0.251	0.251	0.251	0.251	0.251
(9)	11087	Florida SKP	293	0.014	293	293	293	293	293	47	0.014	0.014	0.014	0.014	0.014
(9)	11180	Torrey Oaks HOA	88	0.010	88	88	88	88	88	115	0.010	0.010	0.010	0.010	0.010
	13026	Hardee County BOCC	2,632	0.131	2,690	2,713	2,744	2,765	2,786	50	0.134	0.135	0.137	0.138	0.139
(8)		Additional Irrigation Demand		0.043							0.043	0.043	0.044	0.044	0.044
	Total County		**28,360**	**1.999**	**28,617**	**28,736**	**28,959**	**29,077**	**29,196**		**2.013**	**2.019**	**2.032**	**2.039**	**2.046**
(7)	1-10 Drought Year Demand										2.133	2.140	2.154	2.161	2.169

Notes:
MGD = million gallons per day
(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.
(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.
(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.
(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.
(5) Computed as projected population multiplied by 2011-2015 average per capita water use.
(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.
(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.
(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.
(9) Small general water use permits are not required to submit annual information on their per capita. Consequently, per capita information for the following small general WUPs was obtained as follows:
a) Orange Blossom RV Park (WUP# 2402): Per capita and population information were obtained from permit issued in 2015.
a) MHC Peace River (WUP# 7022): Population information was obtained from permit issued in 2011.
b) Florida SKP (WUP# 11087): Population information was obtained from permit issued in 2014.
c) Torrey Oaks HOA (WUP# 11180): Per capita and population information were obtaind from permit issued in 2016.
(10) Although it is a general permit, Hardee Correctional Institution (WUP# 9550) is not required to submit a PSAR. Therefore, population and per captia were taken from permit issued in 2010.

TABLE 7. HERNANDO COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4), (10) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	25,752	2.416	31,836	38,036	44,276	50,351	55,906	94	2.986	3.568	4.153	4.723	5.244
(9)	1891	Campers Holiday Association	546	0.027	547	549	551	554	558	50	0.027	0.027	0.028	0.028	0.028
(9)	2119	Imperial Estates	242	0.011	242	242	242	242	242	45	0.011	0.011	0.011	0.011	0.011
(9)	3273	Holiday Springs RV Park	462	0.046	462	462	462	462	462	100	0.046	0.046	0.046	0.046	0.046
(9)	3720	McGist, Inc. (Frontier Campground)	149	0.007	149	149	149	149	149	46	0.007	0.007	0.007	0.007	0.007
	5789	Hernando Co Utilities	139,654	17.810	147,808	154,944	160,115	164,246	167,380	128	18.850	19.760	20.419	20.946	21.346
(9)	6302	Avalon Development LLC	1,000	0.085	1,000	1,000	1,000	1,000	1,000	85	0.085	0.085	0.085	0.085	0.085
	7627	City Of Brooksville	14,617	1.076	15,169	15,735	16,417	17,268	18,126	74	1.117	1.159	1.209	1.272	1.335
(9)	8443	Camp-A-Wyle Condominium	431	0.039	434	438	442	446	451	90	0.039	0.039	0.040	0.040	0.041
(8)		Additional Irrigation Demand		2.801							3.027	3.240	3.426	3.595	3.742
	Total County		**182,854**	**24.318**	**197,648**	**211,555**	**223,654**	**234,719**	**244,274**		**26.196**	**27.943**	**29.424**	**30.753**	**31.884**
(7)	1-10 Drought Year Demand										27.768	29.619	31.189	32.598	33.797

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

(9) Small general water use permits are not required to submit annual information on their per capita. Consequently, per capita information for the following small general WUPs was obtained as follows:

a) Campers Holiday Association (WUP# 1891): Per capita information was obtained from permit issued in 2013.

b) Imperial Estates (WUP# 2119): Per capita information was obtained from permit issued in 2010.

c) Holiday Springs RV Park (WUP# 3273): Per capita information was obtained from permit issued in 2009.

d) Frontier Campground (WUP# 3720): Per capita information was obtained from permit issued in 2015.

e) Avalon Development LLC (WUP# 6302): Per capita and population information was obtained from permit issued in 1997.

f) Camp-A-Wyle (WUP# 8443): Per capita information was obtained from permit issued in 2016.

TABLE 8. HIGHLANDS COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	18,865	1.166	20,598	22,072	23,253	24,148	24,829	62	1.274	1.365	1.438	1.493	1.535
	4167	HC Waterworks	1,545	0.170	1,585	1,617	1,643	1,662	1,677	110	0.174	0.177	0.180	0.182	0.184
	4492	City of Sebring	35,768	3.466	37,239	38,362	39,275	39,975	40,514	97	3.608	3.717	3.806	3.873	3.926
(9)	4670	Maranatha Baptist Church	515	0.051	515	514	514	514	514	99	0.051	0.051	0.051	0.051	0.051
	4980	Lake Placid Holding Co	4,308	0.276	4,470	4,610	4,721	4,805	4,868	64	0.286	0.295	0.302	0.307	0.312
	5270	Town Of Lake Placid	7,136	0.710	7,317	7,441	7,540	7,615	7,673	100	0.728	0.741	0.751	0.758	0.764
	6029	City Of Avon Park	21,906	1.957	22,354	22,688	22,961	23,172	23,336	89	1.998	2.027	2.052	2.071	2.085
(11)	6456	HC Waterworks	624	0.062	625	627	628	629	629	100	0.063	0.063	0.063	0.063	0.063
(11)	6804	Lake Bonnet Village MHP	500	0.050	500	500	500	500	500	100	0.050	0.050	0.050	0.050	0.050
	7139	Buttonwood Bay Utilities	1,646	0.161	1,646	1,646	1,646	1,646	1,646	98	0.161	0.161	0.161	0.161	0.161
	9490	LP Utilities Corporation	731	0.057	739	741	743	744	746	77	0.057	0.057	0.058	0.058	0.058
(11)	10926	Lake Lynn Shores	30	0.005	30	30	30	30	30	150	0.005	0.005	0.005	0.005	0.005
(11)	10930	Lake Placid Campground	239	0.009	239	239	239	239	239	37	0.009	0.009	0.009	0.009	0.009
(11)	11601	Pine Ridge Park Inc	631	0.032	631	631	631	631	631	51	0.032	0.032	0.032	0.032	0.032
(11)	12846	Tropical Harbor Mobile Home Esta	835	0.094	835	835	835	835	835	113	0.094	0.094	0.094	0.094	0.094
	13099	Sun N Lake Of Sebring Impr Dist	7,278	0.602	7,894	8,408	8,841	9,187	9,464	83	0.653	0.696	0.731	0.760	0.783
(11)	13272	Lake Park Village Condo Assoc	54	0.004	54	54	54	54	54	80	0.004	0.004	0.004	0.004	0.004
(10)	13367	Silver Lake Utilities, Inc.	19	0.001	33	46	57	64	71	68	0.002	0.003	0.004	0.004	0.005
(11)	20470	Orange Blossom Park	154	0.023	154	154	154	154	154	150	0.023	0.023	0.023	0.023	0.023
(8)		Additional Irrigation Demand		3.556							3.717	3.847	3.953	4.034	4.096
	Total County		**102,783**	**12.452**	**107,458**	**111,216**	**114,265**	**116,606**	**118,409**		**12.989**	**13.418**	**13.766**	**14.033**	**14.239**
(7)	1-10 Drought Year Demand										13.769	14.223	14.591	14.875	15.093

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

(9) According to a letter from the permittee, there has been no public supply water use in this permit since 2010. The per capita is the average residential per capita for the county.

(10) This is a small general permit. It is nor required to submit an annual per capita report. Per capita information is from the last issued permit. If no per capita information was found in WMIS., the per capita is assumed to equal the average county per capita.

(11) Small general water use permits are not required to submit annual information on their per capita. Consequently, per capita information for the following small general WUPs was obtained as follows:

a) HC Waterworks (WUP# 6456): Per capita information was obtained from permit issued in 1998.

b) Lake Bonnet Village MHP (WUP# 6804): Per capita and population information were obtained from permit issued in 2011.

c) Lake Lynn Shores (WUP#10926): Per capita and population information were obtained from permit issued in 2013.

d) Lake Placid Campground (WUP#10930): Per capita information was obtained from permit issued in 2013.

e) Pine Ridge Park Inc (WUP# 11601): Per capita information was obtained from permit issued in 2017.

f) Tropical Harbor Mobile Home Estates (WUP# 12846): Per capita information was obtained from permit issued in 2017.

g) Lake Park Village Condo Assoc (WUP# 13272): Per capita information was obtained from permit issued in 2008.

h) Orange Blossom Park (WUP# 20470): Per capita information was obtained from permit issued in 2014.

TABLE 9. HILLSBOROUGH COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	160,185	11.148	185,869	214,185	241,469	278,417	315,928	70	12.935	14.906	16.804	19.376	21.986
(9)	1	Park Village Hoa Of Ruskin	99	0.015	101	102	103	113	123	148	0.015	0.015	0.015	0.017	0.018
(9)	245	Chula Vista Mobile Home Park	327	0.030	327	327	327	327	327	93	0.030	0.030	0.030	0.030	0.030
(9)	435	The Wildwood Company, Inc.	700	0.102	700	700	700	700	700	145	0.102	0.102	0.102	0.102	0.102
	450	City Of Temple Terrace	32,618	3.403	36,331	39,297	41,753	43,524	44,745	104	3.791	4.100	4.357	4.541	4.669
(9)	1169	Briarwood Mobile Home Park	256	0.019	256	256	256	256	256	74	0.019	0.019	0.019	0.019	0.019
	1776	City Of Plant City Utilities	37,520	4.903	43,858	52,041	60,272	66,676	72,927	131	5.732	6.801	7.877	8.714	9.531
(9)	1787	Hillsborough County BOCC: San Rem	214	0.026	216	218	220	221	222	121	0.026	0.026	0.027	0.027	0.027
(9)	1988	Willaford Groves, LLC	323	0.022	323	323	323	323	323	69	0.022	0.022	0.022	0.022	0.022
	2062	City Of Tampa Water Dept	602,435	67.513	646,921	689,372	727,938	744,543	758,780	112	72.499	77.256	81.578	83.439	85.034
	2285	Charles Springer	1,152	0.113	1,229	1,329	1,422	1,467	1,500	98	0.120	0.130	0.139	0.144	0.147
(9)	2860	Sunrise MHC, LLC	350	0.021	350	350	350	350	350	60	0.021	0.021	0.021	0.021	0.021
(9)	2955	Spanish Main RV Resort	354	0.030	354	354	354	354	354	86	0.030	0.030	0.030	0.030	0.030
(9)	3752	Citrus Knoll MHP	52	0.008	52	52	52	52	52	150	0.008	0.008	0.008	0.008	0.008
(9)	3926	Oakbrook Associates (Plant City	425	0.031	425	425	425	425	425	74	0.031	0.031	0.031	0.031	0.031
(10)	4757	Wilder Corporation	929	0.030	929	929	929	929	929	32	0.030	0.030	0.030	0.030	0.030
(9)	6542	Camp Lemora Rv Park	312	0.016	312	312	312	312	312	50	0.016	0.016	0.016	0.016	0.016
	6879	C W Utility Systems Llc	2,021	0.202	2,021	2,021	2,021	2,021	2,021	100	0.202	0.202	0.202	0.202	0.202
(9)	7002	MHC FR Utility Systems, LLC	1,038	0.097	1,038	1,038	1,038	1,038	1,038	93	0.097	0.097	0.097	0.097	0.097
(9)	7153	Parkwood Estates Mobile Home Park	495	0.069	495	495	495	495	495	140	0.069	0.069	0.069	0.069	0.069
(9)	7213	Bay Hills Village Condominium Assoc,	218	0.033	218	218	218	218	218	150	0.033	0.033	0.033	0.033	0.033
	7637	Riverside Golf Course Comm Llc	1,132	0.535	1,132	1,132	1,132	1,132	1,132	473	0.535	0.535	0.535	0.535	0.535
(9)	7643	Southern Aire Mobile Home Park	245	0.024	245	245	245	245	245	100	0.024	0.024	0.024	0.024	0.024
	7790	Uniprop Income Fund Ii (Paradise Villag	1,355	0.076	1,355	1,355	1,355	1,355	1,355	56	0.076	0.076	0.076	0.076	0.076
(9)	8469	Bonita Bay Farmworker Housing	100	0.005	100	100	100	100	100	50	0.005	0.005	0.005	0.005	0.005
(9)	8579	Neptune Valley Mobile Home Park	146	0.010	146	146	146	146	146	70	0.010	0.010	0.010	0.010	0.010
(9)	8788	Sunset Manor Hoa	74	0.011	74	74	74	74	74	150	0.011	0.011	0.011	0.011	0.011
	8986	Allied Utilities, Inc.	85	0.013	85	85	85	85	85	150	0.013	0.013	0.013	0.013	0.013
(9)	10066	Florida Acecapaders, Inc.	152	0.022	152	152	152	152	152	147	0.022	0.022	0.022	0.022	0.022
	10443	Windemere Utility Company	2,775	0.259	2,780	2,784	2,788	2,813	2,837	93	0.259	0.260	0.260	0.262	0.265
(9)	10543	Cici Trailer Town Mobile Home	90	0.013	90	90	90	90	90	144	0.013	0.013	0.013	0.013	0.013
(9)	12513	Hometown Little Manatee Springs, LLC	475	0.038	475	475	475	475	475	80	0.038	0.038	0.038	0.038	0.038
(9)	12621	Hideaway Partners, LLLP	678	0.022	678	678	678	678	678	32	0.022	0.022	0.022	0.022	0.022
(9)	13004	Eastfield Slopes Condo	229	0.031	231	236	243	245	248	134	0.031	0.032	0.033	0.033	0.033
(9)	13063	Cax Lakeshore Villas Mhp	522	0.059	522	522	522	522	522	113	0.059	0.059	0.059	0.059	0.059
(11)	20141	Hillsborough County Utilities	588,687	55.491	658,787	719,038	767,897	810,996	849,395	94	62.099	67.778	72.384	76.446	80.066
(8)		Additional Irrigation Demand		2.235							2.469	2.690	2.885	3.048	3.199
		Total County	**1,438,767**	**146.675**	**1,589,177**	**1,731,457**	**1,856,960**	**1,961,869**	**2,059,559**		**161.514**	**175.533**	**187.897**	**197.585**	**206.514**
		DPCWUCA	**42,304**	**5.377**	**48,643**	**56,826**	**65,057**	**71,461**	**77,712**		**6.206**	**7.275**	**8.351**	**9.188**	**10.005**
		NTB	**1,274,544**	**132.585**	**1,399,268**	**1,513,231**	**1,611,449**	**1,679,399**	**1,739,569**		**145.403**	**157.230**	**167.500**	**174.452**	**180.618**
		SWUCA	**592,725**	**56.198**	**662,827**	**723,079**	**771,939**	**815,048**	**853,456**		**62.806**	**68.486**	**73.092**	**77.156**	**80.777**
(7)		1-10 Drought Year Demand									171.205	186.065	199.171	209.440	218.905
		DPCWUCA 1-10 Drought Year Demand									6.578	7.712	8.852	9.739	10.605
		NTB 1-10 Drought Year Demand									154.127	166.664	177.550	184.919	191.455
		SWUCA 1-10 Drought Year Demand									66.575	72.595	77.477	81.785	85.623

Notes:
MGD = million gallons per day
(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.
(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.
(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.
(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.
(5) Computed as projected population multiplied by 2011-2015 average per capita water use.
(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.
(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.
(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.
(9) This is a small general permit. It is not required to submit an annual per capita report. Per capita information is from the last issued permit. If no per capita information was found in WMIS., the per capita is assumed to equal the average county per capita.
a) Park Village Hoa Of Ruskin (1): Per capita information was obtained from permit issued in 2018.
b) Chula Vista Mobile Home Park (245): Per capita information was obtained from permit issued in 2013.
c) The Wildwood Company, Inc. (435): Per capita and population information were obtained from permit issued in 2015.
d) Briarwood Mobile Home Park (1169): Per capita information was obtained from permit issued in 2003.
e) Hillsborough County BOCC: San Remo (1169): Per capita information was obtained from permit issued in 2010. Per Norm Davis at Hillsborough Co Utilities, permit has been taken over by Hillsborough Co.
f) Willaford Groves, LLC (1988): Per capita and population information were obtained from permit issued in 2016.
g) Sunrise MHC, LLC (2860): Per capita and population information were obtained from permit issued in 2015.
h) Spanish Main RV Resort (2955): Per capita information was obtained from permit issued in 2012.
i) Citrus Knoll MHP (3752): Per capita and population information were obtained from draft permit in 2018.
j) Oakbrook Associates (Plant City (3926): Per capita information was not available for this permit. I counted mobile homes and trailers visible in the aerial photograph. Per capita is the county average.
k) Camp Lemora Rv Park (6542): Per capita information was obtained from permit issued in 2015.
l) MHC FR Utility Systems, LLC (7002): Per capita information was obtained from permit issued in 2011.
m) Parkwood Estates Mobile Home Park (7153): Per capita information was obtained from permit issued in 2011.
n) Bay Hills Village Condominium Association, Inc (7213): Per capita and population information were obtained from permit issued in 2013.
o) Southern Aire Mobile Home Park (7643): Per capita information was obtained from permit issued in 2010.
o) Sun City Mobile Home Park Water Plant (8440): Per capita information was obtained from permit issued in 2014.
p) Bonita Bay Farmworker Housing (8469): Per capita information was obtained from permit issued in 2016.
q) Neptune Valley Mobile Home Park (8579): Per capita information was obtained from permit issued in 2015.
r) Sunset Manor Hoa (8788): Population information was obtained from permit issued in 2007; renewal currently in house and per capita to decrease from 176 gpd to 150 gpd.
s) Florida Acecapaders, Inc. (10066): Per capita and population information were obtained from permit issued in 2013.
t) Cici Trailer Town Mobile Home (10543): Per capita and population information were obtained from permit issued in 2015.
u) Hometown Little Manatee Springs, LLC (12513): Per capita information was obtained from permit issued in 2014.
v) Hideaway Partners, LLLP (12621): Per capita information was obtained from permit issued in 2014.
w) Eastfield Slope Condo (13004): Per capita information was obtained from permit issued in 2017.
x) Cax Lakeshore Villas Mhp (13063): Per capita information was obtained from permit issued in 2008.
(10) This is a small general permit. The permittee did submit a 2011 Public Supply Annual Report. Per capita information was obtained from this report.
(11) Hillsborough County Utilities population also includes population for WUP 8440, which was previously a small general permit but subsequently subsumed by Hillsborough County Utilities

TABLE 10. LAKE COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	PROJECTED POPULATION 2020	2025	2030	2035	2040	AVG GPCD	PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
	DSS	**Domestic Self-Supply & Small Utilities**	**1,059**	**0.140**	**1,296**	**1,579**	**1,853**	**2,122**	**2,383**	**NA**	**0.170**	**0.200**	**0.240**	**0.270**	**0.310**
	Total County in SWFWMD (all utilities and DSS)		**1,059**	**0.140**	**1,296**	**1,579**	**1,853**	**2,122**	**2,383**		**0.170**	**0.200**	**0.240**	**0.270**	**0.310**
(3)	1-10 Drought Year Demand										0.180	0.212	0.254	0.286	0.329
	CFWI Large Utilities (Public Supply)		NA	NA	NA	NA	NA	NA	NA		0.000	0.000	0.000	0.000	0.000
	CFWI Large Utilities 1-10 Drought Year Demand		NA	NA	NA	NA	NA	NA	NA		0.000	0.000	0.000	0.000	0.000

Notes:
MGD = million gallons per day
(1) Estimate & projections of domestic self-supplied & small utility population for District portion of county from draft 2020 Regional Water Supply Plan for the Central Florida Water Initiative (April 2018).
(2) Estimate & projections of domestic self-supplied & small utility population for District portion of county from draft 2020 Regional Water Supply Plan for the Central Florida Water Initiative (April 2018).
(3) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

TABLE 11. LEVY COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	17,984	0.963	18,741	19,424	20,000	20,418	20,784	54	1.004	1.040	1.071	1.093	1.113
	5640	City of Williston	3,207	0.443	3,286	3,361	3,428	3,481	3,527	138	0.454	0.465	0.474	0.481	0.488
	7755	Town Of Yankeetown	855	0.059	862	868	874	878	881	69	0.059	0.060	0.060	0.060	0.061
(9)	7825	Oak Avenue Water System	57	0.008	57	57	58	58	58	150	0.009	0.009	0.009	0.009	0.009
	8953	Town Of Inglis	1,630	0.132	1,640	1,646	1,651	1,655	1,658	81	0.133	0.133	0.134	0.134	0.134
(8)		Additional Irrigation Demand		0.018							0.019	0.019	0.020	0.020	0.020
	Total County		**23,732**	**1.623**	**24,585**	**25,356**	**26,010**	**26,489**	**26,908**		**1.677**	**1.725**	**1.767**	**1.797**	**1.824**
(7)	1-10 Drought Year Demand										1.777	1.829	1.873	1.905	1.934

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

(9) This is a small general permit. It is nor required to submit an annual per capita report. Per capita information is from the last issued permit. If no per capita information was found in WMIS., the per capita is assumed to equal the average county per capita.

TABLE 12. MANATEE COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3),(11) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6),(10)	DSS	Domestic Self-Supply	10,245	0.623	11,129	11,798	12,561	13,296	14,009	61	0.677	0.717	0.764	0.808	0.852
	6392	City Of Bradenton	65,840	5.552	67,484	68,604	69,137	69,646	70,130	84	5.691	5.785	5.830	5.873	5.914
	10963	Town of Longboat Key	18,054	1.625	18,324	18,629	18,902	19,180	19,472	90	1.649	1.677	1.701	1.727	1.753
	12443	City Of Palmetto	17,463	1.335	19,637	21,517	22,757	23,562	23,634	76	1.501	1.645	1.740	1.801	1.807
(12)	13154	Walker Communities	37	0.003	37	37	37	37	37	68	0.003	0.003	0.003	0.003	0.003
(9),(10)	13343	Manatee County Utility Operations	312,076	28.553	349,406	386,783	420,822	451,153	477,237	91	31.968	35.388	38.502	41.277	43.664
(12)	20235	ERS/Palmetto Park.	24	0.004	24	24	24	24	24	150	0.004	0.004	0.004	0.004	0.004
(8)		Additional Irrigation Demand		1.786							1.964	2.138	2.294	2.431	2.548
(11)	**Total County**		**423,741**	**39.480**	**466,041**	**507,393**	**544,241**	**576,900**	**604,543**		**43.456**	**47.357**	**50.837**	**53.924**	**56.543**
(7)	1-10 Drought Year Demand										46.064	50.198	53.887	57.160	59.936

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

(9) Manatee County water use permits 5387,7345, and 7470 were consolidated into water use permit number 13343.

(10) The sum of the populations for each utility is greater than the total functional population from GISA. This results in negative domestic self supply populations. County totals adjusted upwards to cover deficit plus domestic self-supply.

(11) This estimates exceeds BEBR High and GISA 2017 functional population estimatates and projections for Manatee County.

(12) This is a small general permit. It is nor required to submit an annual per capita report. Per capita information is from the last issued permit. If no per capita information was found in WMIS., the per capita is assumed to equal the average county per capita.

a) Walker Communities (WUP# 13154): Per capita information was obtained from permit issued in 2018.

b) ERS/Palmetto Pak (WUP# 20235): Per capita information was obtained from permit issued in 2011.

TABLE 13. MARION COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	46,069	5.139	52,241	57,863	62,862	67,733	72,330	112	5.827	6.454	7.012	7.555	8.068
	1156	Bay Laurel Community Developmer	11,147	2.499	11,801	12,374	12,870	13,348	13,815	224	2.646	2.774	2.886	2.993	3.097
	2999	Marion Utilities Inc	1,106	0.095	1,119	1,131	1,142	1,153	1,163	86	0.096	0.097	0.098	0.099	0.099
	5643	Utilities Inc of Florida, ATTN: Patric	1,050	0.157	1,054	1,058	1,062	1,065	1,069	149	0.157	0.158	0.158	0.159	0.159
(9)	5731	Foxwood Mobile Home	513	0.057	513	513	513	513	513	112	0.057	0.057	0.057	0.057	0.057
	6151	Marion Co Utilities Dept	35,018	4.717	38,080	40,802	43,152	45,513	47,759	135	5.130	5.497	5.813	6.131	6.434
(9)	6574	Marion Utilities, Inc. - Libra Oaks	122	0.009	122	122	122	122	122	75	0.009	0.009	0.009	0.009	0.009
	6792	Sun Communities Saddle Oak	598	0.086	598	598	598	598	598	144	0.086	0.086	0.086	0.086	0.086
(9)	6884	Marion Utilities Inc	350	0.053	350	350	350	350	350	150	0.053	0.053	0.053	0.053	0.053
	7849	Marion Utilities Inc	1,044	0.118	1,223	1,304	1,309	1,309	1,309	113	0.139	0.148	0.148	0.148	0.148
	8005	Century Fairfield Village Ltd	475	0.058	475	475	475	475	475	122	0.058	0.058	0.058	0.058	0.058
	8020	Association of Marion Landing Ow	1,127	0.156	1,127	1,127	1,127	1,127	1,127	138	0.156	0.156	0.156	0.156	0.156
(9)	8139	The Falls of Ocala HOA, Inc	208	0.030	208	208	208	208	208	146	0.030	0.030	0.030	0.030	0.030
	8339	City Of Dunnellon	6,553	0.838	7,116	7,637	8,101	8,594	9,032	128	0.910	0.977	1.037	1.100	1.156
	8481	Marion Utilities Inc & Spruce Creek	5,688	0.605	6,460	7,208	7,771	8,018	8,236	106	0.688	0.767	0.827	0.853	0.877
(9)	9425	Sweetwater Oaks	371	0.056	371	371	371	371	371	150	0.056	0.056	0.056	0.056	0.056
(9)	10083	Water Wheel RV Park	2	0.000	2	2	2	2	2	100	0.000	0.000	0.000	0.000	0.000
(9)	10110	The Centers	129	0.013	129	129	129	129	129	100	0.013	0.013	0.013	0.013	0.013
(9)	10852	Dogwood Acres MHP	198	0.022	198	198	198	198	198	111	0.022	0.022	0.022	0.022	0.022
(9)	11523	Westwood MHP	143	0.014	143	143	143	143	143	100	0.014	0.014	0.014	0.014	0.014
(9)	20098	Satake Village Utilities	80	0.012	80	80	80	81	81	150	0.012	0.012	0.012	0.012	0.012
(9)	20213	City of Dunnellon - Juliette Falls	51	0.008	58	66	73	79	85	150	0.009	0.010	0.011	0.012	0.013
(8)		Additional Irrigation Demand		0.470							0.518	0.561	0.599	0.634	0.668
	Total County		**112,040**	**15.213**	**123,467**	**133,759**	**142,657**	**151,129**	**159,115**		**16.686**	**18.010**	**19.155**	**20.251**	**21.286**
(7)	1-10 Drought Year Demand										17.687	19.090	20.304	21.466	22.563

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

(9) Small general water use permits are not required to submit annual information on their per capita. Consequently, per capita information for the following small general WUPs was obtained as follows:

a) Foxwood Mobile Home (WUP# 5731): Per capita information obtained from permit issued in 2017.

b) Marion Utilities, Inc. (WUP# 6574): Per capita information was obtained from permit issued in 2016.

c) Marion Utilities, Inc. (WUP# 6884): Per capita and population information were obtained from permit issued in 2010.

d) The Falls of Ocala HOA, Inc (WUP# 8139): Per capita and population information were obtained from permit issued in 2017.

e) Sweetwater Oaks (WUP# 9425): Per capita information was obtained from permit issued in 2010.

f) The Centers (WUP# 10110): Per capita and population information were obtained from permit issued in 2010.

g) Dogwood Acres MHP (WUP# 10852): Per capita information was obtained from permit issued in 2013.

h) Westwood MHP (WUP# 11523): Per capita information was obtained from permit issued in 2010.

i) Satake Village Utilities (WUP# 20098): Per capita information was obtained from permit issued in 2010.

j) City of Dunnellon - Jullict Falls (WUP# 20213): Per capita information obtained from permit issued in 2012.

TABLE 14. PASCO COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	51,487	3.834	67,059	82,908	97,637	111,971	125,821	74	4.993	6.174	7.270	8.338	9.369
	279	Florida Governmental Utility Authorit	3,502	0.247	3,603	3,608	3,608	3,608	3,608	70	0.254	0.254	0.254	0.254	0.254
(10)	540	Holiday Gardens Utilities, Inc.	855	0.078	884	885	885	885	885	91	0.080	0.081	0.081	0.081	0.081
(10)	543	Crestridge Utility Corporation	1,184	0.088	1,197	1,207	1,214	1,214	1,214	74	0.089	0.089	0.090	0.090	0.090
	530	Florida Governmental Utility Authorit	8,226	0.873	8,732	8,930	8,950	8,950	8,950	106	0.933	0.948	0.950	0.950	0.950
(10)	323	Traveler's Rest Resort	1,364	0.048	1,364	1,364	1,365	1,365	1,365	35	0.048	0.048	0.048	0.048	0.048
	364	C S Water Company Inc.	931	0.074	972	1,049	1,126	1,211	1,293	79	0.077	0.083	0.090	0.096	0.103
	1631	City of Dade City	12,184	1.349	12,791	14,393	16,081	17,939	19,828	111	1.417	1.594	1.781	1.987	2.196
	2043	Orangewood Lakes Mobile Home Co	1,022	0.071	1,022	1,027	1,032	1,038	1,045	69	0.071	0.071	0.072	0.072	0.072
(10)	2319	Florida Governmental Utility Authorit	255	0.025	262	266	266	266	266	100	0.026	0.027	0.027	0.027	0.027
(10)	2567	Country- Aire	259	0.029	269	302	336	375	413	113	0.030	0.034	0.038	0.042	0.047
	2978	Florida Governmental Utility Authorit	5,438	0.577	5,671	5,880	5,948	6,010	6,063	106	0.602	0.624	0.631	0.638	0.643
	3182	Florida Governmental Utility Authorit	30,408	2.643	33,439	35,736	37,603	39,227	40,685	87	2.907	3.106	3.269	3.410	3.536
(10)	3273	Holiday Springs RV Park	462	0.046	462	462	462	462	462	100	0.046	0.046	0.046	0.046	0.046
(10)	3302	Baker Acres	542	0.022	545	548	551	553	554	41	0.022	0.022	0.023	0.023	0.023
(10)	3528	Tippecanoe Village Homeowners	525	0.058	525	527	529	531	533	111	0.058	0.058	0.059	0.059	0.059
	3590	Utilities Inc of Florida, ATTN: Patrick	3,746	0.198	3,788	3,832	3,871	3,906	3,922	53	0.201	0.203	0.205	0.207	0.208
(10)	3613	Country Aire Service MHP	168	0.025	170	181	193	207	221	150	0.026	0.027	0.029	0.031	0.033
	3677	Florida Governmental Utility Authorit	1,603	0.086	1,647	1,651	1,651	1,651	1,651	54	0.088	0.088	0.088	0.088	0.088
	3682	City Of Port Richey	11,761	0.571	12,236	12,730	13,286	13,767	14,202	49	0.534	0.621	0.645	0.668	0.688
	4550	City Of San Antonio	2,205	0.205	2,253	2,338	2,541	2,638	2,852	93	0.210	0.223	0.237	0.251	0.266
	4663	Hudson Water Works Inc	7,806	0.675	8,336	9,014	9,670	10,331	10,749	86	0.721	0.773	0.836	0.893	0.929
	4734	City Of New Port Richey	33,172	2.940	34,831	36,179	36,956	37,450	37,870	89	3.087	3.206	3.275	3.319	3.356
(10)	5294	Florida Villas Mobile Home Park	73	0.007	73	74	74	74	74	99	0.007	0.007	0.007	0.007	0.007
(10)	5353	Haciendo Utilities	312	0.078	312	314	316	319	322	86	0.078	0.079	0.079	0.079	0.079
	6040	City of Zephyrhills	27,004	2.652	29,746	32,056	33,904	35,436	36,531	98	2.921	3.148	3.329	3.480	3.587
(10)	6223	Florida Governmental Utility Authorit	837	0.059	840	850	861	872	884	70	0.059	0.059	0.060	0.061	0.062
(10)	6230	Settlers Rest Rv Park	394	0.039	394	394	394	394	394	100	0.039	0.039	0.039	0.039	0.039
(10)	6640	Gem Estates	385	0.058	386	405	408	408	409	150	0.059	0.061	0.061	0.061	0.061
(10)	6867	Utilities Inc of Florida	1,593	0.089	1,604	1,620	1,636	1,651	1,666	56	0.090	0.091	0.092	0.092	0.093
(10)	6881	Ramblewood Mobile Home Communi	234	0.049	234	235	236	237	238	167	0.049	0.049	0.049	0.050	0.050
(10)	6382	Jeffery A. Cole	269	0.010	269	269	269	269	269	36	0.010	0.010	0.010	0.010	0.010
(10)	7293	L W V Utilities Inc	305	0.087	305	319	336	356	377	96	0.087	0.088	0.090	0.092	0.094
(10)	7359	Timber Lake Estates	1,081	0.086	1,087	1,112	1,138	1,163	1,189	80	0.087	0.089	0.091	0.093	0.096
(10)	7588	Cav. Homeowners Cooperative	584	0.042	592	600	603	603	603	72	0.043	0.043	0.043	0.043	0.043
(10)	7718	Florida Governmental Utility Authorit	636	0.045	654	667	671	671	671	70	0.046	0.047	0.047	0.047	0.047
(10)	7745	Florida Governmental Utility Authorit	652	0.080	683	701	701	701	701	122	0.083	0.086	0.086	0.086	0.086
(10)	7773	Barrington Hills MHC	435	0.032	435	435	435	435	435	74	0.032	0.032	0.032	0.032	0.032
(10)	7982	Land O' Lakes Village Apartments	640	0.064	640	640	640	640	640	100	0.064	0.064	0.064	0.064	0.064
	7993	Florida Governmental Utility Authorit	1,980	0.120	2,015	2,060	2,100	2,138	2,171	60	0.122	0.124	0.127	0.129	0.131
(10)	8134	Spanish Trails W Mobile Home	382	0.028	401	421	439	454	461	74	0.030	0.031	0.032	0.034	0.034
	8417	Florida Governmental Utility Authorit	7,832	0.415	8,008	8,176	8,289	8,365	8,403	53	0.424	0.433	0.439	0.443	0.445
(10)	8431	Parrish Properties	435	0.031	436	437	438	439	500	63	0.031	0.031	0.031	0.031	0.031
(10)	8514	Ramblewood Village	244	0.029	247	249	250	250	250	117	0.029	0.029	0.029	0.029	0.029
(10)	9183	Sunburst Rv Park	269	0.028	271	280	291	303	316	106	0.029	0.030	0.031	0.032	0.033
(10)	9666	Southfork Mobile Home Community	733	0.103	734	735	737	739	741	140	0.103	0.103	0.103	0.103	0.104
(10)	11082	Florida Governmental Utility Authorit	849	0.028	1,030	1,142	1,142	1,142	1,142	33	0.034	0.038	0.038	0.038	0.038
	11863	Pasco Co Utilities	285,780	33.210	309,863	331,048	348,522	364,101	377,544	116	36.008	38.470	40.501	42.311	43.873
(9)	99306	Arbor Oaks	363	0.031	364	365	366	367	369	86	0.031	0.031	0.031	0.031	0.032
(9)	99315	Orchid Lake Utilities	688	0.059	688	688	688	688	688	86	0.059	0.059	0.059	0.059	0.059
(8)		Additional Irrigation Demand		4.276							4.634	5.083	5.417	5.725	6.004
	Total County		**515,412**	**56.597**	**565,764**	**612,750**	**652,365**	**690,156**	**723,710**		**61.928**	**66.863**	**71.061**	**74.921**	**78.378**
(7)	1-10 Drought Year Demand										65.643	70.875	75.324	79.416	83.081

Notes:
MGD - million gallons per day
(1) 2015 Estimate was generated using 2010-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.
(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's report titled Estimated Water Use, 2011-2015.
(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.
(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.
(5) Computed as projected population multiplied by 2011-2015 average per capita water use.
(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.
(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.
(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.
(9) This service area is a wholesale importer. There is no water use permit associated with this service area. Per capita is assumed to equal to the average county per capita.
(10) This is a small general permit. It is not required to submit an annual per capita report. Per capita information is from the last issued permit. If no per capita information was found in WMIS., the per capita is assumed to equal the county average.
a) Holiday Gardens Utilities, LLC (WUP# 540): Per capita was obtained from permit issued in 2015.
b) Crestridge Utilities, LLC (WUP# 543): Per capita was obtained from permit issued in 2015.
c) Florida Governmental Utility Authority (WUP# 2319): Per capita was obtained from permit issued in 2014.
d) Country- Aire (WUP# 2567): Per capita was obtained from permit issued in 2012.
e) Holiday Springs RV Park (WUP# 3273): Per capita was obtained from permit issued in 2009.
f) Baker Acres (WUP# 3302): Per capita was obtained from permit issued in 2014.
g) Tippecanoe Village Homeowners (WUP# 3528): Per capita was obtained from permit issued in 2016.
h) Country Aire Service MHP (WUP# 3613): Per capita was obtained from permit issued in 2011.
i) Florida Villas Mobile Home Park (WUP# 5294): Per capita was obtained from permit issued in 2015.
j) Haciendo Utilities (WUP# 5353): Per capita was obtained from permit issued in 2012.
k) Florida Governmental Utility Authority (WUP# 6223): Per capita was obtained from permit issued in 2013.
l) Settlers Rest Rv Park (WUP# 6230): Per capita was obtained from permit issued in
m) Gem Estates (WUP# 6640): Per capita was obtained from permit issued in 2014.
n) Utilities Inc of Florida (WUP# 6867): Per capita was obtained from permit issued in 2013.
o) Ramblewood Mobile Home Community (WUP# 6881): Per capita was obtained from permit issued in 2009.
p) Jeffery A. Cole (WUP# 6382): Per capita was obtained from permit issued in 2003.
q) LWV Utilities (WUP# 7293): Per capita was obtained from permit issued in 2014. Ownership transferred to the City of New Port Richey in 2017.
r) Timber Lake Estates (WUP# 7359): Per capita was obtained from permit issued in 2003.
s) Cav. Homeowners Cooperative (WUP# 7588): Per capita was obtained from permit issued in 2012.
t) Florida Governmental Utility Authority (WUP# 7718): Per capita was obtained from permit issued in 2014.
u) Florida Governmental Utility Authority (WUP# 7745): Per capita was obtained from permit issued in 2014.
v) Barrington Hills MHC (WUP# 7773): Per capita was obtained from permit issued in 2016.
w) Land O' Lakes Village Apartments (WUP# 7982): Per capita and population information were obtained from permit issued in 1995.
x) Spanish Trails W Mobile Home (WUP# 8134): Per capita was obtained from permit issued in 1995.
w) Parrish Properties (WUP# 8431): Per capita was obtained from permit issued in 2012.
z) Ramblewood Village (WUP# 8514): Per capita was obtained from permit issued in 2015.
aa) Conner Properties (WUP# 9125): Per capita was obtained from permit issued in 1998.
ab) Sunburst Rv Park (WUP# 9183): Per capita was obtained from permit issued in 2008.
ac) Traveler's Rest Resort (WUP# 323): Per capita was obtained from permit issued in 2014.
ad) Southfork Mobile Home Community (WUP# 9666): Per capita was obtained from permit issued in 2009.
ae) Aqua Utilities Florida Incorporated (WUP# 11082): Per capita was obtained from permit issued in 2017.

TABLE 15. PINELLAS COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	5,582	0.300	5,611	5,890	6,260	6,587	6,663	54	0.302	0.317	0.337	0.354	0.359
	742	City Of Tarpon Springs	33,476	2.852	34,789	36,180	36,655	36,915	36,963	85	2.964	3.082	3.123	3.145	3.149
	2980	City Of Dunedin	43,382	3.607	44,162	44,757	44,945	45,061	45,076	83	3.671	3.721	3.736	3.746	3.747
	2981	City of Clearwater	141,696	11.193	142,356	143,007	143,162	143,239	143,329	79	11.245	11.297	11.309	11.315	11.322
	7692	Town Of Belleair	5,455	0.746	5,493	5,526	5,537	5,544	5,544	137	0.751	0.756	0.757	0.758	0.758
(9)	9423	Southern Comfort MHP	491	0.069	491	491	491	491	491	140	0.069	0.069	0.069	0.069	0.069
(9)	10350	Utilities Inc of Florida	1,370	0.058	1,382	1,385	1,385	1,385	1,385	42	0.058	0.058	0.058	0.058	0.058
	10795	City Of Gulfport	14,493	1.002	14,668	14,745	14,753	14,756	14,757	69	1.014	1.019	1.020	1.020	1.020
	11218	City Of Oldsmar	17,000	1.300	17,589	18,516	19,028	19,470	20,157	76	1.345	1.416	1.455	1.489	1.542
	11245	City of Safety Harbor	15,801	1.364	16,224	16,577	16,699	16,765	16,776	86	1.401	1.431	1.442	1.448	1.449
	12351	City of Pinellas Park	84,864	4.555	86,799	88,883	89,575	90,070	90,181	54	4.658	4.770	4.807	4.834	4.840
	20142	Pinellas County	500,277	39.309	504,863	514,010	526,816	539,181	543,701	79	39.670	40.388	41.395	42.366	42.721
	20143	City of St. Petersburg	344,056	28.267	347,930	350,963	352,040	352,947	353,570	82	28.585	28.835	28.923	28.998	29.049
(8)		Additional Irrigation Demand		6.628							6.707	6.809	6.899	6.982	7.016
(10)	**Total County**		**1,207,943**	**101.250**	**1,222,356**	**1,240,929**	**1,257,345**	**1,272,410**	**1,278,592**		**102.441**	**103.969**	**105.330**	**106.582**	**107.098**
(7)	1-10 Drought Year Demand										108.588	110.207	111.650	112.977	113.524

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

(9) This is a small general permit. It is nor required to submit an annual per capita report. Per capita information is from the last issued permit. If no per capita information was found in WMIS., the per capita is assumed to equal the average county per capita.

a) Southern Comfort MHP (WUP# 9423): Per capita information was obtained from permit issued in 2009.

b)Utilities Inc of Florida (WUP# 10350): Per capita information was obtained from permit issued in 2014..

(10) These estimates and projections exceed BEBR HIgh and GISA 2017 functional population estimates and projections for Pinellas County.

TABLE 16. POLK COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	PROJECTED POPULATION 2020	2025	2030	2035	2040	(3) Gross Per Capita	(4) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)		**Domestic Self-Supply & Small Utilit**	**34,523**	**2.9**	**37,839**	**41,022**	**43,631**	**46,127**	**48,538**	**NA**	**3.24**	**3.51**	**3.73**	**3.94**	**4.15**
		CFWI Large Utilities (Below)													
	341	City Of Bartow	24,706	2.435	26,835	28,744	30,461	32,227	33,843	116	3.11	3.33	3.53	3.74	3.93
	587	Lelynn RV Resort	317	0.016	320	320	320	320	320	50	0.02	0.02	0.02	0.02	0.02
	645	City Of Fort Meade	7,818	0.496	8,121	8,509	8,865	9,283	9,725	68	0.55	0.58	0.60	0.63	0.66
	1616	Lake Region Mobile Home Owners Inc	316	0.074	337	346	353	362	372	90	0.08	0.09	0.09	0.09	0.09
	2332	Town Of Lake Hamilton	1,262	0.345	1,348	1,461	1,561	1,685	1,816	206	0.28	0.30	0.32	0.35	0.37
	1625	Four Lakes Golf Club	1,170	0.298	1,183	1,183	1,183	1,183	1,183	318	0.38	0.38	0.38	0.38	0.38
	3415	Orchid Springs Development Corp	943	0.067	959	963	965	965	965	75	0.07	0.07	0.07	0.07	0.07
	4005	Crooked Lake Park Water Company	3,439	0.215	3,766	4,080	4,370	4,660	4,933	61	0.23	0.25	0.27	0.28	0.30
	4607	City Of Winter Haven	73,604	9.001	80,157	85,774	90,112	94,361	98,053	123	9.86	10.55	11.08	11.61	12.06
	4658	City of Lake Wales	23,542	2.410	25,808	28,368	30,691	33,289	35,954	106	2.74	3.01	3.25	3.53	3.81
	4912	City Of Lakeland Water Utilities Water Admin	165,037	20.147	177,109	187,746	195,476	203,077	210,204	127	22.49	23.84	24.83	25.79	26.70
	5251	Grenelefe Resort LLC	2,580	1.123	2,611	2,617	2,622	2,628	2,635	402	1.05	1.05	1.05	1.06	1.06
	5750	City of Davenport	6,218	0.814	7,361	8,391	9,318	10,373	11,444	109	0.80	0.91	1.02	1.13	1.25
	5870	City Of Frostproof	3,861	0.372	4,138	4,400	4,642	4,917	5,201	85	0.35	0.37	0.39	0.42	0.44
	5893	Town of Dundee Public Works Dept	4,862	0.542	5,583	6,421	7,183	8,046	8,932	100	0.56	0.64	0.72	0.80	0.89
	6023	North Pointe HOA	144	0.018	146	146	146	146	146	126	0.02	0.02	0.02	0.02	0.02
	6124	City Of Mulberry	4,290	0.389	4,589	4,903	5,189	5,496	5,798	106	0.49	0.52	0.55	0.58	0.61
	6174	Saddlebag Lake Resort	684	0.086	698	699	699	699	699	145	0.10	0.10	0.10	0.10	0.10
	6505	Polk County Utilities - NWRUSA	42,656	2.491	47,790	52,459	56,512	60,013	63,016	64	3.06	3.36	3.62	3.84	4.03
	6506	Polk County Utilities -SWRUSA	42,610	3.113	48,255	52,691	56,260	58,173	60,010	75	3.62	3.95	4.22	4.36	4.50
	6507	Polk County Utilities -CRUSA	15,593	1.003	17,042	18,662	20,131	21,707	23,165	64	1.09	1.19	1.29	1.39	1.48
	6508	Polk County Utilities - SERUSA	6,143	0.542	6,382	6,615	6,829	7,063	7,298	87	0.56	0.58	0.59	0.61	0.63
	6509	Polk County Utilities - NERUSA	35,336	6.636	42,371	47,775	52,154	55,877	58,544	200	8.47	9.56	10.43	11.18	11.71
	6624	City of Lake Alfred	8,663	1.023	10,018	11,005	11,903	12,800	13,637	117	1.17	1.29	1.39	1.50	1.60
	6920	City of Eagle Lake	4,447	0.316	5,002	6,008	6,912	7,997	9,140	81	0.41	0.49	0.56	0.65	0.74
	7119	City of Auburndale	33,529	4.556	36,795	40,058	42,950	45,881	48,670	136	5.00	5.45	5.84	6.24	6.62
	7187	CHC VII Ltd Century Realty Fund	1,249	0.225	1,263	1,263	1,263	1,263	1,263	266	0.34	0.34	0.34	0.34	0.34
	7328	Carefree RV Country Club	876	0.079	894	895	896	897	899	124	0.11	0.11	0.11	0.11	0.11
	7878	Florida Governmental Utility Authority	1,898	0.151	1,993	2,045	2,050	2,050	2,050	80	0.16	0.16	0.16	0.16	0.16
	8054	Polk County Utilities - ERUSA	6,525	0.435	7,828	9,101	10,294	11,060	11,448	74	0.58	0.67	0.76	0.82	0.85
	8344	S V Utilities Ltd	923	0.104	947	954	961	968	973	193	0.18	0.18	0.19	0.19	0.19
	8468	City Of Polk City	7,614	0.357	8,365	9,203	9,950	10,747	11,514	47	0.39	0.43	0.47	0.51	0.54
	8522	City of Haines City	26,020	4.350	29,716	33,796	37,462	41,303	44,820	170	5.05	5.75	6.37	7.02	7.62
	8967	Sweetwater Community LLC	525	0.121	532	532	533	533	533	244	0.13	0.13	0.13	0.13	0.13
	10141	Ovation Water Production Facility	1	0.000	1	1	1	1	1	89	0.00	0.00	0.00	0.00	0.00
	12964	Alafia Preserve LLC; Eagle Ridge LLC; and Dc	73	0.000	747	1,398	2,022	2,630	3,207	135	0.10	0.19	0.27	0.36	0.43
	13043	Cypress Lakes Utilities Inc	2,778	0.174	2,834	2,847	2,858	2,870	2,882	76	0.22	0.22	0.22	0.22	0.22
		Total County in SWFWMD (all utilities and DS	**597,981**	**67.484**	**658,283**	**714,001**	**760,328**	**804,277**	**844,431**		**77.055**	**83.583**	**88.978**	**94.144**	**98.812**
		DPCWUCA	**85,266**	**5.604**	**96,045**	**105,150**	**112,772**	**118,186**	**123,026**		**6.678**	**7.309**	**7.836**	**8.204**	**8.534**
		SWUCA	**508,696**	**56.376**	**557,199**	**602,397**	**640,046**	**675,912**	**709,138**		**63.755**	**68.774**	**72.936**	**76.995**	**80.766**
		CFWI Large Utilities (Public Supply)	**563,458**	**64.584**	**620,444**	**672,979**	**716,697**	**758,150**	**795,893**		**73.82**	**80.07**	**85.25**	**90.20**	**94.66**
		1-10 Drought Year Demand									81.68	88.60	94.32	99.79	104.74
(5)		DPCWUCA 1-10 Drought Year Demand									7.08	7.75	8.31	8.70	9.05
		SWUCA 1-10 Drought Year Demand									67.58	72.90	77.31	81.61	85.61
		CFWI Large Utilities 1-10 Drought Year Demand									78.24	84.88	90.36	95.62	100.34

Notes:
MGD - million gallons per day
(1) Estimate & projections of domestic self-supplied & small utility population for District portion of county from draft 2020 Regional Water Supply Plan for the Central Florida Water Initiative (April 2018).
(2) Estimate & projections of domestic self-supplied & small utility population for District portion of county from draft 2020 Regional Water Supply Plan for the Central Florida Water Initiative (April 2018).
(3) Unless otherwise noted, gross per capitas are from the draft 2020 Regional Water Supply Plan for the Central Florida Water Initiative (April 2018).
(4) For large utilities, projected water demand is calculated as projected population times utility specific gross per capita.
(5) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

TABLE 17. SARASOTA COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	39,355	2.066	47,765	55,812	61,930	67,654	71,313	52	2.507	2.929	3.251	3.551	3.743
	2923	City of North Port	47,761	3.038	56,560	65,724	75,600	84,505	91,634	64	3.597	4.180	4.808	5.375	5.828
	4318	City of Sarasota Public Works	76,162	6.259	77,421	78,134	78,279	78,426	78,573	82	6.363	6.422	6.433	6.446	6.458
	4866	Englewood Water District	37,935	2.589	39,601	41,480	44,275	45,368	46,736	68	2.703	2.831	3.022	3.097	3.190
	5393	City Of Venice	34,667	2.093	35,226	35,992	36,276	36,523	36,708	60	2.127	2.173	2.190	2.205	2.216
(9)	5456	Venice Ranch Mobile Home Estates	370	0.025	370	370	370	370	370	67	0.025	0.025	0.025	0.025	0.025
	5807	Camelot Communities	1,829	0.271	1,829	1,829	1,829	1,829	1,829	148	0.271	0.271	0.271	0.271	0.271
(11)	7448	Royalty Resorts	1,254	0.094	1,254	1,254	1,254	1,254	1,254	75	0.094	0.094	0.094	0.094	0.094
	8836	Sarasota County Board of County Co	222,255	17.286	231,014	236,945	239,025	240,437	241,369	78	17.967	18.428	18.590	18.700	18.772
(10)	99914	Pluris - South Gate Utilities	10,600	0.824	10,744	10,783	10,782	10,782	10,784	78	0.836	0.839	0.839	0.839	0.839
(8)		Additional Irrigation Demand		5.709							6.067	6.387	6.645	6.857	7.019
	Total County		**472,188**	**40.254**	**501,783**	**528,324**	**549,621**	**567,149**	**580,570**		**42.556**	**44.579**	**46.168**	**47.458**	**48.455**
(7)	1-10 Drought Year Demand										45.109	47.254	48.938	50.305	51.362

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

(9) This is a small general permit. It is nor required to submit an annual per capita report. Per capita information is from the last issued permit. If no per capita information was found in WMIS., the per capita is assumed to equal the average county per capita.

a) Venice Ranch Mobile Home Estates (WUP# 5456): Population and per capita information were obtained from permit issued in 2017.

(10) This service areas is a wholesale importer from Sarasota County Utilities (WUP# 8836). There is no water use permit associated with this service area. Per capita is assumed to equal WUP# 8836 per capita.

(11) Although Royalty Resorts is permitted above 100,000 gpd, it did not report a per capita in 2015. Therefore, the permitted per capita issued in 2012 was used in the absence of a five year average.

TABLE 18. SUMTER COUNTY POPULATION ESTIMATES AND PROJECTIONS

	WUP		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	DSS	Domestic Self-Supply	12,447	1.900	18,930	28,897	37,600	50,036	61,083	153	2.890	4.411	5.740	7.638	9.324
(9)	1368	Lake Panasoffkee Water Assoc Inc	3,681	0.231	4,689	6,006	7,216	8,443	9,326	63	0.294	0.377	0.453	0.530	0.585
(9)	6519	City Of Bushnell	2,533	0.375	3,719	5,741	7,674	8,770	9,717	148	0.551	0.850	1.136	1.299	1.439
	7185	City Of Webster	1,290	0.119	1,718	2,286	2,843	2,960	3,061	92	0.158	0.211	0.262	0.273	0.282
(11)	7799	Cedar Acres, Inc.	524	0.066	580	581	581	581	581	125	0.073	0.073	0.073	0.073	0.073
	8135	City Of Wildwood City Mng	17,776	2.213	31,749	44,660	57,550	67,164	75,634	124	3.952	5.560	7.165	8.361	9.416
(11)	8193	City of Center Hill	1,001	0.119	1,298	1,751	2,201	2,450	2,667	119	0.154	0.208	0.262	0.292	0.317
(11)	10488	City of Coleman	608	0.040	670	886	1,105	1,208	1,300	65	0.044	0.058	0.072	0.079	0.085
(11)	12434	Jumper Creek Manor	104	0.016	155	221	271	281	290	150	0.023	0.033	0.041	0.042	0.043
(11)	12584	Village Parc Center	285	0.023	285	285	285	285	285	80	0.023	0.023	0.023	0.023	0.023
(10)	13005	The Villages of Marion and Sumter	82,654	22.420	89,945	91,481	91,549	91,720	91,800	271	24.397	24.814	24.832	24.879	24.900
(11)	13123	Florida Grande Motor Coach Resort	0	0.000	2	5	8	60	104	114	0.000	0.001	0.001	0.007	0.012
(11)	20095	Southern Motor Coach Resort	800	0.070	800	800	800	800	800	88	0.070	0.070	0.070	0.070	0.070
(12)	20597	City of Wildwood:Continental Country	1,825	0.204	1,856	1,926	1,995	2,010	2,022	112	0.208	0.216	0.223	0.225	0.226
(8)		Additional Irrigation Demand		0.166							0.207	0.245	0.280	0.313	0.342
	Total County		**125,529**	**27.961**	**156,397**	**185,527**	**211,678**	**236,768**	**258,670**		**33.045**	**37.149**	**40.632**	**44.103**	**47.139**
(7)	1-10 Drought Year Demand										35.027	39.378	43.070	46.749	49.967

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(2) Estimated using average 2011-2015 GPCD, as provided in Table A-1 of the District's reports titled Estimated Water Use, 2011-2015.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gpd per well.

(9) The population estimate is from the Table A-1 of the 2010 Estimated Water Use. The projections are based on the 2010 population served estimated and growth from the 20

The growth rates are from GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 24JAN2013).

(10) At a meeting on the Withlacoochee Regional Water Supply Authority on April 24, 2012, Trey Arnett stated The Villages is scheduled to built out at 92,152 by 2017.

(11) Small general water use permits are not required to submit annual information on their per capita. Consequently, per capita information for the following small general WUPs was obtained as follows:

a) Cedar Acres (WUP# 7799): Per capita information obtained from permit issued in 2016.

a) City of Center Hill (WUP# 8193): Per capita information obtained from permit issued in 2012.

b) City of Coleman (WUP# 10488): Per capita information was obtained from permit issued in 2012.

c) Jumper Cree Manor (WUP# 12434): Per capita information were obtained from permit issued in 2013.

d) Village Parc Center (WUP# 12584): Population and per capita information were obtainted from permit issued in 2018.

e) Florida Grande Motor Coach Resort (WUP# 13123): Population and per capita information were obtainted from permit issued in 2015.

f) Southern Motor Coach Resort (WUP# 20095): Population and per capita information were obtained from permit issued in 2010.

(12) This is a new general permit and does not have per capita information from 2011-2015. Therefore, the permitted per capita was used as a proxy.

TABLE 19. DISTRICT TOTAL POPULATION ESTIMATES AND WATER DEMAND PROJECTIONS

		(1) 2015 POPULATION	(2) 2015 POPULATION TIMES 2011-2015 GPCD (MGD)	(3) PROJECTED POPULATION 2020	2025	2030	2035	2040	(4) 2011-2015 AVG GPCD	(5) PROJECTED WATER DEMANDS (MGD) 2020	2025	2030	2035	2040
(6)	Domestic Self-Supply	515,348	40.037	595,510	680,555	758,295	847,080	930,348	68	46.649	53.810	60.351	67.950	75.073
	Utilities	5,099,713	506.110	5,452,149	5,776,854	6,054,366	6,279,361	6,469,361	99	546.169	579.908	608.550	631.680	651.379
(8)	Additional Irrigation Demand		31.217							33.182	35.016	36.584	37.954	39.096
	Total District	**5,615,061**	**577.363**	**6,047,660**	**6,457,409**	**6,812,661**	**7,126,441**	**7,399,709**		**626.001**	**668.734**	**705.484**	**737.584**	**765.548**
(7)	1-10 Drought Year Demand									663.561	708.858	747.813	781.839	811.481
										546.169	**579.908**	**608.550**	**631.680**	**651.379**

Notes:

MGD = million gallons per day

(1) 2015 Estimate was generated using 2016-2020 growth rates from The University of Florida Bureau of Economic and Business Research, Projections of Florida Population by County, 2016-2045, Florida Population Studies, Volume 50, Bulletin 177, April 2017.

(3) Source: Population Projections calculated using GIS Associates, Inc.'s population projection model data and the PS_SERVICEAREAS GIS layer (Date: 02FEB2018). The functional population estimates include seasonal residents, tourists and net commuters, if applicable to the service area.

(4) For utilities with at least 0.1 mgd average annual withdrawal, year 2011-2015 average estimated per capita water use rates, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for years 2011-2015, were used to project demands. See footnotes 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.

(5) Computed as projected population multiplied by 2011-2015 average per capita water use.

(6) County residential per capita rate from the District's annual 'Estimated Water Use Report' for years 2011-2015, was used to calculate average estimated 2011-2015 usage, Table A-2. If a county residential per capita rate was not available, the District's 2011-2015 average residential per capita rate was used.

(7) 1-10 Drought Year Demand is calculated as 1.06 x Projected Future Water Use.

(8) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. It is calculated based on 332 gallons per well per day.

See table named "IRRIGATION WELL TYPES LESS THAN 5" WITHIN SWFWMD's PSSAs AND OUTSIDE WUP CONTROL AREAS" created by Ryan Pearson (File: Additional_Irrigation_Demand_2017_Analysis_Update.xlsx)

TABLE 20. DISTRICT TOTAL PUBLIC SUPPLY WATER DEMAND PROJECTIONS BY COUNTY (Includes All Utilities and Domestic Self Supply)

County	2015		2020		2025		2030		2035		2040		Change in Demand		% Change	
	Avg	1-10	Avg	1-10	Avg	1-10	Avg	1-10	Avg	1-10	Avg	1-10	Avg	1-10	Avg	1-10
Charlotte	19.206	20.359	20.561	21.794	21.748	23.053	22.774	24.140	23.646	25.065	24.429	25.894	5.222	5.536	27.2%	27.2%
Citrus	19.945	21.142	20.874	22.126	21.737	23.042	22.462	23.809	23.060	24.444	23.534	24.946	3.589	3.804	18.0%	18.0%
DeSoto	2.765	2.931	2.840	3.011	2.901	3.075	2.963	3.141	3.019	3.200	3.057	3.241	0.292	0.310	10.6%	10.6%
Hardee	1.999	2.119	2.013	2.133	2.019	2.140	2.032	2.154	2.039	2.161	2.046	2.169	0.048	0.051	2.4%	2.4%
Hernando	24.318	25.777	26.196	27.768	27.943	29.619	29.424	31.189	30.753	32.598	31.884	33.797	7.566	8.020	31.1%	31.1%
Highlands	12.452	13.200	12.989	13.769	13.418	14.223	13.766	14.591	14.033	14.875	14.239	15.093	1.787	1.894	14.3%	14.3%
Hillsborough	146.675	155.476	161.514	171.205	175.533	186.065	187.897	199.171	197.585	209.440	206.514	218.905	59.839	63.429	40.8%	40.8%
Lake	0.140	0.148	0.170	0.180	0.200	0.212	0.240	0.254	0.270	0.286	0.310	0.329	0.170	0.180	121.4%	121.4%
Levy	1.623	1.721	1.677	1.777	1.725	1.829	1.767	1.873	1.797	1.905	1.824	1.934	0.201	0.213	12.4%	12.4%
Manatee	39.480	41.849	43.456	46.064	47.357	50.198	50.837	53.887	53.924	57.160	56.543	59.936	17.063	18.087	43.2%	43.2%
Marion	15.213	16.126	16.686	17.687	18.010	19.090	19.155	20.304	20.251	21.466	21.286	22.563	6.073	6.437	39.9%	39.9%
Pasco	56.597	59.993	61.928	65.643	66.863	70.875	71.061	75.324	74.921	79.416	78.378	83.081	21.781	23.088	38.5%	38.5%
Pinellas	101.250	107.325	102.441	108.588	103.969	110.207	105.330	111.650	106.582	112.977	107.098	113.524	5.848	6.199	5.8%	5.8%
Polk	67.484	71.533	77.055	81.679	83.583	88.598	88.978	94.316	94.144	99.793	98.812	104.741	31.328	33.208	46.4%	46.4%
Sarasota	40.254	42.669	42.556	45.109	44.579	47.254	46.168	48.938	47.458	50.305	48.455	51.362	8.201	8.693	20.4%	20.4%
Sumter	27.961	29.639	33.045	35.027	37.149	39.378	40.632	43.070	44.103	46.749	47.139	49.967	19.177	20.328	68.6%	68.6%
Total	**577.363**	**612.005**	**626.001**	**663.561**	**668.734**	**708.858**	**705.484**	**747.813**	**737.584**	**781.839**	**765.548**	**811.481**	**188.185**	**199.476**	**32.6%**	**32.6%**

TABLE 21. DISTRICT TOTAL POPULATION PROJECTIONS BY REGION (Includes all Utilities and Domestic Self Supply)

Water Use by Planning Region	2015	2020	2025	2030	2035	2040	Change 2015-2040	% Change
Heartland Planning Region	729,124	794,358	853,953	903,551	949,959	992,036	262,912	36%
Northern Planning Region	599,932	665,228	726,223	779,844	829,796	873,535	273,603	46%
Southern Planning Region	1,123,883	1,210,776	1,292,096	1,361,997	1,422,251	1,472,277	348,394	31%
Tampa Bay Planning Region	3,162,123	3,377,297	3,585,136	3,767,269	3,924,435	4,061,861	899,738	28%
Districtwide	5,615,061	6,047,660	6,457,409	6,812,661	7,126,441	7,399,709	1,784,648	32%
Central Florida Water Initiative (CFWI)	599,040	659,579	715,580	762,181	806,399	846,814	247,774	41%
Dover Plant City Water Use Caution Area (DWUCA)	127,570	144,688	161,976	177,829	189,647	200,738	73,168	57%
North Central Florida Coordination Area (NCFCA)	237,569	279,865	319,286	354,335	387,897	417,785	180,216	76%
Southern Water Use Caution Area (SWUCA)	2,356,446	2,566,877	2,757,525	2,917,205	3,058,893	3,182,476	826,030	35%

Notes:

Planning Regions:

Heartland Planning Region = Hardee, Highlands, Polk

Northern Planning Region = Citrus, Hernando, Lake, Levy, Marion, Sumter

Southern Planning Region = Charlotte, DeSoto, Manatee, Sarasota

Tampa Bay Planning Region = Hillsborough, Pasco, Pinellas

TABLE 22. DISTRICT TOTAL WATER DEMAND PROJECTIONS BY REGION (Includes All Utilities and Domestic Self Supply)

Water Use by Planning Region	2015		2020		2025		2030		2035		2040		Change in Demand		% Change	
	Avg	1-in-10	Avg	1-in-10	Avg	1-in-10	Avg	1-in-10	Avg	1-in-10	Avg	1-in-10	Avg	1-in-10	Avg	1-10
Heartland Planning Region	81.9	86.9	92.1	97.6	99.0	105.0	104.8	111.1	110.2	116.8	115.1	122.0	33.2	35.2	40%	40%
Northern Planning Region	89.2	94.6	98.6	104.6	106.8	113.2	113.7	120.5	120.2	127.4	126.0	133.5	36.8	39.0	41%	41%
Southern Planning Region	101.7	107.8	109.4	116.0	116.6	123.6	122.7	130.1	128.0	135.7	132.5	140.4	30.8	32.6	30%	30%
Tampa Bay Planning Region	304.5	322.8	325.9	345.4	346.4	367.1	364.3	386.1	379.1	401.8	392.0	415.5	87.5	92.7	29%	29%
Districtwide	577.4	612.0	626.0	663.6	668.7	708.9	705.5	747.8	737.6	781.8	765.5	811.5	188.2	199.5	33%	33%
Central Florida Water Initiative (CFWI)	67.6	71.7	77.2	81.9	83.8	88.8	89.2	94.6	94.4	100.1	99.1	105.1	31.5	33.4	47%	47%
Dover Plant City Water Use Caution Area (DWUCA)	11.0	11.6	12.9	13.7	14.6	15.5	16.2	17.2	17.4	18.4	18.5	19.7	7.6	8.0	69%	69%
Northern Tampa Bay (NTB) Water Use Caution Area	290.4	307.9	309.8	328.4	328.1	347.7	343.9	364.5	356.0	377.3	366.1	388.1	75.7	80.2	26%	26%
Southern Water Use Caution Area	228.7	242.5	251.0	266.0	269.3	285.4	284.6	301.6	298.3	316.2	310.3	328.9	81.6	86.5	36%	36%

Notes:

Planning Regions:

Heartland Planning Region = Hardee, Highlands, Polk

Northern Planning Region = Citrus, Hernando, Lake, Levy, Marion, Sumter

Southern Planning Region = Charlotte, DeSoto, Manatee, Sarasota

Tampa Bay Planning Region = Hillsborough, Pasco, Pinellas

Table 23. Residential Irrigation Well Data

IRRIGATION WELL TYPES LESS THAN 5" WITHIN SWFWMD's PSSAs AND OUTSIDE WUP CONTROL AREAS (1)							
	Functional Population (2)		2015-2020 Population Growth Rate (3)	2015 332 gpd 2015 Irrigation Wells		2020 332 gpd 2020 Irrigation Well Estimates	
	2015	2020		# Wells	Withdrawl (mgd)	# Wells	Withdrawl (mgd)
Charlotte	191,446	205,401	0.07289	6,725	2.23	7,215	2.40
Citrus	154,717	161,834	0.04600	3,685	1.22	3,855	1.28
DeSoto	36,508	37,551	0.02857	221	0.07	227	0.08
Hardee	28,360	28,617	0.00907	129	0.04	130	0.04
Hernando	182,854	197,648	0.08091	8,436	2.80	9,119	3.03
Highlands	102,783	107,458	0.04548	10,710	3.56	11,197	3.72
Hillsborough	1,438,767	1,589,177	0.10454	6,732	2.24	7,436	2.47
Lake	1,059	1,296	0.22380	0	N/A	0	N/A
Levy	23,732	24,585	0.03594	54	0.02	56	0.02
Manatee	423,741	466,041	0.09983	5,379	1.79	5,916	1.96
Marion	112,040	123,467	0.10199	1,416	0.47	1,560	0.52
Pasco	515,412	565,764	0.09769	12,879	4.28	14,137	4.69
Pinellas	1,207,943	1,222,356	0.01193	19,965	6.63	20,203	6.71
Polk	597,981	658,283	0.10084	7,743	N/A	8,524	N/A
Sarasota	472,188	501,783	0.06268	17,195	5.71	18,273	6.07
Sumter	125,529	156,397	0.24590	500	0.17	623	0.21
Total (6)	***5,615,061***	***6,047,660***		***101,769***	***31.22***	***108,471***	***33.18***

Notes:

(1) Additional Irrigation Demand is defined as water demand from residential irrigation wells utilized by residents that depend upon a centralized system for indoor water needs. Demand is calculated based on 332 gallons per day per well (Determination of Landscape Irrigation Water Use in Southwest Florida, May 31, 2018, Michael Dukes & Mackenzie Boyer).

(2) Countywide permanent and total functional population in SWFWMD.

(3) 2015-2020 population growth rate used to estimate 2020 well count.

(4) Analysis of District well inventory conducted September 2017.

(5) Additional irrigation demand was not calculated in the draft Regional Water Supply Plan for the Central Florida Water Initiative (October 2018).

(6) Total Withdrawals exclude Lake and Polk amounts