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July 3, 2019

TO: Interested Parties

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

FROM: Kevin Wills, Senior Economist, Water Resources Bureau  
Ryan Pearson, Economist, Water Resources Bureau

SUBJECT: 2020 Regional Water Supply Plan: Public Water Supply Demand Projections

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## **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:  $\text{RATE}(4, -, 5704, 5984) = 1.21\%$
- 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):

$$((0.442 \times 132 \text{ gpd}) + ((1 - 0.442) \times (132 \text{ gpd} - 69.3 \text{ gpd}))/132 \text{ gpd} = 0.707$$

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

$$((0.567 \times 132 \text{ gpd}) + ((1 - 0.567) \times (132 \text{ gpd} - 69.3 \text{ gpd}))/132 \text{ gpd} = 0.773$$

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  $\pm 5$  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<sup>1</sup>.

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

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<sup>1</sup> 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.

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[www.swfwmd.state.fl.us/data/hydrologic/rainfall\\_data\\_summaries](http://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](http://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**

| County       | BEBR Medium Permanent Population <sup>1</sup>      |                  |                  |                  |                  |                  | Permanent Population in SWFWMD <sup>2</sup> |                  |                  |                  |                  |                  |
|--------------|--|------------------|------------------|------------------|------------------|------------------|---|------------------|------------------|------------------|------------------|------------------|
|              | Population inside and outside District boundaries. |                  |                  |                  |                  |                  | Population Inside District boundaries only. |                  |                  |                  |                  |                  |
|              | 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          |
| <b>Total</b> | <b>5,601,998</b>                                   | <b>6,070,700</b> | <b>6,512,400</b> | <b>6,895,600</b> | <b>7,236,200</b> | <b>7,535,000</b> | <b>4,988,790</b>                            | <b>5,396,760</b> | <b>5,782,127</b> | <b>6,116,495</b> | <b>6,413,261</b> | <b>6,672,302</b> |

**Reference Sources for Countywide Permanent and Permanent Population Projections**

<sup>1</sup> 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.  
<sup>2</sup> 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 <sup>1,2,3,4,5</sup>                  |                  |                  |                  |                  |                  |                  |
|---|------------------|------------------|------------------|------------------|------------------|------------------|
| 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 <sup>4</sup>   | 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 <sup>5</sup>  | 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 <sup>5</sup>   | 1,207,943        | 1,222,356        | 1,240,929        | 1,257,345        | 1,272,410        | 1,278,592        |
| Polk <sup>4</sup>   | 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          |
| <b>Total</b>  | <b>5,615,061</b> | <b>6,047,660</b> | <b>6,457,409</b> | <b>6,812,661</b> | <b>7,126,441</b> | <b>7,399,709</b> |

**Reference Sources for Countywide Permanent in SWFWMD and Functional Population Projections**

<sup>1</sup>Total functional population comprises permanent population, functional seasonal population, functional tourist, and functional net commuters population.

<sup>2</sup>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.

<sup>3</sup>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.

<sup>4</sup> 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)

<sup>5</sup> 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)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>2011-2015<br>GPCD<br>MGD | (3)<br>PROJECTED POPULATION |                |                |                |                | (4)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>MGD |               |               |               |               |
|---|---------------------------|--|-----------------------------|----------------|----------------|----------------|----------------|------------------------------|---------------------------------------|---------------|---------------|---------------|---------------|
|   |                           |  | 2020                        | 2025           | 2030           | 2035           | 2040           |                              | 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         |
| <b>Total County</b>                           | <b>191,446</b>            | <b>19.206</b>  | <b>205,401</b>              | <b>217,978</b> | <b>228,875</b> | <b>238,188</b> | <b>246,609</b> |                              | <b>20.561</b>                         | <b>21.748</b> | <b>22.774</b> | <b>23.646</b> | <b>24.429</b> |
| (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)<br>2015<br>POPULATION | (2)                         | (3)            |                      |                |                |                | (5)                                      |               |               |               |               |               |
|--|---------------------------|-----------------------------|----------------|----------------------|----------------|----------------|----------------|--|---------------|---------------|---------------|---------------|---------------|
|  |                           | 2015<br>POPULATION<br>(MGD) | 2020           | PROJECTED POPULATION |                |                |                | PROJECTED WATER DEMANDS<br>(MGD)         |               |               |               |               |               |
|  |                           | 2011-2015<br>GPCD           |                | 2025                 | 2030           | 2035           | 2040           | (4), (11), (12)<br>2011-2015<br>AVG GPCD | 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 G            | 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         |
| <b>Total County</b>                              | <b>154,717</b>            | <b>19.945</b>               | <b>161,834</b> | <b>168,447</b>       | <b>173,991</b> | <b>178,568</b> | <b>182,185</b> |  | <b>20.874</b> | <b>21.737</b> | <b>22.462</b> | <b>23.060</b> | <b>23.534</b> |
| (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 0.1mgd 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)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>2011-2015<br>GPCD<br>(MGD) | (3)<br>PROJECTED POPULATION |               |               |               |               | (4)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |              |              |              |              |
|---|---------------------------|--|-----------------------------|---------------|---------------|---------------|---------------|------------------------------|---|--------------|--------------|--------------|--------------|
|   |                           |  | 2020                        | 2025          | 2030          | 2035          | 2040          |                              | 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        |
| <b>Total County</b>                       | <b>36,508</b>             | <b>2.765</b>   | <b>37,551</b>               | <b>38,401</b> | <b>39,260</b> | <b>40,015</b> | <b>40,554</b> |                              | <b>2.840</b>                            | <b>2.901</b> | <b>2.963</b> | <b>3.019</b> | <b>3.057</b> |
| (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)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>2011-2015<br>GPCD<br>(MGD) | (3)<br>PROJECTED POPULATION |               |               |               |               | (4)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |              |              |              |              |
|---|---------------------------|--|-----------------------------|---------------|---------------|---------------|---------------|------------------------------|---|--------------|--------------|--------------|--------------|
|   |                           |  | 2020                        | 2025          | 2030          | 2035          | 2040          |                              | 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 Water  | 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        |
| <b>Total County</b>                       | <b>28,360</b>             | <b>1.999</b>   | <b>28,617</b>               | <b>28,736</b> | <b>28,959</b> | <b>29,077</b> | <b>29,196</b> |                              | <b>2.013</b>                            | <b>2.019</b> | <b>2.032</b> | <b>2.039</b> | <b>2.046</b> |
| (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 obtained 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 capita were taken from permit issued in 2010.

TABLE 7. HERNANDO COUNTY POPULATION ESTIMATES AND PROJECTIONS

| WUP   | (1)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>2011-2015<br>GPCD<br>(MGD) | (3)<br>PROJECTED POPULATION |                |                |                |                | (4), (10)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |               |               |               |               |
|---|---------------------------|--|-----------------------------|----------------|----------------|----------------|----------------|------------------------------------|---|---------------|---------------|---------------|---------------|
|   |                           |  | 2020                        | 2025           | 2030           | 2035           | 2040           |                                    | 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         |
| <b>Total County</b>                         | <b>182,854</b>            | <b>24.318</b>  | <b>197,648</b>              | <b>211,555</b> | <b>223,654</b> | <b>234,719</b> | <b>244,274</b> |                                    | <b>26.196</b>                           | <b>27.943</b> | <b>29.424</b> | <b>30.753</b> | <b>31.884</b> |
| (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)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>2011-2015<br>GPCD<br>(MGD) | (3)<br>PROJECTED POPULATION |                |                |                |                | (4)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |               |               |               |               |
|---|---------------------------|--|-----------------------------|----------------|----------------|----------------|----------------|------------------------------|---|---------------|---------------|---------------|---------------|
|   |                           |  | 2020                        | 2025           | 2030           | 2035           | 2040           |                              | 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         |
| <b>Total County</b>                         | <b>102,783</b>            | <b>12.452</b>  | <b>107,458</b>              | <b>111,216</b> | <b>114,265</b> | <b>116,606</b> | <b>118,409</b> |                              | <b>12.989</b>                           | <b>13.418</b> | <b>13.766</b> | <b>14.033</b> | <b>14.239</b> |
| (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 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.

(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 1938.
- 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                 |  | (2)<br>2015<br>POPULATION<br>TIMES |                            | (3)<br>PROJECTED POPULATION |                  |                  |                  |                  | (4)<br>2011-2015<br>AVG GPCD |                |                |                |                | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |  |  |  |  |
|---------------------|--|------------------------------------|----------------------------|-----------------------------|------------------|------------------|------------------|------------------|------------------------------|----------------|----------------|----------------|----------------|---|--|--|--|--|
|                     |  | (1)<br>2015<br>POPULATION          | 2011-2015<br>GPCD<br>(MGD) | 2020                        | 2025             | 2030             | 2035             | 2040             | 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                                   |  |  |  |  |
| (9)                 | 450 City Of Temple Terrace                   | 32,618                             | 3.403                      | 36,331                      | 39,297           | 41,763           | 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                                   |  |  |  |  |
| (9)                 | 1776 City Of Plant City Utilities            | 37,520                             | 4.903                      | 43,898                      | 52,041           | 60,272           | 66,676           | 72,927           | 131                          | 5.732          | 6.801          | 7.877          | 8.714          | 9.531                                   |  |  |  |  |
| (9)                 | 1787 Hillsborough County BOCG- San Rem       | 214                                | 0.026                      | 216                         | 218              | 220              | 221              | 222              | 121                          | 0.026          | 0.026          | 0.027          | 0.027          | 0.027                                   |  |  |  |  |
| (9)                 | 1988 Willard Groves, LLC                     | 323                                | 0.022                      | 323                         | 323              | 323              | 323              | 323              | 69                           | 0.022          | 0.022          | 0.022          | 0.022          | 0.022                                   |  |  |  |  |
| (9)                 | 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                                  |  |  |  |  |
| (9)                 | 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                                   |  |  |  |  |
| (9)                 | 6979 C V Utility Systems Lic                 | 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                                   |  |  |  |  |
| (9)                 | 7637 Riverside Golf Course Comm Lic          | 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                                   |  |  |  |  |
| (9)                 | 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                                   |  |  |  |  |
| (9)                 | 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                                   |  |  |  |  |
| (9)                 | 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)                 | 12512 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 Cas 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          | 2.895          | 3.048          | 3.199                                   |  |  |  |  |
| <b>Total County</b> |  | <b>1,438,767</b>                   | <b>146.675</b>             | <b>1,589,177</b>            | <b>1,731,457</b> | <b>1,856,960</b> | <b>1,961,869</b> | <b>2,059,559</b> |                              | <b>161.514</b> | <b>175.533</b> | <b>187.897</b> | <b>197.585</b> | <b>206.514</b>                          |  |  |  |  |
| <b>DPCVUCA</b>      |  | <b>42,304</b>                      | <b>5.377</b>               | <b>48,643</b>               | <b>56,826</b>    | <b>65,057</b>    | <b>71,461</b>    | <b>77,712</b>    |                              | <b>6.206</b>   | <b>7.275</b>   | <b>8.351</b>   | <b>9.188</b>   | <b>10.005</b>                           |  |  |  |  |
| <b>NTB</b>          |  | <b>1,274,544</b>                   | <b>132.585</b>             | <b>1,399,268</b>            | <b>1,513,231</b> | <b>1,611,449</b> | <b>1,679,399</b> | <b>1,739,569</b> |                              | <b>145.403</b> | <b>157.230</b> | <b>167.500</b> | <b>174.452</b> | <b>180.618</b>                          |  |  |  |  |
| <b>SVUCA</b>        |  | <b>592,725</b>                     | <b>56.198</b>              | <b>662,827</b>              | <b>723,079</b>   | <b>771,939</b>   | <b>815,048</b>   | <b>853,456</b>   |                              | <b>62.806</b>  | <b>68.486</b>  | <b>73.092</b>  | <b>77.156</b>  | <b>80.777</b>                           |  |  |  |  |
| (7)                 | 1-10 Drought Year Demand                     |                                    |                            |                             |                  |                  |                  |                  |                              | 171,205        | 186,065        | 199,171        | 209,440        | 218,905                                 |  |  |  |  |
|                     | DPCVUCA 1-10 Drought Year Demand             |                                    |                            |                             |                  |                  |                  |                  |                              | 6,579          | 7,712          | 8,852          | 9,739          | 10,605                                  |  |  |  |  |
|                     | NTB 1-10 Drought Year Demand                 |                                    |                            |                             |                  |                  |                  |                  |                              | 154,127        | 166,664        | 177,550        | 184,919        | 191,455                                 |  |  |  |  |
|                     | SVUCA 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 the 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 WMS, 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 BOCG- 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) Willard 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.  
p) Sun City Mobile Home Park Water Plant (8440): Per capita information was obtained from permit issued in 2014.  
q) Bonita Bay Farmworker Housing (8469): Per capita information was obtained from permit issued in 2016.  
r) Neptune Valley Mobile Home Park (8579): Per capita information was obtained from permit issued in 2015.  
s) 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.  
t) Florida Acecapaders, Inc. (10066): Per capita and population information were obtained from permit issued in 2013.  
u) Cici Trailer Town Mobile Home (10543): Per capita and population information were obtained from permit issued in 2015.  
v) Hometown Little Manatee Springs, LLC (12513): Per capita information was obtained from permit issued in 2014.  
w) Hideaway Partners, LLLP (12621): Per capita information was obtained from permit issued in 2014.  
x) Eastfield Slopes Condo (13004): Per capita information was obtained from permit issued in 2017.  
y) Cas 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)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>2011-2015<br>GPCD<br>(MGD) | PROJECTED POPULATION |              |              |              |              | PROJECTED WATER DEMANDS<br>(MGD) |              |              |              |              |              |
|---|---------------------------|--|----------------------|--------------|--------------|--------------|--------------|----------------------------------|--------------|--------------|--------------|--------------|--------------|
|   |                           |  | 2020                 | 2025         | 2030         | 2035         | 2040         | AVG GPCD                         | 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        |
| <b>Total County in SWFWMD (all utilities and DSS)</b> | <b>1,059</b>              | <b>0.140</b>   | <b>1,296</b>         | <b>1,579</b> | <b>1,853</b> | <b>2,122</b> | <b>2,383</b> |                                  | <b>0.170</b> | <b>0.200</b> | <b>0.240</b> | <b>0.270</b> | <b>0.310</b> |
| (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           | 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           | 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)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>2011-2015<br>GPCD<br>(MGD) | (3)<br>PROJECTED POPULATION |               |               |               |               | (4)<br>2011-2015<br>AVG GPCD |              |              |              |              | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |      |      |      |      |  |
|----------------------------------|---------------------------|--|-----------------------------|---------------|---------------|---------------|---------------|------------------------------|--------------|--------------|--------------|--------------|---|------|------|------|------|--|
|                                  |                           |  | 2020                        | 2025          | 2030          | 2035          | 2040          | 2020                         | 2025         | 2030         | 2035         | 2040         | 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                                   |      |      |      |      |  |
| <b>Total County</b>              | <b>23,732</b>             | <b>1.623</b>   | <b>24,585</b>               | <b>25,356</b> | <b>26,010</b> | <b>26,489</b> | <b>26,908</b> |                              | <b>1.677</b> | <b>1.725</b> | <b>1.767</b> | <b>1.797</b> | <b>1.824</b>                            |      |      |      |      |  |
| (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 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.

TABLE 12. MANATEE COUNTY POPULATION ESTIMATES AND PROJECTIONS

| WUP  | (1)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>2011-2015<br>GPCD<br>(MGD) | (3),(11)<br>PROJECTED POPULATION |                |                |                |                | (4)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |               |               |               |               |
|--|---------------------------|--|----------------------------------|----------------|----------------|----------------|----------------|------------------------------|---|---------------|---------------|---------------|---------------|
|  |                           |  | 2020                             | 2025           | 2030           | 2035           | 2040           |                              | 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) <b>Total County</b>                         | <b>423,741</b>            | <b>39.480</b>  | <b>466,041</b>                   | <b>507,393</b> | <b>544,241</b> | <b>576,900</b> | <b>604,543</b> |                              | <b>43.456</b>                           | <b>47.357</b> | <b>50.837</b> | <b>53.924</b> | <b>56.543</b> |
| (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 GIS. This results in negative domestic self supply populations. County totals adjusted upwards to cover deficit plus domestic self-supply.

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

(12) 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) 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 |   | (2)<br>2015<br>POPULATION<br>TIMES |                            | (3)<br>PROJECTED POPULATION |                |                |                |                | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |               |               |               |               |               |
|-----|---|------------------------------------|----------------------------|-----------------------------|----------------|----------------|----------------|----------------|---|---------------|---------------|---------------|---------------|---------------|
|     |   | (1)<br>2015<br>POPULATION          | 2011-2015<br>GPCD<br>(MGD) | 2020                        | 2025           | 2030           | 2035           | 2040           | (4)<br>2011-2015<br>AVG GPCD            | 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 Developme         | 1,147                              | 2.499                      | 1,801                       | 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 Owl      | 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         |
|     | <b>Total County</b>                         | <b>112,040</b>                     | <b>15.213</b>              | <b>123,467</b>              | <b>133,759</b> | <b>142,657</b> | <b>151,129</b> | <b>159,115</b> |   | <b>16.686</b> | <b>18.010</b> | <b>19.155</b> | <b>20.251</b> | <b>21.286</b> |
| (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 - Juliette Falls (WUP# 20213): Per capita information obtained from permit issued in 2012.

TABLE 14. PASCO COUNTY POPULATION ESTIMATES AND PROJECTIONS

| WUP                 |   | (2)<br>POPULATION<br>TIMES |                            | (3)<br>PROJECTED POPULATION |                |                |                | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |      |               |               |               |               |               |
|---------------------|---|----------------------------|----------------------------|-----------------------------|----------------|----------------|----------------|---|------|---------------|---------------|---------------|---------------|---------------|
|                     |   | (1)<br>2015<br>POPULATION  | 2011-2015<br>GPCD<br>(MGD) | 2020                        | 2025           | 2030           | 2035           | (4)<br>2011-2015<br>AVG GPCD            | 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                                     | 31   | 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         |
| 590                 | Florida Governmental Utility Authorit       | 8,226                      | 0.873                      | 8,792                       | 8,930          | 8,950          | 8,950          | 8,950                                   | 106  | 0.933         | 0.948         | 0.950         | 0.950         | 0.950         |
| (10)                | 923 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         |
| 964                 | C S Water Company Inc.                      | 331                        | 0.074                      | 372                         | 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         | 1.534         | 1.781         | 1.987         | 2.196         |
| (10)                | 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            | 306            | 315            | 413                                     | 113  | 0.030         | 0.034         | 0.039         | 0.042         | 0.047         |
| 2918                | Florida Governmental Utility Authorit       | 5,438                      | 0.577                      | 5,671                       | 5,890          | 5,948          | 6,010          | 6,063                                   | 106  | 0.602         | 0.624         | 0.631         | 0.638         | 0.643         |
| (10)                | 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            | 554            | 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)                | 3619 Country Aire Service MHP               | 168                        | 0.025                      | 170                         | 181            | 193            | 207            | 221                                     | 150  | 0.026         | 0.027         | 0.028         | 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         | 0.089         | 0.089         | 0.089         | 0.089         |
| 3692                | City Of Port Richey                         | 11,761                     | 0.571                      | 12,236                      | 12,790         | 13,286         | 13,767         | 14,202                                  | 49   | 0.594         | 0.621         | 0.645         | 0.668         | 0.689         |
| 4550                | City Of San Antonio                         | 2,205                      | 0.205                      | 2,259                       | 2,398          | 2,541          | 2,638          | 2,852                                   | 93   | 0.210         | 0.223         | 0.237         | 0.251         | 0.266         |
| 4669                | Hudson Water Works Inc                      | 7,806                      | 0.675                      | 8,336                       | 9,014          | 9,650          | 10,331         | 10,749                                  | 86   | 0.721         | 0.779         | 0.836         | 0.893         | 0.929         |
| 4734                | City Of New Port Richey                     | 33,172                     | 2.340                      | 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                                      | 39   | 0.007         | 0.007         | 0.007         | 0.007         | 0.007         |
| (10)                | 5353 Haciends Utilities                     | 912                        | 0.078                      | 912                         | 914            | 916            | 919            | 922                                     | 86   | 0.078         | 0.079         | 0.079         | 0.079         | 0.079         |
| 6040                | City of Zephyrhills                         | 27,004                     | 2.852                      | 29,146                      | 32,304         | 33,904         | 35,436         | 36,551                                  | 98   | 3.148         | 3.329         | 3.480         | 3.603         | 3.719         |
| (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                      | 396                         | 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         | 294                        | 0.049                      | 294                         | 295            | 296            | 297            | 298                                     | 167  | 0.049         | 0.049         | 0.049         | 0.050         | 0.050         |
| (10)                | 6982 Jeffery A. Cole                        | 269                        | 0.010                      | 269                         | 269            | 269            | 269            | 269                                     | 36   | 0.010         | 0.010         | 0.010         | 0.010         | 0.010         |
| (10)                | 7299 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          | 1,169          | 1,199                                   | 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                        | 0.054                      | 640                         | 640            | 640            | 640            | 640                                     | 100  | 0.064         | 0.064         | 0.064         | 0.064         | 0.064         |
| 7999                | Florida Governmental Utility Authorit       | 1,990                      | 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         |
| (10)                | 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                     | 495                        | 0.031                      | 496                         | 497            | 498            | 499            | 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        |
| (3)                 | 99906 Arbor Oaks                            | 363                        | 0.031                      | 364                         | 365            | 366            | 367            | 369                                     | 86   | 0.031         | 0.031         | 0.031         | 0.031         | 0.032         |
| (3)                 | 99915 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         |
| <b>Total County</b> |   | <b>515,412</b>             | <b>56.597</b>              | <b>565,764</b>              | <b>612,150</b> | <b>652,365</b> | <b>690,156</b> | <b>723,710</b>                          |      | <b>61.928</b> | <b>66.863</b> | <b>71.061</b> | <b>74.921</b> | <b>78.378</b> |
| (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 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 59, Bulletin 177, April 2017.
- (2) Estimated during 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 P5\_SERVICAREAS GIS layer (Date: 02/FEB/2018). The functional population estimator includes seasonal residents, tourists and out commutes, 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 rate, as provided in Table A-1 of the District's annual 'Estimated Water Use Report' for year 2011-2015, were used to project demand. See footnote 6 and 8 for descriptions of the per capita used for the Domestic Self-Supply and Additional Irrigation Demand.
- (5) Computed or 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 year 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 1.0 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 in-district water needs. It is calculated based on 332 gallons per well per day.
- (9) This service area is a sub-leakage 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 WHMS, 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# 3619): 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) Haciends 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 2013.
- 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# 6982): Per capita was obtained from permit issued in 2009.
- q) L W V Utilities (WUP# 7299): 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 2009.
- 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.
- y) 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# 923): 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) Aquas Utilities Florida Incorporated (WUP# 11082): Per capita was obtained from permit issued in 2011.

TABLE 15. PINELLAS COUNTY POPULATION ESTIMATES AND PROJECTIONS

| WUP                                | (1)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES | (3)<br>PROJECTED POPULATION |                  |                  |                  |                  | (4)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |                |                |                |                |
|------------------------------------|---------------------------|------------------------------------|-----------------------------|------------------|------------------|------------------|------------------|------------------------------|---|----------------|----------------|----------------|----------------|
|                                    |                           | 2011-2015<br>GPCD<br>(MGD)         | 2020                        | 2025             | 2030             | 2035             | 2040             | 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) <b>Total County</b>           | <b>1,207,943</b>          | <b>101.250</b>                     | <b>1,222,356</b>            | <b>1,240,929</b> | <b>1,257,345</b> | <b>1,272,410</b> | <b>1,278,592</b> |                              | <b>102.441</b>                          | <b>103.969</b> | <b>105.330</b> | <b>106.582</b> | <b>107.098</b> |
| (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 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) 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**

| (6) | WUP   | (1)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>GPCD<br>(MGD) | PROJECTED POPULATION |                |                |                |                | (3)<br>Gross<br>Per Capita | (4)<br>PROJECTED WATER DEMANDS<br>(MGD) |               |               |               |               |
|-----|---|---------------------------|---|----------------------|----------------|----------------|----------------|----------------|----------------------------|---|---------------|---------------|---------------|---------------|
|     |   |                           |   | 2020                 | 2025           | 2030           | 2035           | 2040           |                            | 2020                                    | 2025          | 2030          | 2035          | 2040          |
|     | <b>Domestic Self-Supply &amp; Small Utilities (Below)</b> | <b>34,523</b>             | <b>2.9</b>  | <b>37,839</b>        | <b>41,022</b>  | <b>43,631</b>  | <b>46,127</b>  | <b>48,538</b>  | <b>NA</b>                  | <b>3.24</b>                             | <b>3.51</b>   | <b>3.73</b>   | <b>3.94</b>   | <b>4.15</b>   |
|     | 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                     | 0.436   | 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            | 30                         | 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                      | 343                       | 0.067   | 359                  | 363            | 365            | 365            | 365            | 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         | 30,631         | 33,289         | 35,954         | 106                        | 2.74                                    | 3.01          | 3.25          | 3.53          | 3.81          |
|     | 4312 City Of Lakeland Water Utilities Water Admin         | 165,037                   | 20.147  | 177,109              | 187,746        | 195,476        | 203,077        | 210,204        | 127                        | 22.43                                   | 23.84         | 24.83         | 25.79         | 26.70         |
|     | 5251 Grenelefs 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          | 5,436          | 5,738          | 106                        | 0.43                                    | 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                    | 2.431   | 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                        | 35,936                    | 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          | 7,937          | 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                                    | 323                       | 0.104   | 347                  | 354            | 361            | 368            | 373            | 193                        | 0.18                                    | 0.18          | 0.18          | 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 Alofia Preserve LLC; Eagle Ridge LLC; and Dc        | 79                        | 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          |
|     | <b>Total County in SWFWMD (all utilities and D)</b>       | <b>597,981</b>            | <b>67.484</b>                                       | <b>658,283</b>       | <b>714,001</b> | <b>760,328</b> | <b>804,277</b> | <b>844,431</b> |                            | <b>77.055</b>                           | <b>83.583</b> | <b>88.978</b> | <b>94.144</b> | <b>98.812</b> |
|     | <b>DPCWUCA</b>  | <b>85,266</b>             | <b>5.604</b>  | <b>96,045</b>        | <b>105,150</b> | <b>112,772</b> | <b>118,186</b> | <b>123,026</b> |                            | <b>6.678</b>                            | <b>7.309</b>  | <b>7.836</b>  | <b>8.204</b>  | <b>8.534</b>  |
|     | <b>SWUCA</b>  | <b>508,696</b>            | <b>56.376</b>                                       | <b>557,199</b>       | <b>602,397</b> | <b>640,046</b> | <b>675,912</b> | <b>709,138</b> |                            | <b>63.755</b>                           | <b>68.774</b> | <b>72.936</b> | <b>76.995</b> | <b>80.766</b> |
|     | <b>CFWI Large Utilities (Public Supply)</b>               | <b>563,458</b>            | <b>64.584</b>                                       | <b>620,444</b>       | <b>672,979</b> | <b>716,697</b> | <b>758,150</b> | <b>795,893</b> |                            | <b>73.82</b>                            | <b>80.07</b>  | <b>85.25</b>  | <b>90.20</b>  | <b>94.66</b>  |
|     | 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         |
|     | <b>CFWI Large Utilities 1-10 Drought Year Demand</b>      |                           |   |                      |                |                |                |                |                            | <b>78.24</b>                            | <b>84.88</b>  | <b>90.36</b>  | <b>95.62</b>  | <b>100.34</b> |

**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 capita 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)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES<br>2011-2015<br>GPCD<br>(MGD) | (3)<br>PROJECTED POPULATION |                |                |                |                | (4)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |               |               |               |               |
|---|---------------------------|--|-----------------------------|----------------|----------------|----------------|----------------|------------------------------|---|---------------|---------------|---------------|---------------|
|   |                           |  | 2020                        | 2025           | 2030           | 2035           | 2040           |                              | 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         |
| <b>Total County</b>                       | <b>472,188</b>            | <b>40.254</b>  | <b>501,783</b>              | <b>528,324</b> | <b>549,621</b> | <b>567,149</b> | <b>580,570</b> |                              | <b>42,556</b>                           | <b>44,579</b> | <b>46,168</b> | <b>47,458</b> | <b>48,455</b> |
| (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 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) Venice Ranch Mobile Home Estates (WUP# 5456): Population and per capita information were obtained from permit issued in 2017.

(10) This service area 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)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES | (3)<br>PROJECTED POPULATION |                |                |                |                | (4)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |               |               |               |               |
|---|---------------------------|------------------------------------|-----------------------------|----------------|----------------|----------------|----------------|------------------------------|---|---------------|---------------|---------------|---------------|
|   |                           | 2011-2015<br>GPCD<br>(MGD)         | 2020                        | 2025           | 2030           | 2035           | 2040           | 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         |
| <b>Total County</b>                             | <b>125,529</b>            | <b>27.961</b>                      | <b>156,397</b>              | <b>185,527</b> | <b>211,678</b> | <b>236,768</b> | <b>258,670</b> |                              | <b>33.045</b>                           | <b>37.149</b> | <b>40.632</b> | <b>44.103</b> | <b>47.139</b> |
| (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 obtained from permit issued in 2018.

e) Florida Grande Motor Coach Resort (WUP# 13123): Population and per capita information were obtained 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)<br>2015<br>POPULATION | (2)<br>2015<br>POPULATION<br>TIMES | (3)<br>PROJECTED POPULATION |                  |                  |                  |                  | (4)<br>2011-2015<br>AVG GPCD | (5)<br>PROJECTED WATER DEMANDS<br>(MGD) |                |                |                |                |
|----------------------------------|---------------------------|------------------------------------|-----------------------------|------------------|------------------|------------------|------------------|------------------------------|---|----------------|----------------|----------------|----------------|
|                                  |                           | 2011-2015<br>GPCD<br>(MGD)         | 2020                        | 2025             | 2030             | 2035             | 2040             | 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         |
| <b>Total District</b>            | <b>5,615,061</b>          | <b>577.363</b>                     | <b>6,047,660</b>            | <b>6,457,409</b> | <b>6,812,661</b> | <b>7,126,441</b> | <b>7,399,709</b> |                              | <b>626.001</b>                          | <b>668.734</b> | <b>705.484</b> | <b>737.584</b> | <b>765.548</b> |
| (7) 1-10 Drought Year Demand     |                           |                                    |                             |                  |                  |                  |                  |                              | 663.561                                 | 708.858        | 747.813        | 781.839        | 811.481        |
|                                  |                           |                                    |                             |                  |                  |                  |                  |                              | <b>546.169</b>                          | <b>579.908</b> | <b>608.550</b> | <b>631.680</b> | <b>651.379</b> |

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         |
| 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%        |
| <b>Total</b> | <b>577.363</b> | <b>612.005</b> | <b>626.001</b> | <b>663.561</b> | <b>668.734</b> | <b>708.858</b> | <b>705.484</b> | <b>747.813</b> | <b>737.584</b> | <b>781.839</b> | <b>765.548</b> | <b>811.481</b> | <b>188.185</b>   | <b>199.476</b> | <b>32.6%</b> | <b>32.6%</b> |

**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      | 1-10 |
| 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**

| <b>IRRIGATION WELL TYPES LESS THAN 5" WITHIN SWFWMD's PSSAs AND OUTSIDE WUP CONTROL AREAS (1)</b> |                                  |                  |   |   |                         |  |                         |
|---|----------------------------------|------------------|---|---|-------------------------|--|-------------------------|
|   | <b>Functional Population (2)</b> |                  | <b>2015-2020<br/>Population<br/>Growth Rate (3)</b> | <b>2015<br/>332 gpd<br/>2015 Irrigation Wells</b> |                         | <b>2020<br/>332 gpd<br/>2020 Irrigation Well Estimates</b> |                         |
|   | <b>2015</b>                      | <b>2020</b>      |   | <b># Wells</b>                                    | <b>Withdrawal (mgd)</b> | <b># Wells</b>   | <b>Withdrawal (mgd)</b> |
|   | Charlotte                        | 191,446          |   | 205,401   | 0.07289                 | 6,725  | 2.23                    |
| 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                    |
| <b>Total (6)</b>  | <b>5,615,061</b>                 | <b>6,047,660</b> |   | <b>101,769</b>                                    | <b>31.22</b>            | <b>108,471</b>   | <b>33.18</b>            |

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