Central Springs/East Coast Regional Water Supply Plan (2020–2040)

St. Johns River Water Management District
Palatka, Florida

February 7, 2022

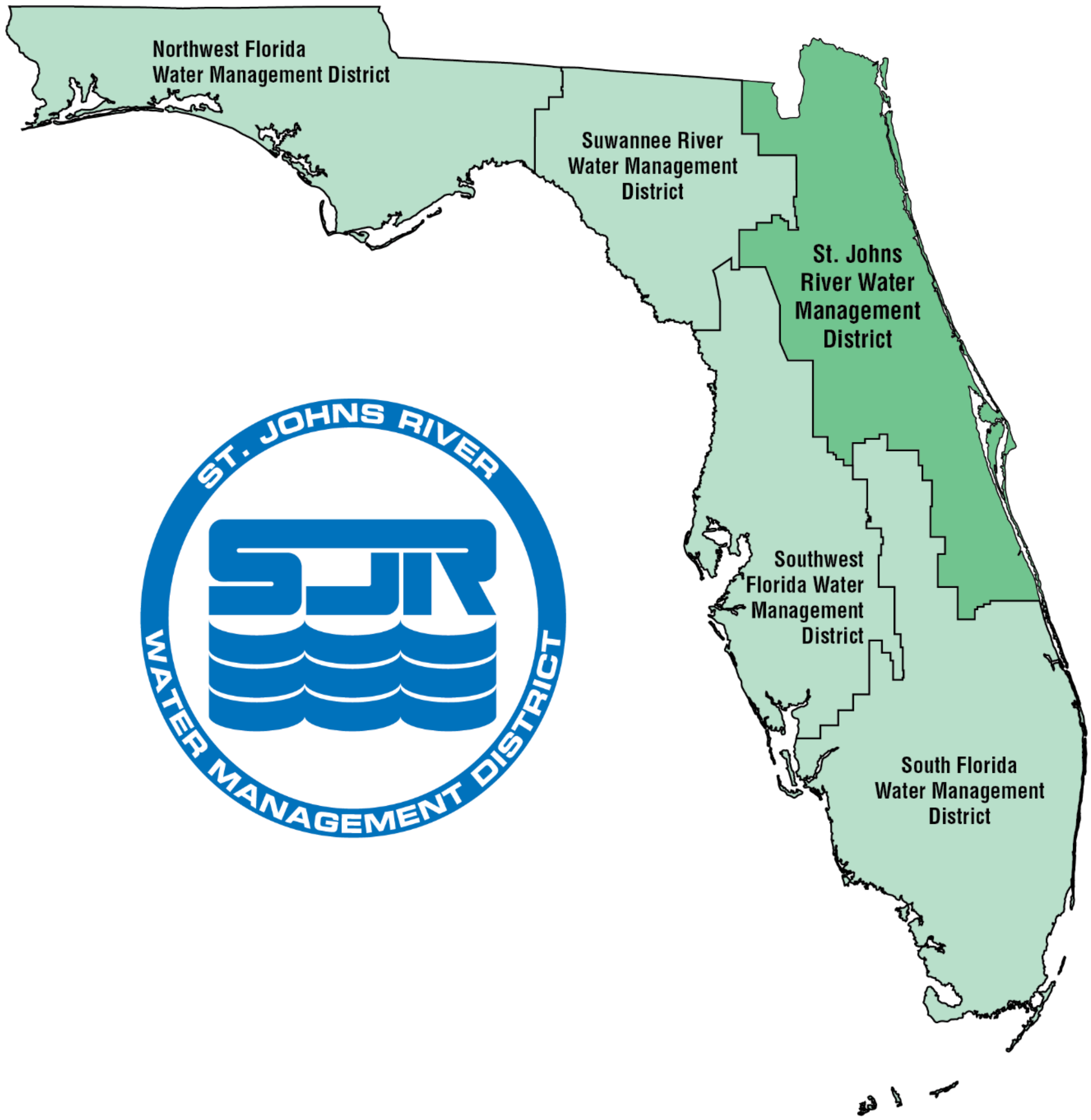

Figure 1: Location and boundary of the St. Johns River Water Management District

Acknowledgements

The St. Johns River Water Management District (SJRWMD, Figure 1) recognizes and thanks stakeholders, local governments, and other water management districts for their contributions, comments, advice, information, and assistance throughout the development of the Central Springs/East Coast Regional Water Supply Plan. Furthermore, SJRWMD expresses its appreciation to all staff who contributed to the development and production of this collaborative regional water supply plan.

Executive Summary

The St. Johns River Water Management District (SJRWMD) Central Springs/East Coast (CSEC) planning region includes all or part of six counties; Volusia, Marion, Lake, Brevard, Indian River, and Okeechobee. Notable surface water features within the planning region include the Upper, Middle, and a portion of the Lower St. Johns River, the Indian River Lagoon, and the Ocklawaha River. Six Outstanding Florida Springs (OFS) are located in the region: Blue, De Leon, and Gemini in Volusia County, Silver and Silver Glen springs in Marion County, and Alexander Springs in Lake County.

The CSEC Regional Water Supply Plan (RWSP) was developed through a collaborative process among SJRWMD, local governments, public supply utilities, environmental advocates, and other stakeholders. The CSEC water supply planning process included more than 38 meetings and four public workshops to assist stakeholders in understanding the technical methodologies employed in plan development and the water supply issues in the CSEC RWSP area.

This RWSP covers a 20-year planning period (2020 through 2040) and is based on the best data available at the time of plan development. Key components of the CSEC RWSP are the groundwater flow models: the 2015 Volusia model, the Northern District Model Version 5, and the East-Central Florida Transient Expanded Model Version 1.0. These groundwater flow models incorporate elements of the water budget, including recharge, evapotranspiration, surface water flows, groundwater levels, and water use. The development of these models utilized calibration processes to incorporate the most current data and provide the best available approximation of all components of the water budget within the CSEC RWSP area. These models constitute the best available toolset for evaluation of the effects of groundwater withdrawals on water resources in the CSEC RWSP area.

The population within the CSEC RWSP area during the 2015 base year was approximately 1.5 million people. The area's population is projected to reach approximately 2 million by 2040, which represents a 30 percent increase. The total average water use in the CSEC RWSP area is projected to increase 21 percent from approximately 353.2 million gallons per day (mgd) in the base year to 427.9 mgd in 2040.

Based on the results of the CSEC water resource assessment, SJRWMD determined that water supply planning pursuant to section 373.709, *Florida Statutes*, was necessary since traditional water sources alone cannot supply the projected 75 mgd increase in water demand while at the same time sustaining water resources and related natural systems during the 20-year planning horizon. The water resource assessment projected that adopted minimum flows and levels would not be achieved and predicted an increased potential for degradation of water quality resulting from saltwater intrusion. The CSEC RWSP identifies projects and measures that, when implemented, will meet the current and future water use needs of the region, while avoiding harm to water resources.

One of the major components of the CSEC RWSP is a focus on water conservation. The CSEC RWSP describes water conservation efforts which could potentially reduce the projected 2040 water demand by as much as 38.2 mgd. This represents approximately 51 percent of the projected 75 mgd increase in demand over the 20-year planning horizon. Implementation of water conservation measures can be more cost effective than constructing alternative water supply projects and is encouraged by SJRWMD.

In addition to water conservation, the CSEC RWSP identifies an additional 191 mgd of potential water resource and water supply development project options to assist water users and suppliers in their efforts to meet projected water demands while protecting natural resources. Project options range from aquifer recharge and potable reuse to alternative water supply sources like reclaimed, surface water, and stormwater. The integrated approach outlined in the CSEC RWSP includes:

- Continued implementation of water conservation measures and other demand management strategies
- Development of alternative water supplies
- Optimization of groundwater withdrawals through a cooperative approach between water users
- Additional evaluation and modeling of identified projects to implement the most cost-effective options
- Continued implementation of identified water resource and water supply development projects

The CSEC RWSP provides a roadmap that offers options to achieve sustainable water use through the planning horizon. SJRWMD will continue to encourage and support project implementation within the CSEC RWSP area to ensure a sufficient water supply to meet 2040 water demand, while protecting water resources and associated natural systems.

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List of Acronyms

ASR	Aquifer Storage and Recovery
AWS	Alternative Water Supply(ies)
BEBR	Bureau of Economic and Business Research
BMPs	Best Management Practices
CSEC	Central Springs/East Coast
cfs	Cubic Feet per Second
CFWI	Central Florida Water Initiative
CII	Commercial/Industrial/Institutional Self-supply
CUP	Consumptive Use Permit
Districts	Florida's Five Water Management Districts
DOWN	District Observation Well Network (SJRWMD)
DSS	Domestic Self-supply and Small Public Supply Systems
ECFTX	East-Central Florida Transient Expanded Model Version 1.0
EDR	Electrodialysis Reversal
EQIP	Environmental Quality Incentives Program
ET	Evapotranspiration
F.A.C.	Florida Administrative Code
FAS	Floridan Aquifer System
FDACS	Florida Department of Agriculture and Consumer Services
FDEP	Florida Department of Environmental Protection
F.S.	Florida Statutes
FSAID	Florida Statewide Agricultural Irrigation Demand
FY	Fiscal Year
GIS	Geographic Information Systems
GPCD	Gallons Per Capita Per Day
LFA	Lower Floridan Aquifer
LRA	Landscape/Recreational/Aesthetic Irrigation Self-supply
M	Million (as expressed in million dollars)
MD	Mining/Dewatering Self-supply
MFLs	Minimum Flows and Minimum Water Levels
mgd	Million Gallons Per Day
mg/L	Milligram per Liter
mg/L/yr	Milligram per Liter per Year
NDMv5	Northern District Model Version 5
NRCS	Natural Resources Conservation Service
OAWP	Office of Agriculture Water Policy
OFS	Outstanding Florida Spring(s)
PG	Power Generation Self-supply
PSC	Florida Public Service Commission
RO	Reverse Osmosis
RWSP	Regional Water Supply Plan
s.	Section within Florida Statutes and Florida Administrative Code
SAS	Surficial Aquifer System

SCPE	Single-Continuum Porous-Equivalent
SDWS	Secondary Drinking Water Standard
SFWMD	South Florida Water Management District
SJRWMD	St. Johns River Water Management District
SWFWMD	Southwest Florida Water Management District
ss.	Subsection and Further Subdivisions within Florida Statutes and Florida Administrative Code
TDS	Total Dissolved Solids
UFA	Upper Floridan Aquifer
WIFIA	Water Infrastructure Finance and Innovation Act
WPSP	Water Protection and Sustainability Program
WRCA	Water Resource Caution Area
WWTF	Wastewater Treatment Facility

Central Springs/East Coast Regional Water Supply Plan (2020–2040)

Chapter 1: The Central Springs/East Coast Regional Water Supply Plan Area

Introduction

Subsection (ss.) 373.709(1), *Florida Statutes* (F.S.), requires that the state's five water management districts (Districts) conduct water supply assessments to identify areas where traditional sources of water are not adequate to supply water for all existing and future reasonable-beneficial uses while sustaining the water resources and related natural systems for the planning period. If such areas are identified, water supply planning is then required for those areas. Water supply plans identify water needs, sources, and project options for at least a 20-year time frame (i.e., planning horizon)(ss. 373.709(2), F.S.) The St. Johns River Water Management District (SJRWMD) is represented by three regional water supply planning regions; the North Florida Regional Water Supply Plan Partnership, the Central Florida Water Initiative (CFWI), and the Central Springs/East Coast (CSEC) planning area (Figure 2). This document serves as the regional water supply plan (RWSP) for the CSEC planning area and includes projected water demands, potential water resource impacts, and a combination of project options, water conservation, and water sources that may be utilized to meet future water needs through 2040 and avoid unacceptable water resource impacts.

The CSEC RWSP area includes all or part of six counties in SJRWMD; Volusia, Lake, Marion (the SJRWMD portion), Brevard (excluding the City of Cocoa which is included in the CFWI), Indian River, and the small section of Okeechobee County that falls within SJRWMD jurisdiction (Figure 3). The CSEC RWSP area is different from other SJRWMD planning areas as it includes portions of SJRWMD that are currently covered by three different groundwater flow models and, therefore, requires three distinct water resource assessments. The CSEC RWSP discusses general methodologies and assessment results summarized for the planning region as a whole. Additional information specific to the three sub-regions covered by different groundwater models is provided in Appendix A. These sub-regions include:

- Volusia County
- SJRWMD-portion of Marion County and the northern, or non-CFWI, portion of Lake County (defined as North Lake County throughout the document)
- Brevard (excluding the City of Cocoa service area) and Indian River counties along with the SJRWMD-portion of Okeechobee County

Persons interested in additional material from that provided in the CSEC RWSP should refer to the detailed information offered in the appendices.

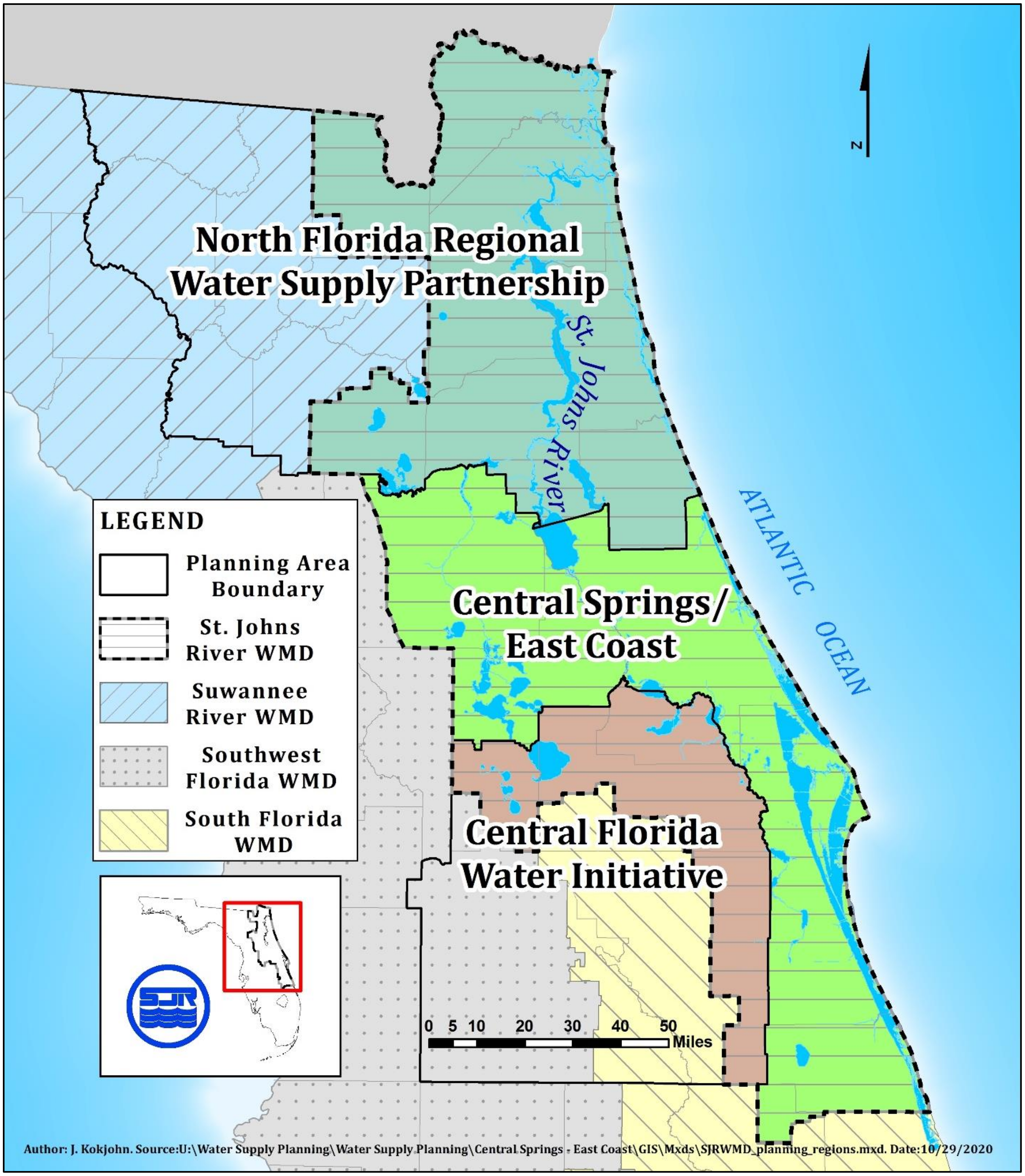


Figure 2: Location of SJRWMD water supply planning regions

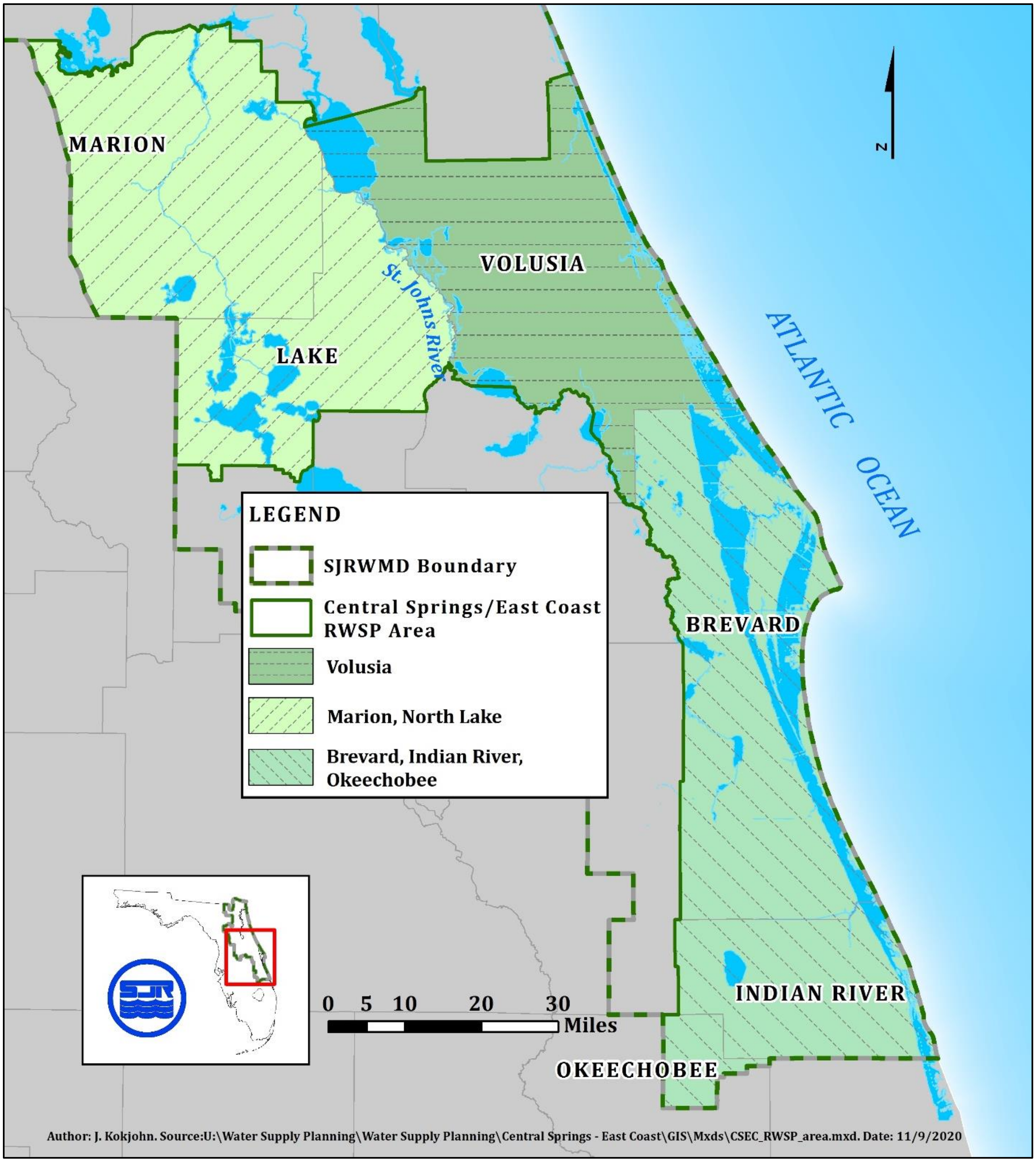


Figure 3: The Central Springs/East Coast Regional Water Supply Plan area

Base Year

Population and water demand projections are essential components to regional water supply plan development. In developing population and water demand projections, a base year comprised of actual population and water use data is needed. The base year is the "starting point" to which projected changes in population and water demand are applied.

For the CSEC RWSP, the base year is 2015, which was the most current year with population and water use data at the time projections were developed. Population and water demand were then projected at five-year intervals throughout the 20-year planning horizon, 2020 through 2040, per statewide regional water supply planning guidelines.

Population

The estimated population in the CSEC RWSP area during the base year, 2015, was just over 1.51 million people. In 2019, population was estimated at 1.65 million.

Primary Surface Water Basins

The primary surface water basins within the CSEC RWSP area include the Indian River Lagoon, portions of the Lower, Middle and Upper St. Johns River, Ocklawaha River, Lake George, Northern Coastal, and Florida Ridge basins. Significant surface water features include the St. Johns River and associated lakes (Washington, Poinsett, Harney, and Monroe), the lakes within the Upper Ocklawaha chain, portions of the Lower Ocklawaha River, and the Indian River Lagoon.

Groundwater Resources

Groundwater resources in the CSEC RWSP area include the Floridan Aquifer System (FAS), which is comprised of the Upper Floridan aquifer (UFA) and the Lower Floridan aquifer (LFA), the Intermediate Confining Unit (ICU)/Intermediate Aquifer System (IAS), and the Surficial Aquifer System (SAS). Figure 4 shows a representative diagram of the SAS, ICU/IAS, and the FAS while Figure 5 shows their spatial extent in Florida. These aquifer systems are discussed below.

Floridan Aquifer System (FAS)

The FAS underlies the entire state of Florida and is the predominant source of water in the CSEC RWSP area because of good water quality (in most of the region), high productivity, and wide-spread accessibility. The FAS is composed of sequential layers of limestone and dolostone and is traditionally subdivided into the Upper and Lower Floridan aquifers (UFA and LFA), which are separated by a less productive or nonproductive horizon called the middle confining unit. The degree of confinement between the UFA and LFA is variable across the CSEC RWSP area (Miller 1986) as well as the water quality, which can vary from fresh to brackish.

Surficial Aquifer System (SAS)

The SAS is composed primarily of unconsolidated, sandy and shelly sediments. The SAS is a source for public supply in Brevard and Indian River counties. It is also used for domestic self-supply in the coastal counties within the CSEC RWSP area. Utilities who have historically relied on the SAS to meet all or a portion of their demand, have been transitioning to alternate sources to mitigate for wetland and water quality impacts.

Use of the SAS for public supply is expected to continue to decline and be replaced in many cases with brackish water from the FAS.

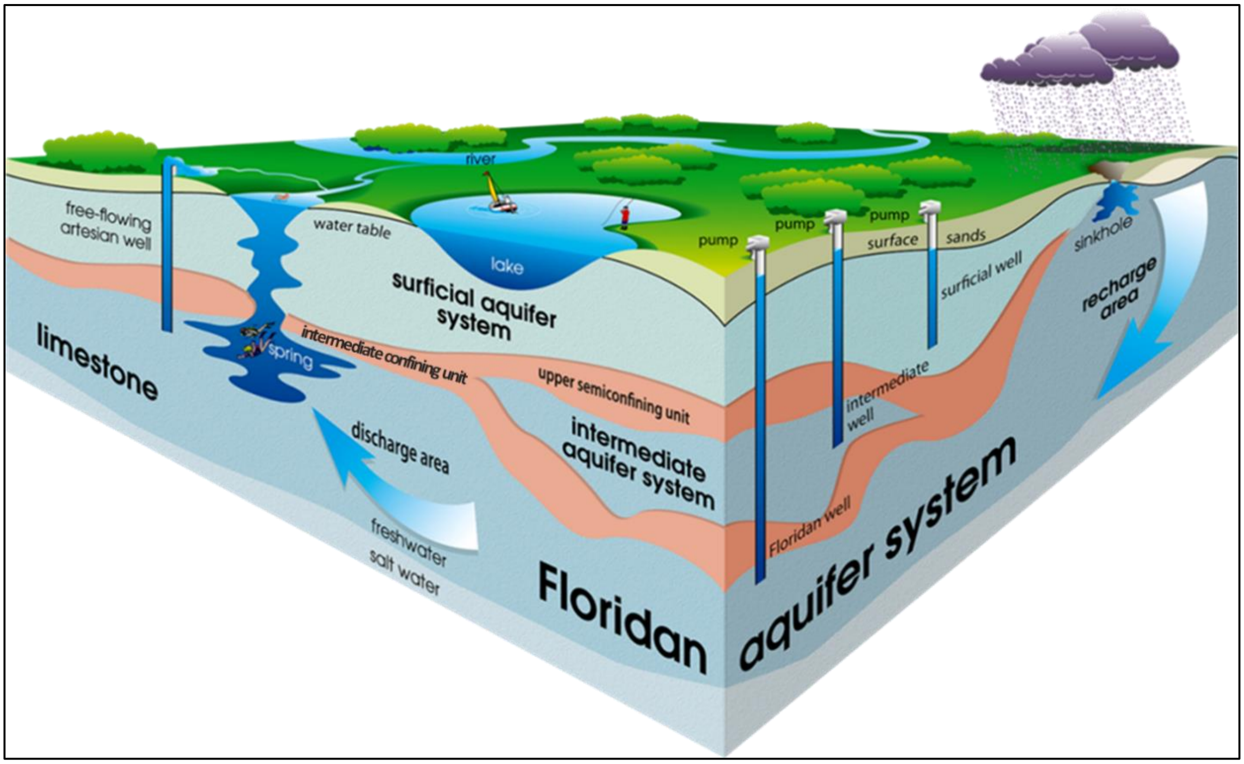


Figure 4: Representative diagram of the aquifer systems within the CSEC RWSP area

Intermediate Confining Unit (ICU)/Intermediate Aquifer System (IAS)

The ICU is a confining layer between the SAS and the FAS consisting of clayey sand and clay, which can contain layers of water bearing zones of permeable deposits such as limestone. In areas where the ICU is regionally productive (mostly in Southwest Florida Water Management District (SWFWMD); see Figure 5), the ICU may be referred to as the Intermediate Aquifer System (IAS). In the CSEC RWSP area, the ICU yields little or no significant amount of water, although there may be localized use (for domestic self-supply and private irrigation) where pockets of permeable material exist within. Due to its comparatively low yields and limited spatial extent, the ICU will not have a significant role in meeting future water demands in the CSEC RWSP area.

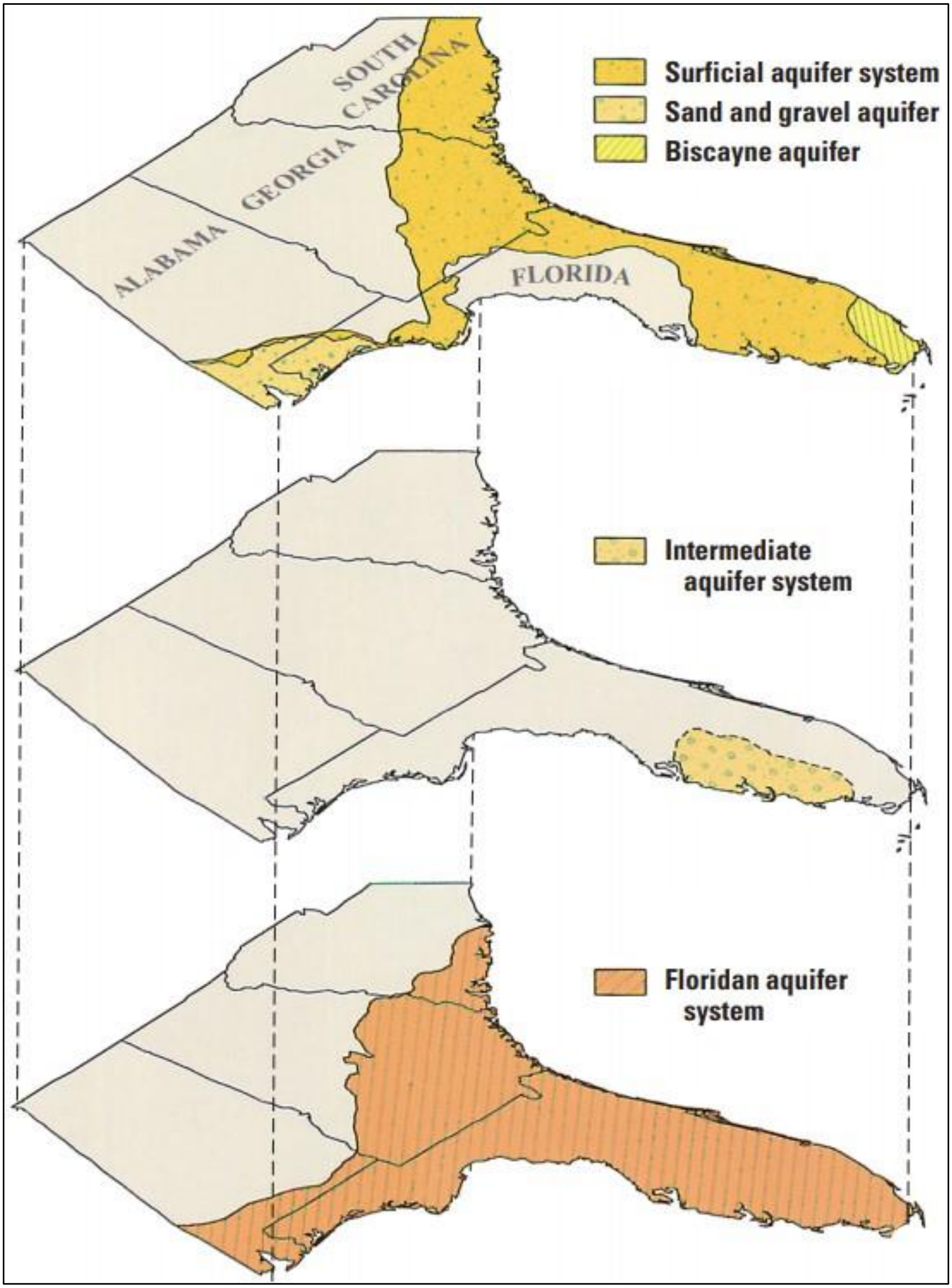


Figure 5: Diagram of the spatial extent of aquifer systems in Florida (adapted from Williams et al. 2016)

Springs

There are numerous springs within the CSEC RWSP area, including six that are classified as Outstanding Florida Springs (OFS) per ss. 373.802(4), F.S.: Alexander Springs in North Lake County; Silver and Silver Glen springs in Marion County; and Blue, DeLeon, and Gemini springs in Volusia County (Figure 6). Four of these springs (Alexander, Silver, Silver Glen, and Blue) are classified as first-magnitude springs, defined as having flows of at least 100 cubic feet per second (cfs). The remaining two OFS, DeLeon and Gemini springs, are classified as second-magnitude springs, defined as having flows between 10 and 100 cfs. There are seven additional second magnitude springs within the CSEC RWSP area including Bugg, Messant, and Seminole springs in North Lake County and Fern Hammock, Juniper, Salt, and Sweetwater springs in Marion County.

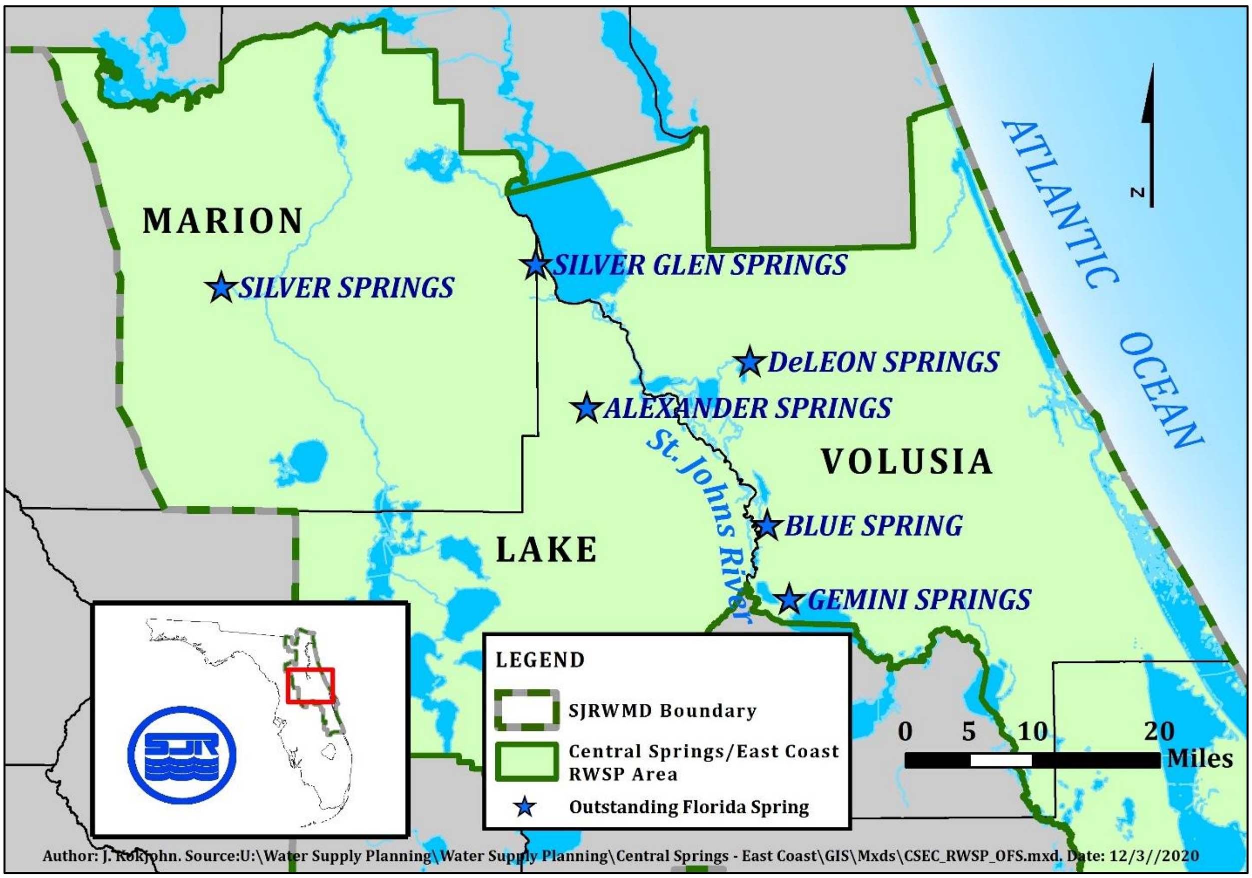


Figure 6: Location of Outstanding Florida Springs in the CSEC RWSP area

Traditional Water Sources

Fresh groundwater with less than 500 milligrams per liter (mg/L) total dissolved solids (TDS), 250 mg/L chloride, and 250 mg/L sulfate has been the primary water supply source in the CSEC RWSP area because of its proximity to the desired location of use and relatively low cost for treatment. The majority (94%) of public supply, domestic self-supply, agriculture, and commercial/industrial/ institutional water use in the CSEC RWSP area was from fresh groundwater during 2015. Given a consistent pattern of historic and current utilization of fresh groundwater, SJRWMD recognizes fresh groundwater as the only traditional water supply source in the CSEC RWSP area and designates all other water sources to be nontraditional (i.e., alternative water supplies (AWS); (ss. 373.019(1), F.S.)). Nontraditional or alternative sources include brackish groundwater, seawater, surface water, reclaimed water, stormwater, or water stored in aquifer storage and recovery facilities or reservoirs. In Marion and North Lake counties, the LFA is also considered a nontraditional source, so long as site-specific hydrogeologic investigations confirm adequate confinement between the UFA and LFA.

Chapter 2: Introduction to Water Supply Planning

Introduction

Florida's five Districts develop water supply plans to identify sustainable water supplies for all existing and anticipated water uses while protecting water resources and related natural systems. Water supply plans provide a view of projected future water needs, potential water supply sources, and avoidable water resource impacts to help all water users make informed decisions regarding how to meet their future water needs. The major components of a water supply plan include:

- Projected water demands for all use types through the planning horizon
- Potential water resource impacts that could occur as a result of meeting the projected increase in water demand with traditional sources
- Technically and economically feasible water resource and water supply development project options that could be implemented to meet future water demands while preventing the loss of natural resources

Legislative Mandates

Section (s.) 373.709, F.S., provides that the Districts shall conduct water supply planning when it is determined that 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. The Districts must conduct planning in an open public process, in coordination and cooperation with local governments, regional water supply authorities, water and wastewater utilities, multijurisdictional water supply entities, self-suppliers, the Florida Department of Environmental Protection (FDEP), the Florida Department of Agriculture and Consumer Services (FDACS), and other affected and interested parties. In addition, each RWSP must be based on at least a 20-year planning period and must include the following:

- Water supply and water resource development components
- Funding strategies for water resource development projects
- Consideration of how water supply development project options serve the public interest or save costs overall by preventing the loss of natural resources or avoiding greater future expenditures for water resource or water supply development projects
- The technical data and information applicable to each planning region which are necessary to support the regional water supply plan
- The minimum flows and minimum water levels (MFLs) established for water resources within each planning region
- Minimum flows and minimum water levels prevention and recovery strategies, if applicable

- Reservations of water adopted by rule pursuant to ss. 373.223(4), F.S., within each planning region
- Identification of surface waters or aquifers for which MFLs are scheduled to be adopted

Relationship to SJRWMD Regulatory Programs

Subsection 373.709(7), F.S., states that nothing contained in the water supply development component of the CSEC RWSP shall be construed to require any entity to select and/or implement a water supply development project identified in the component merely because it is identified in the RWSP. Pursuant to ss. 373.709(7), F.S., the CSEC RWSP may not be used in the review of consumptive use permit (CUP) applications, unless the RWSP or an applicable portion thereof has been adopted by rule, with one exception. The one exception is in evaluating an application for the consumptive use of water which proposes the use of a water supply development project as described in the CSEC RWSP and provides reasonable assurances of the applicant's capability to design, construct, operate, and maintain the project; then it is presumed that the AWS use by the applicant is consistent with the public interest (ss. 373.223(5), F.S.).

It is important to note that, while the CSEC RWSP may not be used in the review of CUP applications, SJRWMD may use data or other information used to develop the RWSP for regulatory purposes.

CSEC RWSP Outreach

During plan development beginning in 2016, SJRWMD held more than 38 focused meetings with local governments, regional organizations, utilities, the agricultural community, and other interested parties in the CSEC RWSP area. The purpose of the meetings was to share an overview of the CSEC RWSP process, provide background information of interest to stakeholders, and answer questions. SJRWMD also solicited feedback and project concepts. This effort provided a valuable means for stakeholders to engage with the CSEC RWSP development and share their perspectives with SJRWMD. In cases where feedback from local governments included updated or revised data, the data was considered during development of the CSEC RWSP pursuant to ss. 373.709(1), F.S. SJRWMD found the expanded input received during these discussions to be beneficial to the development of the CSEC RWSP.

In order to promote coordination and collaboration with state and regional agencies, once a draft of the CSEC RWSP was complete, it was provided to FDEP, FDACS, SWFWMD, South Florida Water Management District (SFWMD), and the Withlacoochee Regional Water Supply Authority for their review and comment prior to public release.

Approval Process

A total of four public workshops were held in July 2021 to discuss information pertaining to the CSEC RWSP consistent with ss. 373.709(1), F.S. A technical methods workshop to present the technical data and modeling tools used to support the CSEC RWSP was held on July 21, 2021. Three additional public workshops — held on July 26, July 28, and July 29, 2021 — communicated the status, overall conceptual intent, and impacts of the CSEC RWSP on existing and future reasonable-beneficial uses and related natural systems. The draft CSEC RWSP was posted for 47 days for public comment beginning on July 12, 2021. Comments received during the public workshop and comment period were incorporated, as appropriate, into the CSEC RWSP. All received public comments and SJRWMD responses are provided in Appendix M.

SJRWMD presented the CSEC RWSP to its Governing Board on February 8, 2022, at which time they voted unanimously for approval.

Requirements after Plan Approval

The SJRWMD water supply planning process is closely coordinated and linked to the water supply planning efforts of local governments and utilities. Significant coordination and collaboration throughout the development, approval, and implementation of the CSEC RWSP is necessary among all water supply planning entities.

Subsection 373.709(8)(a), F.S., requires SJRWMD to notify water supply entities identified in the CSEC RWSP as the parties responsible for implementing the various project options listed in the CSEC RWSP. When the notice is received by the water supply entity, the water supplier must respond to SJRWMD within 12 months about their intentions to develop and implement the project options identified by the CSEC RWSP or provide a list of other projects or methods to meet the identified water demands (ss. 373.709(8)(a), F.S.).

In addition to the requirements above, local governments are required to adopt water supply facilities work plans and related amendments into their comprehensive plans within 18 months following the approval of the CSEC RWSP. The work plans contain information to update the comprehensive plan's capital improvements element, which provides specifics about the need for and location of public facilities, principles for construction, cost estimates, and a schedule of capital improvements.

Local governments in the CSEC RWSP area are required by ss. 163.3177(6)(c)3, F.S., to modify the potable water sub-elements of their comprehensive plan by:

- Incorporating the water supply project or projects selected by the local government from those projects identified in the CSEC RWSP or proposed by the local government;
- Identifying water supply projects to meet the water needs identified in the CSEC RWSP within the local government's jurisdiction; and

- Including a work plan, covering at least a 10-year planning period, for building public, private and regional water supply facilities, including the development of AWS, which are identified in the potable water sub-element to meet the needs of existing and new development.

Chapter 3: Overview of Water Demand Components and Methods

Purpose

SJRWMD develops water demand projections to estimate future water needs, identify viable existing and reasonably anticipated sources of water to meet those needs, and identify water conservation potential. SJRWMD's goal in projecting water demands is to develop estimates that are reasonable, based on the best information available, and that are agreed to by both the water users and SJRWMD. The projected increase in water demand is used in water resource assessments to determine the potential for unacceptable impacts to groundwater quality, springs, and surface water bodies, as well as adverse change to wetland function, during the planning horizon.

Water use and projected water demand in SJRWMD is grouped into six water use categories for water supply planning.

- Public Supply
- Domestic Self-supply and Small Public Supply Systems (DSS)
- Agricultural Irrigation Self-supply
- Landscape/Recreational/Aesthetic Irrigation Self-supply (LRA)
- Commercial/Industrial/Institutional Self-supply (CII) and Mining/Dewatering Self-supply (MD)
- Power Generation Self-supply (PG)

Definitions for these water use categories are provided in Appendix B. SJRWMD also projects future reclaimed water flows, which can potentially offset future water demand.

Assumptions

For the purposes of the CSEC RWSP, SJRWMD assumed that projected increases in demand will be met from traditional sources, unless users are authorized via their consumptive use permit to develop and utilize other sources. Many public water supply utilities in Florida are in varying stages of transitioning exclusively from traditional sources to include alternative sources.

Guidance and minimum requirements for developing water demand and population projections are described in s. 373.709, F.S. Detailed methodologies utilized in the CSEC RWSP for all population and water demand projections, as well as their spatial distribution, are provided in Appendix B.

Population

Population projections yield the estimated population growth throughout the 2040 planning horizon and the percent change. SJRWMD estimates the population projections for water supply utilities in two categories; public supply and small public supply systems. For both categories, SJRWMD used a parcel-level population distribution method, as described in Appendix B. For domestic self-supply (DSS), SJRWMD also used a parcel-level population distribution method, as described in Appendix B, aligning the county-level growth rates to the Bureau of Economic and Business Research (BEBR) medium population projections for each county (Rayer and Wang 2017).

SJRWMD's total population for the CSEC RWSP area is expected to increase by more than 456,000 people (30% to approximately 1.96 million people) by 2040 (Figure 7). Public supply represents 84 percent of the 2040 total population projection, and DSS and small public supply systems represent the remaining 16 percent. The largest percent increase in population is projected to occur in Brevard, Indian River, and Okeechobee counties (34%), followed by Marion and North Lake counties (30%), and Volusia County (27%).

SJRWMD evaluated the 2019 population for the CSEC RWSP area to determine if realized population growth is in line with 2020 projected population. The 2019 population was 1.65 million whereas the 2020 projected population shows 1.67 million, or a 1.2 percent increase from 2019. The total projected increase in population from the base year to 2040 also represents a 1.2 percent increase per year. Therefore, it appears that realized population remains on track with projections when using 2015 as the base year.

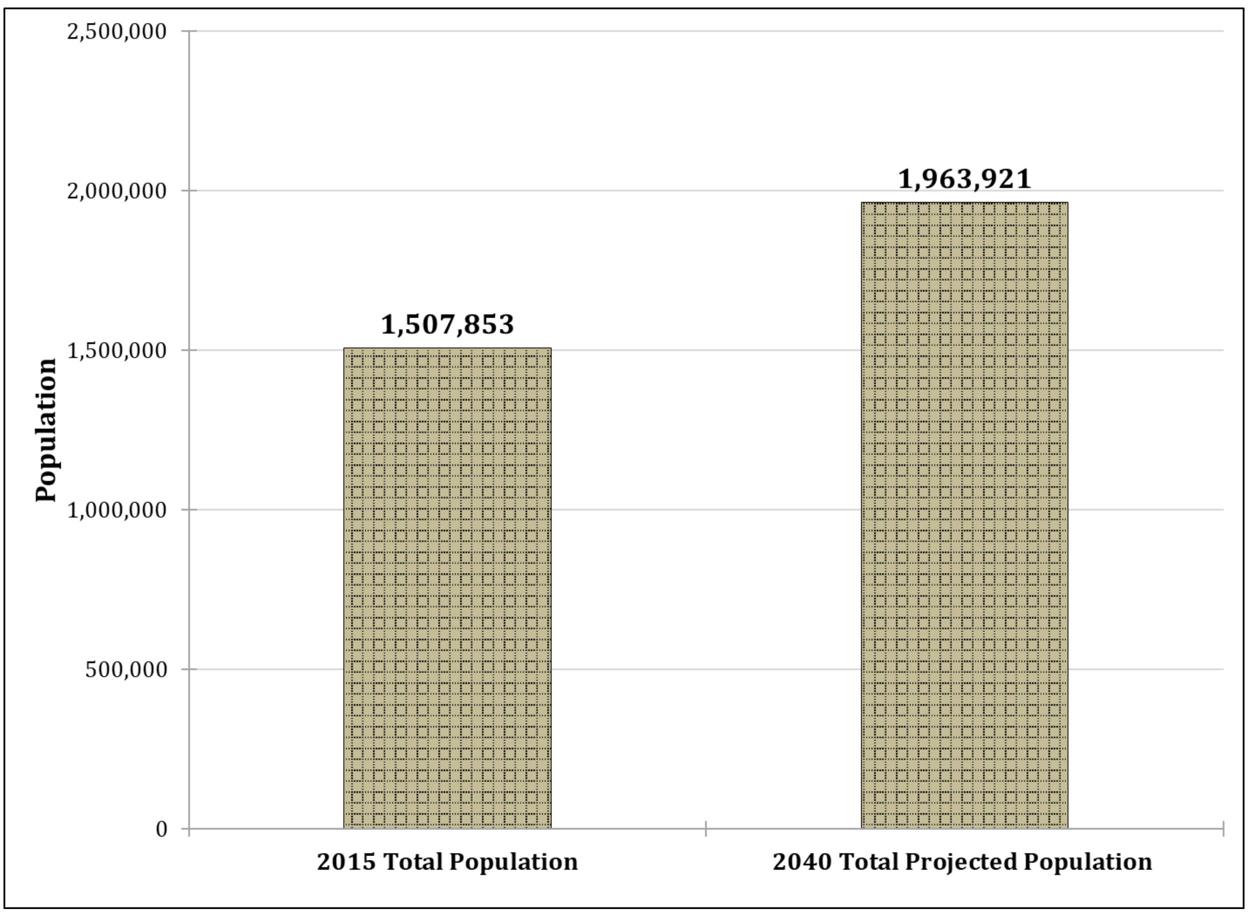


Figure 7: 2015 Population and 2040 projected population in the CSEC RWSP area

Water Demand Projections

Total water demand in the CSEC RWSP area is anticipated to increase from 353.2 million gallons per day (mgd) in 2015 to 427.9 mgd in 2040 (21%)(Figure 8). Public supply represents the largest demand in the CSEC RWSP area (45%), followed by agriculture (29%), LRA (13%), DSS (7%), CII/MD (4%), and PG (3%)[1]. SJRWMD also calculated a 1-in-10 year drought water demand for 2040, which represents an event that would result in an increase in water demand of a magnitude that would have a 10 percent probability of occurring during any given year. It is estimated that total water demand in 2040 could increase by an additional 19 percent (81 mgd) if a 1-in-10 year drought event occurred.

SJRWMD compiled water use data for 2016 through 2019 for the CSEC RWSP area to determine if significant changes in water use had occurred since the base year. Total water use for these years fluctuated between 6 and 20 percent of the 2015 total. Agricultural water use showed the greatest variation, which can be directly linked to precipitation timing and quantity. The average water use within the CSEC RWSP area from 2016 to 2019 was approximately 365.0 mgd. This average falls within the range bracketed by 2015 water use and 2020 projected water demand.

[1] Due to rounding to whole percent values, total does not equal 100.

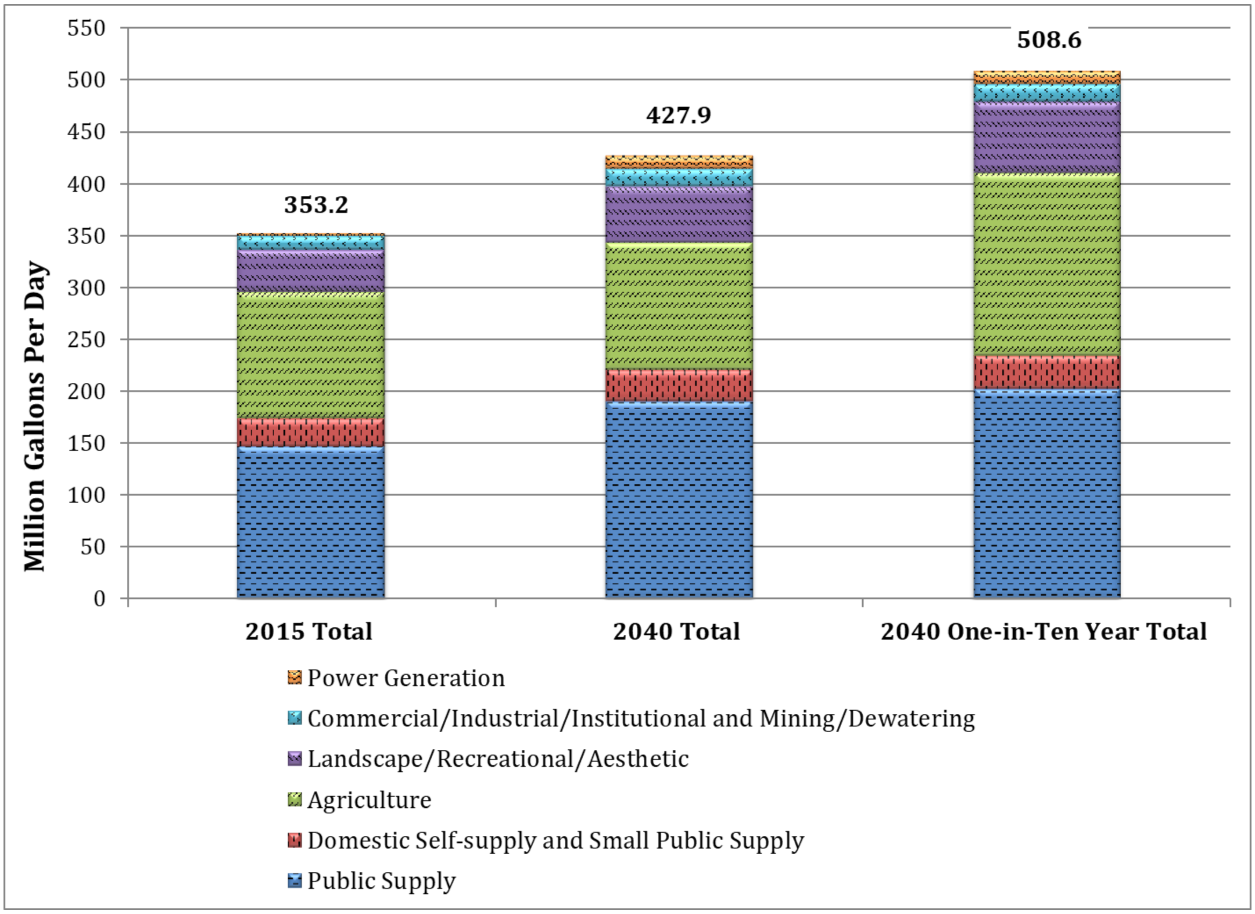


Figure 8: 2015 Water use and 2040 water demand projections in the CSEC RWSP area by category

Public Supply

The public supply category consists of residential and nonresidential uses supplied by public and private utilities that have CUPs to withdraw an annual average of 0.1 mgd or more.

SJRWMD calculated water demand for each public supply and small public supply (defined below with DSS) system. The public supply category includes water use provided by any municipality, county, regional water supply authority, special district, public or privately-owned water utility, or multijurisdictional water supply authority for human consumption and other water uses served by the water supplier (e.g., commercial facilities, schools, parks, industrial complexes, etc.).

Demand

For the CSEC RWSP, SJRWMD based the public supply and small public supply systems water demand projections on the 2011 to 2015 five-year average gross per capita rate, which was the most current five-year period at the time projections were developed. The gross per capita water use rate is the factor applied to projected population to determine future water demand. Gross per capita is the appropriate rate to utilize when projecting public supply demand since public supply provides water for other uses in addition to residential, whereas residential per capita does not include these other uses. For public supply and small public supply systems, the gross per capita rate is defined as the total water use (including residential and non-residential uses) for each individual public supply system divided by its respective residential population served expressed in average gallons per capita per day (gpcd). A five-year average is used to address annual variations in water use due to climate variations and implementation of water conservation programs. SJRWMD calculated five-year average gross per capita water use rates for each individual public supply and small public supply system.

The use of a gross per capita is recognized as a national standard methodology for water supply planning. However, this practice assumes that past water use is predictive of future water use and incorporates the current economic conditions and current rates of reclaimed water use and water conservation into the future projections. Factors such as water conservation, decreases in potable water used for landscape irrigation, and increases in multifamily housing occupancy can decrease the gross per capita rates. Conversely, expanded tourism and other commercial development, larger irrigated lots, and increases in single family housing occupancy can increase the gross per capita rates. Changes to the factors affecting gross per capita rates and public supply water demands that occur over time are captured during the five-year water supply plan updates.

Total public supply water demand for the CSEC RWSP area is expected to increase by 43 mgd (29% to approximately 191.0 mgd) by 2040 (Figure 9). Public supply represents 45 percent of the 2040 projected water demand in the CSEC RWSP area. Of note, public supply also represents 58 percent of the total projected increase in water demand in the CSEC RWSP area.

SJRWMD also calculated a 1-in-10 year drought water demand for 2040 (shown in Figure 9). It is estimated that public supply water demand in 2040 could increase by an additional 6 percent (11.5 mgd) if a 1-in-10 year drought event occurred.

Projected demand for small public supply systems (systems less than 0.1 mgd) is not included in the public supply category. SJRWMD aggregated the projected water demand for the small public supply systems for each county and summed those values to the total respective county demand for the DSS category, discussed next.

SJRWMD evaluated public supply and DSS water use compared to population for the five-year period of 2015 to 2019 to determine if there had been any significant changes in per capita (from the 2011 to 2015 average) that may impact public supply and DSS projections. The results show a difference of less than one percent when compared to values used for projections. Therefore, the use of 2011 to 2015 average per capita water use for public supply and DSS demand projections continues to be appropriate.

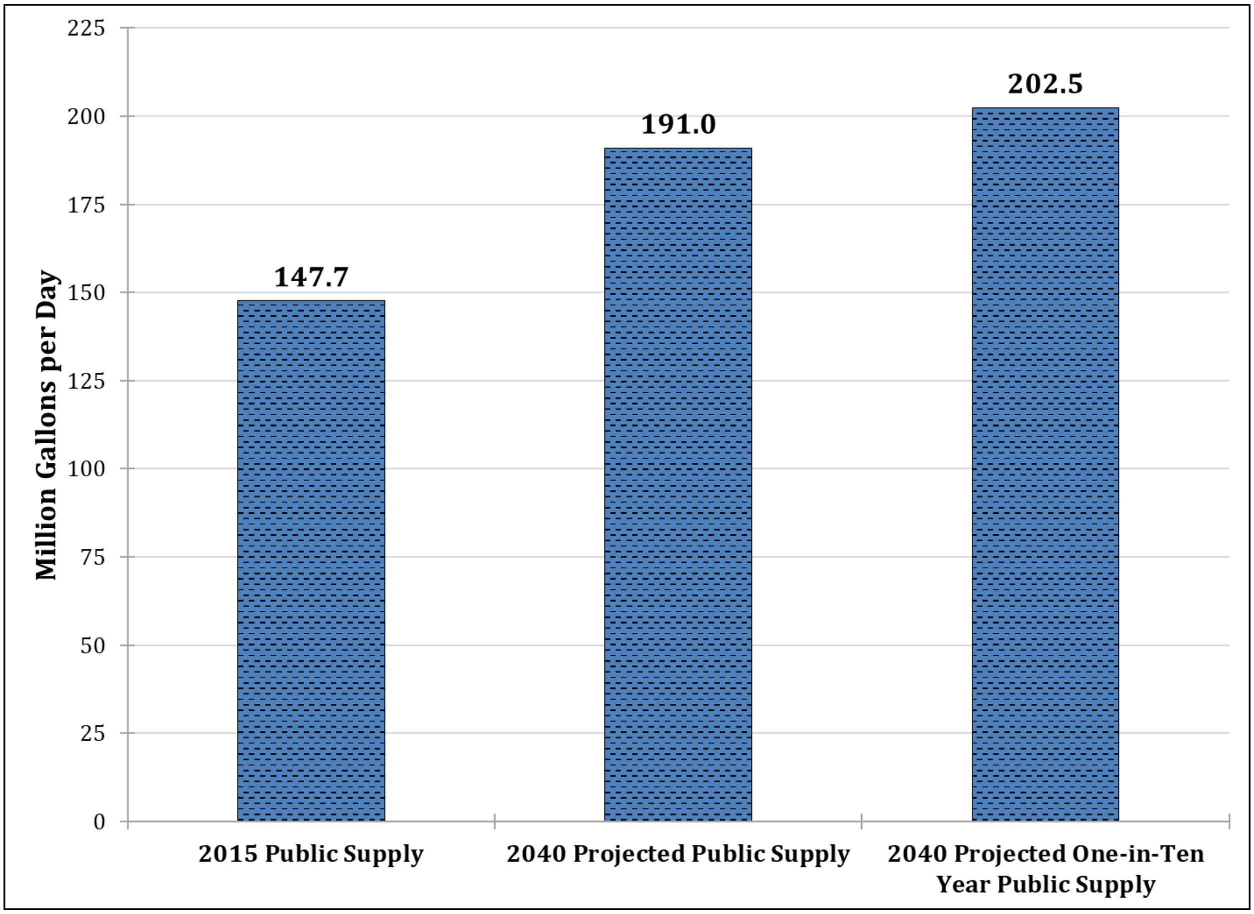


Figure 9: 2015 Public supply water use and 2040 water demand projections in the CSEC RWSP area

Domestic Self-Supply

The DSS category consists of residential dwellings not served by a public supply and small public supply systems (systems less than 0.1 mgd). Historic water use and population and projected water demand and population for small public supply systems are calculated individually but are combined with the DSS category for reporting purposes at the county level.

Demand

For the CSEC RWSP, SJRWMD based the DSS water demand projections on the 2011-2015 five-year average residential per capita rate for each county. The residential per capita rate is defined as the water used solely for residential purposes (both indoor and outdoor) divided by the total population in the category. Gross per capita is not used for this category since it includes uses other than residential.

Total DSS and small public supply system water demand for the CSEC RWSP area is expected to increase by 3.5 mgd (13% to approximately 30.3 mgd) by 2040 (Figure 10). In this water use category, domestic self-supply represents 87 percent of the 2040 projected water demand, with the remaining 13 percent representing small public supply systems.

SJRWMD also calculated a 1-in-10 year drought water demand for 2040 (shown in Figure 10). It is estimated that water demand in 2040 would increase by an additional 6 percent (1.8 mgd) if a 1-in-10 year drought event occurred.

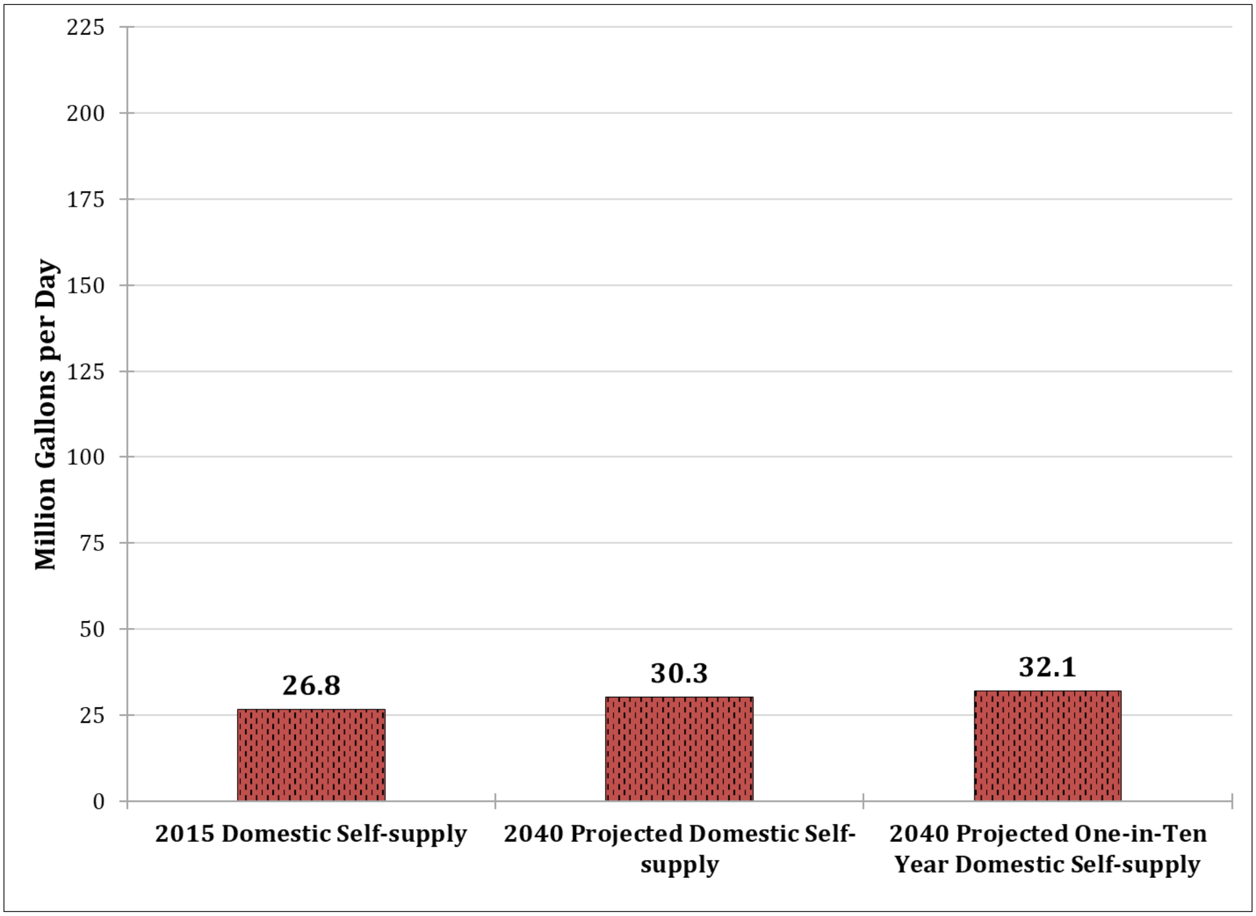


Figure 10: 2015 Domestic self-supply (combined) water use and 2040 water demand projections in the CSEC RWSP area

Agriculture

The agricultural irrigation self-supply category includes the irrigation of crops and other miscellaneous water uses associated with agricultural production. Irrigated acreage and projected water demands were determined for a variety of crop categories, including citrus, vegetables, melons, berries, field crops, greenhouse/nursery, sod, and pasture. In addition, projected water demands associated with other agriculture uses were estimated and reported as miscellaneous type uses, such as aquaculture, dairy/cattle, poultry, and swine.

In 2013, legislation was passed that required the Districts to consider agricultural demand projections provided by FDACS (ss. 373.709(2)(a)1b, F.S.) when developing RWSPs. FDACS developed future agricultural acreage and water demand projections in five-year increments for the state of Florida for the years 2020-2040, as well as a water demand for a 1-in-10 drought year and delivered the final draft to SJRWMD on June 30, 2017 (FDACS 2017). This product is known as the Florida Statewide Agricultural Irrigation Demand (FSAID) and the June 30, 2017 version is identified as FSAID IV.

SJRWMD used the FSAID IV agricultural acreage and water demand projections (FDACS 2017) for the CSEC RWSP. Detailed methodology can be found in the June 30, 2017, FSAID IV Final Report (FDACS 2017).

Acreage and Demand

By 2040, SJRWMD's total agricultural water demand for the CSEC RWSP area is expected to increase by 1.2 mgd (1% to approximately 122.9 mgd) and acreage is expected to decrease by 7,500 acres (7% to approximately 97,000 acres) (Figures 11 and 12). Although agricultural acreage is projected to decrease, water demand is projected to increase due to crop intensification (e.g., double and triple cropping) related to industry trends. Citrus is projected to account for 45 percent of the 2040 agricultural acreage in the CSEC RWSP area, followed by hay at 18 percent and fresh vegetables at 10 percent.

According to FSAID IV, projected water demand in 2040 (which was based on a 5-in-10 year, or average, drought condition) could increase by an estimated 44 percent (53.6 mgd) if a 1-in-10 year drought event occurred (Figure 11).

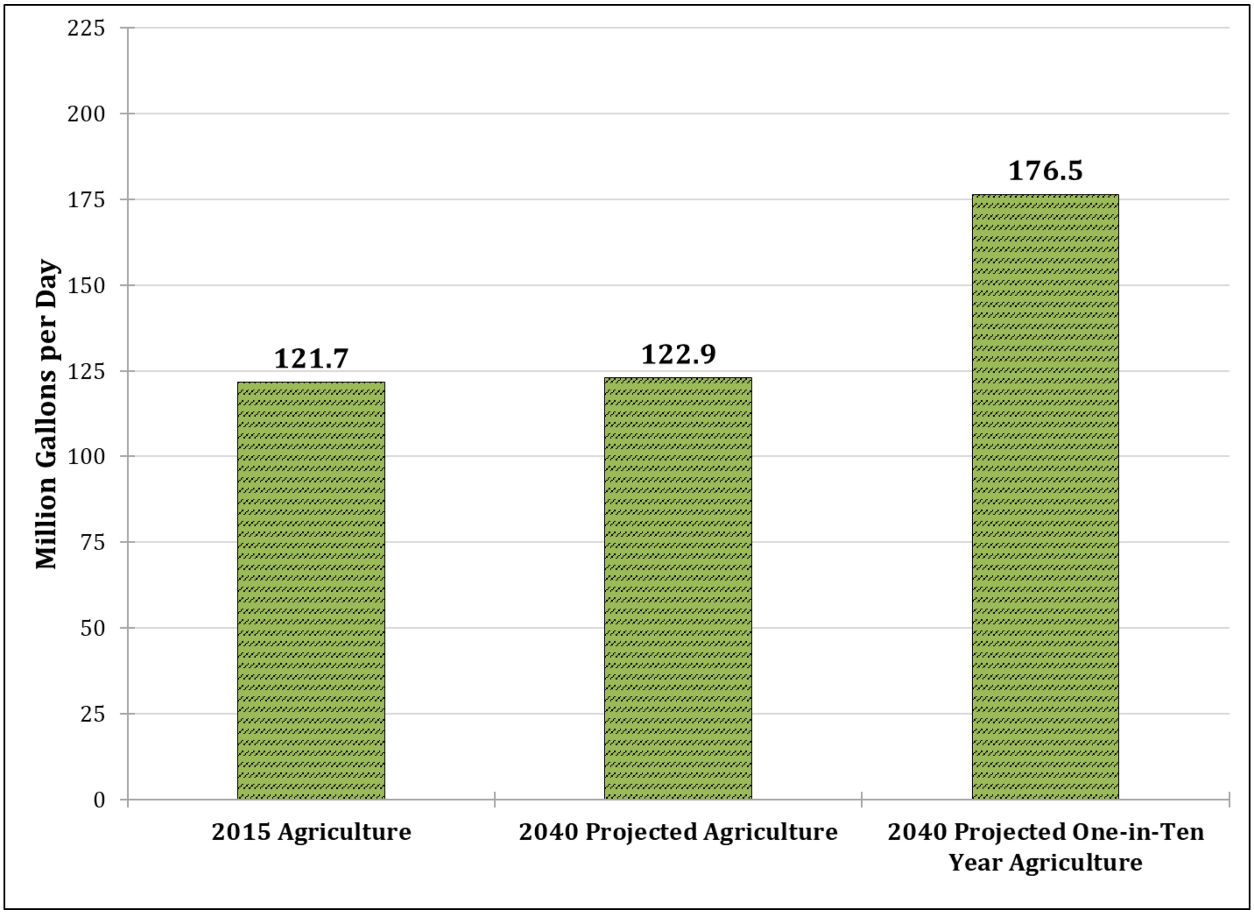


Figure 11: 2015 Agriculture water use and 2040 water demand projections in the CSEC RWSP area (FDACS 2017)

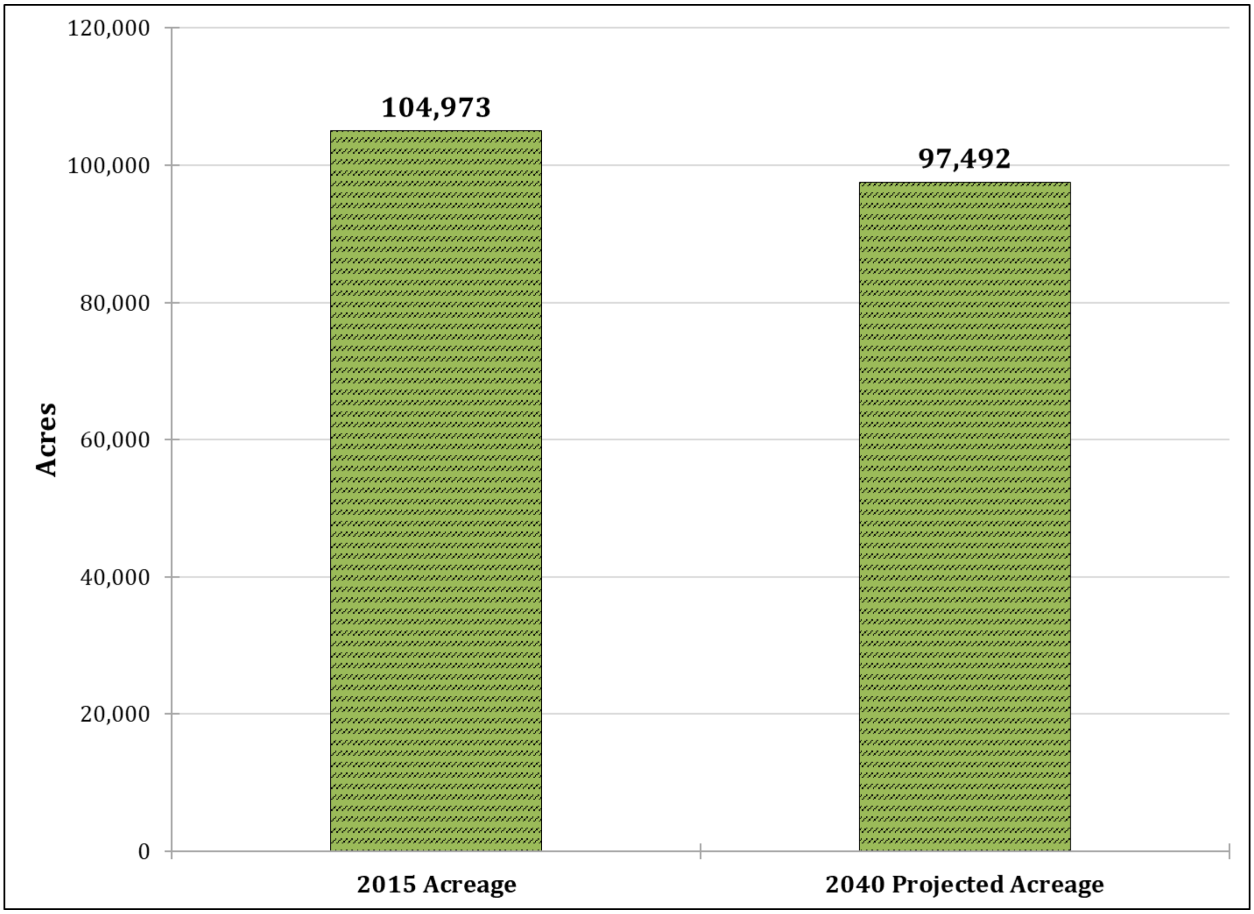


Figure 12: 2015 Agriculture acreage estimates and 2040 acreage projections in the CSEC RWSP area (FDACS 2017)

Commercial/Industrial/Institutional and Mining/Dewatering

The Commercial/Industrial/Institutional (CII) category represents water use associated with the production of goods or provisions of services by CII establishments. Commercial uses include general businesses, office complexes, commercial cooling and heating, bottled water, food and beverage processing, restaurants, gas stations, hotels, car washes, laundromats, and water used in zoos, theme parks, and other attractions. Industrial uses include manufacturing and chemical processing plants and other industrial facilities, spraying water for dust control, maintenance, cleaning, and washing of structures and mobile equipment, and the washing of streets, driveways, sidewalks, and similar areas. Institutional use includes hospitals, group home/assisted living facilities, churches, prisons, schools, universities, military bases, etc. The Mining/Dewatering (MD) category includes water uses associated with the extraction, transport, and processing of subsurface materials and minerals and dewatering for the long-term removal of water to control surface or groundwater levels during construction or excavation activities.

Demand

Water demand for the CII/MD categories was projected at the county level using a respective CII/MD historic average gpcd. CII/MD historic water use and projected water demand consist of only consumptive uses; recycled surface water or non-consumptive uses were not included. For the CSEC RWSP, SJRWMD used the loss of water in the mining operations due to evaporation and water removed in the product to calculate demand. The amount of water lost is represented by 5 percent of the total surface water withdrawn by the mine operation. The remaining surface water was assumed to be recirculated in the mining process and, therefore, is considered nonconsumptive. For further clarification, SJRWMD defines consumptive use as any use of water that reduces the supply from which it is withdrawn or diverted. The CII/MD average gpcd was applied to the additional population projected by BEBR (Rayer and Wang 2017) for each five-year increment and the associated water demand was added to the 2015 base-year water use. Water demands for large commercial and industrial facilities that are not impacted by population growth (e.g., pulp and paper mills) were held constant.

Total combined CII/MD water demand for the CSEC RWSP area is expected to increase by 3.1 mgd (22% to approximately 16.9 mgd) by 2040 (Figure 13).

Since the majority of water use in this category is related to processing and production needs, SJRWMD did not quantify drought event (1-in-10 year) water use projections, which is consistent with state planning guidelines. It was assumed that CII/MD water use would remain fairly constant with varying climatic conditions.

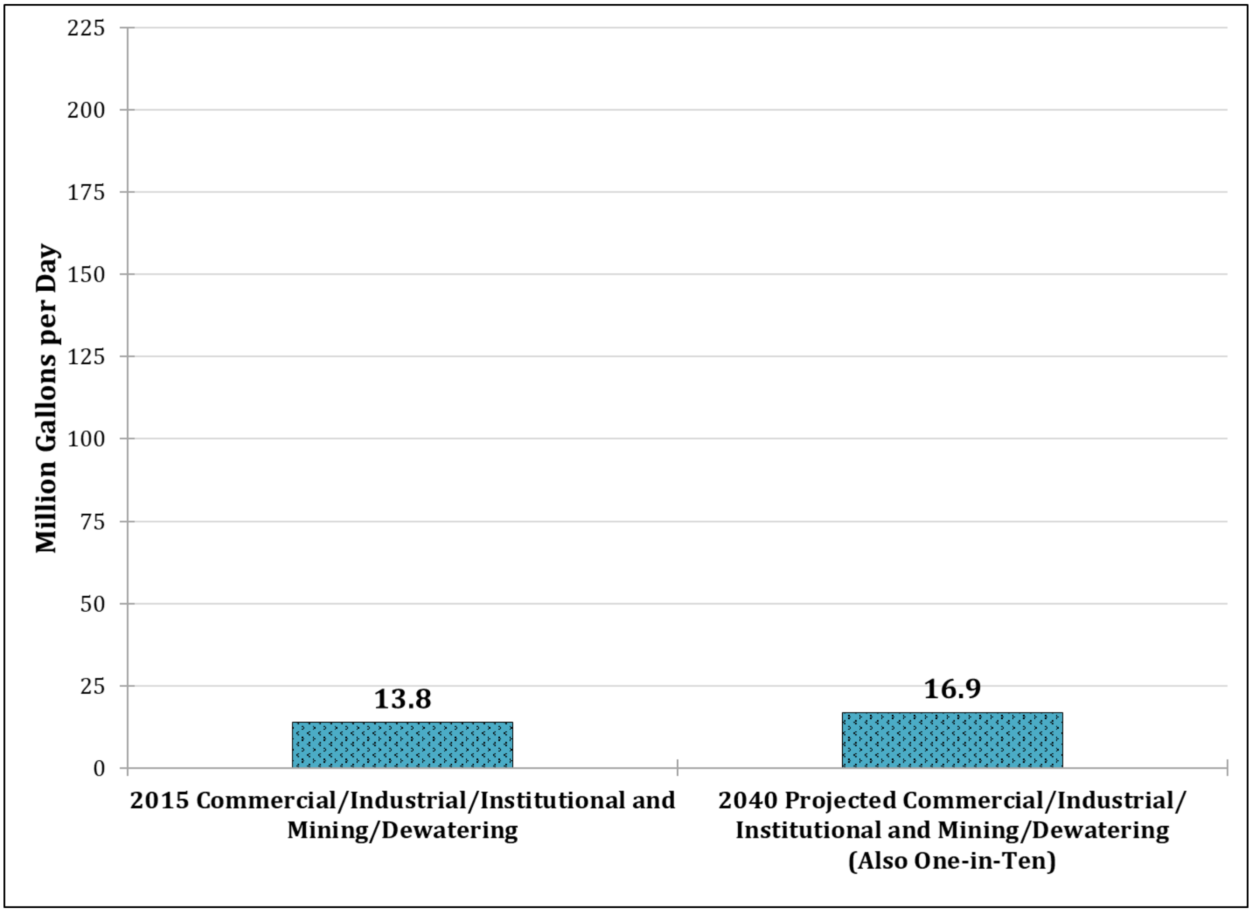


Figure 13: 2015 Commercial/Industrial/Institutional and Mining/Dewatering water use and 2040 water demand projections in the CSEC RWSP area

Landscape/Recreation/Aesthetic

The LRA category represents self-supplied water use associated with the irrigation, maintenance, and operation of golf courses, cemeteries, parks, medians, attractions, and other large, irrigated areas. Landscape use includes the outdoor irrigation of plants, shrubs, lawns, ground cover, trees, and other flora in such diverse locations as the common areas of residential developments and industrial buildings, parks, recreational areas, cemeteries, public rights-of-way, and medians. Recreational use includes the irrigation of recreational areas such as golf courses, soccer, baseball and football fields, and playgrounds. Water-based recreation use is also included in this category, which includes public or private swimming and wading pools and other water-oriented recreation such as water slides. Aesthetic use includes fountains, waterfalls, and landscape lakes and ponds where such uses are ornamental and decorative.

Demand

Water demand for the LRA category was projected at the county level using a respective LRA historic average gpcd. The average LRA gpcd was applied to the additional population projected by BEBR (Rayer and Wang 2017) for each five-year increment and the associated water demand was added to the 2015 base-year water use. Future acreage estimates were interpolated from 2015 acreage and 2015 water use ratios.

Total LRA water demand for the CSEC RWSP area is expected to increase by 13.2 mgd (32% to approximately 54.2 mgd) by 2040. It is estimated that water demand in 2040 could increase by 26 percent (13.8 mgd) if a 1-in-10 year drought occurred (Figure 14).

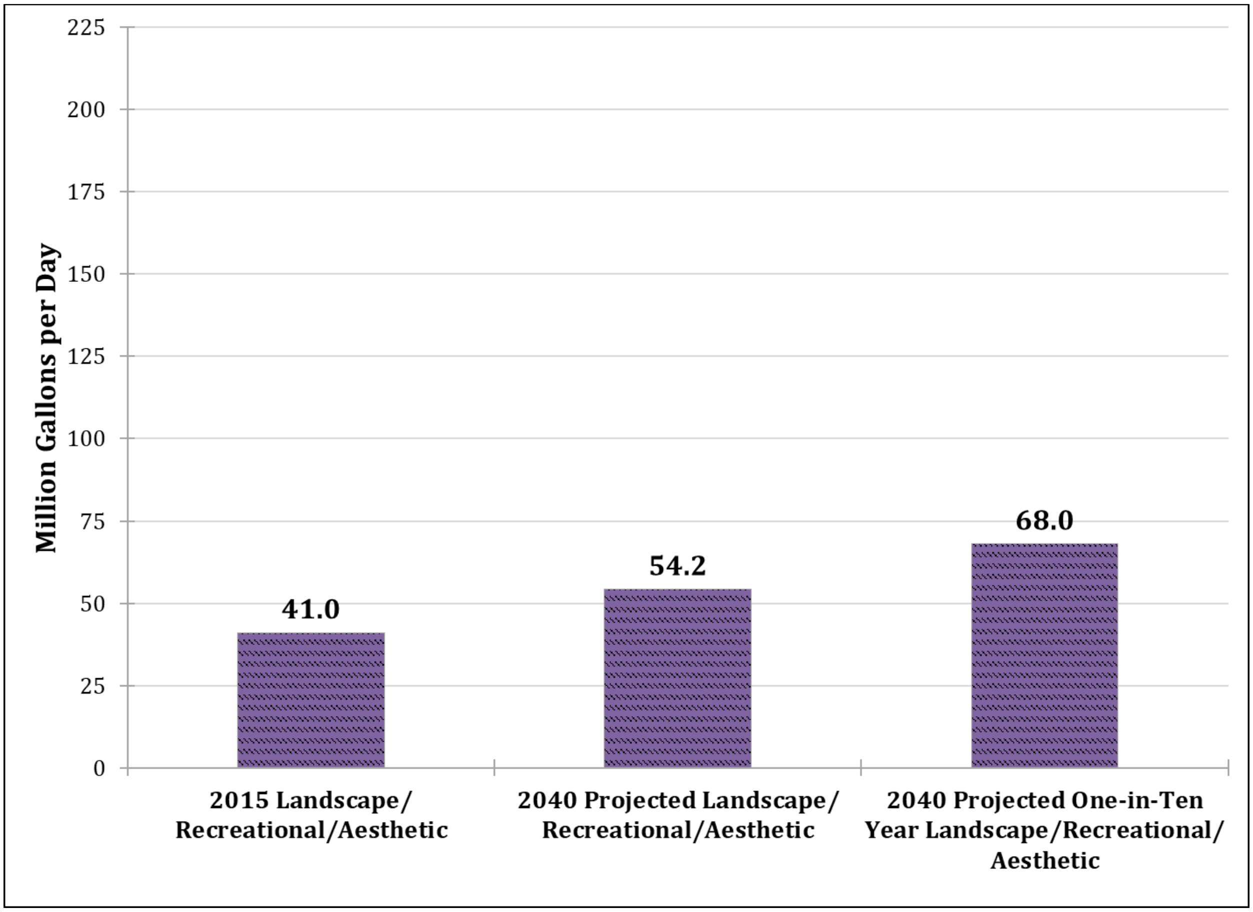


Figure 14: 2015 Landscape/Recreational/Aesthetic water use and 2040 water demand projections in the CSEC RWSP area

Power Generation

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

Demand

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

The Florida Public Service Commission (PSC) requires that each PG entity produce detailed 10-year site plans for each of its facilities. These plans include planned facilities and generating capacity expansion, as well as decommission of facilities and reductions associated with more efficient processes. The 2015 10-year site plans for each PG facility within the CSEC RWSP area were downloaded from the PSC website and were used in developing the PG water demand projections (http://www.floridapsc.com/ElectricNaturalGas/TenYearSitePlans).

For each PG facility with a planned capacity expansion, PG consumptive use capacity projections were interpolated between the existing capacity and the planned capacity, as detailed in the 10-year site plans. The projection of PG consumptive water demand beyond the planned expansion in the 10-year site plans was calculated for each facility using a linear extrapolation of the existing and planned expansion dates and data and BEBR medium population projection rates (Rayer and Wang 2017). In addition, the average daily gallon per megawatt use was estimated for 2011–2015 and used as a proxy to project future water demand beyond the 10-year site plans and when projected water demand (for the 10-year site plan period) was not included.

Total PG water demand for the CSEC RWSP area is expected to increase by 10.3 mgd (456% to approximately 12.6 mgd) by 2040 (Figure 15). This increase is due largely to a new power generation facility located in Okeechobee County.

SJRWMD determined that drought events do not have significant impacts on water use in the PG category. Water use for this category is related primarily to processing and production needs.

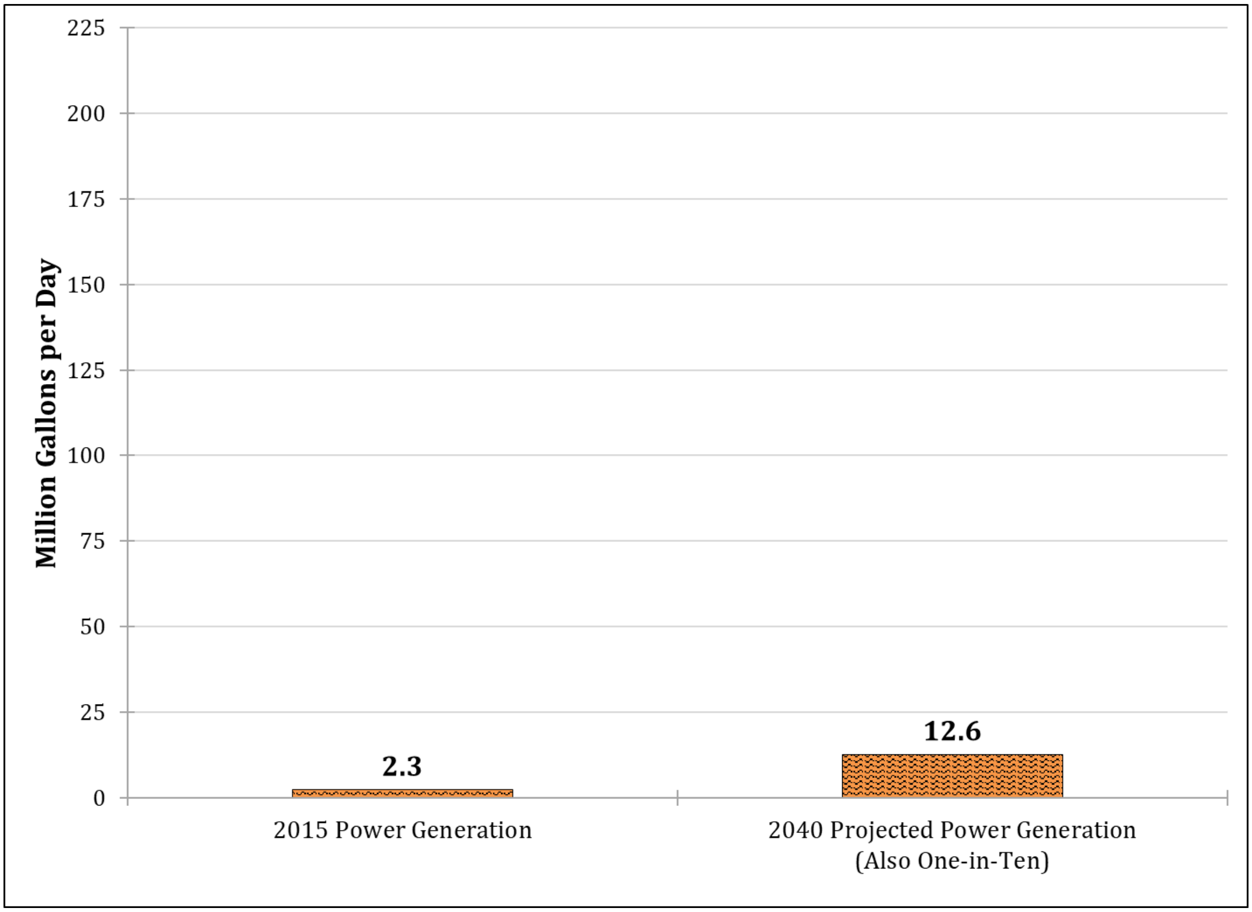


Figure 15: 2015 Power generation water use and 2040 water demand projections in the CSEC RWSP area

Reclaimed Water Projections

Projections were made for domestic wastewater treatment facilities (WWTF) with 2015 permitted wastewater treatment capacities equal to or greater than 0.1 mgd. A detailed methodology for reclaimed water projections is provided in Appendix B.

Existing Flows

SJRWMD considered base year (2015) reclaimed water flows that were not used beneficially to be available for future use. SJRWMD considers beneficial reuse to be only those uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable, such as water used for landscape irrigation. Delivery of reclaimed water to sprayfields, absorption fields, and rapid infiltration basins are not considered beneficial reuse by SJRWMD, unless located in recharge areas. Reclaimed water flows in 2015, including both beneficial use and disposal, totaled 83.2 mgd in the CSEC RWSP area. Overall, 47.2 mgd (57%) of reclaimed water was used beneficially in 2015.

Recognizing the potential for increased beneficial reuse of existing flows, SJRWMD employed two methodologies for estimating a reasonable quantity that could be utilized. The first method used the FDEP statewide reuse utilization goal of 75 percent (FDEP 2003). For the CSEC RWSP, the amount of WWTF flows not being utilized beneficially in 2015 was multiplied by 75 percent, and the result (27.0 mgd) was considered as additional existing reclaimed water that could be used for beneficial reuse.

For the second method, SJRWMD applied the 2015 percent beneficial utilization for each facility to the quantity of 2015 wastewater flows that was not utilized beneficially. For example, if a facility treated 5 mgd of wastewater in 2015 and utilized 4 mgd beneficially (80%), the percent beneficial utilization (80%) was applied to the amount not beneficially reused (1.0 mgd) providing an estimated 0.8 mgd of reclaimed water currently available from that facility. The resulting quantity of potential existing reclaimed water in the CSEC RWSP area that could be used beneficially was 13.7 mgd. It is recognized that each WWTF is unique and items such as system upgrades and treatment, additional storage, system expansion, customer availability, etc., have to be taken into consideration.

Future Flows

SJRWMD identified WWTFs that could potentially receive additional wastewater flow as a result of population growth. It was assumed that 95 percent of the population increase identified within each public supply service area will receive sewer service and thereby return wastewater for treatment (CFWI 2015). It is acknowledged that the actual percentage of sewered population growth and resulting wastewater flows will vary for individual service providers due to a number of factors.

It was further assumed that the increased sewered population will generate approximately 84 gpcd of wastewater to the local WWTF (Vickers 2001, Mayer and DeOreo 1999, AWWA 1999). The estimated future flow was then multiplied by the FDEP utilization goal of 75 percent (FDEP 2003) and the 2015 beneficial utilization percentage by utility to generate a range of potential 2040 quantities of new additional reclaimed water available for reuse, 21.5 mgd and 16.6 mgd, respectively (Appendix B).

In total, SJRWMD estimated that between 30.3 mgd and 48.5 mgd of additional reclaimed water, including current and future flows, could be reused for beneficial purposes by 2040, potentially offsetting withdrawals from traditional water sources and reducing predicted impacts within the CSEC RWSP area.

SJRWMD recognizes that only a portion of the existing and future wastewater treated for reuse actually offset demands that would otherwise require the use of fresh groundwater. The amount of potable-offset that is typically achieved utility-wide is approximately 65 percent to 75 percent but can range from 50 percent to as much as 100 percent, depending on the type of use being replaced. The projected wastewater flows do not represent an amount equal to the demand reduction due to system losses, inefficiencies of its reuse customers, and timing of availability relative to demand.

Reclaimed water systems are unique to each utility and the potential WWTF flow estimated for this CSEC RWSP may not necessarily represent the reclaimed water that could be used in projects. Current treatment processes, WWTF capacities, storage, and infrastructure have to be considered, which could potentially have a financial impact associated with utilization of additional or currently available reclaimed water. Likewise, SJRWMD realizes that future and existing utilization may be higher than estimated if the WWTF provided reclaimed water for reuse to more efficient customers.

SJRWMD also recognizes that potential future wastewater flow could be less if additional residential indoor water conservation is achieved. For example, the American Water Works Association has noted (drinktap.org) that if all residences installed more efficient water fixtures and regularly checked for leaks, daily indoor water use and associated wastewater flows could potentially be reduced to 45.2 gpcd (Vickers 2001).

Water Conservation and Irrigation Efficiency

Current water demand projections and the water conservation potential for the CSEC RWSP area were calculated in an effort to gauge the future benefit of effective water conservation. It is important to note that reductions in water use resulting from current and historical water conservation efforts are reflected in the 2040 water demand projections that were calculated for the CSEC RWSP. Current water demand projections are lower than previously developed for this area, in part, because of the effects of existing water conservation.

For the CSEC RWSP, SJRWMD created two scenarios of potential water conservation for the public supply and DSS categories. Irrigation efficiency estimates for agriculture can be found in the FSAID IV Final Report (FDACS 2017). For the remaining water use categories, SJRWMD employed the methodology developed during the CFWI RWSP process (CFWI 2015).

For the first scenario for the public supply and DSS categories, as well as all other categories excluding agriculture, the conservation potential was derived from the percent reduction in water use by category associated with the implementation of specific best management practices (BMPs) as calculated within the 2015 CFWI Final RWSP (CFWI 2015). With the percent reductions applied to the 2040 CSEC projected water demand along with FDACS estimates of agricultural irrigation efficiency, it is estimated that approximately 27.0 mgd of the projected demand for 2040 could be reduced if water conservation BMPs were implemented (Table 1). Estimates of water conservation potential for DSS, CII, LRA, and PG were based on the implementation of relevant public supply BMPs.

For the second public supply and DSS conservation scenario, SJRWMD calculated the average 2011-2015 gross per capita rate for each of the three sub-regions in the CSEC RWSP area. For the utilities whose gross per capita was greater than their sub-region average, the sub-region average gross per capita was multiplied by the utility's 2040 population projections to calculate a revised demand. The corresponding percent reduction in public supply demand by county was then applied to DSS. If all public supply systems achieved the average 2011–2015 gross per capita rate for their respective sub-region of the CSEC RWSP area and the same percent savings was applied to DSS demand, water conservation could be increased by an additional 42 percent for a total of 38.2 mgd (Table 1).

Table 1: 2040 Water conservation and irrigation efficiency potential

Category	**2040 Low Conservation Potential (mgd)**	**2040 High Conservation Potential (mgd)**
Public Supply	7.8	18.1
Domestic Self-supply	1.2	2.3
Agriculture	16.0	16.0
Landscape/Recreation/Aesthetic Self-supply	1.5	1.5
Commercial/Industrial/Institutional Self-supply	0.2	0.2
Power Generation Self-supply	0.2	0.2
Total[1]	**27.0**	**38.2**

Note: mgd = million gallons per day

[1] Totals may be slightly different due to rounding of individual values.

Chapter 4: Evaluation of Potential Effects of Projected Water Demand on Water Resources within the CSEC RWSP Area (Water Resource Assessment)

Purpose

The purpose of the CSEC RWSP water resource assessment was to evaluate the extent to which water resources and related natural systems may be impacted by projected increases in groundwater withdrawals within the CSEC RWSP area through 2040. This chapter provides information regarding the evaluations for the entire CSEC RWSP area. Details regarding the evaluations performed for the each of the three sub-regions are provided in Appendix A. Evaluated assessment components included MFLs, groundwater quality, and wetlands. The results of the assessment identified potential impacts that could occur absent implementation of projects and measure identified within the water supply plan and were used to support the delineation of the CSEC RWSP area as a water resource caution area (Chapter 5).

Modeling within the CSEC RWSP Area

Three groundwater flow models (Figure 16) were used to evaluate the potential for resource impacts on natural systems in the CSEC RWSP area from 2040 projected water demand; the Northern District Model Version 5 (NDMv5)(HGL et al. 2016), the 2015 Volusia Groundwater Flow Model (Volusia model)(Williams 2006), and the East-Central Florida Transient Expanded Model Version 1.0 (ECFTX)(CFWI 2020a). These groundwater flow models incorporate all elements of the water budget including recharge, evapotranspiration, surface water flows, groundwater levels, and water use. The models are the best available tools for simulation of the groundwater systems and groundwater withdrawal impacts on water resources within the CSEC RWSP area. SJRWMD is partnering with SWFWMD in the development of a new regional groundwater flow model, the Central Springs model, which will replace both the NDMv5 and the Volusia model in the next CSEC RWSP five-year update.

In support of the SJRWMD modeling approach, the following, which comes from the United States Geological Service (USGS) Scientific Investigations Report 2016-5116 (Kuniansky 2016), is a general statement regarding modeling of the Floridan Aquifer System (FAS) using porous-equivalent media models.

> The USGS, multiple state water management districts, and other agencies and consultants have frequently used porous-equivalent media models for water-management problems to simulate the Biscayne aquifer and the FAS in Florida. The Biscayne aquifer and FAS are composed of karstified carbonate rocks that can be characterized as dual porosity continua. As of 2015, more than 30 models developed by the USGS have used a single-continuum porous-equivalent (SCPE) model approach to meet necessary calibration criteria for the study objectives. Many of the Districts in Florida use a SCPE model approach for groundwater management and

resource evaluation. Most of these SCPE models are applied to water-supply studies and are regional or subregional in scale and water budgets are desired; this is an appropriate application of such models.

Minimum Flows and Minimum Water Levels (MFLs)

Section 373.042, F.S., directs FDEP or the Districts to establish MFLs for lakes, rivers, springs, wetlands, and aquifers. A premise of MFLs determinations is that by identifying all relevant environmental metrics and protecting the most constraining (i.e., most sensitive to water withdrawals), the basic structure and function of a given ecosystem will also be protected. Therefore, MFLs represent the limits at which further withdrawals would be significantly harmful to the water resources or ecology of the area. As such, MFLs provide quantitative metrics for water resource assessments and CUP application evaluations. If an analysis determines that a water body is not currently meeting its MFLs or is projected to fall below its MFLs during a 20-year planning horizon, the water body is said to be in recovery or prevention, respectively. In both cases, the Districts are required to formulate a strategy to ensure the MFLs are achieved throughout the planning horizon.

The Districts are required to submit to FDEP an annual priority list and schedule for the establishment of MFLs. The priority list is based on the importance of waters to the state or region and the existence of, or potential for, significant harm to the water resources or ecology of the region. Appendix E includes a summary of the SJRWMD 2020 Priority List and Schedule.

Information on all the adopted MFLs within SJRWMD can be found in Chapter 40C-8, *Florida Administrative Code* (*F.A.C.*). Within the CSEC RWSP area, SJRWMD assessed the status of 25 lakes, six springs, and two river reaches with MFLs (Figure 17). A summary of the assessment methodologies and results are provided below. See Appendix A for a more detailed discussion by sub-region and Appendix F for additional information concerning the methodologies and analyses.

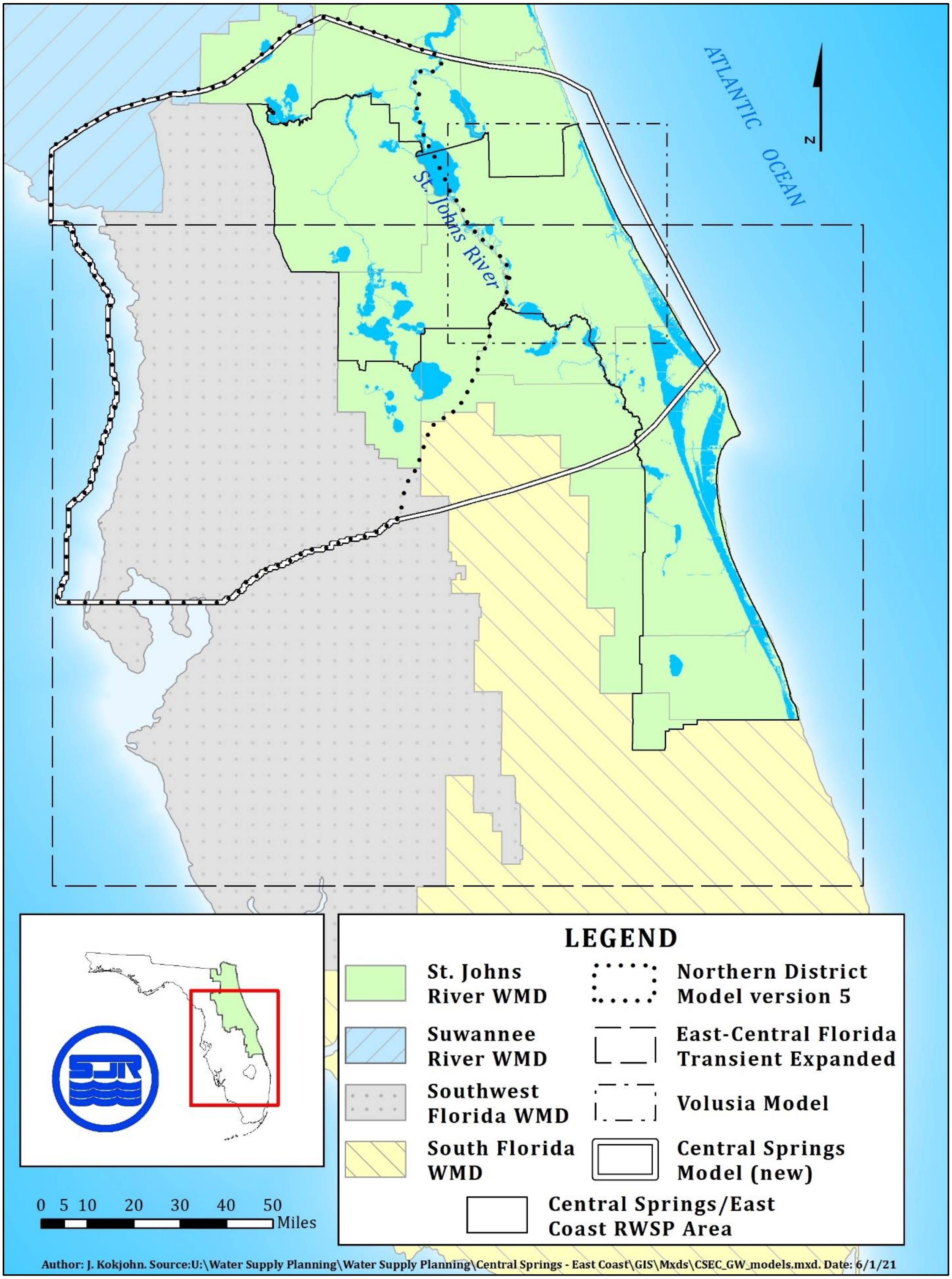


Figure 16: Groundwater flow models within the CSEC RWSP area

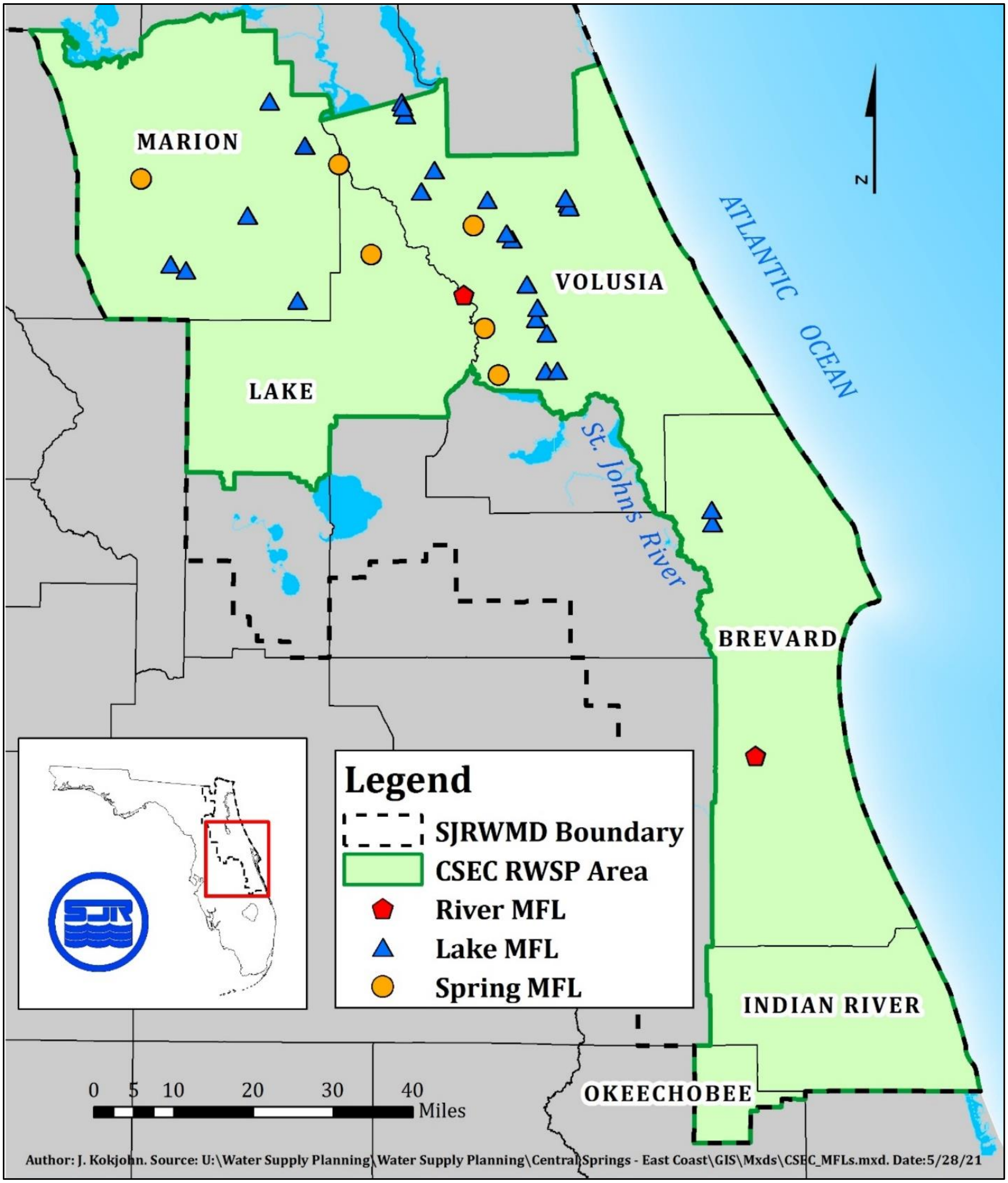


Figure 17: Location of MFL water bodies assessed in the CSEC RWSP area

Lakes with MFLs

Methodology

When lake MFLs are adopted, an Upper Floridan aquifer (UFA) freeboard value associated with a lake's surface water model year is typically quantified. The freeboard provides the maximum amount of additional UFA drawdown that can occur beneath the lake to ensure that its most constraining environmental metric is met. Model-derived UFA drawdown from the appropriate groundwater flow model was used to update the UFA freeboard under each lake to current conditions (2015, or 2014 for the ECFTX) to determine current MFL status and to projected 2040 conditions to determine MFL status at the planning horizon.

Results

The MFL status evaluation determined that all 25 evaluated MFL lakes were meeting their adopted MFLs under current conditions. Four lakes, all located in Volusia County, were projected to not meet their MFLs by 2040. These lakes (Butler, Indian, Scoggin, and Shaw) are classified as being in prevention.

Springs with MFLs

Methodology

All six of the MFL springs assessed within the CSEC RWSP area are designated as OFS pursuant to subsection 373.802(4), F.S. For each spring system, the amount of flow available for consumptive uses (freeboard) was previously identified in a status assessment of each spring's MFLs. Freeboard values were brought forward to 2015 conditions by evaluating changes in model-derived spring flow (from the initial status assessment year to 2015) to evaluate current MFL status. To determine MFL status at the planning horizon, model-derived flow reductions predicted as a result of increased water demand from 2015 to 2040 were compared to 2015 freeboard quantities.

Results

The springs MFL status evaluation determined that four of the six springs (Alexander, De Leon, Gemini, and Silver Glen) were meeting their adopted MFLs under current and 2040 projected conditions. Silver Springs, in Marion County, was determined to be meeting its MFLs under current conditions but was not projected to meet its MFLs under 2040 conditions; therefore, Silver Springs continues to be classified as being in prevention.

The MFLs for Blue Spring are unique in that they prescribe a minimum flow regime that increases over time with the final minimum flow effective in 2024 (40C-8, *F.A.C.*). A Blue Spring MFL status assessment was performed in 2018 that demonstrated the minimum flow regime at that time (142 cfs) was being achieved at current pumping conditions, and the MFL status remained in prevention (SJRWMD 2019; see *MFL Prevention/Recovery Strategies* below). In 2019, the Blue Spring minimum flow increased to 148 cfs, pursuant to the adopted MFL. A status determination showed that the higher minimum flow was not being met under current pumping conditions and, therefore, the status of the Blue Spring MFL shifted to recovery. Pursuant to 40C-8.031(13)(a), *F.A.C.*, SJRWMD will perform a causation analysis to evaluate the potential impacts of various stressors on Blue Spring, including whether groundwater pumping is a factor. Based on the results of this analysis, SJRWMD will evaluate existing MFL criteria and may adjust any existing prevention/recovery strategies, if necessary, to ensure the protection of Blue Spring from significant harm due to consumptive uses of water. In addition, SJRWMD staff may request Governing Board authorization to include Blue Spring on the MFL Priority List and Schedule for re-evaluation prior to the next CSEC RWSP. Currently, there are sufficient projects and measures identified in the MFL prevention/recovery strategy documents to ensure achievement of the final Blue Spring MFL at 2040 projected water demand.

Rivers with MFLs

Methodology

River reach MFLs were assessed by comparing published surface water availability quantities with permitted surface water withdrawals and, in UFA discharge areas, modeled changes in groundwater contributions to river flow from 2015 to 2040.

Results

Both river reaches were determined to be in compliance with their adopted MFLs based on current and projected 2040 conditions.

MFL Prevention and Recovery Strategies

Regional water supply plans shall include prevention and recovery strategies which have been developed and approved pursuant to ss. 373.042(2), F.S. SJRWMD has three approved prevention/recovery strategies. The Prevention/Recovery Strategy for Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes (2013 Volusia Strategy; SJRWMD 2013) was approved by the SJRWMD Governing Board on November 12, 2013. In 2018, the first five-year strategy assessment (2018 Volusia Strategy Assessment; SJRWMD 2019) was performed to ensure the continued success of this strategy through 2040. The Prevention Strategy for the Implementation of Silver Springs Minimum Flows and Levels (SJRWMD 2017) was approved by the SJRWMD Governing Board on April 11, 2017. Finally, the Prevention Strategy for the Implementation of Lake Butler Minimum Levels was approved by the Governing Board on August 11, 2020 (2020 Lake Butler Strategy; SJRWMD 2020). The three strategies and the five-year assessment are discussed in Appendix A by applicable sub-region and the final strategy documents are included in Appendix G.

Groundwater Quality (Saltwater Intrusion)

Saltwater intrusion can occur from saltwater moving inland from the ocean (i.e., lateral intrusion) or from relict seawater migrating vertically near a pumping well (i.e., upconing). Saltwater intrusion can affect productivity of existing infrastructure, resulting in increased treatment and infrastructure costs. Although saltwater intrusion poses a challenge for all affected water users, the issue is particularly acute for small public supply systems and self-supply water users that may have fewer options for infrastructure modifications. An evaluation was conducted to assess the potential for saltwater intrusion within the CSEC RWSP area resulting from withdrawals of groundwater. The purpose of this evaluation was to identify wells within the CSEC RWSP area where potential degradation of groundwater quality from saltwater intrusion may constrain the availability of groundwater sources.

The Florida Safe Drinking Water Act (s. 403.850 - 403.864, F.S.) directs FDEP to develop rules that reflect national drinking water standards. Chapter 62-550, *F.A.C.*, lists quality standards for finished drinking water that include concentration limits for chloride (250 mg/L), a secondary drinking water standard (SDWS). Increasing trends in chloride concentration can be an indicator of saltwater intrusion and, once concentrations exceed the SDWS, groundwater is no longer considered potable. The CSEC RWSP groundwater quality analysis was performed using existing water quality trends resulting from historic and current groundwater withdrawals and climatic conditions. Increases in groundwater withdrawals and sea level rise may accelerate degrading water quality trends over time. SJRWMD is developing additional tools that will predict water quality changes based on various withdrawal and sea level scenarios (see *Climate Change* below).

Methodology

The groundwater quality evaluation consisted of a statistical analysis of observed monitoring data. SJRWMD evaluated groundwater quality data from 300 permitted public supply and agricultural wells and 89 District Observation Well Network (DOWN) monitoring wells located in the CSEC RWSP area (Figure 18). Collectively, these 389 wells provide information on groundwater quality in the UFA and limited areas within the SAS. Trends in chloride concentrations were quantified and interpreted using nonparametric statistical methods with statistically significant trends identified by a p value less than or equal to 0.05[2]. For those wells exhibiting statistically significant increasing trends in chloride concentration, SJRWMD calculated the year in which the SDWS would be exceeded if current trends continue. An expanded explanation of the water quality analysis methodology and well-specific results are provided in Appendix D.

Results

Of the 89 UFA DOWN wells evaluated in the CSEC RWSP area, nine showed increasing chloride concentrations at rates ≥ 3 mg/L/yr (high rate of change), and two showed increasing chloride concentrations at a rate within the range ≥ 1 and < 3 mg/L/yr (medium rate of change)(Table 2). Ten of the eleven wells with a high or medium rate of chloride change currently exceed the chloride SDWS and are generally located in the St. Johns River valley in Volusia County or along the Indian River Lagoon or the Atlantic coastline in Brevard and Indian River counties. Finally, six DOWN wells showed a statistically significant decreasing rate of change, three of which currently exceed the chloride SDWS.

Table 2: Analyzed UFA DOWN wells with statistically significant high, medium, or decreasing trends in chloride concentration in the CSEC RWSP area

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (9 wells)	9	---
Medium Rate of Change (2 wells)	1	0
Decreasing Rate of Change (6 wells)	3	NA

Note: mg/L = milligrams per liter

[2] A p value is a predetermined statistical threshold that indicates the probability of obtaining the same test result randomly. When p values are small (e.g., less than or equal to 0.05 or 5%), there is evidence that the test result is not random (and one can reject the null hypothesis that there is no trend).

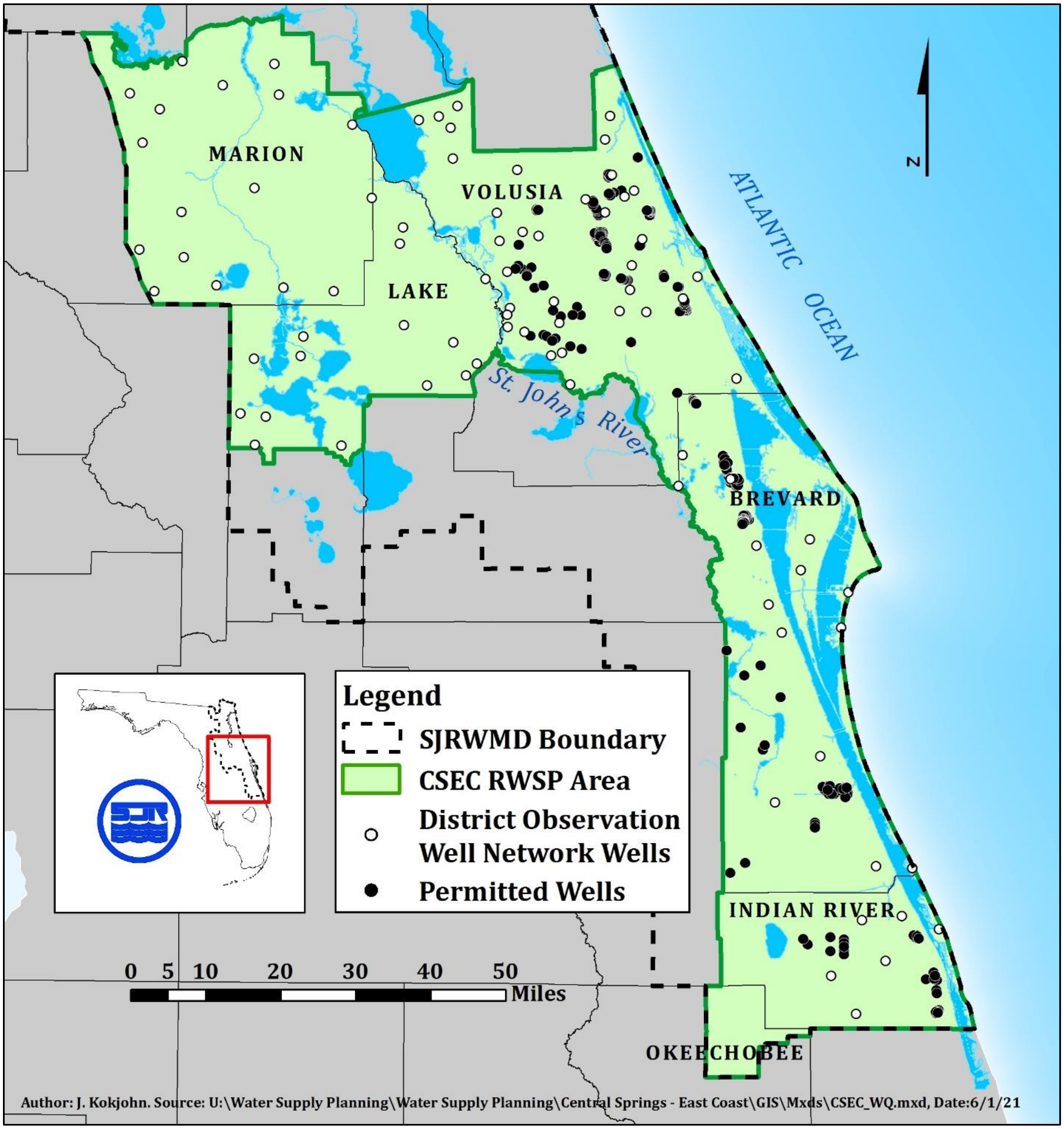


Figure 18: Wells included in the CSEC RWSP groundwater quality analysis

Of the 179 UFA public supply wells evaluated in the CSEC RWSP area, 29 showed increasing chloride concentrations at a high rate of change, and three showed increasing chloride concentrations at a medium rate of change (Table 3). Fifteen of the 32 wells with a high or medium rate of chloride change currently exceed the chloride SDWS and an additional 10 wells are projected to exceed the SDWS by 2040. The majority of these 32 well are generally located in the St. Johns River valley in Volusia County or along the Indian River Lagoon or the Atlantic coastline of Brevard and Indian

River counties. Finally, 75 public supply wells showed a statistically significant decreasing rate of change, two of which currently exceed the chloride SDWS.

Table 3: Analyzed UFA public supply wells with statistically significant high, medium, or decreasing trends in chloride concentration in the CSEC RWSP area

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (29 wells)	15	10
Medium Rate of Change (3 wells)	0	0
Decreasing Rate of Change (75 wells)	2	NA

Note: mg/L = milligrams per liter

The CSEC water quality analysis evaluated 101 SAS public supply wells, all of which were located in Brevard and Indian River counties. Of the 101 wells, 22 showed increasing chloride concentrations at a high rate of change, and nine showed increasing chloride concentrations at a medium rate of change (Table 4). Eight of the 31 wells displaying a high or medium rate of chloride change currently exceed the chloride SDWS and an additional 13 are projected to exceed the SDWS by 2040. These 31 wells are all located just west of the Indian River Lagoon with the majority occurring in Brevard County. Thirty-four wells showed a statistically significant decreasing rate of chloride change, four of which currently exceed the chloride SDWS.

Table 4: Analyzed SAS public supply wells with statistically significant high, medium, or decreasing trends in chloride concentration in the CSEC RWSP area

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (22 wells)	8	12
Medium Rate of Change (9 wells)	0	1
Decreasing Rate of Change (34 wells)	4	NA

Note: mg/L = milligrams per liter

Twenty agricultural wells were analyzed for statistically significant chloride trends with only one well, located in southern Volusia County, showing an increasing chloride trend at the high rate of change (Table 5). Two of the agricultural wells showed a statistically significant decreasing rate of change, both of which currently exceed the chloride SDWS.

Table 5: Analyzed UFA agricultural wells with statistically significant high, medium, or decreasing trends in chloride concentration in the CSEC RWSP area

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (1 well)	1	---
Medium Rate of Change (0 wells)	---	---
Decreasing Rate of Change (2 wells)	2	NA

Note: mg/L = milligrams per liter

Additional details and spatial depictions of the water quality results for each CSEC RWSP sub-region are provided in Appendix A.

Wetlands

Methodology

Wetland vegetative communities can be affected by water level changes in the SAS due to unique combinations of soil type, vegetative species, and hydrogeology. The wetlands assessment estimated the magnitude of potential adverse change to wetland function that may occur due to the projected increase in groundwater withdrawals through 2040. Many factors other than groundwater withdrawals (e.g., modification of surface water hydrology) can result in significant alterations of wetlands relative to predevelopment conditions. Therefore, this analysis focused exclusively on assessing the potential for additional adverse changes to existing wetlands from projected increases in groundwater withdrawals within the CSEC RWSP area. The potential for adverse change was assessed using the Kinser-Minno method (Kinser and Minno 1995; Kinser et al. 2003) in the portions of the CSEC RWSP area where the UFA is confined and the modified Kinser-Minno method (Dunn et al. 2008) was used in portions of the CSEC RWSP area where the UFA is unconfined. Both methods utilize a geographic information system (GIS) matrix analysis of soil permeability, sensitivity of the existing plant species, and projected declines in aquifer level predicted from groundwater model simulations. The analysis yielded a spatial identification of areas with moderate and high potential for adverse change to wetland function. Additional details regarding the wetland analysis methodology are provided in Appendix H.

The CSEC RWSP wetland analysis is intended to provide a regional picture of wetland acreage at a moderate or high potential for adverse change resulting from increased demand in 2040. The potential for adverse change does not necessarily correspond to realized adverse change due to the uncertainty with the analysis. Therefore, field verification and monitoring, typically carried out for the SJRWMD regulatory program, is required when it is determined to be necessary to ensure the prevention of impacts from groundwater pumping. The CSEC RWSP wetland analysis is not a replacement for the analysis of the specific potential of a proposed consumptive use to individually or cumulatively impact wetland systems. However, the spatial coverage of wetland acreage identified in the CSEC RWSP as being at risk for change can be utilized by regulatory staff as a screening tool to locate general areas within the CSEC RWSP area where potential wetland impacts are more likely to occur.

Results

The wetland analysis identified 34,091 acres of wetlands (or 4% of total wetland acreage) within the CSEC RWSP area that have a moderate or high potential for adverse change as a result of the projected increase in groundwater demand through 2040. A breakdown of acreage by county and maps of the identified acreage are provided in Appendix A.

Reservations

Subsection 373.223(4), F.S., authorizes the Districts and FDEP to reserve water from use by permit applicants for the protection of fish and wildlife or public health or safety. When a water reservation is in place, volume and timing of water quantities at specific locations are protected and maintained for the natural system ahead of new consumptive uses. There are no water reservations within the CSEC RWSP area.

Climate Change

In order to provide a reliable and economical supply of water that is necessary for a strong Florida economy while ensuring protection of water resources, climate change and its effects on hydrologic conditions are considered in water supply planning. Climate change has the potential to significantly impact the sustainability of water supplies throughout the state. While climate change is occurring across the globe, effects vary, and the degree and rate of change remain uncertain. Long-term data indicate changes in parameters such as temperature, rainfall, and sea level. Increased air temperatures and changes in precipitation regimes and storm frequency could result in greater evaporation, longer drought periods, and higher risk of flooding.

Recent predictions from multiple climate models summarized by the Intergovernmental Panel on Climate Change indicate global mean surface temperatures will likely increase over the next 20 years, leading to longer and more frequent heat waves over land areas (Southeast Florida Regional Climate Change Compact 2011). These heat wave changes could increase evapotranspiration (ET) in the CSEC RWSP area, resulting in lower surface water levels, increased irrigation demand, reductions in soil moisture, diminished aquifer recharge, and degradation of water quality. By identifying sufficient project options to meet the water demand associated with a 1-in-10 year drought, the CSEC RWSP addresses many of the concerns associated with increased surface temperatures during the planning horizon. However, if drought frequency increases in the future as a result of climate change, water demand associated with a 1-in-10 year drought will also increase.

Additionally, more frequent, intense rainfall events with longer interim dry periods could increase total annual rainfall but decrease effective rainfall as more water may be lost to runoff. This may prompt the need for increased storage alternatives to augment decreased aquifer recharge. Several proposed projects would increase capture and storage of rainfall and stormwater in the CSEC RWSP area and therefore would address water resource constraints while helping to mitigate the impacts of increased flooding events. Improvements in infrastructure capacity, flexibility, and redundancy (such as interconnected water supply systems) could assist in mitigating the uncertainty in local and regional climate prediction and compensate for prolonged drought cycles. Local aquifer storage and recovery (ASR) projects could offset predicted decreases or variability in effective rainfall by capturing excess surface water or reclaimed water during rainy periods for use during extended dry periods. Since more extreme droughts are expected in the future as a result of global warming, SJRWMD will consider analyzing the impact of climate change on severity and frequency of droughts and water supply availability in future updates of the CSEC RWSP.

As noted previously in this chapter, localized saltwater intrusion is a concern for coastal communities as potential solutions will likely increase the cost associated with providing potable water to existing and future users and take time to implement. The CSEC RWSP saltwater intrusion analysis identified wells that are currently, or projected to be, vulnerable to saltwater intrusion. This analysis, however, was limited to current conditions including the current rate of sea-level rise and groundwater withdrawals. Additional climate changes will likely exacerbate saltwater intrusion, accelerating the time frame and magnitude of enhanced management practices and/or infrastructure that will be needed to mitigate potential increased salinity. SJRWMD will be developing a water quality model to evaluate potential water quality impacts resulting from sea-level rise. This tool will predict the magnitude of saltwater intrusion for various rates of sea-level rise and projected groundwater withdrawals, providing valuable information to water suppliers along SJRWMD's Atlantic Coast.

SJRWMD assists communities and utilities become more resilient in preparing for and adapting to climate change impacts. Through the offering of cost-share dollars (see Chapter 7), SJRWMD helps to fund projects which alleviate flooding, enhance stormwater capture, develop alternative water supplies, and otherwise lessen climate change impacts while meeting SJRWMD core missions. SJRWMD continues to offer technical assistance to communities which can include flood modeling preparation, inclusion of sea-level and temperature rise in SJRWMD model scenarios, establishment of MFLs to protect water resources, and participation in regional, local, and statewide resilience groups. Finally, the SJRWMD's data collection efforts continue to provide water resource-related data available for use by communities in their resilience planning activities.

Local management actions and regional collaborations will help mitigate climate change impacts and enhance the continued reliability of water supply in the CSEC RWSP area. As part of a collaborative effort to address climate and water resource issues, Brevard, Volusia, and North Lake counties, along with other Florida counties, are members of the

East Central Florida Regional Resilience Collaborative, which serves as a structure and framework for regional resilience activities. In addition, communities and stakeholders in Volusia and Brevard counties developed the East Central Florida Regional Resiliency Action Plan, which provides a matrix of resilience actions for various levels of government and stakeholders. Some communities within the CSEC planning area, such as Indian River County and the City of Satellite Beach, are implementing Adaption Action Areas as part of their comprehensive planning activities. Adaptation Action Areas are a policy tool that allows local governments to plan for sea-level rise, designate vulnerable areas, and prioritize adaptation strategies so a community can become more resilient to climate change impacts.

Despite the challenges of climate change, many of the same practices implemented to address water resource constraints may also delay some of its impacts. For example:

- Decrease groundwater demand (e.g., increase use of reclaimed water or other alternative water supplies; improve water conservation)
- Improve water use efficiency (e.g., upgrade agricultural irrigation technology; replace aging public supply distribution systems to reduce losses)
- Increase infrastructure storage, capacity, and flexibility (e.g., ASR, interconnect water supply systems)

Additional information regarding these practices is provided in Chapter 6.

Chapter 5: Alternative Water Supply Needs Assessment and Delineation of Water Resource Caution Areas (Sufficiency Analysis)

Purpose

Pursuant to s. 373.709(2), F.S., a RWSP must include sufficient water resource and water supply development project options to meet projected water demands while preventing the loss of natural resources and must support MFL recovery or prevention strategies. This chapter summarizes the approach used to demonstrate the sufficiency of the CSEC RWSP project options and provides the technical basis used for the delineation of a water resource caution area (WRCA; Rule 62-40.520(2), *F.A.C.*).

Sufficiency Analysis

The water resource assessment identified projected harm to water resources in the CSEC RWSP area resulting from 75 mgd of additional demand from traditional sources. Since traditional water sources alone are not sufficient to meet projected water demands through 2040, water resource and water supply development projects must be developed and implemented. The purpose of performing a sufficiency analysis is to determine whether the implementation of specific water resource and water supply project options will allow for projected water demands to be met and prevent the loss of natural resources. SJRWMD determined that the suite of project options identified within the CSEC RWSP was sufficient to address the potential water resource impacts based on the following; 1) the 75 mgd of additional future demand identified in Chapter 3 can be met with 228.5 mgd of water conservation and water supply and water resource development project options; 2) SJRWMD has included the CSEC RWSP area approved MFL prevention and recovery strategies and associated projects, and 3) when 41.1 mgd of projects are modeled in Volusia County and 36.7 mgd of projects are modeled in Marion and North Lake counties, all of the MFL water bodies identified as being in prevention or recovery are projected to achieve their MFLs at 2040. Sufficiency analyses were performed using groundwater models and other tools described in the CSEC RWSP and appendices. Specific analyses for each sub-region of the CSEC RWSP area are discussed in detail in Appendix A.

Minimum Flows and Levels

Implementation of the projects summarized in Chapter 6 (and detailed in the appendices) is sufficient to ensure the achievement of CSEC RWSP area MFLs at the 2040 planning horizon. Table 6 shows those water bodies identified as being in prevention or recovery with regard to their MFLs. The amount of flow or UFA level rebound needed for the MFL water bodies to meet their MFLs at 2040 conditions is listed along with the modeled benefits of the identified projects. For each water body, there was sufficient benefit projected through implementation of the projects to ensure the achievement of MFLs at 2040 (see positive 2040 freeboard values in Table 6).

Table 6: MFL water body rebound requirements, project benefits, and revised freeboard[1]

County	Water Body	Rebound Needed at 2040 Conditions (ft or cfs)	Benefit of projects (ft or cfs)	2040 Freeboard with projects (ft or cfs)
Marion	Silver Springs	3.6	19.7	16.1
Volusia	Blue Spring	17.0	17.8	0.8
Volusia	Lake Butler	0.4	1.3	1.0
Volusia	Indian Lake	1.0	2.0	0.9
Volusia	Scoggin Lake	0.4	1.4	1.0
Volusia	Shaw Lake	0.6	0.6	<0.1

[1] For springs, rebound, benefit, and freeboard are expressed in cubic feet per second (cfs); for lakes, in feet (ft) of UFA level change.

Water Quality

Twelve percent of the analyzed UFA DOWN wells, 18 percent of the UFA public supply wells, 31 percent of the SAS public supply wells, and 5 percent of the UFA agricultural wells in the CSEC RWSP area displayed increasing chloride concentrations at the high or medium rate of change. All of these wells are located in Volusia, Brevard, or Indian River county. A spatial evaluation of the trending UFA wells suggests that upconing may be the cause of increasing chlorides in the majority of cases, which can often be mitigated through enhanced wellfield management strategies or well modifications. However, increasing trends in two UFA wells located on coastal barrier islands may be indicative of lateral saltwater intrusion. All the SAS public supply trending wells are located in Brevard and Indian River counties where 70 percent of DSS users rely on the surficial aquifer for potable water.

Certain projects summarized in Chapter 6 directly address potential water quality issues resulting from possible saltwater intrusion, however, there are additional listed projects that will reduce groundwater pumping in vulnerable areas, some of which are susceptible to saltwater intrusion. Wellfield management plans that move withdrawals away from critical water resources and the further development of alternative water supplies such as reclaimed water, surface water, and brackish groundwater will reduce the potential for upconing and lateral intrusion. The SJRWMD Regulatory Program will continue to evaluate the potential for harmful upconing and lateral intrusion during CUP application review to ensure all permitting criteria are met prior to permit issuance. In addition, SJRWMD will investigate instances of unforeseen harmful water quality impacts potentially resulting from consumptive uses of water, and if verified, will require mitigation by the responsible permittee(s).

Wetlands

The CSEC wetland analysis is meant to be a screening tool to identify wetland acreage that may be at risk for harm. Since the potential for adverse change does not necessarily correspond to realized adverse change, water supply and water resource development project development did not focus on reducing the wetland acreage identified in the CSEC RWSP area as having the potential for adverse change. However, implementation of the projects specified in the CSEC RWSP will reduce the acreage of potentially impacted wetlands, although these benefits were not quantified as part of the plan. The SJRWMD Regulatory Program will continue to thoroughly evaluate the potential of harm to wetlands resulting from consumptive uses of water and will require mitigation where harm has occurred. Through their continued use of enhanced wetland assessment protocols in conjunction with the spatial review of wetland acreage identified in the CSEC RWSP, SJRWMD regulatory staff will ensure the protection of wetland acreage throughout the planning region by preventing, or requiring mitigation for, adverse impacts to wetlands from both individual and cumulative permit-related groundwater withdrawals.

Water Resource Caution Area Delineation

In 1996, the SJRWMD Governing Board designated the entire district as a water resource caution area (WRCA)(40C-23, F.A.C). Water resource caution areas are geographic areas identified by the Districts as having existing water resource problems or areas in which water resource problems are projected to develop during the next 20 years. Water resource caution areas are established pursuant to Rule 62-40.520(2), *F.A.C.*, which provides "[w]ithin one year of the determination that a regional water supply plan is needed for a water supply planning region, the region shall also be designated as a water resource caution area." Once a planning region is designated as a WRCA, domestic wastewater treatment facilities which are located within, serve a population located within, or discharge within a water resource caution area, shall be subject to the reuse requirements of s. 403.064, F.S. These requirements mandate domestic wastewater treatment facilities to prepare detailed reuse feasibility studies, which help ensure the maximized reuse of reclaimed water in areas with limited traditional water supplies. This mandate has been in effect in SJRWMD since the 1996 designation of the entire district as a WRCA (40C-23, *F.A.C.*)

In 2015, SJRWMD began designating WRCAs in approved RWSPs. The 2020 CFWI RWSP verified the prior designation of the entire CFWI planning region as a WRCA (CFWI 2020b). The 2017 North Florida RWSP designated the SJRWMD-portion of the planning region as a WRCA (SJRWMD et al. 2017). Since potential water resource problems have been identified in the CSEC planning area, including MFLs that are not projected to be achieved and areas of degrading water quality, the CSEC RWSP supports the designation of the CSEC planning region as a WRCA.

The 2013 Volusia Strategy identified MFL constraints that were reaffirmed in the 2018 Volusia Strategy Assessment and the 2020 Lake Butler Strategy. The Silver Springs Prevention Strategy (2017) classified Silver Springs as being in prevention at 2035 conditions, which is extended through 2040 as part of the CSEC RWSP water resource assessment. Currently, five MFL water bodies in the CSEC RWSP area are identified as being in prevention (including one OFS), and one MFL water body (also an OFS) is identified as being in recovery. Projects identified in the strategies have been incorporated in the CSEC

RWSP, as they are necessary to ensure the achievement of MFLs at 2040 projected water demand.

Results of the water quality analysis suggest that water quality constraints may exist in the coastal counties of the CSEC RWSP area. Statistically significant chloride trends, specifically in Brevard and Indian River counties, may indicate a stressed fresh aquifer system, in the case of the surficial aquifer, or saltwater intrusion resulting from upconing and the lateral encroachment of seawater, in the case of the Upper Floridan aquifer. Although there are land use changes and projects that may lessen or mitigate current trends, sea-level rise is expected to accelerate the degradation in the future.

The CSEC RWSP, along with the 2013 Volusia Strategy, the 2018 Volusia Strategy Assessment, the 2020 Lake Butler Strategy, and the 2017 Silver Springs Prevention Strategy, constrain the availability of groundwater throughout the CSEC RWSP area and provide a technical basis for the constraints. As a result of these constraints, the CSEC RWSP area is proposed for continued designation as a WRCA. SJRWMD identifies WRCAs in its regional water supply planning process following guidelines established by FDEP (2013).

The CSEC RWSP proposes to designate the entire planning region as a water resource caution area based on the constraints identified by the supporting analyses and approved MFL prevention and recovery documents. Upon Governing Board approval of the CSEC RWSP, the CSEC planning area identified in this plan shall be considered a WRCA for the purposes of s. 403.064, F.S., and affected parties may challenge the designation pursuant to s. 120.569, F.S.

Concurrent with the approval of the CSEC RWSP, SJRWMD staff will request that the Governing Board repeal 40C-23, *F.A.C.,* since the entire SJRWMD will be designated as a WRCA via the North Florida, CFWI, and the CSEC RWSPs.

Chapter 6: Project Options

Purpose

This chapter provides an overview of the water source options available to water users located within the CSEC RWSP area as a means to overcome water resource constraints. Fresh groundwater sources have historically been considered traditional water sources in the CSEC RWSP area, whereas nontraditional or AWS included brackish groundwater, surface water/stormwater, seawater, reclaimed water, and water stored in ASR systems and reservoirs. In the CSEC RWSP, the Lower Floridan aquifer is also being designated as a nontraditional source in Marion and North Lake counties (see Other Nontraditional Sources below). In addition, management tools can enhance the source of supply, sustain the water resources and related natural systems, or otherwise optimize supply yield. Examples of management tools include ASR, storage tanks and ponds/reservoirs, wellfield optimization, water resource augmentation, and aquifer recharge.

All projects submitted to, or proposed by, SJRWMD are provided in Appendices I, J, and K. Projects were evaluated and are summarized into three categories: water resource development projects (Appendix I), water supply development projects (Appendix J), and water conservation projects (Appendix K). Implementation of these projects will serve the public interest or save costs by preventing the loss of natural resources or avoiding greater future expenditures for alternative water resource or water supply development projects. Pursuant to ss. 373.709(2)(a)2., F.S., SJRWMD considered the technical and financial feasibility and permittability of water supply development project options (at a planning level of analysis) when developing the CSEC RWSP. The use of mining reclamation sites for potential water supply or water resource development projects, as referenced in ss. 373.709(2)(j), F.S., was not considered in the CSEC RWSP as more cost-efficient and feasible project options were identified.

Water Supply Development Project Options

An important part of the CSEC RWSP process is identifying water supply development project options necessary to meet the anticipated water needs of the planning area through the 2040 planning horizon. While water users are not limited to the projects listed in the CSEC RWSP, the provided lists represent a set of projects that could supply a sufficient quantity of water to meet the projected water demands if implemented.

Water supply development is defined in ss. 373.019(26), F.S. as the planning, design, construction, operation, and maintenance of public or private facilities for water collection, production, treatment, transmission, or distribution for sale, resale, or end use. Unlike water resource development projects, water supply projects are typically implemented by a single entity. These projects can involve a variety of sources, which are described below. In cases where the development of these sources provides a regional benefit and is funded by water management districts or other state agencies, they are categorized as water resource development projects (see Water Resource Development Project Options presented later in this chapter).

Fresh Groundwater

The amount of additional fresh groundwater development, especially within the SAS and UFA, is limited within the CSEC RWSP area. The UFA plays a key role in supporting regional surface water systems including springs, lakes, rivers, and wetlands. Excessive withdrawals from the UFA can adversely impact these systems by lowering water levels. Opportunities sometimes exist to manage and mitigate local impacts, but future fresh groundwater development within the CSEC RWSP area will require evaluation during consumptive use permit review to ensure that unacceptable impacts to MFL water bodies, water quality, and wetlands are not projected to occur.

Brackish Groundwater

Brackish groundwater from the FAS represents a key potential alternative source for water supply development in the CSEC RWSP area. For SJRWMD alternative water supply planning purposes, brackish water is generally defined as water that does not always meet federal and state drinking water standards for chloride, sulfate, or total dissolved solids. Brackish groundwater exists in the FAS in portions of the CSEC RWSP area, specifically in Brevard and Indian River counties, other coastal areas, and within the St. Johns River valley in Volusia County. Brackish groundwater can be utilized to meet water demands but may require treatment by methods such as low-pressure reverse osmosis (RO) or electrodialysis reversal (EDR). Treatment generally requires disposal of concentrate or reject water. Both RO and EDR treatment costs are higher than the treatment costs of fresh water sources. Additionally, the hydrologic connection between the brackish and fresh portions of the local aquifer horizons requires evaluation and may not offer sufficient hydrologic confinement to protect overlying aquifer systems from possible drawdown and saltwater intrusion. Several brackish groundwater treatment facilities currently exist in Brevard and Indian River counties.

Surface Water/Stormwater

Opportunities exist for the additional development of water supplies from the lakes and rivers in the CSEC RWSP area that could supplement traditional groundwater supplies. Smaller, local lakes are generally considered a limited resource and often provide local landowners with water for irrigation purposes. The capture and storage of available water from river/creek systems and runoff can supply significant quantities of water and could be a component of multi-source water supply development projects. Larger lakes may represent an opportunity for development of supplies, as they can have larger, regional drainage basins that may help buffer the effects of withdrawals.

Reclaimed Water

Reclaimed water is wastewater that has received at a minimum secondary treatment and basic disinfection and is reused after leaving a domestic WWTF. Reuse is the deliberate application of reclaimed water, in compliance with FDEP and the Districts' rules, for beneficial purposes. Reclaimed water utilization is a key component of water resource management in the CSEC RWSP area. Reclaimed water is used for non-potable purposes such as landscape irrigation, agricultural irrigation, aesthetic uses, groundwater recharge, industrial uses, environmental enhancement, and fire protection purposes. Reclaimed water can also be utilized for potable reuse, which is the process of purifying reclaimed water to state and federal drinking water standards so that it can be utilized for recharge or recycled for potable water supply uses (also referred to as direct potable reuse). SJRWMD is a partner of One Water Florida, which is an initiative to highlight the benefits of recycled water and how it will safely support Florida's future. Although direct potable reuse (DPR) is not currently providing potable supply in SJRWMD, DPR methods have been tested and found to be successful in Florida. Once statewide DPR guidelines are developed, several utilities are expected to move forward with implementation of DPR to meet a portion of their water demand.

Aquifer Storage and Recovery

Aquifer storage and recovery is the underground injection and storage of water into an acceptable aquifer (typically the FAS) with the water withdrawn at a later date to meet demands when insufficient traditional supplies are available. The aquifer acts as an underground reservoir for the injected water. Aquifer storage and recovery provides for storage of large quantities of water for both seasonal and long-term storage and ultimate recovery that would otherwise be unavailable due to land limitations, loss to tides, or evaporation. While ASR is not a new supply source, it provides for system reliability allowing for increased development and utilization of other sources of water. Some sources of supply, including many surface water supply options, can be intermittent and therefore unreliable. Other supply options such as reclaimed water have variable demand issues but have relatively consistent supply. In these instances, ASR systems can play an important role to store large quantities of water for distribution in cases where the source or demand is variable.

Other Nontraditional Sources

Historically, the UFA has been the traditional water source for public supply uses in Marion and North Lake counties. However, water resource constraints are projected to limit the availability of UFA withdrawals as water demand continues to increase as a result of population growth. Utilities may decide to pursue alternative sources as a means to meet increased future demand and avoid or lessen their impacts to water resources. The CSEC RWSP designates the LFA in Marion and North Lake counties as a nontraditional water source, which utilities may wish to consider as an alternative water supply to the UFA.

A list of water supply project options for the CSEC RWSP area was developed in coordination with water suppliers and other permitted water users. In preparation of the CSEC RWSP, SJRWMD circulated a questionnaire to solicit information from public supply utilities regarding the traditional and AWS projects planned to meet their water needs through 2040. This process allowed public supply utilities to provide input on the proposed water supply project options included in the CSEC RWSP (Appendix J). Water supply development projects that received SJRWMD cost-share dollars and that were completed post 2015 or that are currently underway or proposed through the fiscal year 2020 cost-share cycle are also included in Appendix J.

In compiling the list of water supply project options, there was a consideration of how the public interest is served by the project or how the project will save costs overall by preventing the loss of natural resources or avoiding greater future expenditures for water resource development or water supply development. The identified projects will serve the public interest by providing, in a cost-effective manner, water to meet basic public health, safety, and welfare needs, as well as providing water for agricultural, CII, recreational, and other typical public supply system needs within the CSEC RWSP area.

Pursuant to ss. 373.709(7), F.S., nothing contained in the water supply component of a RWSP should be construed as a requirement for local governments, public or privately owned utilities, special districts, self-suppliers, multi-jurisdictional entities, and other water suppliers to select that identified project. If the projects identified in the CSEC RWSP are not selected by a water supplier, the entity would need to identify another source to meet its future needs and advise SJRWMD of the alternate project(s). In addition, the associated local government will need to include such information in its water supply facilities work plan (see Chapter 2).

To best manage the water resources in the CSEC RWSP area, the CSEC RWSP promotes the diversification of sources for the water supply projects. Proposed project options in this plan were evaluated for inclusion based on factors such as economic feasibility, the potential to not adversely impact MFLs, and the capability of the source water to supply the project. In the case of agricultural self-suppliers, SJRWMD recognizes the limited AWS options available and has incorporated this limitation in the list of project options pursuant to ss. 373.709(2)(a)2, F.S.

The projects presented in this plan identify 53 water supply development project options for the CSEC RWSP area (Table 7). The quantity of water produced listed for each project expresses the project's ability to deliver "new" water as a result of project construction. For example, a pipeline constructed to deliver water to a new area would not generate water by itself and, therefore, would not be considered new water. Several projects consist of UFA wellfield management strategies. Other project options include development of previously unused sources which would add new supplies of water upon project completion.

For each water supply development project option identified, the following information is provided in Appendix J:

- An estimate of the amount of water made available by the project
- A time frame for project implementation
- An estimate of planning-level costs for capital investment and operating and maintaining the project
- An analysis of funding needs and sources of possible funding options
- Identification of the likely entity responsible for implementing each project

Table 7: Summary of water supply development project options in the CSEC RWSP area

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Cost (Million dollars)
Groundwater (fresh)	5	14.3	$89.5
Groundwater (AWS[1])	9	31.1	$160.6
Reclaimed Water	34	26.4	$172.3
Surface Water	3	3.6	$10.5
Multi-source[2]	2	12.1	$11.6
Total	**53**	**87.5**	**$444.6**

Note: mgd = million gallons per day

[1] Includes brackish groundwater and groundwater from the Lower Floridan aquifer in Marion and North Lake counties.

[2] Combined source that can include reclaimed water, surface water, and stormwater.

In addition to the 87.5 mgd of water supply development projects identified above, SJRWMD determined that there will be an additional 44.8 mgd of reclaimed water (including planned augmentation quantities) available for additional water supply development projects by 2040. This quantity of additional reclaimed water was considered during the sufficiency analysis (Chapter 5).

<u>Water Resource Development Project Options</u>

Water resource development projects provide regional benefits and are typically implemented directly by the Districts or by the Districts in conjunction with other agencies or local governments (ss. 373.705(1)(a), F.S.). These include projects that increase the amount of water available for water supply, collect and analyze data for water supply planning, and study the feasibility and benefits of new techniques. This section provides an overview of these project types.

Reservoirs

Surface water reservoirs provide storage of water, primarily during wet weather conditions, for use in the dry season. Water typically is captured, pumped from rivers or canals, and stored in above or in-ground reservoirs. Small-scale (local) reservoirs/ ponds that can hold several hundred thousand gallons or more are used by farms and golf courses to store recycled irrigation water or collect local stormwater runoff. These reservoirs may also provide water quality treatment before off-site discharge. Large-scale (regional) reservoirs may hold up to several billion gallons and are used for stormwater attenuation, water quality treatment in conjunction with stormwater treatment areas, and storage of seasonally available water for use during dry periods. The potential yield of such reservoirs is directly related to the size of the reservoir and the size of the surface water capture area.

Aquifer Recharge

Aquifer recharge projects can be used to increase the amount of water in an aquifer to help offset declines caused by groundwater withdrawals. Methods for aquifer recharge include land application in a high recharge area, direct injection via recharge wells, or use of other recharge techniques such as rapid infiltration basins. Sources of water for aquifer recharge can include surface water, reclaimed water, or stormwater. For recharge through injection wells, stringent construction, operation, and permitting regulations must be adhered to as required by Florida's Aquifer Protection Program. In addition, if the water is injected into zones of an aquifer designated as an underground source of drinking water, additional treatment may be required to meet state and federal drinking water standards.

Seawater

The use of desalinated seawater from the Atlantic Ocean is an additional water source option in the CSEC RWSP area. Seawater is an essentially unlimited source of water. However, desalination is required before seawater can be used for water supply purposes and concentrate from the desalination process must be managed to meet regulatory and environmental criteria. In addition to treatment facilities, pump stations and pipelines would be required to transport finished water from the coast to the interior portions of the CSEC RWSP area.

The use of seawater to meet public supply demands requires advanced treatment of the water by desalination technologies, which include distillation, RO, or EDR as options. Significant advances in treatment and efficiencies in seawater desalination have occurred over the past decade. While seawater treatment costs are decreasing and capital costs are becoming competitive with above ground reservoir options, operational costs remain moderately higher than other viable water supply options within the region. Seawater projects costs can be higher than other alternative water supply options and, therefore, proposed projects would benefit from partnerships with other water suppliers, SJRWMD, and possibly other state agencies.

Abandoned Artesian Well Plugging Program

The SJRWMD's abandoned artesian well plugging program assists property owners in properly abandoning or back-plugging unused, free-flowing wells or substandard wells that impact groundwater quality. This program helps to conserve groundwater resources and improve groundwater quality.

Hydrologic Data Collection and Analysis

The data collection and analysis activities conducted by SJRWMD support the health of natural systems and the development of water supplies. Data collection programs allow SJRWMD to monitor the status of water resources, observe trends, identify and analyze existing or potential resource issues, and develop programs to support water resource projects that will assist in correcting existing problems and preventing future problems. Data collection also supports the CUP and MFL programs and provides information required for the accurate modeling of surface and groundwater systems.

Innovative Project Cost-Share Funding Program

SJRWMD realizes the importance of developing new techniques to facilitate development of alternative water supplies. Since 2015, SJRWMD's annual Rural Economic Development Initiative (REDI)/Innovative Project Cost-Share Program has provided a funding opportunity for innovative projects that use emerging or proven technology in a unique way. Qualifying projects provide alternative water supply quantities or expand available quantities to offset groundwater withdrawals, improve water quality, or otherwise improve the water resources of SJRWMD in support of its core missions. The continuation of this program demonstrates SJRWMD's commitment to exploring new opportunities to enhance protection of water resources.

A list of water supply development options within the CSEC RWSP area is summarized in Table 8 with additional details provided in Appendix I. The CSEC RWSP identifies a total of 12 water resource development projects; seven projects that will provide 21.6 mgd of water for aquifer recharge, two regional alternative water supply projects that will redivert approximately 14.9 mgd of water to the upper St. Johns River for possible use downstream, and three co-funded well abandonment programs that will eliminate 22.5 mgd of flowing groundwater.

Table 8: Summary of water resource development project options in the CSEC RWSP area

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Cost (Million dollars)
Groundwater (brackish)	3	22.5	$0.3
Reclaimed water	1	6.0	$5.3
Surface water	2	14.9	$38.7
Stormwater	1	3.0	$0.3
Multi-source[1]	5	12.6	$30.0
Total	**12**	**59.0**	**$74.6**

Note: mgd = million gallons per day

[1] Combined source that can include reclaimed water, surface water, and stormwater.

Water Conservation Project Options

Effective water conservation efforts have been implemented in the CSEC RWSP area, the benefits of which are reflected in decreased historical per capita use (both gross and residential). Continued investment in water conservation is critical to help the CSEC RWSP area meet its future water needs and avoid unacceptable water resource impacts. Water conservation includes any action which reduces the demand for water including those that prevent or reduce wasteful or unnecessary use and those that improve efficiency of use. Achieving long-term improvements in water use efficiency will require implementing a variety of water conservation measures, including basic measures such as education and outreach, irrigation restriction enforcement, leak prevention and more advanced measures such as advanced metering, indoor retrofit programs, irrigation efficiency programs, landscape ordinances, and water budgeting. Education, outreach, and public engagement are essential for accomplishing a measurable change in water conservation and maintaining a lasting commitment to efficient water use in the CSEC RWSP area. Conservation strategies and projects are often recognized as being the most economically feasible.

Estimates for the CSEC RWSP area show the high estimate of 2040 water conservation potential at 38.2 mgd (Chapter 3) at a cost of approximately $63.0 million. Forty-one water conservation projects are completed or currently underway in the CSEC RWSP area with an estimated savings of 3.1 mgd of water at a total cost of $6.7 million (Appendix K). Implementing additional projects to meet the high conservation potential (an additional 35.1 mgd of savings) may be a more cost-effective option than implementing some of the water supply and water resource development projects discussed above. However, SJRWMD anticipates that a conservation only strategy will not offset the predicted shortfall in fresh groundwater supplies.

The following water conservation strategies have been, are, or can be implemented within the CSEC RWSP area by non-agricultural water users:

- Tiered public supply billing rates: Tiered rates are an essential aspect of any successful program as they provide direct and clear feedback to individual water users who can then take action to improve efficiency. Analyses of historical billing rates and per capita use demonstrate a reduction in gross and residential per capita use after implementation of tiered rate structures.
- Implementation of landscape irrigation restrictions: As of August 2020, 23 local governments in the CSEC RWSP area have adopted ordinances to enforce the irrigation restrictions contained in Chapter 40C-2, *F.A.C.* This local action encourages outdoor water conservation and provides for more consistent implementation of the rule. Enforcement of the irrigation restrictions year-round should be prioritized by local governments to realize needed conservation savings.
- Landscape and irrigation design codes: Many jurisdictions in the CSEC RWSP area have land development codes with provisions that encourage efficient outdoor

water use. Consistent implementation and enforcement of these design codes will contribute to long-term conservation savings.

- Outreach and education: Water conservation outreach is common throughout the CSEC RWSP area, regarding both indoor and outdoor water use. Water conservation outreach occurs via websites, utility bill stuffers, webinars and in-person events, and through other collaborative approaches implemented by local governments, utilities, SJRWMD, and other partners. The SJRWMD WaterLess campaign launched in 2019 and SJRWMD has successfully partnered with a number of local governments and utilities in the region to expand the public reach and promote decreasing irrigation water use. The SJRWMD Utility Conservation Coordinator group meets quarterly and offers members in the region an opportunity to learn more about specific conservation strategies relevant to their service areas. Other conservation messaging includes general recommendations for efficient water use as well as advertising for existing programs such as Florida-Friendly Landscaping™, Florida Water Star℠, and the Florida Green Building Coalition. Consistent and collaborative messaging in the region is essential to the success of conservation measures.
- Water use audits for residential customers: When employed by a public supply utility, this strategy has been very effective in this region as it provides customized recommendations, includes direct contact with landowners, and can be targeted to water users with the greatest potential for savings.
- Meter reading technology: Automatic meter reading and advanced metering infrastructure are used by several utilities in the CSEC RWSP area to identify high water users or unusual increases in water use relative to historical patterns for individual customers. This technology provides a significant opportunity for water conservation savings when used to identify individual homeowners/businesses that public supply utility staff can then contact to provide technical assistance identifying and resolving the cause(s) of high water use and/or unusual increases.
- Water conservation rebate programs: This strategy offers customers either a reduced price or free replacement of a variety of indoor plumbing fixtures and outdoor irrigation devices (e.g., replacement rain sensors, soils moisture sensors, evapotranspiration controllers). Water savings is achieved one of two ways; either when the replacement fixtures and devices are more efficient than the older fixtures or when broken/malfunctioning fixtures and devices are replaced. Fixture replacement occurs in both residential and commercial customers.
- Innovative practices: Public supply utilities are also experimenting with utilization of new technology as well as data-driven approaches for targeted implementation of existing programs and technology to maximize their effectiveness.

In addition to the non-agricultural water conservation programs and practices highlighted above, savings can also be gained by improving agricultural irrigation efficiency. This includes rainwater harvesting, tailwater recovery, center pivot retrofits, micro-irrigation installation, and other irrigation efficiency practices and technologies. In recent years, SJRWMD has provided funding to 37 agricultural stakeholders in the CSEC RWSP area for implementation of agricultural BMPs. Many of these projects also provide water quality benefits. In addition, 174,022 acres of agricultural land within the CSEC RWSP area are currently enrolled in applicable FDACS BMP programs. For more information see fdacs.gov.

Chapter 7: Funding

Purpose

A summary of funding sources to assist in meeting the water supply and water resource development project needs identified in this plan, is outlined below, as required by ss. 373.709(2)(a)3.c., F.S. Florida water law identifies two types of projects to assist in ensuring an adequate water supply for reasonable and beneficial uses and to ensure that natural systems are protected. Water resource development projects are generally the responsibility of the Districts, while water supply development projects are generally the responsibility of the local entities and/or water suppliers. Currently, SJRWMD provides funding for both water resource and water supply development projects. In addition, SJRWMD also provides funding for conservation projects and strategies.

Water Utility Revenue Funding Sources

Increased water demand generally results from new customers that help to finance source development through impact fees and utility bills. The financial structure of utility fees can be highly variable and reflect the needs of each utility. Water utilities draw from a number of revenue sources such as connection fees, tap fees, impact fees, base and minimum charges, and volume charges. Connection and tap fees generally do not contribute to water supply development or treatment capital costs. Impact fees are generally devoted to the construction of source development, treatment, and transmission facilities. Base charges generally contribute to fixed customer costs such as billing and meter replacement. However, a base charge or a minimum charge, which also covers the cost of the number of gallons of water used, may contribute to source development, treatment, and transmission construction cost debt service. Volume charges contribute to both source development/ treatment/transmission debt service and operation and maintenance.

Community development districts and special water supply and/or sewer districts may also develop non-ad valorem assessments for system improvements to be paid at the same time as property taxes. Community development districts and special district utilities generally serve a planned development in areas not served by a government-run utility. In general, all utilities have the ability to issue and secure construction bonds backed by revenues from fees, rates, and charges.

Regional water supply authorities are wholesale water providers to utilities. An authority's facilities are funded through fixed and variable charges to the utilities they supply, which are in turn paid for by the retail customers of the utilities. Funding is also obtained through state appropriations, federal and state grants, and funding from the Districts. Counties, municipalities, and special districts have the legislative ability to create regional water supply authorities in a manner that is cost effective and reduces the environmental effects of concentrated groundwater withdrawals. Regional water supply authorities are granted multiple rights and privileges, including the ability to levy taxes, issue bonds, and incur debt to develop water supplies.

SJRWMD Funding Options

Cost-share Programs

SJRWMD currently provides funding assistance through competitive cost-share programs, which have been administered annually and support AWS, water resource development, water conservation, and agricultural-related projects. When available, state funds can complement SJRWMD cost-share awards. In addition to the general cost-share program, funding opportunities have been available for innovative projects (i.e., projects that use emerging or proven technologies in a unique way) and projects submitted by REDI communities. Financial assistance is provided primarily to governmental entities, but private entities are also eligible to participate in these programs. Water resource development projects may also be funded solely by SJRWMD or in a cooperative arrangement with a local partner or partners. Through the SJRWMD cost-share program from FY 2014 through FY 2020, SJRWMD has provided more than $91 million for 167 projects within the CSEC RWSP area that have been completed or are under construction. Upon completion, these projects will make approximately 43 mgd of alternative water supplies available, reduce consumption by more than 6 mgd through water conservation, and provide more than 11 mgd of water to benefit natural systems. Project details are provided in Appendix L.

Water Resource Development Work Program

SJRWMD annually updates its five-year Water Resource Development Work Program (Work Program), which describes the implementation strategy and funding plan for water resource, water supply, and AWS development components. The following programs and project types are identified in the SJRWMD 2021 Work Program: abandoned artesian well plugging; hydrologic and water quality data collection, monitoring, and analysis; MFLs development; components of the Upper St. Johns River Basin Project; and water conservation, water supply development, and water resource development projects that support SJRWMD RWSPs or MFL prevention/recovery strategies.

State Funding Options

Agricultural Conservation

The FDACS Office of Agricultural Water Policy (OAWP) works with multiple partners, including the Natural Resources Conservation Service (NRCS), FDEP, the Districts, and soil and water conservation districts, to provide funds that assist farmers in implementing BMPs. Cost-share programs through the FDACS OAWP vary regionally based upon the resource concerns and appropriate practices. Funds are provided to cost-share irrigation system efficiency improvements and irrigation system management tools like soil moisture sensors.

Springs Protection

During FY 2014 through FY 2020, SJRWMD partnered with the state of Florida via FDEP, local governments, public supply utilities, and agricultural interests to collectively invest more than $185 million in 114 springs protection and restoration projects across SJRWMD. These efforts will reduce or offset groundwater withdrawals by more than 79 mgd and reduce total nitrogen loading by approximately 1 million pounds per year.

These projects address either water quality or water quantity, although many provide dual benefits. Typical water quality projects include WWTF upgrades, conversion of traditional septic systems to enhanced systems or to central sewer, and improved stormwater treatment. Typical water quantity projects include water conservation, reclaimed water system enhancements or expansions, and AWS development. Innovative projects benefiting springs include use of biologically active media in rapid infiltration basins and indirect and direct potable reuse. FDEP springs protection funding has also been awarded for agricultural irrigation system efficiency improvements and enhanced water recycling components for dairies.

With the passage of the 2016 Legacy Florida legislation, $50 million per year from the Land Acquisition Trust Fund was earmarked for springs restoration, protection, and management projects for the next 20 years. It is anticipated that SJRWMD, local governments, and public supply utilities will continue to partner with the state of Florida through FDEP to aggressively implement springs protection projects.

State of Florida Water Protection and Sustainability Program

The Water Protection and Sustainability Program (WPSP) was created by the Florida Legislature in 2005. The program funded several environmental programs, including the AWS program. Within the WPSP, AWS includes reclaimed water, brackish water, seawater, and surface water captured during wet season flows. This program was modestly funded in FYs 2020 and 2021. Future funding of the WPSP would serve as a source of matching funds to assist in the development of AWS.

State of Florida Alternative Water Supply and Development Program

In both FY 2020 and FY 2021, the governor and Florida Legislature allocated $40 million statewide for water resource development and water supply projects to help protect the state's water resources and ensure the needs of existing and future users are met. The funding supported implementation of water conservation programs, AWS projects, and water resource development projects. Priority funding was considered for regional projects in areas that were determined to have water resource constraints and that provide the greatest resource benefit. Projects in SJRWMD were awarded more than $32 million from this program, however future funding is not guaranteed.

Drinking Water State Revolving Fund Program

The Drinking Water State Revolving Fund Program provides low interest loans to eligible entities for planning, designing, and constructing public water facilities. Cities, counties, authorities, special districts, and other privately owned, investor-owned, or cooperatively held public water systems that are legally responsible for public water services are eligible for loans. Loan funding is based on a priority system, which takes into account public health considerations, compliance, and affordability. Affordability includes the evaluation of median household income, population affected, and consolidation of very small public water systems, which serve a population of 500 people or fewer.

Funds are made available for pre-construction loans to rate-based public water systems, construction loans of a minimum of $75,000, and pre-construction grants and construction grants to small, financially disadvantaged communities. The loan terms include a 20-year (30-year for financially disadvantaged communities) amortization and a low interest rate. Community assistance is available for small communities having populations less than 10,000. Fifteen percent of the annual funds are reserved exclusively for small communities. In addition, small communities may qualify for loans from the unreserved 85 percent of the funds.

Florida Forever Program

Florida Forever is Florida's conservation and recreation lands acquisition program. The Florida Forever Act, passed in 1999, was the 10-year, $3 billion statewide successor to the $3 billion Preservation 2000 Program that was effective from 1999 through 2000. The initial Florida Forever Program ran from 2000 through 2010 and was extended in 2008 for 10 more years (through 2020) with an additional $3 billion. Eligible projects under the Florida Forever Program include land acquisition, land and water body restoration, ASR facilities, surface water reservoirs, and other capital improvements. Historically funded by annual appropriations, land acquisitions recommended by the Florida Forever Program may now be funded through document stamp taxes as described below.

Water and Land Conservation Amendment

Approved by voters in 2014, the Water and Land Conservation Amendment to the Florida Constitution dedicated 33 percent of collected document stamp taxes for land acquisition/management, springs, and water resource protection for 20 years. Since 2016, the Legacy Florida legislation has allocated funds for springs protection in SJRWMD consistent with this amendment.

Federal Funding

Environmental Quality Incentives Program

The United States Department of Agriculture's NRCS provides technical and financial assistance to agricultural producers through the Environmental Quality Incentives Program (EQIP) for the installation or implementation of structural and management practices to improve environmental quality on agricultural lands. Projects that benefit water supply or nutrient management through detention/retention or tailwater recovery ponds can also be implemented through this program.

Water Infrastructure Finance and Innovation Act

The Water Infrastructure Finance and Innovation Act of 2014 (WIFIA) established a new financing mechanism to accelerate investment in our nation's water infrastructure. Administered by the EPA, the WIFIA program provides loans for up to 49 percent of eligible project costs for projects that will cost at least $20 million for large communities and $5 million for small communities (population of 25,000 or less).

Public-Private Partnerships, Cooperatives, and other Private Investment

Another source of funding that is becoming more common while offering public entities a means to reduce financial burden, is public-private partnerships. These partnerships can require technical expertise and financial risk beyond the expertise and risk tolerance of many utilities and water supply authorities. A range of public-private partnerships and risk options is available to provide this expertise. These options range from all-public ownership to all-private ownership of facility design, construction, and operation. Competition among private firms desiring to fund, build, or operate water supply development projects with assistance from government entities could reduce project costs, potentially resulting in lower customer charges.

Chapter 8: Conclusions

The CSEC RWSP was prepared by SJRWMD in coordination with stakeholders and is consistent with the water supply planning requirements of Chapter 373, F.S. Total water demand in the CSEC RWSP area is projected to increase from 353.2 mgd to approximately 427.9 mgd in 2040. SJRWMD has determined that traditional sources alone cannot supply the projected 74.7 mgd increase in water demand while sustaining water resources and related natural systems. Although there may be localized opportunities for additional withdrawals from traditional sources where groundwater withdrawals have not been fully optimized, these opportunities may be limited.

The CSEC RWSP offers solutions for meeting the future water demands while protecting the environment, which include enhanced water conservation, aquifer recharge, additional use and implementation of reclaimed water, and surface water, stormwater, and brackish groundwater projects. Specifically, SJRWMD has identified up to 229.4 mgd of projects potentially available to offset the projected increase in water demand at 2040 under average climate conditions (74.7 mgd) and under a 1-in-10 year drought scenario (155.4 mgd). The breakdown of projects by type includes:

- 38.2 mgd of water conservation potential
- 44.7 mgd of additional reclaimed water supplies
- 87.5 mgd of water supply development projects, and
- 59.0 mgd of water resource development projects

Through implementation of these projects, the CSEC RWSP concludes that future water demand can be met through the 2040 planning horizon, while sustaining water resources and related natural systems.

References

AWWA. 1999. *Residential End Users of Water, Report 90781*. AWWA, Denver, CO. Available from: http://www.waterrf.org

Central Florida Water Initiative (CFWI). 2015. *Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP): Volume I – Planning Document*. Available from: http://cfwiwater.com/

CFWI. 2018. *Central Florida Water Initiative (CFWI); Minimum Standards for Water Resource Data Collection, Site Establishment, and Field Data Collection Protocols*. Available from: https://cfwiwater.com/pdfs/DMIT-MinStandards-2018.pdf

CFWI. 2020a. *Model Documentation Report East-Central Florida Transient Expanded (ECFTX) Model*. Available from: https://cfwiwater.com/pdfs/ECFTX_Model_Final_Report_Feb_2020.pdf

CFWI. 2020b. *Central Florida Water Initiative; Regional Water Supply Plan 2020, Planning Document*. Available from https://cfwiwater.com/planning.html

Dunn, W., P. Burger, S. Brown, and M. Minno. 2008. *Development and Application of a Modified Kinser-Minno Method for Assessing the Likelihood of Harm to Native Vegetation and Lakes in Areas with an Unconfined Aquifer*. SJRWMD Special Publication SJ2008-SP24.

FDACS. 2017. *Florida Statewide Agricultural Irrigation Demand.* Prepared by The Balmoral Group. FDACS, Tallahassee, FL.

FDEP. 2003. *Water Reuse for Florida: Strategies for Effective Uses of Reclaimed Water.* FDEP, Tallahassee, FL. Available from: http://www.dep.state.fl.us/water/reuse/docs/valued_resource_FinalReport.pdf.

FDEP. 2013. Guidance Relating to Water Resource Caution Areas. WMD Policy Documents. Available from: https://www.dep.state.fl.us/secretary/watman.

HydroGeoLogic, Inc. (HGL) and Dynamic Solutions, LLC. 2016. *Northern District Groundwater Flow Model Version 5.0*. Prepared for SJRWMD and SWFWMD.

Kinser, P., and M. Minno. 1995. *Estimating the Likelihood of Harm to Native Vegetation from Groundwater Withdrawals*. SJRWMD Technical Publication SJ95-8.

Kinser, P., M. Minno, P. Burger, and S. Brown. 2003. *Modification of Modeling Criteria for Application in the 2025 Assessment of Likelihood of Harm to Native Vegetation*. SJRWMD Professional Paper SJ2003-PP3.

Kuniansky, E. 2016. *Simulating Groundwater Flow in Karst Aquifers with Distributed Parameter Models – Comparison of Porous-Equivalent Media and Hybrid Flow Approaches*. USGS Scientific Investigations Report 2016-5116.

Mayer, P and W. DeOreo. 1999. *Residential End Uses of Water*. AWWA Research Foundation. Denver, Co.

Miller, J. 1986. *Hydrogeologic Framework of the Floridan Aquifer System in Florida and in Parts of Georgia, Alabama, and South Carolina*. U.S. Geological Survey Professional Paper 1403-B. USGS. Washington.

Rayer, S., and Y. Wang. 2017. *Projections of Florida Population by County, 2020 – 2045, with Estimates for 2016. Volume 50, Bulletin 177.* BEBR, University of Florida. Gainesville, FL.

SJRWMD. 2013. *Prevention/Recovery Strategy for Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes.* SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/gb1311_005.pdf

SJRWMD. 2017. *Prevention Strategy for the Implementation of Silver Springs Minimum Flows and Levels*. SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/ssmfl/Silver-Springs-Prevention-Strategy.pdf

SJRWMD. 2019. *2018 Five-Year Strategy Assessment for the Implementation of Minimum Flow and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes*. SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/Volusia_5year_assessment_2019.pdf

SJRWMD. 2020. *Prevention Strategy for the Implementation of Lake Butler Minimum Levels*. SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/MFL-Lake-Butler/Butler_Strategy.pdf

SJRWMD and SRWMD. 2017. *North Florida Regional Water Supply Plan (2015 – 2035)*. Available from: www.northfloridawater.com/watersupplyplan/documents/final/NFRWSP_01192017.pdf

Southeast Florida Regional Climate Change Compact Technical Ad hoc Work Group (SFRCC). 2011. *A Unified Sea Level Rise Projection for Southeast Florida.*

Vickers, A. 2001. *Handbook of Water Use and Conservation*: *Homes, Landscapes, Industries, Businesses, Farms.* WaterPlow Press, Amherst, MA.

Williams, L. and E. Kuniansky. 2016. *Revised Hydrogeologic Framework of the Floridan Aquifer System in Florida and Parts of Georgia, Alabama, and South Carolina*. U.S. Geological Survey Professional Paper 1807 v. 1.1. USGS. Reston, VA.

Williams, S.A. 2016. *Simulation of the Effects of Groundwater Withdrawals from the Floridan Aquifer System in Volusia County and Vicinity*. SJRWMD Technical Publication SJ2006-4. Palatka, FL.

APPENDIX A

SUPPLEMENTAL REGIONAL WATER SUPPLY PLAN COMPONENTS FOR THE CSEC RWSP SUB-REGIONS

Table of Contents

A1: Regional Water Supply Plan Components for Volusia County

Chapter 1: Introduction to Volusia County

Population

The estimated population in Volusia County during the base year, 2015, was just under 0.53 million.

Primary Surface Water Basins

The primary surface water basins located within Volusia County include portions of the Lower St. Johns River, Middle St. Johns River, Upper St. Johns River, Lake George, Northern Coastal, and Indian River Lagoon basins.

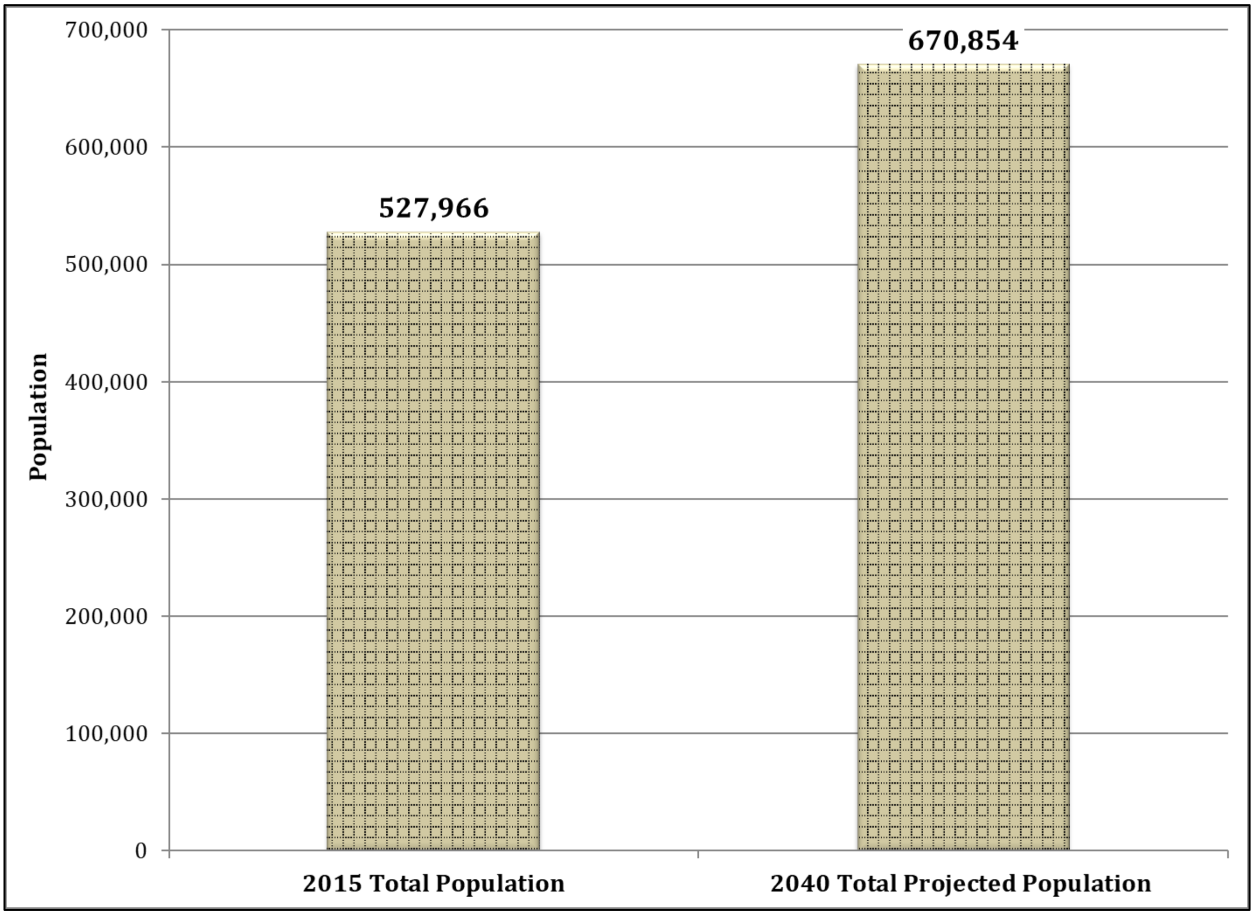
Springs

There are three Outstanding Florida Springs (OFS) in Volusia County, pursuant to subsection (ss.) 373.802(4), *Florida Statutes* (F.S.); Blue, De Leon, and Gemini springs. Blue Springs is the only first-magnitude in Volusia County, defined as having flows of at least 100 cubic feet per second (cfs). De Leon and Gemini springs are the only two second-magnitude springs, defined as having flows between 10 and 100 cfs.

Chapter 2: Water Demand, Reclaimed Water and Water Conservation Projections for Volusia County

Population

Total population for Volusia County is expected to increase by 143,000 people (27% to approximately 671,000 people) by 2040 (Figure A1-1). For a breakdown of population by type (public supply versus domestic self-supply served), see Appendix B.



Water Demand

Total water demand in Volusia County is anticipated to increase from 88.4 million gallons per day (mgd) in 2015 to 109.6 mgd in 2040 (24%). Public supply represents the largest demand in Volusia County (61%), followed by agriculture (20%) and recreation/landscape/aesthetic (LRA; 7%)(Figure A1-2). It is estimated that 2040 total water demand could increase by an additional 10 percent (11.2 mgd) if a 1-in-10 year drought event occurred.

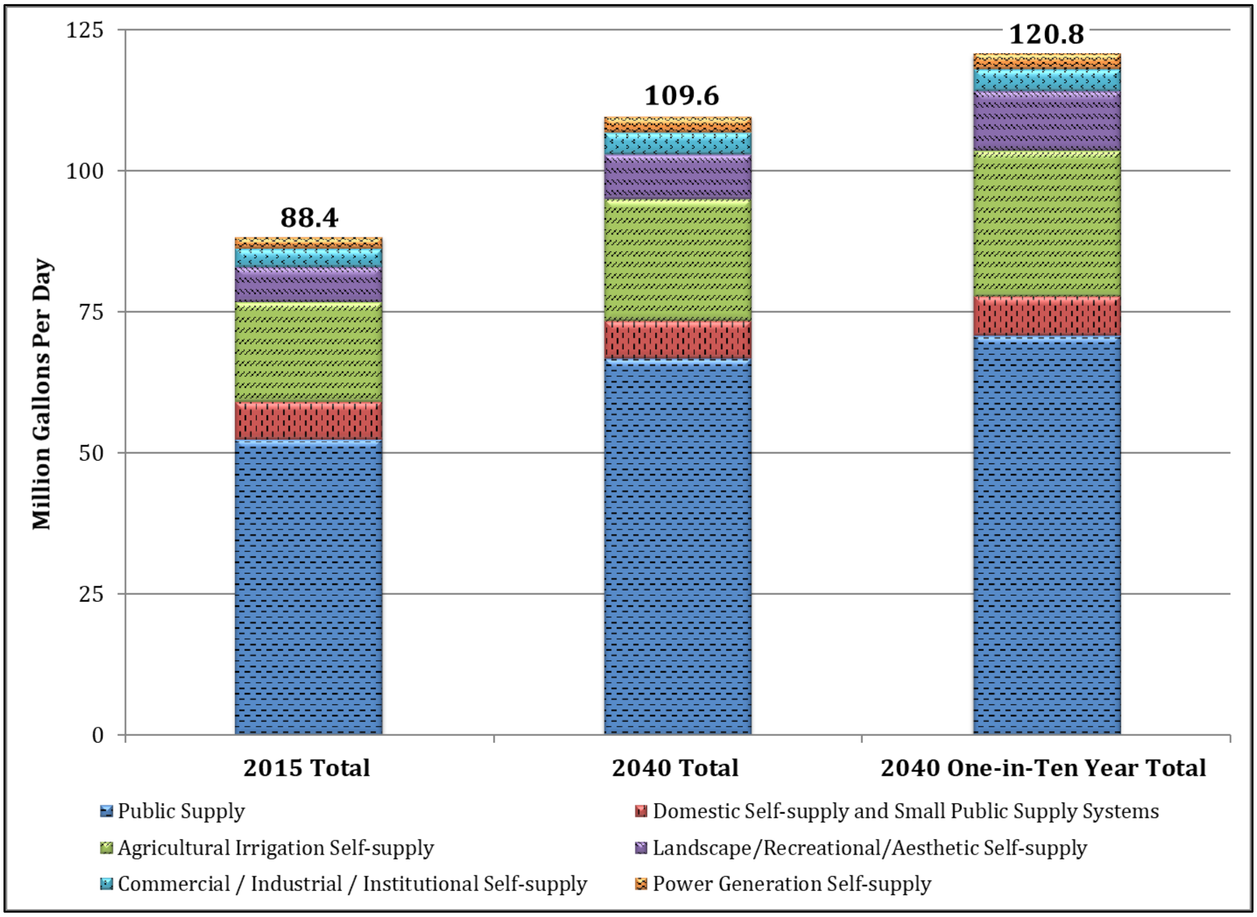
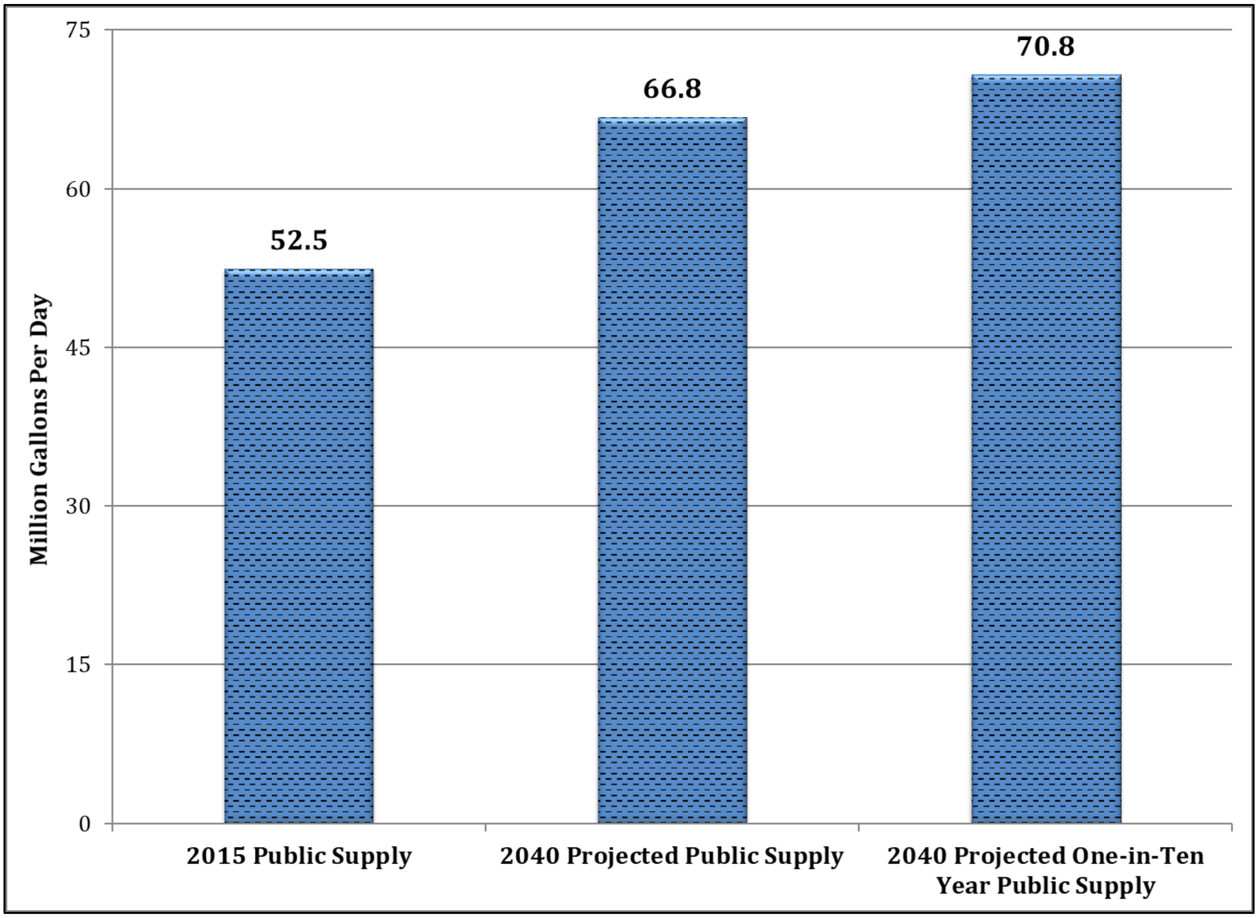


Figure A1-2: 2015 Water Use Estimates and 2040 Water Demand Projections in Volusia County by Category

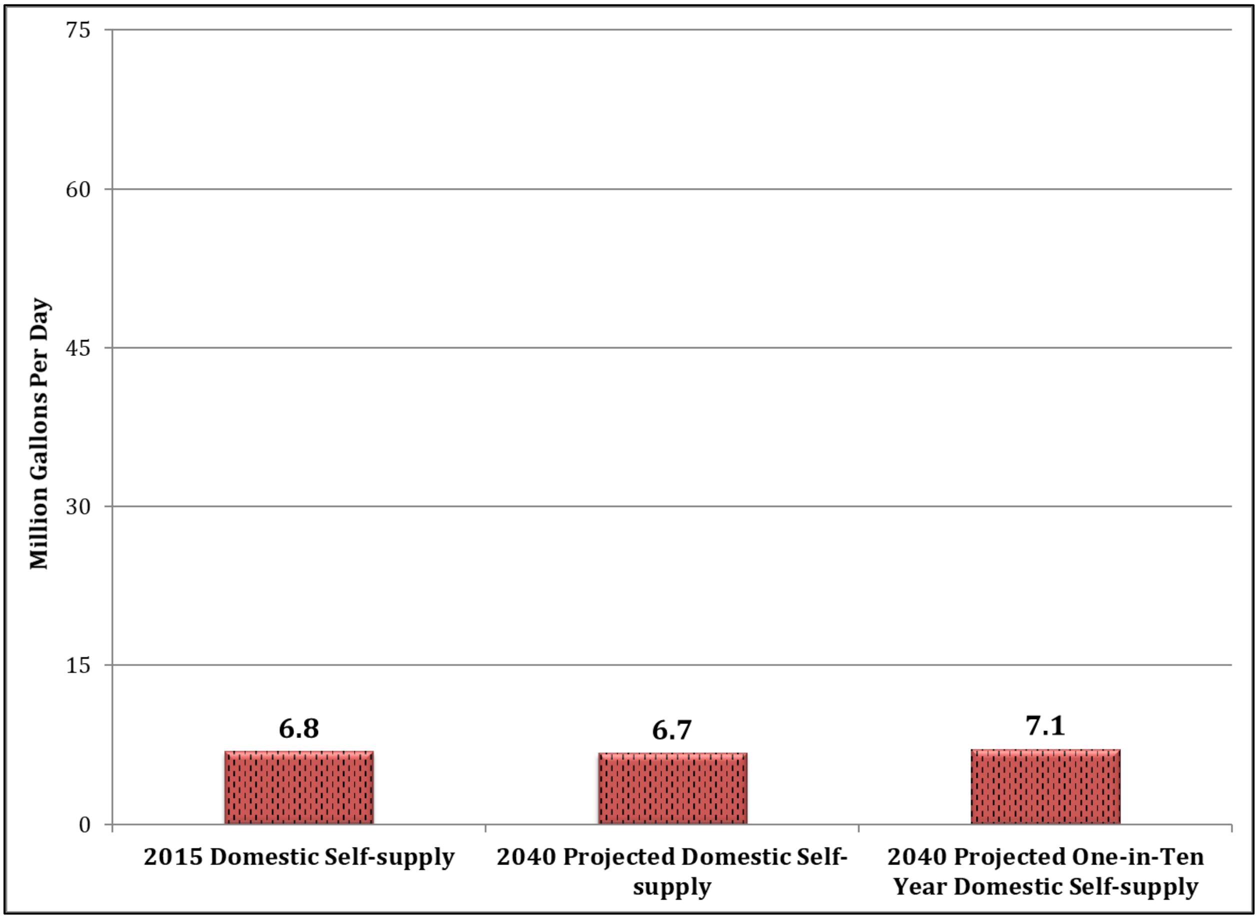
Public Supply Demand

Total public supply water demand for Volusia County is expected to increase by 14.3 mgd (27% to approximately 67 mgd) by 2040 (Figure A1-3). Public supply represents 61 percent of the 2040 projected water demand in Volusia County. Of note, public supply also represents 67 percent of the total increase in water demand in Volusia County. It is estimated that 2040 public supply water demand could increase by an additional 6 percent (4.0 mgd) if a 1-in-10 year drought occurred.



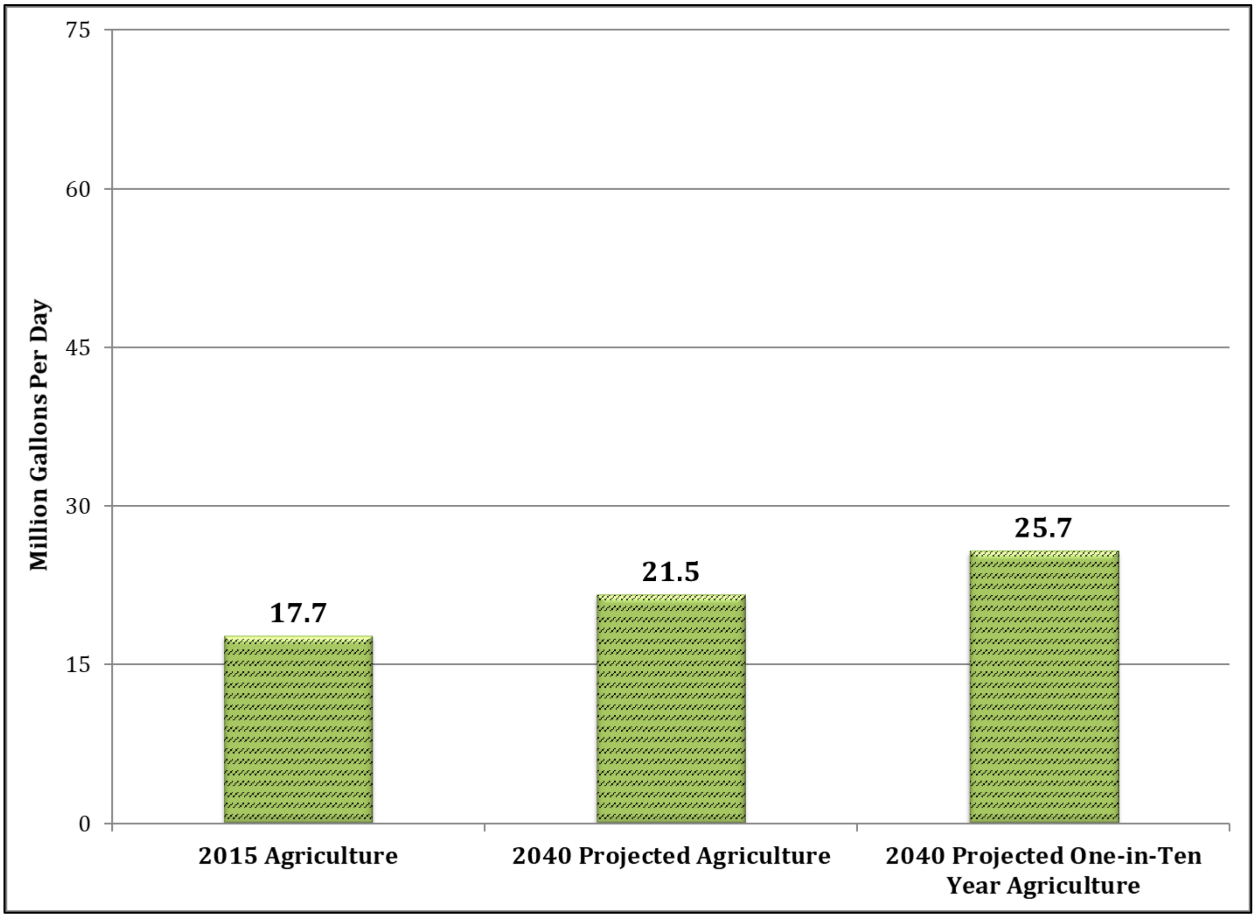
Domestic Self-Supply Demand

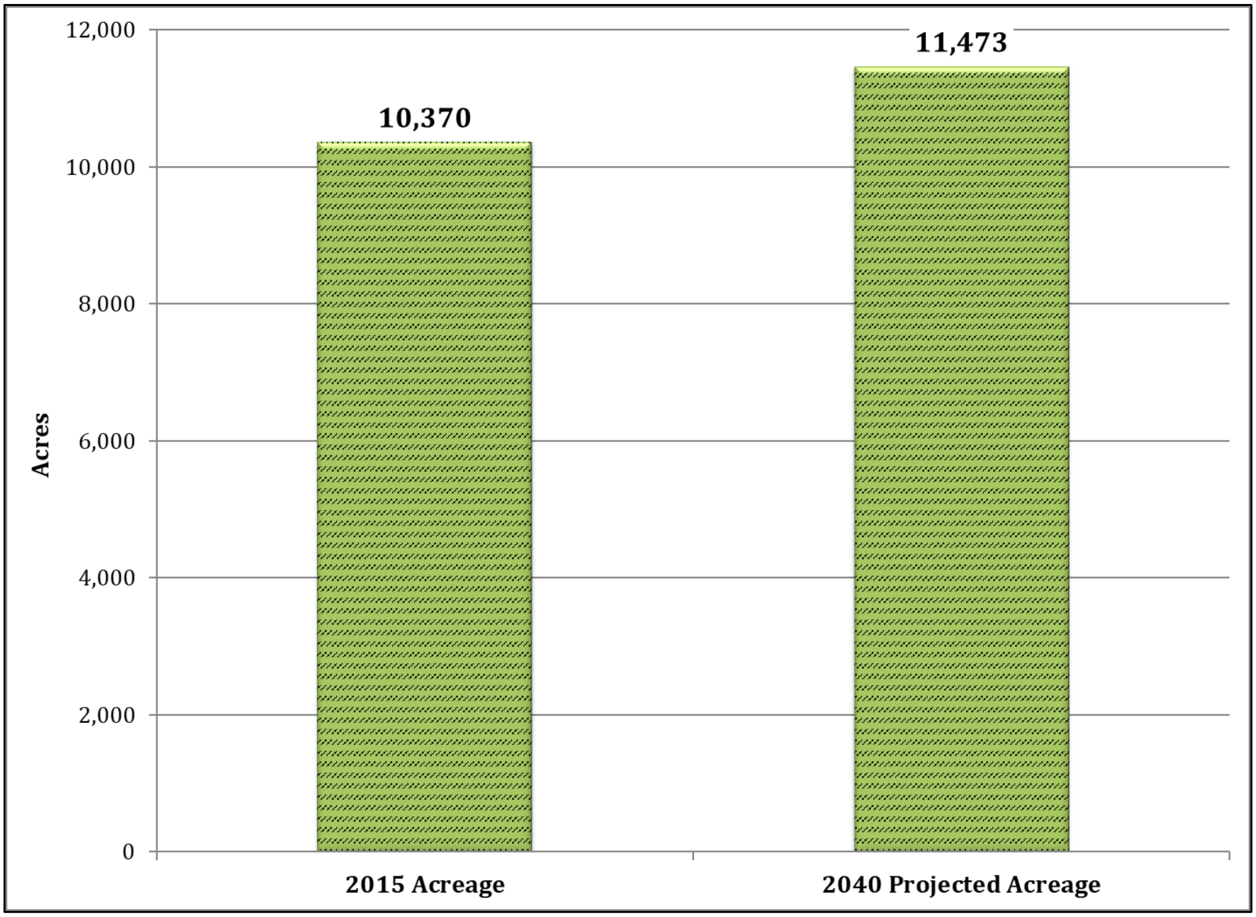
In Volusia County, total combined domestic self-supply (DSS) water demand, which includes small public supply systems as defined in Appendix B, is expected to remain fairly stable through 2040 with a slight predicted decrease to approximately 6.7 mgd (Figure A1-4). While DSS population does increase over the planning horizon, the increase is offset by the five-year (2011 to 2015) average residential per capita (85 gallons per capita per day, gpcd) being lower than the 2015 per capita (107 gpcd). As shown in Appendix B, projected DSS water demand does increase between 2020 and 2040 as a result of population growth. Of the 2040-combined DSS water demand, DSS wells represent 96 percent of the projected water demand (with small public supply systems representing the remaining 4%). It is estimated that 2040-combined DSS water demand could increase by an additional 6 percent (0.4 mgd) if a 1-in-10 year drought occurred.



Agriculture Acreage and Demand

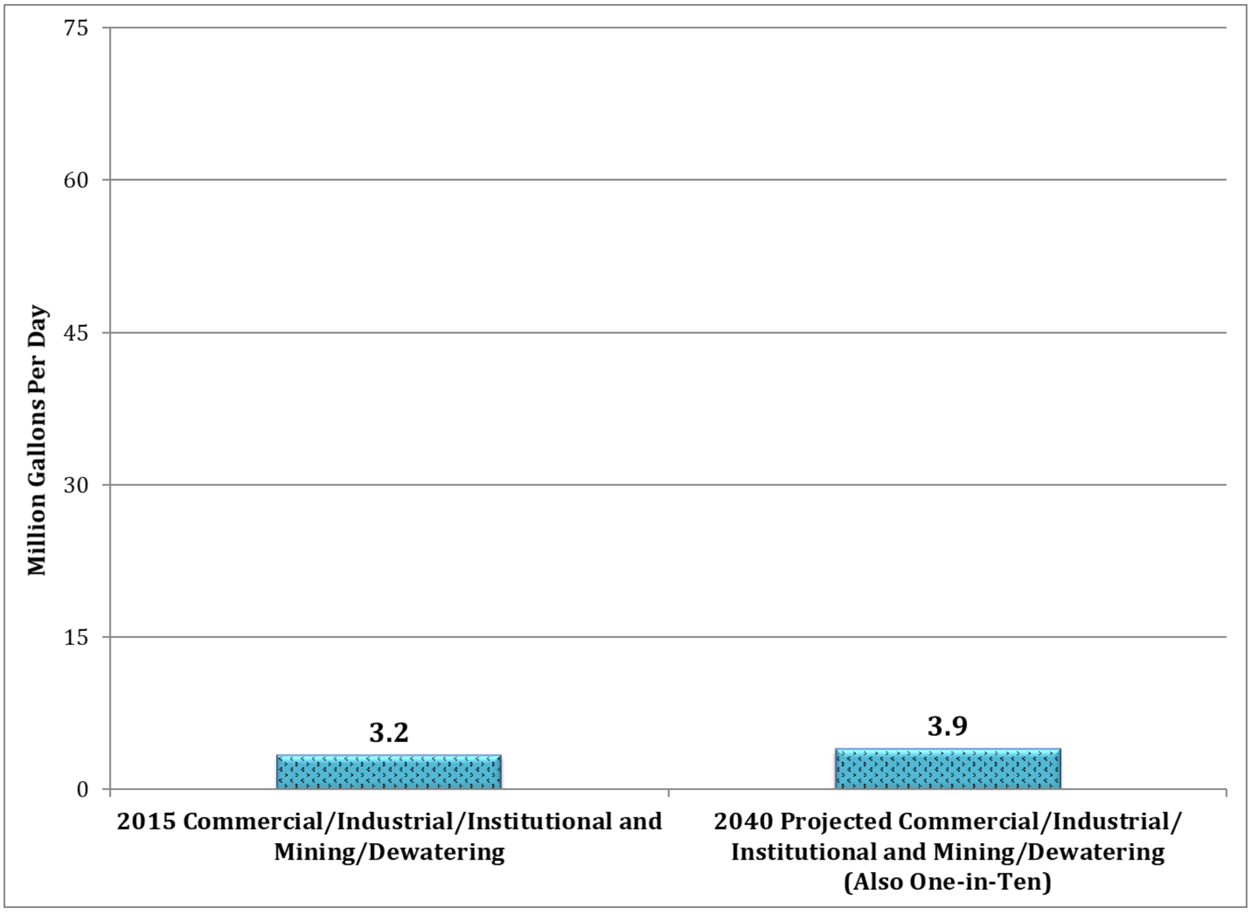
Total agricultural water demand for Volusia County is expected to increase by 3.8 mgd (22% to 21.5 mgd) by 2040 and acreage is expected to increase by 1,100 acres (11% to approximately 11,500 acres) (Figures A1-5 and A1-6). The Florida Department of Agriculture and Consumer Affairs' (FDACS) Florida Statewide Agricultural Irrigation Demand (FSAID) IV estimates that 2040 agricultural water demand (which was based on a 5-in-10 year, or average, drought condition) could increase by an additional 19 percent (4.2 mgd) if a 1-in-10 year drought occurred (FDACS 2017).




12,000
10,000
8,000
6,000
4,000
2,000
0
Acres
10,370
11,473
2015 Acreage
2040 Projected Acreage

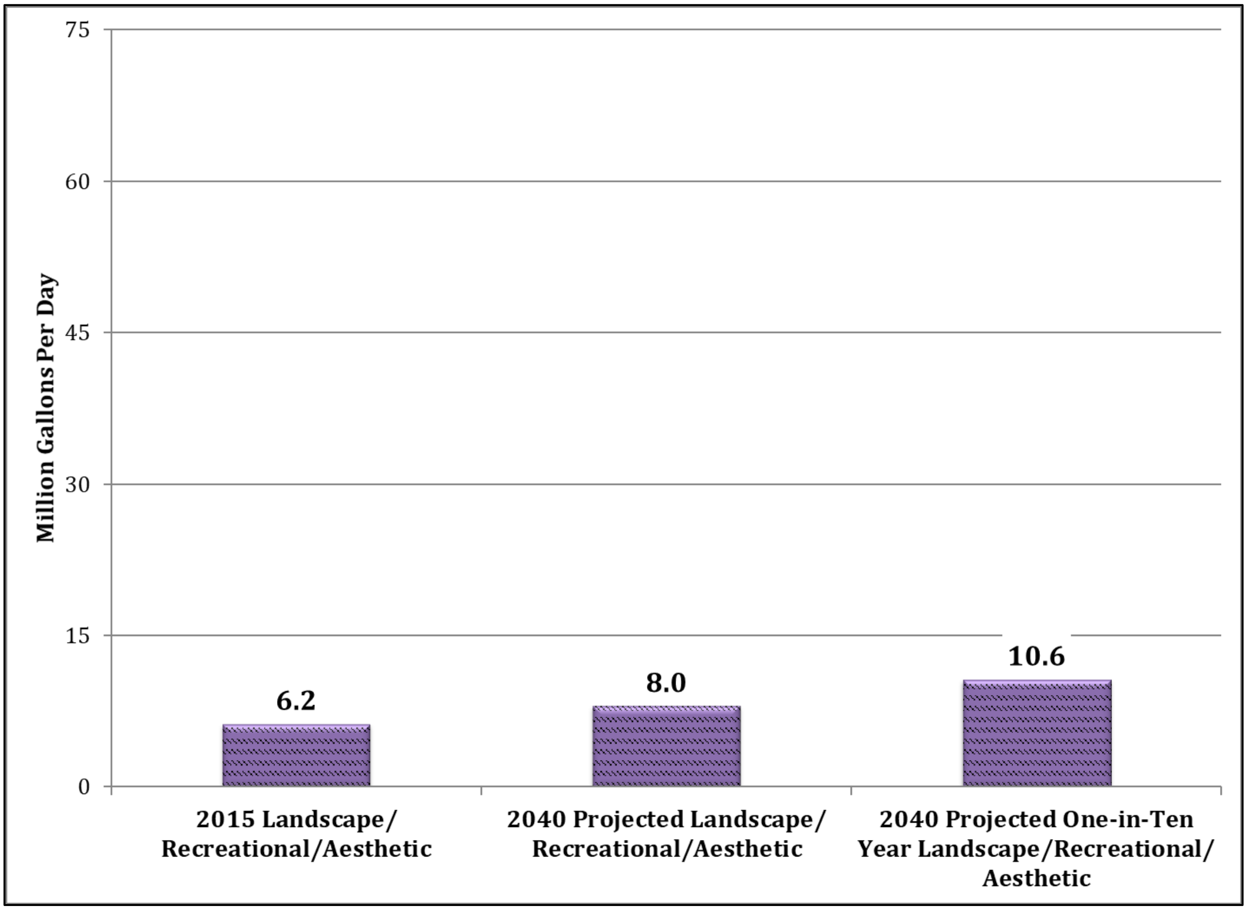
Commercial/Industrial/Institutional and Mining/Dewatering Demand

Total combined commercial/industrial/institutional and mining/dewatering water demand for Volusia County is expected to increase by 0.7 mgd (19% to approximately 3.9 mgd) by 2040 (Figure A1-7).



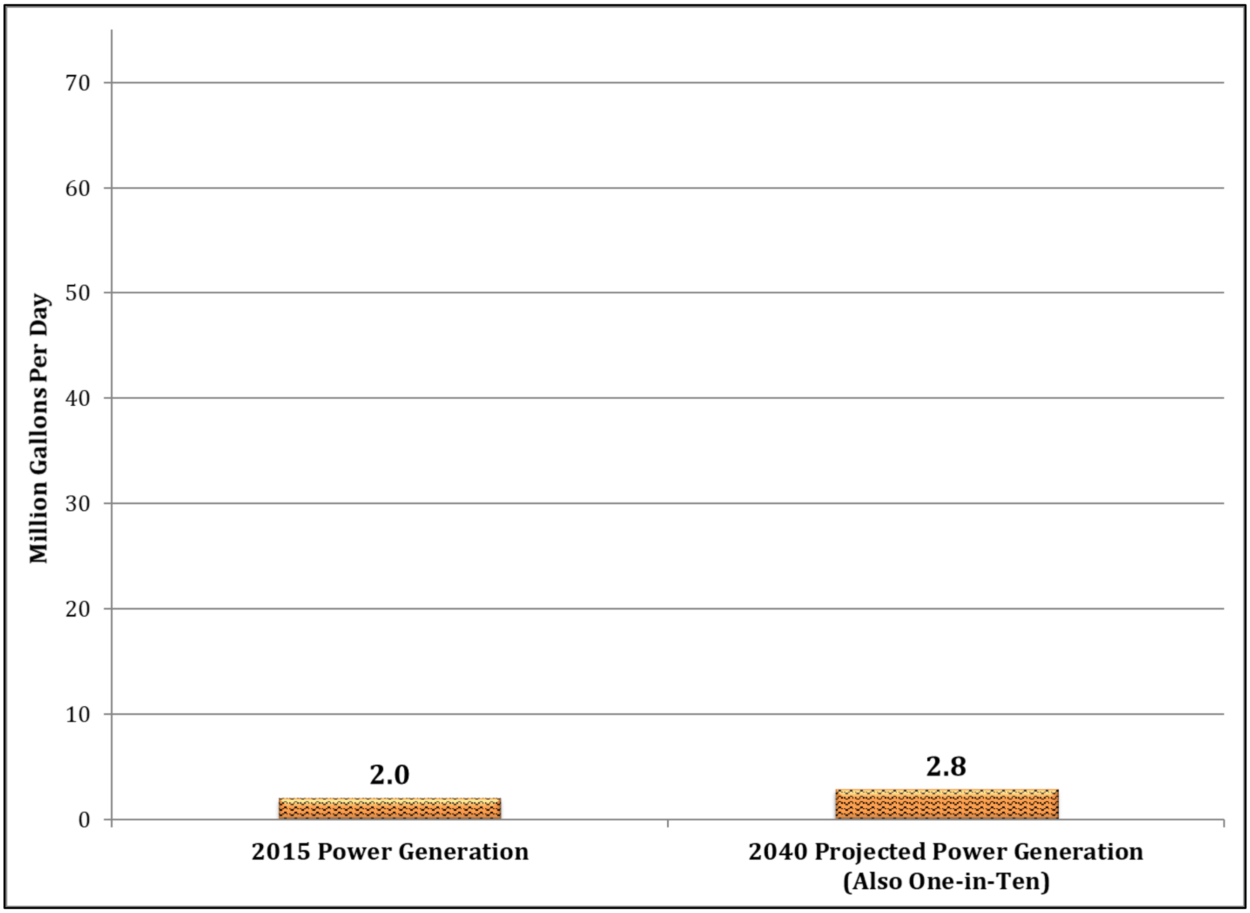
Landscape/Recreation/Aesthetic Demand

Total LRA water demand for Volusia County is expected to increase by 1.8 mgd (28% to approximately 8.0 mgd) by 2040 (Figure A1-8). It is estimated that 2040 LRA water demand could increase by an additional 33 percent (2.6 mgd) if a 1-in-10 year drought occurred.



Power Generation Demand

Total power generation water demand for Volusia County is expected to increase by 0.8 mgd (40% to approximately 2.8 mgd) by 2040 (Figure A1-9).



Reclaimed Water Projections

Existing Flows

Figure A1-10 displays 2015 reclaimed water flows, both beneficial and disposal, in Volusia County. The relative size of the pie charts represents the magnitude of total flow. The yellow shading represents disposal, and the purple shading represents the beneficial use of reclaimed water. The values utilized for Figure A1-10 are provided in Table A1-1. Approximately 62 percent (21.8 mgd) of 2015 treated wastewater flows was used beneficially in Volusia County, while the remaining 38 percent (13.2 mgd) was considered disposal. Recognizing the potential for increased beneficial reuse of existing flows, the St. Johns River Water Management District (SJRWMD) estimated that between 4.9 mgd and 9.9 mgd of the existing disposal flows could reasonably be utilized beneficially going forward.

Table A1-1: Detailed Summary of 2015 Reclaimed Water Flows in Volusia County

Facility	2015 Total Treated Flow[1] (mgd)	Beneficial Utilization (mgd)	Disposal (mgd)
Daytona – Westside Regional WWTF	11.1	2.7	8.4
DeLand Regional WWTF (Wiley M Nash)	3.2	3.2	0.0
Deltona Lakes	0.8	0.8	0.0
Edgewater WWTF	1.6	1.0	0.6
Holy Hill WWTF	1.6	0.3	1.3
N. Peninsula Utilities - Seabridge	0.1	0.0	0.1
New Smyrna Beach WWTF	3.8	3.8	0.0
Ormond Beach WWTF	5.0	3.4	1.6
Port Orange WWTF	5.7	4.7	1.0
Tymber Creek	0.1	0.1	0.0
Volusia Co. Utility Dept. (VCUD) – Deltona North	0.4	0.4	0.0
VCUD- Four Townes	0.2	0.0	0.2
VCUD – Halifax Plantation WWTF	0.1	0.0	0.1
VCUD – Southeast Regional WWTF	0.2	0.2	0.0
VCUD – Southwest Regional WWTF	1.4	1.4	0.0
Total[1]	**35.0**	**21.8**	**13.2**

Note: mgd = million gallons per day; WWTF = wastewater treatment facility
[1] Totals may be slightly different due to rounding of individual values.

Future Flows

SJRWMD estimated that increased future reclaimed water flows of approximately 6.3 mgd to 6.7 mgd could be used for beneficial purposes. When considered together with existing disposal flow that could be utilized beneficially, between 11.6 mgd to 16.2 mgd of total potential reclaimed water for reuse will be available in 2040 to potentially offset withdrawals from traditional water sources and predicted impacts within Volusia County.

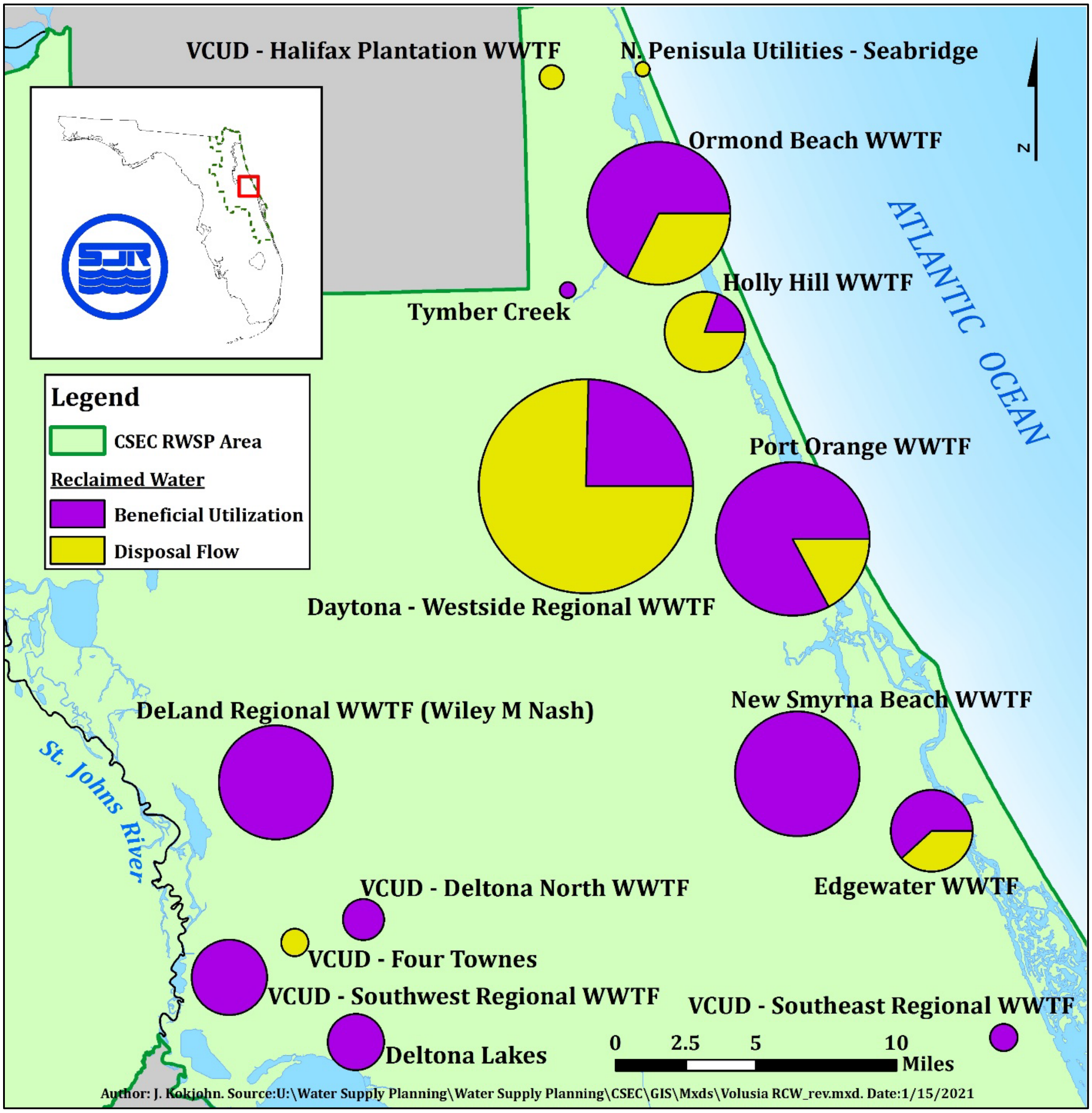


Figure A1-10: Summary of 2015 Reclaimed Water Flows in Volusia County

Water Conservation and Irrigation Efficiency

For the first scenario of water conservation and irrigation efficiency [using the Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP) methodology (CFWI 2015) and FDACS' FSAID IV (FDACS 2017)], it is estimated that approximately 6.1 mgd of the projected 2040 demand in Volusia County could be reduced by water conservation (Table A1-2).

For the second scenario, using the average 2011–2015 gross per capita rate for Volusia County for public supply and applying the same percent reduction to DSS, it is estimated that water conservation could be increased by about 3.7 mgd to a total of 9.8 mgd, potentially offsetting some future demand (Table A1-2).

Table A1-2: 2040 Water Conservation and Irrigation Efficiency Potential in Volusia County

Category	**2040 Low Conservation Potential (mgd)**	**2040 High Conservation Potential (mgd)**
Public Supply	2.7	6.1
Domestic Self-supply	0.3	0.6
Agriculture	2.8	2.8
Landscape/Recreation/Aesthetic Self-supply	0.2	0.2
Commercial/Industrial/Institutional Self-supply	0.1	0.1
Power Generation Self-supply	< 0.1	< 0.1
Total	**6.1**	**9.8**

Chapter 3: Assessment of Groundwater Conditions Associated with Future Water Demand Projections for Volusia County (Volusia Model Modeling Simulations)

Volusia Groundwater Model Overview

The Volusia model was developed by SJRWMD (Williams 2006), in part, to support the SJRWMD's regional water supply planning process. Developed using the MODFLOW code, the Volusia model explicitly represents aquifer systems and implicitly simulates the exchange of water through semi-confining layers using a leakance term. The model grid consists of 100 rows and columns with uniform grid spacing of 2,500 feet. The model extends from Crescent City in the northwest corner to near Rock Springs in Orange County in the southwest corner (Figure A1-11). The Atlantic Ocean/Mosquito Lagoon form the model's eastern boundary. The model includes three layers simulating the surficial, Upper Floridan, and Lower Floridan aquifers.

Originally calibrated to 1995 steady-state conditions, the Volusia model was later re-calibrated to include a second steady-state period representing hydrologic conditions for 2002. SJRWMD recently updated the steady-state model to 2010 and 2015 water use and boundary conditions. All simulations performed in support of this plan utilized 2015 boundary conditions with various water use stresses as determined by the specific analysis.

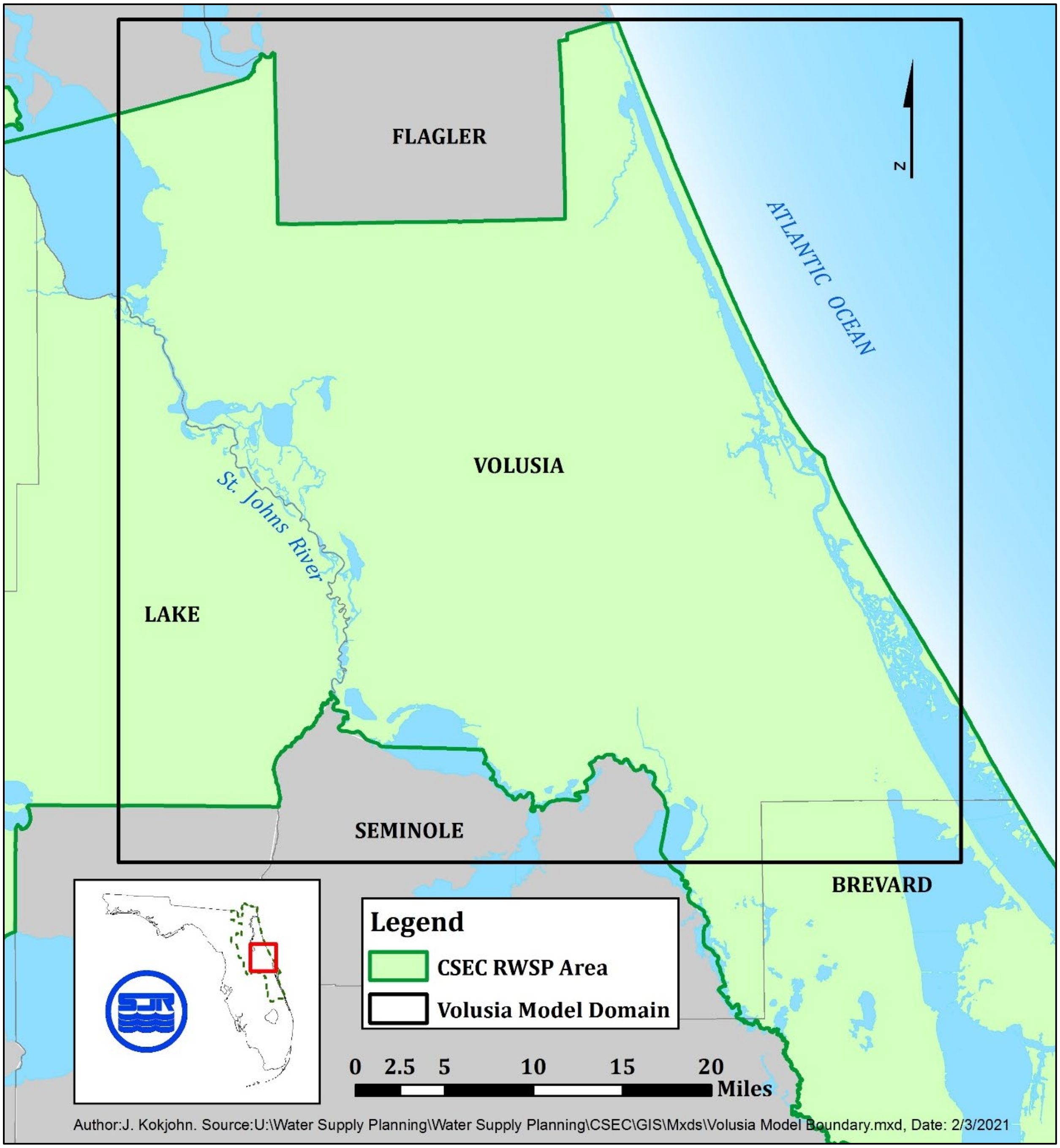


Figure A1-11: Volusia Model Domain

Methodology

SJRWMD completed a water resource assessment using the Volusia model to estimate the potential impacts from 2015 through the 2040 planning horizon. The assessment addressed the potential impacts of groundwater withdrawals with respect to adopted minimum flows and minimum levels (MFL) and wetlands in Volusia County.

Three modeling scenarios and two comparisons, listed below, were performed as part of the Volusia water resource assessment and to predict the benefits of water supply and water resource development projects. Modeling of additional water use scenarios was performed to determine current (i.e., 2015 base year) MFL status and is described in Appendix C.

Scenarios

- Scenario 1: 2015 water use (calibrated base year condition)
- Scenario 2: 2040 projected water demand
- Scenario 3: Scenario 2 with water supply and water resource development projects included

Comparisons

Comparison 1 was performed to assess potential water resource impacts due to projected increases in groundwater withdrawals within the Volusia model domain. Comparison 2 was used to demonstrate the effectiveness of the water supply and water resource development projects summarized in Chapter 6.

Results of these comparisons are described in Chapters 4 and 5.

- Comparison 1: MFL water bodies and wetland assessment (Scenario 2 minus Scenario 1)
- Comparison 2: Benefits of water supply and water resource development projects (Scenario 3 minus Scenario 2)

Chapter 4: Evaluation of Potential Effects of Projected Water Demand on Water Resources within Volusia County (Water Resource Assessment)

Water Resource Assessment Results

A water resource assessment was performed for Volusia County at 2040 projected water demand. The results for the MFL, groundwater quality, and wetland analyses are provided in this chapter, along with a list of approved MFL prevention/recovery strategies applicable to the area.

MFLs

The MFL analysis results are summarized in Table A1-3 and then discussed by water body type below. Additional details regarding the analysis are provided in Appendix F.

Table A1-3: Status of Assessed MFL Water Bodies in Volusia County

Type	Name	MFLs Status at 2040
Lake	Big	Met
Lake	Butler	Prevention
Lake	Colby	Met
Lake	Coon Pond	Met
Lake	Daugharty	Met
Lake	Davis	Met
Lake	Emporia	Met
Lake	Helen	Met
Lake	Hires	Met
Lake	Indian	Prevention
Lake	Lower Louise	Met
Lake	Scoggin	Prevention
Lake	Shaw	Prevention
Lake	Three Island	Met
Lake	Upper Louise	Met
Lake	Winnemisett	Met
Lake	Winona	Met
River	St. Johns at S.R. 44 (DeLand)	Met
Spring	Blue	Recovery
Spring	De Leon	Met
Spring	Gemini	Met

Lakes with MFLs

Results of the MFL lake analysis indicate that 13 of the 17 evaluated lakes in Volusia County are meeting their MFLs under current conditions and are projected to meet their MFLs throughout the 2040 planning horizon. The MFLs for Butler, Indian, Scoggin, and Shaw lakes are considered to be in prevention since their MFLs are met under current conditions but not under 2040 projected conditions. The amount of Upper Floridan aquifer (UFA) level rebound needed to ensure achievement of these MFLs in 2040 is provided in Table A1-4.

Table A1-4: Summary of UFA Rebound Requirements for MFL Lakes in Volusia County

Lake	2015 Freeboard (ft)	2015 to 2040 Drawdown (ft)	UFA Rebound Needed (ft)
Butler	0.2	0.6	0.4
Indian	0.3 [1]	1.3	1.0
Scoggin	0.4	0.8	0.4
Shaw	0.7	1.3	0.6

[1] Includes benefit of the Tiger Bay weir (0.47 ft), constructed in 2016.

Rivers with MFLs

The MFL status assessment for the St. Johns River near DeLand shows the MFLs are met under current and 2040 projected water use conditions.

Springs with MFLs

Results of the MFL springs analysis show that De Leon and Gemini springs are meeting their MFLs under current conditions and will continue to meet their MFLs through the planning horizon.

The Blue Spring MFL is unique in that it defines a minimum flow regime that increases in five-year increments with the final minimum flow of 157 cfs becoming effective in 2024 (40C-8, *Florida Administrative Code* (*F.A.C.*)) A Blue Spring MFL status evaluation was performed in 2018 to support the first five-year assessment of the 2013 Volusia prevention and recovery strategy (SJRWMD 2019; see *MFL Prevention and Recovery Strategies* below). Results from the analysis showed that the Blue Spring MFL applicable to 2018 (142 cfs) was being achieved under current pumping conditions and the MFL status remained in prevention. On April 1, 2019, the Blue Spring minimum flow increased to 148 cfs, pursuant to the adopted MFL. An updated MFL status determination showed that the higher minimum flow was not being met and, therefore, the status of the Blue Spring MFL shifted to recovery. Pursuant to 40C-8.031(13)(a), *F.A.C.*, SJRWMD will perform a causation analysis to evaluate the potential impacts of various stressors on Blue Spring, including whether groundwater pumping is a factor. Based on the results of this analysis, SJRWMD will evaluate existing MFL criteria and may adjust any existing prevention/recovery strategies, if necessary, to ensure the protection of Blue Spring from significant harm due to consumptive uses of water. In addition, SJRWMD may request Governing Board authorization to include Blue Spring on the MFL Priority List and Schedule for re-evaluation prior to the next Central Springs/East Coast (CSEC) RWSP.

The existing Blue Spring MFL requires a final minimum flow increase to 157 cfs by 2024. Table A1-5 shows the amount of flow needed to meet the current (148 cfs) and final (157 cfs) Blue Spring MFL at current and projected pumping conditions. Currently, there are sufficient projects and measures identified in the MFL prevention/recovery strategy and five-year assessment to ensure achievement of the final Blue Spring MFL at 2040 projected water demand. Additional details regarding the Blue Spring MFL assessment are provided in Appendix F.

Table A1-5: Summary of Flow Recovery Requirements for Blue Spring

Year	MFL (cfs)	Recovery Needed at Current Pumping[1] (cfs)	Additional Impacts due to Projected Pumping Increases (cfs)	Total Recovery Needed (cfs)
2019	148	4.6	1.3	5.9
2040	157	12.0	5.0	17.0

[1] Current pumping represents average withdrawals from 2011 through 2015

MFL Prevention and Recovery Strategies

The Prevention/Recovery Strategy for the Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes (2013 Volusia Strategy; SJRWMD 2013), which addresses MFLs for Volusia County, was approved by the SJRWMD Governing Board on November 12, 2013. A five-year assessment of the 2013 Volusia Strategy was performed in 2018. The 2018 Five-Year Strategy Assessment for the *Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes* (2018 Volusia Strategy Assessment; SJRWMD 2019) updated the prevention/recovery status of the Volusia County MFL water bodies (with the exception of Lake Butler, whose MFLs were not adopted at the time) and identified additional projects to ensure achievement of the listed MFLs at 2040 projected water demand. Lake Butler MFLs were approved for adoption on August 11, 2020, at which time the Governing Board concurrently approved the Prevention Strategy for the Implementation of Lake Butler Minimum Levels (2020 Lake Butler Strategy). Since the projects listed in the 2013 Volusia Strategy were sufficient to ensure achievement of Lake Butler MFLs through 2040 with additional benefits predicted as a result of the projects listed in the 2018 Volusia Strategy Assessment, the 2020 Lake Butler Strategy included only those previously identified projects. All three strategy documents are included in Appendix G.

Groundwater Quality (Saltwater Intrusion)

The groundwater quality analysis results are summarized below by well type. Additional information including data on specific wells is provided in Appendix D.

District Observation Well Network Wells

Three District Observation Well Network (DOWN) wells showed increasing chloride concentrations at rates ≥ 3 milligrams per liter per year (mg/L/yr)(high rate of change), and one DOWN well showed increasing chloride concentrations at a rate within the range ≥ 1 and < 3 mg/L/yr (medium rate of change)(Table A1-6). Three of the four wells with high and medium rates of chloride change currently exceed the chloride secondary drinking water standard (SDWS) and are generally located near the St. Johns River in the St. Johns River valley (Figure A1-12). This area is characterized as a groundwater discharge zone where hydraulic conditions allow relict sea water from the Lower Floridan aquifer to mix with freshwater from the UFA through upward leakage or direct flow through fractures or faults (Boniol 2002). Here, the UFA freshwater lens can be thin, and the open hole interval of monitoring wells may extend beneath this lens within a zone of lower quality water. It is possible that saltwater intrusion via upconing is occurring in a select group of analyzed DOWN wells, specifically those located close to pumping centers. However, the upconing appears to be localized as other monitoring wells in the area did not show increasing chloride concentration trends.

Of the four DOWN wells that showed a statistically significant decreasing rate of change, two have chloride concentrations that currently exceed the SDWS. All the DOWN wells analyzed in Volusia County were constructed in the UFA.

Table A1-6: Analyzed UFA DOWN Wells with Statistically Significant High, Medium, or Decreasing Trends in Chloride Concentration in Volusia County

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (3 wells)	3	---
Medium Rate of Change (1 wells)	0	0
Decreasing Rate of Change (4 wells)	2	NA

Note: mg/L = milligrams per liter

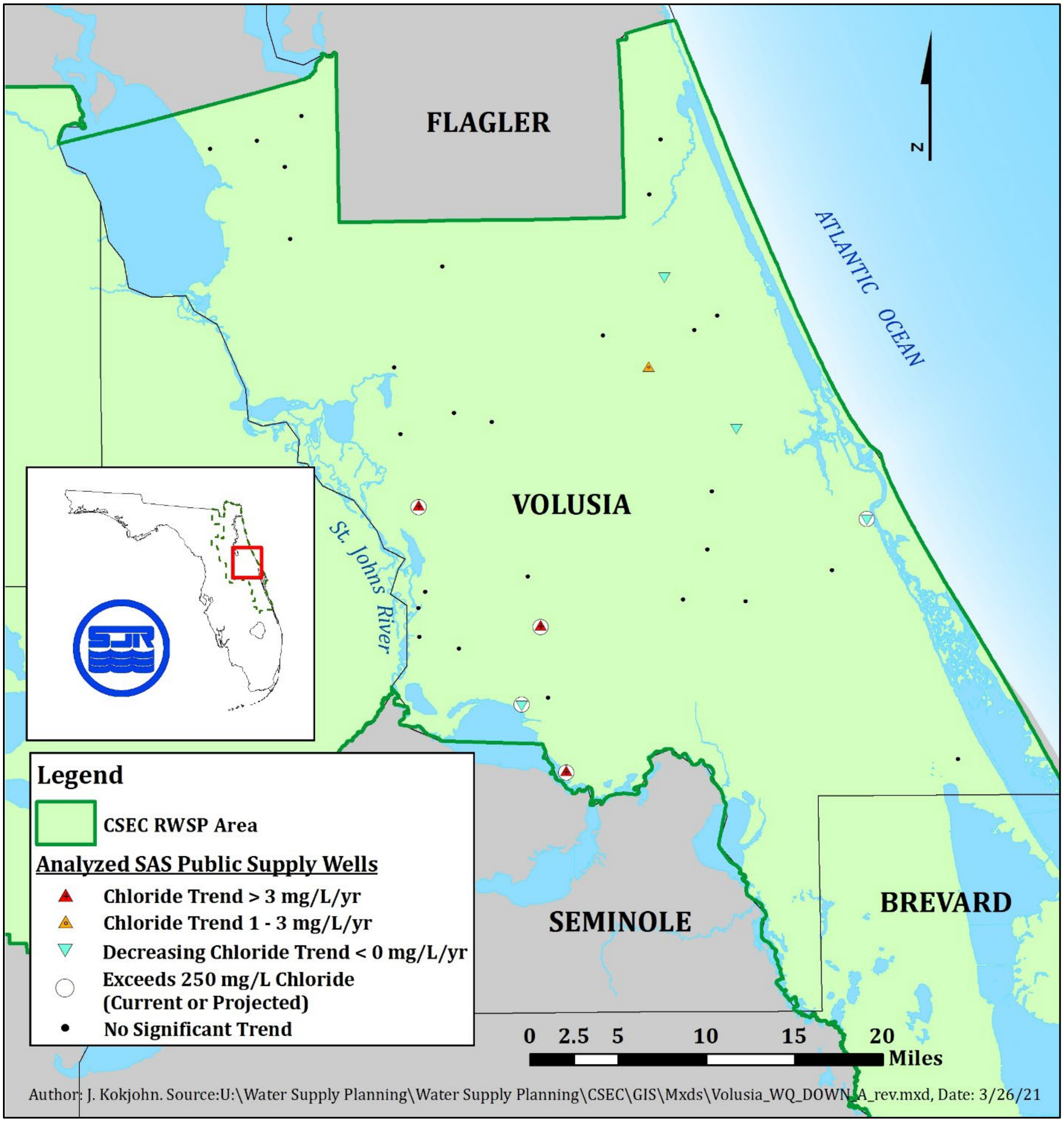


Figure A1-12: Spatial Summary of UFA DOWN Well Chloride Trend Analysis in Volusia County

Public Supply Wells

Fourteen public supply wells showed increasing chloride concentrations at rates ≥ 3 mg/L/yr (high rate of change), and three public supply wells showed increasing chloride concentrations at rates within the range ≥ 1 and < 3 mg/L/yr (medium rate of change)(Table A1-7). These 17 wells with high and medium rates of chloride change were generally located in the St. Johns River valley or near the Atlantic coastline (Figure A1-13). None of these 17 wells currently exceed the chloride

SDWS; however, 10 wells are projected to exceed the SDWS by 2040. The DOWN well analysis did not show signs of lateral saltwater intrusion, therefore it is possible that these trending public supply wells are experiencing water quality changes as a result of upconing. Current, or potentially enhanced, wellfield management strategies implemented by affected utilities may decrease or reverse the increasing chloride trends.

Finally, of the 70 public supply wells that showed a statistically significant decreasing rate of change, only one has a chloride concentration that currently exceeds the SDWS. All the public supply wells analyzed in Volusia County were constructed in the UFA.

Table A1-7: Analyzed UFA Public Supply Wells with Statistically Significant High, Medium, or Decreasing Trends in Chloride Concentration in Volusia County

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (14 wells)	0	10
Medium Rate of Change (3 wells)	0	0
Decreasing Rate of Change (70 wells)	1	NA

Note: mg/L = milligrams per liter

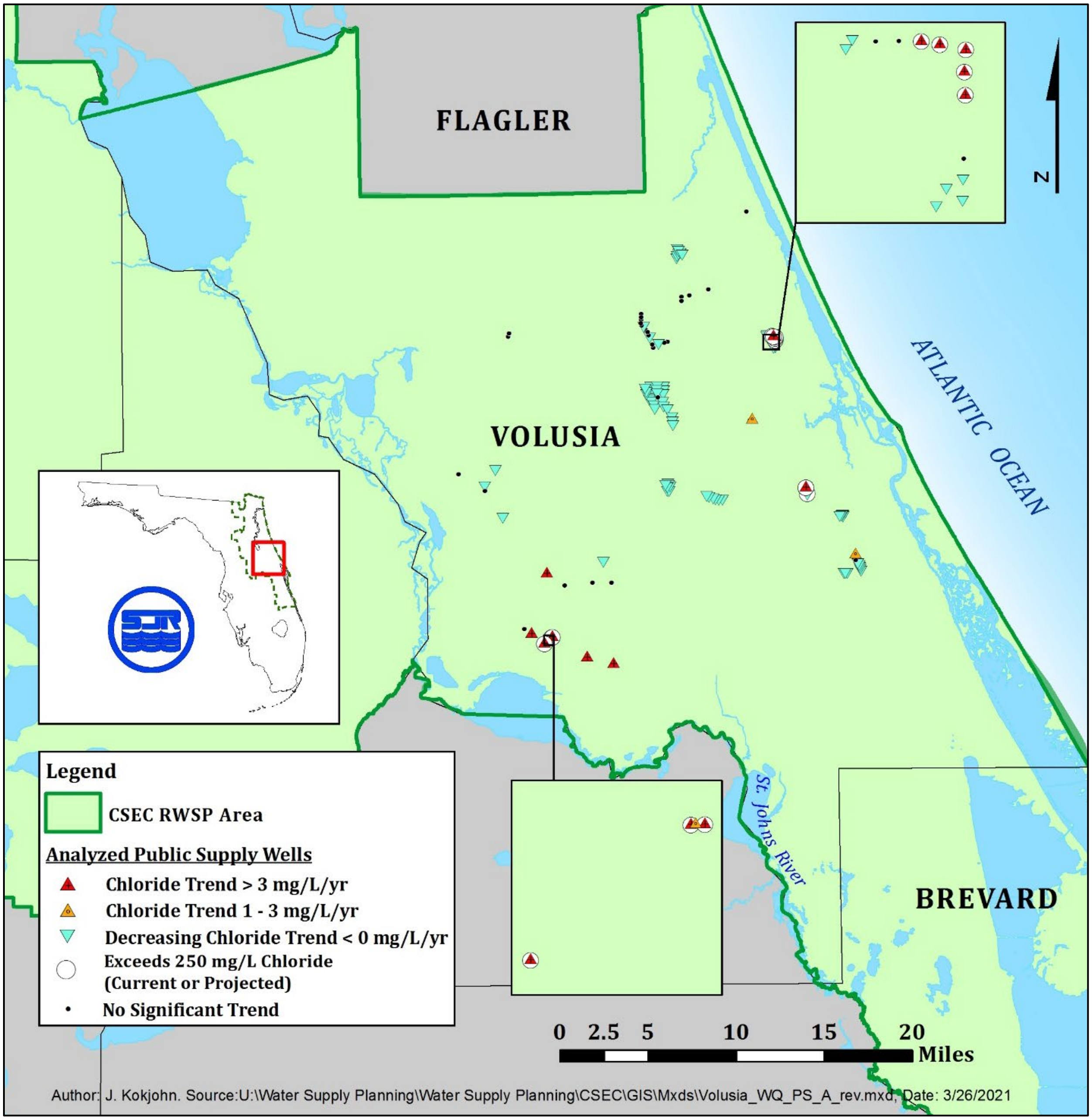


Figure A1-13: Spatial Summary of UFA Public Supply Well Chloride Trend Analysis in Volusia County

Agricultural Wells

One of the two analyzed agricultural wells showed an increasing chloride concentration at a rate ≥ 3 mg/L/yr (high rate of change) and currently exceeds the chloride SDWS (Table A1-8). This well is located in southern Volusia County and is a UFA monitor well associated with a proposed agricultural operation (Figure A1-14). This well monitors the lower zone of the UFA, which is brackish in this region. Although the agricultural facility is not yet in operation, it is possible that upconing from other withdrawals in the area are influencing this well. However, the period of record for the agricultural monitor well is only four years. A monitor well associated with a nearby wellfield has a six-year period of record and shows no apparent trend with the additional two years of data. SJRWMD will re-evaluate the chloride trend during the next CSEC RWSP update when the period of record includes an additional five years.

Table A1-8: Analyzed UFA Agricultural Wells with Statistically Significant High, Medium, or Decreasing Trends in Chloride Concentration in Volusia County

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (1 well)	1	---
Medium Rate of Change (0 wells)	---	---
Decreasing Rate of Change (0 wells)	---	NA

Note: mg/L = milligrams per liter

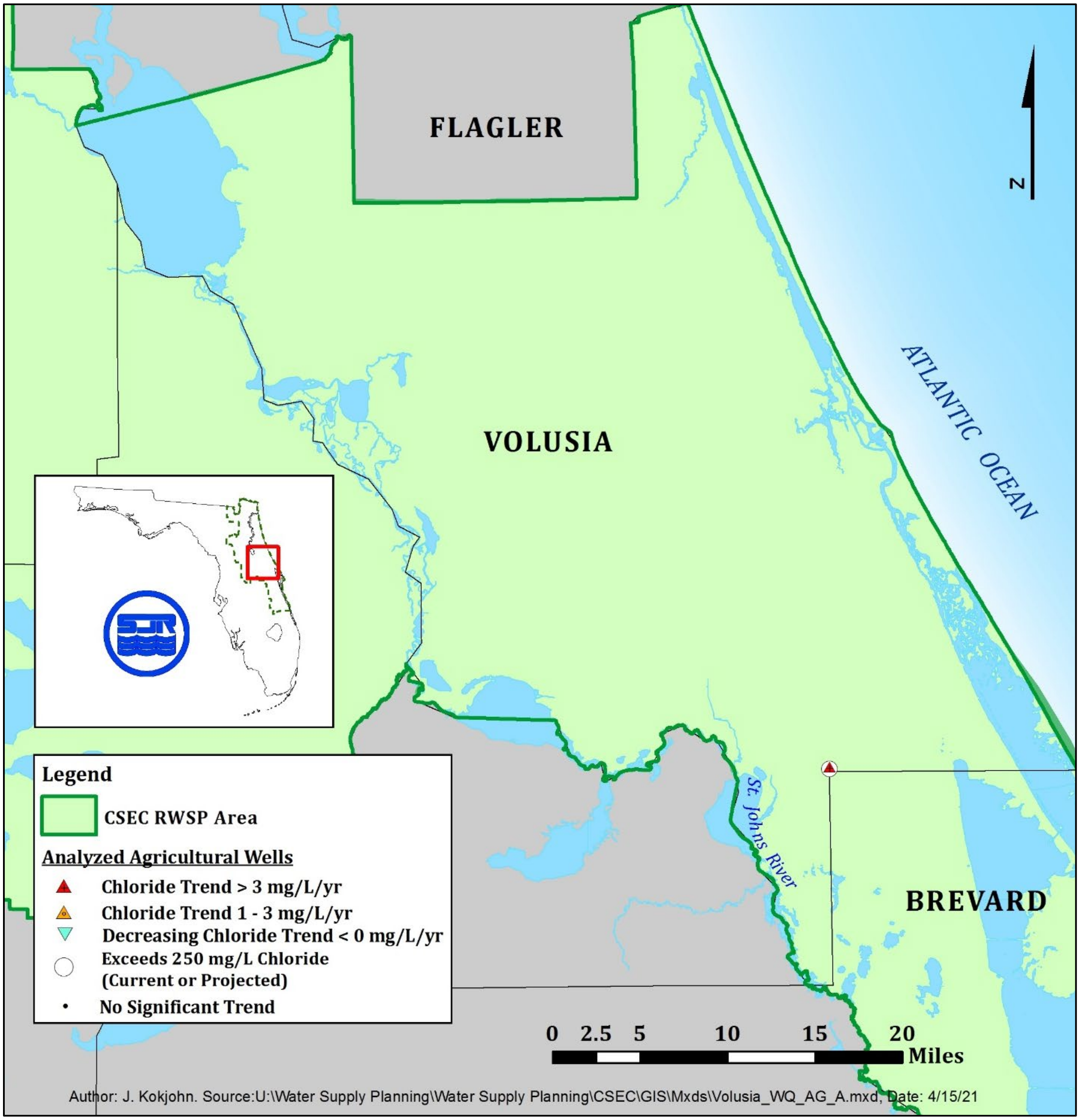


Figure A1-14: Spatial Summary of Agricultural Well Chloride Trend Analysis in Volusia County

Wetlands

The wetland assessment identified 4,558 acres with a moderate or high potential for adverse change based on 2040 projected water demand within Volusia County (Figure A1-15). Due to the geographic extent of the Volusia model, the southeast corner and southernmost part of Volusia County was not included in this analysis. The potential for adverse change does not necessarily correspond to realized adverse change due to the uncertainty with the analysis. As a result, field verification and monitoring, typically carried out for the SJRWMD regulatory program, is required when it is determined to be necessary to ensure the prevention of impacts from groundwater pumping. In 2015, the SJRWMD regulatory program implemented an enhanced wetland monitoring protocol that was developed and approved by stakeholders during the CFWI planning process (CFWI 2018). This new protocol results in a more comprehensive and defensible strategy to monitor for and prevent adverse change to wetlands resulting from groundwater withdrawals. The CSEC wetland assessment is not a replacement for the analysis of the specific potential of a proposed consumptive use to individually or cumulatively impact wetland systems, however, the spatial coverage of wetland acreage identified as being at risk for change can be utilized by regulatory staff as a screening tool to locate general areas where potential wetland impacts are more likely to occur.

Additional detailed information regarding the wetland assessment methodology is included in Appendix H.

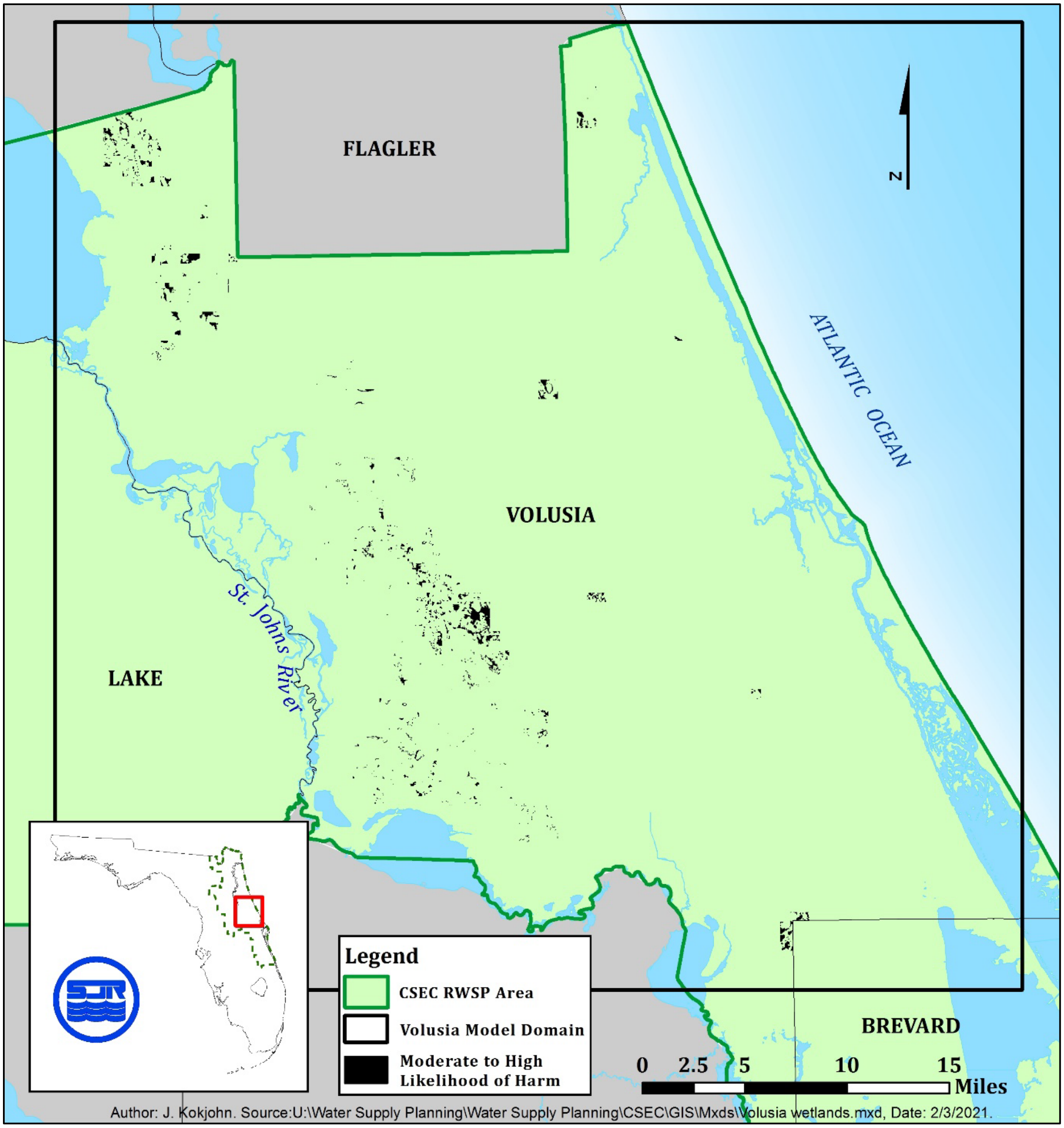


Figure A1-15: Wetlands at Risk of Adverse Change in Volusia County Due to 2040 Projected Withdrawals within the Volusia Model Domain

Chapter 5: Alternative Water Supply Needs Assessment and Delineation of Water Resource Caution Area for Volusia County (Sufficiency Analysis)

Sufficiency Analysis

Within Volusia County, results of the MFLs, water quality, and wetland analyses demonstrate the potential water resource impacts associated with 110 mgd of future demand at 2040. Since water quality issues and wetland impacts are typically dealt with locally through wellfield management or regulatory restrictions, the focus of the suite of projects options in Chapter 6 is to address potential impacts to MFL water bodies, specifically those water bodies identified as being in prevention or recovery.

As required by Chapter 373.709, F.S., SJRWMD has included the 2013 Volusia Strategy, the 2018 Volusia Strategy Assessment, and the 2020 Lake Butler Strategy within the CSEC RWSP (Appendix G). By incorporating the specific projects identified in these strategies, the CSEC RWSP provides assurance that Volusia County's future water needs will be met while sustaining water resources and related natural systems.

Using the Volusia model, SJRWMD assessed the benefits of 41.1 mgd of water conservation potential and water supply and water resource development projects. The modeling results demonstrate that implementation of the suite of projects is sufficient to provide the increase in springflow and aquifer levels required to ensure achievement of MFLs at 2040 projected water demand.

MFL Water Bodies in Prevention or Recovery

As mentioned previously, implementation of the projects summarized in Chapter 6 is sufficient to ensure achievement of Volusia County MFLs at the 2040 planning horizon. Specific details regarding each MFL water body identified as being in prevention or recovery are provided below.

Lake Butler

Maximizing the beneficial use of reclaimed water from the West Volusia Water Suppliers (WVWS) along with the implementation of conservation measures is sufficient to achieve Lake Butler MFLs at 2040. Recharge and wellfield optimization projects provide additional benefits to Lake Butler, which cumulatively contribute to 1.0 ft of available freeboard at 2040 with project implementation.

Indian Lake

With implementation of water conservation measures, the Bennett Swamp rehydration project, and maximized utilization of additional reclaimed water to offset groundwater withdrawals within the vicinity of the lake, the Indian Lake

MFLs will be achieved at 2040 with 1.0 ft of remaining freeboard. This analysis assumed that nearby utilities would continue to implement the wellfield management plans memorialized by condition in their respective consumptive use permits. These wellfield management plans are not listed as project options due to full implementation prior to 2015, however, the permitted withdrawal distributions were incorporated into the modeled 2040 projected withdrawals. Additional surface water and groundwater modeling will be completed in 2023 that may show additional benefits at Indian Lake from the Tiger Bay Weir (constructed in 2016) and the Bennett Swamp rehydration project. This information will be included in the next CSEC RWSP five-year update.

Scoggin Lake

Scoggin Lake MFLs will be achieved at 2040 with 1.0 ft of freeboard through implementation of water conservation measures and additional reclaimed water utilization within the model domain. Similar to Indian Lake, this analysis assumed that nearby utilities would continue to adhere to their wellfield management plans throughout the planning horizon.

Shaw Lake

Implementation of water conservation measures is sufficient to ensure Shaw Lake MFLs are met at the planning horizon, although results show negligible remaining freeboard. Currently, a single consumptive use permit utilizes surface water withdrawals from Shaw Lake for crop freeze protection. Additional UFA freeboard may be achievable through a permit modification that authorizes an alternative source for freeze protection. SJRWMD regulatory staff have been notified of the Shaw Lake MFL status, which will assist in future consumptive use permit application review.

Blue Spring

Implementation of the water conservation, alternative water supply, reclaimed water expansion, and recharge projects identified in this plan will ensure achievement of the final Blue Spring MFL (157 cfs) at 2040 projected water demand with approximately 0.8 cfs of remaining freeboard.

Water Quality

Eleven percent of the analyzed DOWN wells, 12 percent of the analyzed public supply wells, and one of the two analyzed agricultural wells in Volusia County displayed increasing chloride concentrations at the high or medium rate of change. These increasing trends may be the result of localized upconing in response to groundwater withdrawals, which can often be mitigated through enhanced wellfield management strategies or well modifications. Although the projects in Chapter 6 did not directly address potential water quality issues resulting from possible upconing, several projects will reduce groundwater pumping in vulnerable areas. Wellfield management plans that move withdrawals outside the Blue Spring springshed and the further development of alternative water supplies such as reclaimed water and surface water have the potential to reduce upconing impacts in the St. Johns River valley. In the coastal areas where only select wells within a wellfield appear to be affected by upconing, public supply utilities can investigate the modification of wells or operation strategies to reduce water quality changes. When viewed in total, the primary conclusion of this analysis is that groundwater quality may constrain the availability of fresh groundwater in a limited area within Volusia County, specifically along the coast and near the St. Johns River. However, through the implementation of proposed projects and enhanced management strategies, it may be possible to reduce or reverse increasing chloride concentration trends in impacted areas. The SJRWMD Regulatory Program will continue to evaluate the potential for harmful upconing and lateral intrusion during consumptive use permit application review to ensure all permitting criteria are met prior to permit issuance. In addition, SJRWMD will investigate instances of unforeseen harmful water quality impacts potentially resulting from consumptive uses of water, and if verified, will require mitigation by the responsible permittee(s).

It should be noted that the major public supply utilities in coastal Volusia County have developed additional wellfields further inland. New wellfields were necessary to avoid water quality degradation in the thin freshwater lens of the Upper Floridan aquifer near the coast while meeting increased demand of growing populations. The continued shift of withdrawals to the west may be of concern in the future as municipalities in western Volusia County are shifting withdrawals east to mitigate impacts to MFL water bodies. Additional alternative water supplies may be necessary in the future as utilities continue to shift withdrawals toward central Volusia County to reduce water resource impacts.

Wetlands

Since the potential for adverse change does not necessarily correspond to realized adverse change (see Chapter 4), water supply and water resource project development did not focus on reducing the 4,553 acres of wetlands identified as having the potential for adverse change. However, implementation of the projects specified in the CSEC RWSP will reduce the acreage of potentially impacted wetlands, although these benefits were not quantified as a part of this plan. Furthermore, through the continued use of the enhanced wetland assessment protocol in conjunction with the spatial review of wetland acreage identified in the CSEC RWSP (see Chapter 4), SJRWMD regulatory staff will ensure the protection of wetland acreage within Volusia County by preventing, or requiring mitigation for, adverse impacts to wetlands from both individual and cumulative permit-related groundwater withdrawals.

Water Resource Caution Area

The 2013 Volusia Strategy identified MFL constraints in Volusia County that were reaffirmed in the 2018 Volusia Strategy Assessment and the 2020 Lake Butler Strategy.

Currently, four water bodies in Volusia County are listed as being in prevention with respect to their MFLs and one is in recovery. Projects identified in the strategies have been incorporated into the CSEC RWSP, as they are necessary to ensure achievement of the MFLs at 2040 projected water demand. The CSEC RWSP, along with the 2013 Volusia Strategy, the 2018 Volusia Strategy Assessment, and the 2020 Lake Butler Strategy, constrain the availability of groundwater throughout Volusia County and provide a technical basis for the constraint. As a result of these constraints, the Volusia County portion of the CSEC RWSP area is proposed for inclusion in the CSEC WRCA.

Chapter 6: Project Options for Volusia County

Water Resource Development Project Options

A summary of water resource development project options for Volusia County is shown in Table A1-9. Upon implementation, these projects would provide 16.6 mgd of water for aquifer recharge. Additional project details can be found in Appendix I.

Table A1-9: Summary of Water Resource Development Project Options in Volusia County

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Construction Cost (Million dollars)
Multi-source[1]	4	7.6	$20.7
Stormwater	1	3.0	$0.3
Reclaimed water	1	6.0	$5.3
Total	**6**	**16.6**	**$26.3**

Note: mgd = million gallons per day
[1] Combined source that can include reclaimed water, surface water, and stormwater.

Water Supply Development Project Options

A summary of water supply development options is shown in Table A1-10. Together, these projects provide 33.6 mgd of water in Volusia County. Since several of the projects increase reclaimed water availability due to storage expansion or supplementation with surface water, it is estimated that 15.4 mgd of reclaimed water will be available for additional future projects. These unspecified reclaimed water projects were considered in the sufficiency analysis presented in Chapter 5. Additional project details can be found in Appendix J.

Table A1-10: Summary of Water Supply Development Project Options in Volusia County

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Construction Cost (Million dollars)
Groundwater	2	8.0	$81.6
Multi-source[1]	2	12.1	$11.6
Reclaimed Water	20	13.5	$65.2
Total	**24**	**33.6**	**$158.4**

Note: mgd = million gallons per day
[1] Combined source that can include reclaimed water, surface water, and stormwater.

Water Conservation Project Options

Estimates for Volusia County show the water conservation potential at 9.8 mgd (high estimate) at 2040 at a cost of approximately $14.5 million. Eight water conservation projects are completed or currently underway in Volusia County with an estimated savings of 0.4 mgd of water for $1.3 million (Appendix K). Remaining conservation potential is estimated at 9.4 mgd and can be realized through the implementation of the various types of water conservation projects listed in the CSEC RWSP.

Summary of SJRWMD Project Funding in Volusia County

From fiscal year (FY) 2014 through FY 2020, the SJRWMD cost-share program has awarded Volusia County cooperators approximately $43.5 million in total funds, with $22.3 million awarded specifically for water supply, natural systems, and water conservation projects (Appendix L). Once fully implemented, these projects will provide approximately 19.2 mgd of alternative water supplies and 0.4 mgd in water savings, with 1.0 mgd providing a natural systems benefit.

Chapter 7: Conclusions

The CSEC RWSP was developed consistent with the water supply planning requirements of Chapter 373, F.S. The CSEC RWSP concludes that the current and future water demands of Volusia County can be met through the 2040 planning horizon while sustaining the water resources and related natural systems through water conservation, management measures, and implementation of the water resource and water supply development projects identified in Chapter 6.

Total water demands by all water use categories in Volusia County are projected to increase from a current use in 2015 of 88.4 mgd to approximately 109.6 mgd in 2040. SJRWMD has determined that fresh groundwater alone cannot supply the projected 21.3 mgd increase in water demand without causing unacceptable impacts to water resources.

Primary solutions identified for meeting the future water demands in Volusia County while protecting the environment include enhanced water conservation, wellfield management, aquifer recharge, additional use and implementation of reclaimed water, and surface water and stormwater projects. With all of these options, SJRWMD and local stakeholders have identified up to 75.4 mgd of projects potentially available to offset the projected increase in water demand at 2040 under average (21.3 mgd) and 1-in-10 year drought conditions (32.5 mgd).

Chapter 8: References

Boniol, D. 2002. *Evaluation of Upper Floridan Aquifer Water Quality to Design a Monitoring Network in the St. Johns River Water Management District*. SJRWMD Technical Publication SJ2002-1.

Central Florida Water Initiative (CFWI). 2015. *Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP): Volume I – Planning Document*. Available from: http://cfwiwater.com/

CFWI. 2018. *Central Florida Water Initiative (CFWI); Minimum Standards for Water Resource Data Collection, Site Establishment, and Field Data Collection Protocols*. Available from: https://cfwiwater.com/pdfs/DMIT-MinStandards-2018.pdf

FDACS. 2017. *Florida Statewide Agricultural Irrigation Demand.* Prepared by The Balmoral Group. FDACS, Tallahassee, FL.

SJRWMD. 2013. *Prevention/Recovery Strategy for Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes.* SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/gb1311_005.pdf

SJRWMD. 2019. *2018 Five-Year Strategy Assessment for the Implementation of Minimum Flow and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes*. SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/Volusia_5year_assessment_2019.pdf

SJRWMD. 2020. *Prevention Strategy for the Implementation of Lake Butler Minimum Levels*. SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/MFL-Lake-Butler/Butler_Strategy.pdf

Williams, S.A. 2006. *Simulation of the effects of groundwater withdrawals from the Floridan aquifer system in Volusia County and vicinity*. SJRWMD Technical Publication SJ2006-4.

A2: Regional Water Supply Plan Components for Marion and North Lake Counties

Chapter 1: Introduction to Marion and North Lake Counties

Population

The estimated population in Marion and North Lake[1] counties during the base year, 2015, was just under 0.43 million.

Primary Surface Water Basins

The primary surface water basins located within Marion and North Lake counties include portions of the Ocklawaha River, Middle St. Johns River, and Lake George basins.

Springs

There are three Outstanding Florida Springs (OFS) in Marion and North Lake counties, pursuant to subsection (ss.) 373.802(4), *Florida Statutes* (F.S.); Alexander (North Lake), Silver Glen (Marion), and Silver (Marion) springs. These three OFS are classified as first-magnitude springs, defined as having flows of at least 100 cubic feet per second (cfs). There are also seven second-magnitude springs in this region, defined as having flows between 10 and 100 cfs; Bugg, Messant, and Seminole springs in North Lake County and Fern Hammock, Juniper, Salt, and Sweetwater springs in Marion County.

[1] North Lake County is defined throughout the CSEC RWSP as that portion of Lake County that is not located in the Central Florida Water Initiative planning region.

Chapter 2: Water Demand, Reclaimed Water and Water Conservation Projections for Marion and North Lake Counties

Population

Total population for Marion and North Lake counties is expected to increase by 126,000 people (30% to approximately 554,000 people) by 2040 (Figure A2-1). For a breakdown of population by type (public supply versus domestic self-supply served) and by county, see Appendix B.

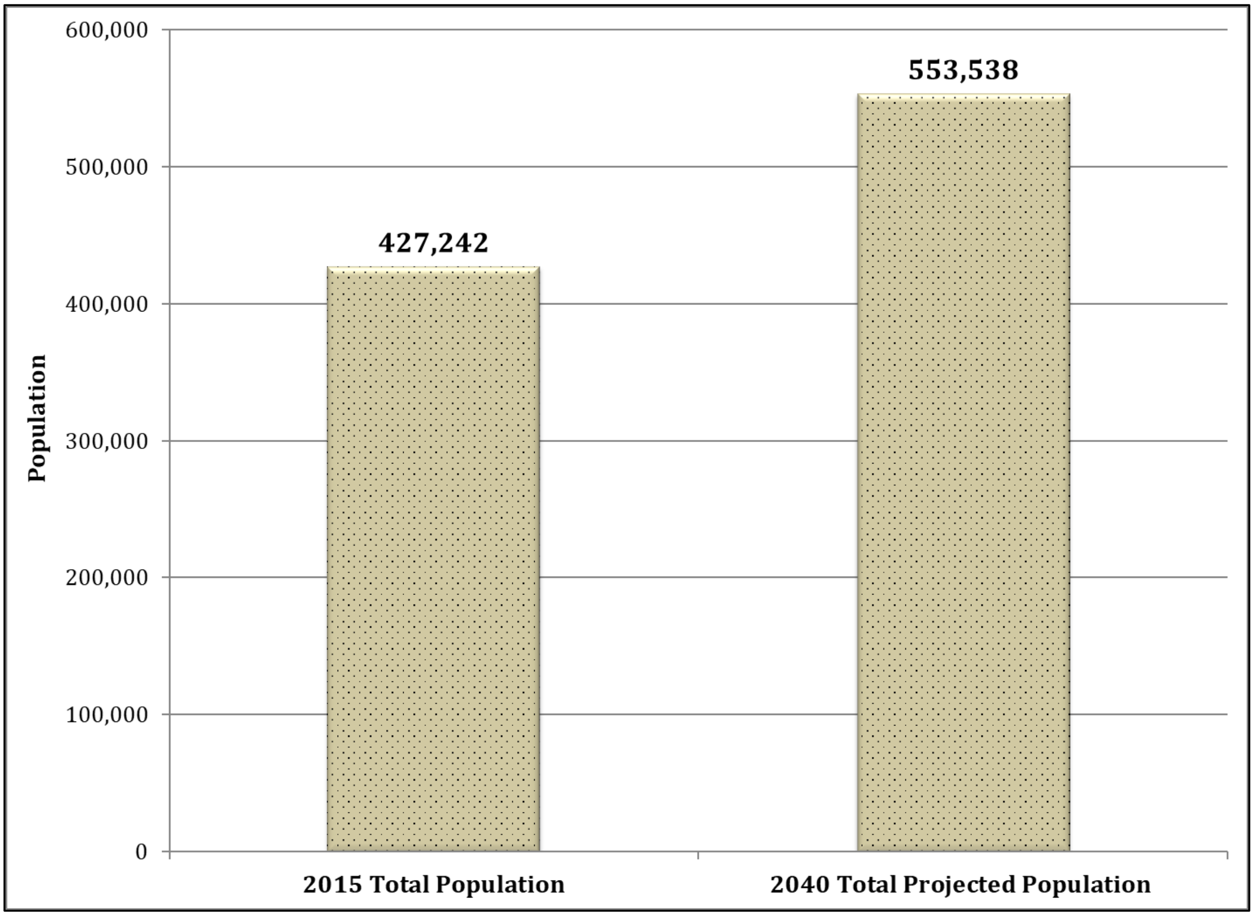


Figure A2-1: 2015 Population Estimate and 2040 Population Projection in Marion and North Lake Counties

Water Demand

Total water demand in Marion and North Lake counties is anticipated to increase from 96.4 million gallons per day (mgd) in 2015 to 126.4 mgd in 2040 (31%). Public supply represents the largest demand in Marion and North Lake counties (48%), followed by agriculture (20%), and domestic self-supply (DSS)(16%), as shown in Figure A2-2. It is estimated that 2040 total water demand could increase by an additional 14 percent (17.3 mgd) if a 1-in-10 year drought occurred.

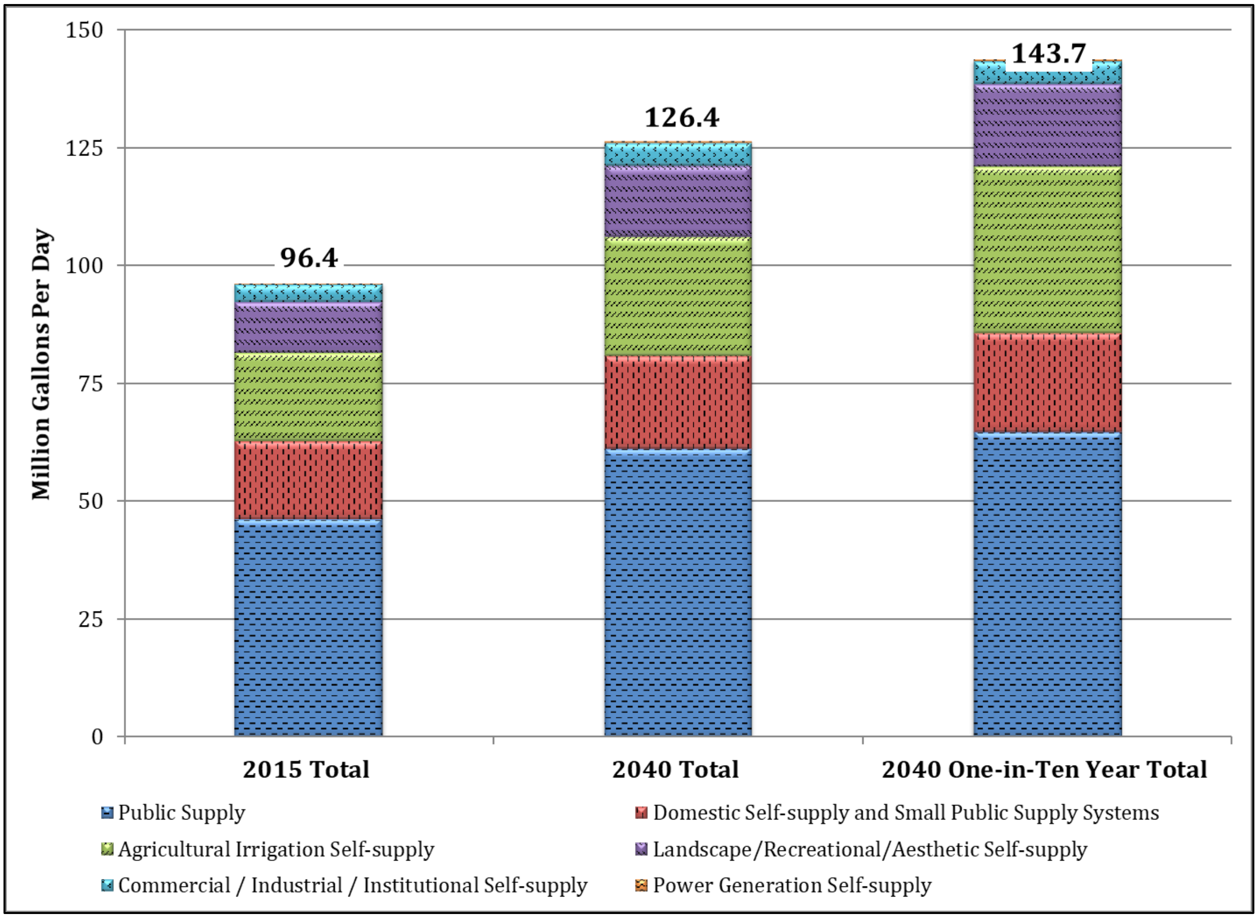


Figure A2-2: 2015 Water Use Estimates and 2040 Water Demand Projections in Marion and North Lake Counties

Public Supply Demand

Total public supply water demand for Marion and North Lake counties is expected to increase by 14.8 mgd (32% to approximately 61.1 mgd) by 2040 (Figure A2-3). Public supply represents 48 percent of the 2040 projected water demand in Marion and North Lake counties. Of note, public supply also represents 50 percent of the total increase in water demand in Marion and North Lake counties. It is estimated that 2040 public supply water demand could increase by an additional 6 percent (3.6 mgd) if a 1-in-10 year drought occurred.

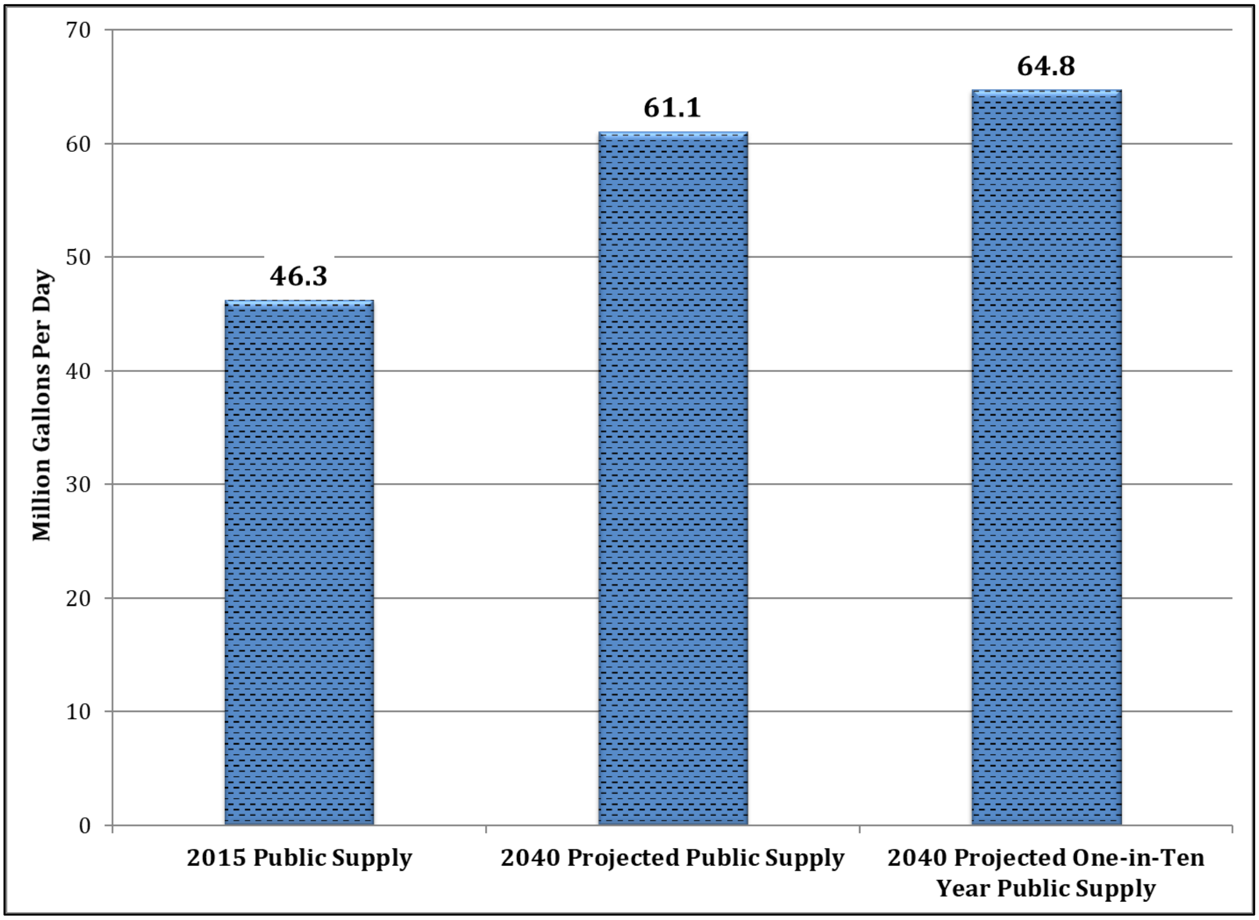


Figure A2-3: 2015 Public Supply Water Use Estimates and 2040 Water Demand Projections in Marion and North Lake Counties

Domestic Self-Supply Demand

In Marion and North Lake counties, total combined DSS water demand, which includes small public supply systems as defined in Appendix B, is expected to increase by 3.1 mgd (19% to 19.8 mgd) by 2040 (Figure A2-4). Of the 2040-combined DSS water demand, DSS wells represent 83 percent of the projected water demand (with small public supply systems representing the remaining 17%). It is estimated that 2040 DSS water demand could increase by an additional 6 percent (1.2 mgd) if a 1-in-10 year drought occurred.

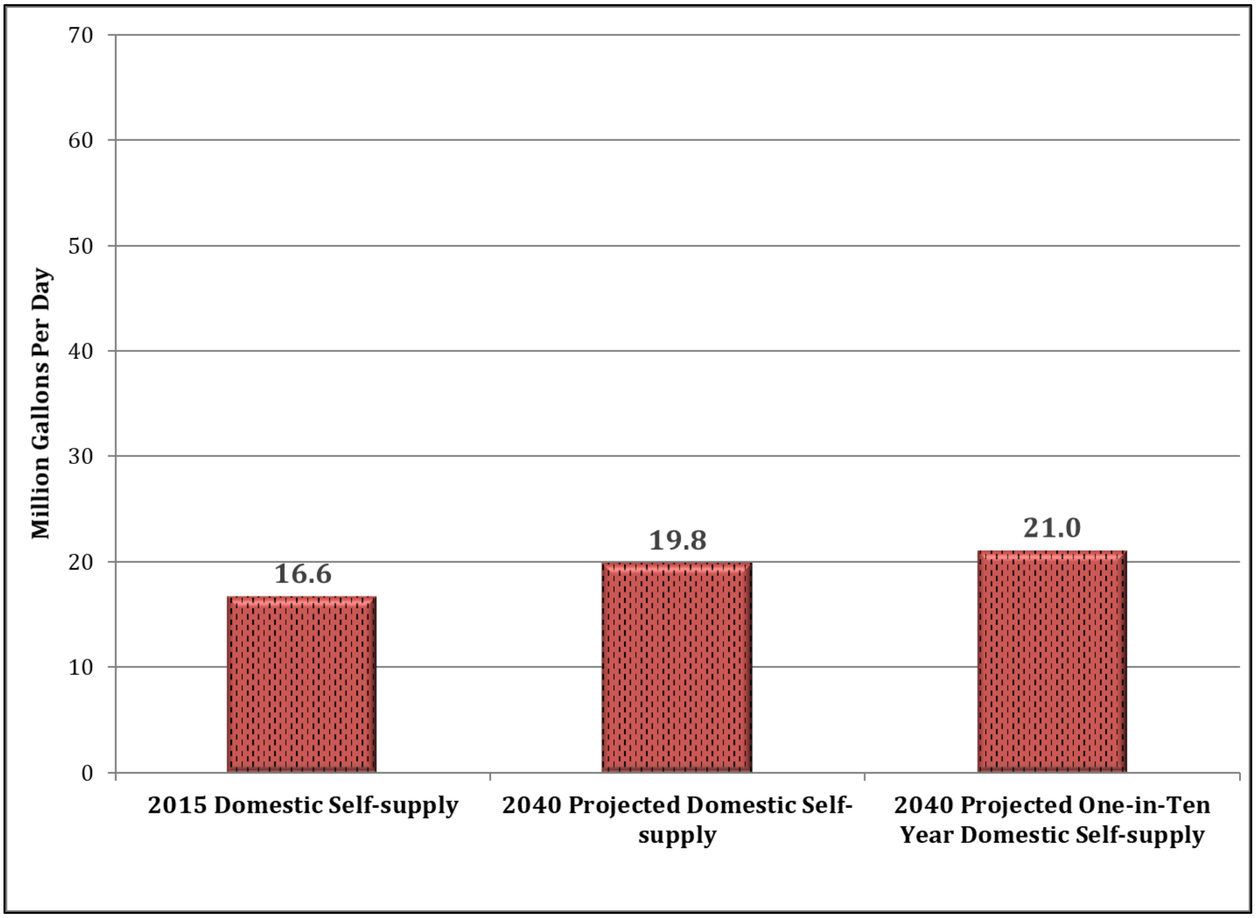


Figure A2-4: 2015 Combined Domestic Self-supply Water Use Estimates and 2040 Water Demand Projections in Marion and North Lake Counties

Agriculture Acreage and Demand

Total agricultural water demand for Marion and North Lake counties is expected to increase by 6.6 mgd (35% to approximately 25.3 mgd) by 2040 and acreage is expected to increase by 3,600 acres (22% to approximately 20,000 acres)(Figures A2-5 and A2-6). Florida Department of Agriculture and Consumer Services' (FDACS) Florida Statewide Agricultural Irrigation Demand (FSAID) IV estimates that 2040 agricultural water demand (which was based on a 5-in-10 year, or average, drought condition) could increase by an additional 40 percent (10.0 mgd) if a 1-in-10 year drought occurred (FDACS 2017).

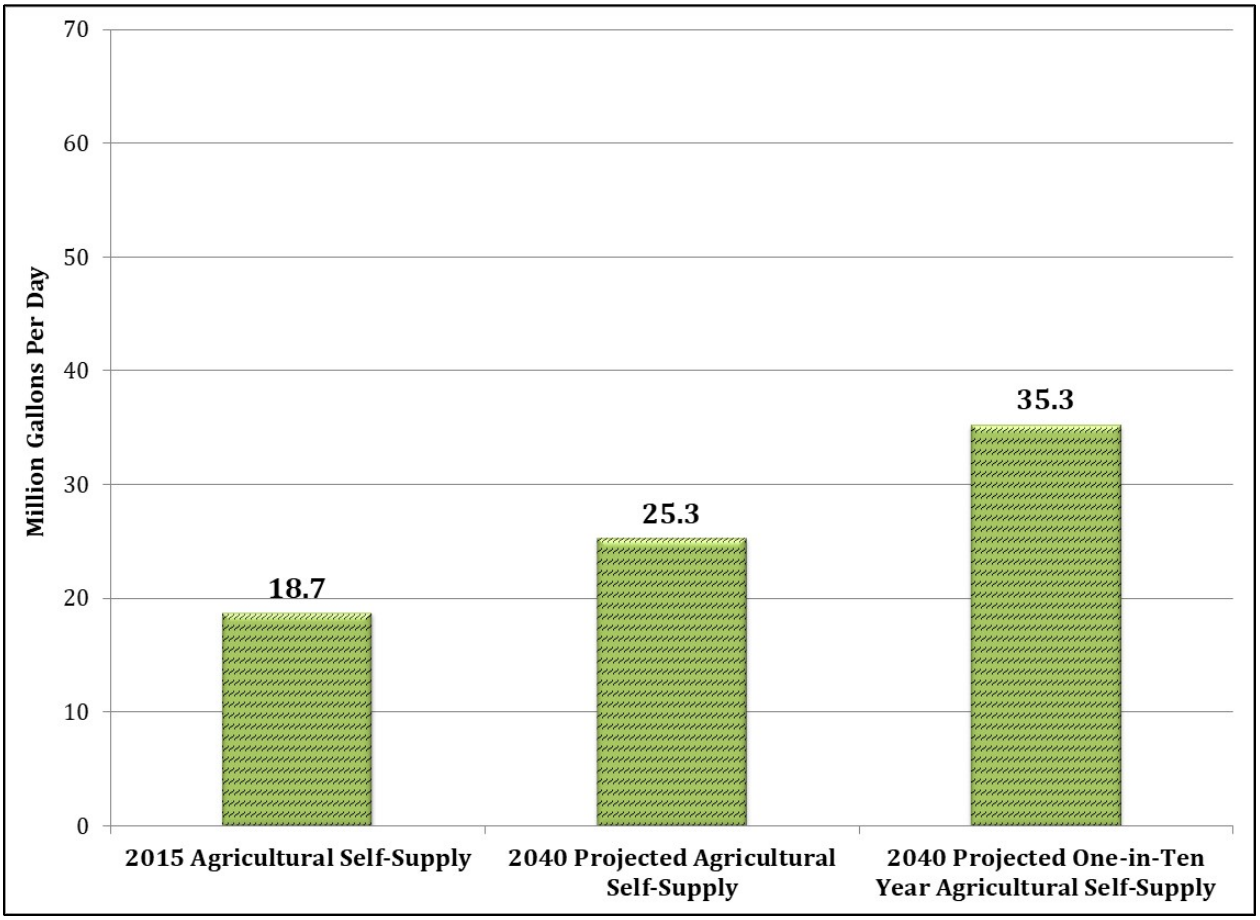


Figure A2-5: 2015 Agriculture Self-supply Water Use Estimates and 2040 Water Demand Projections in Marion and North Lake Counties (FDACS 2017)

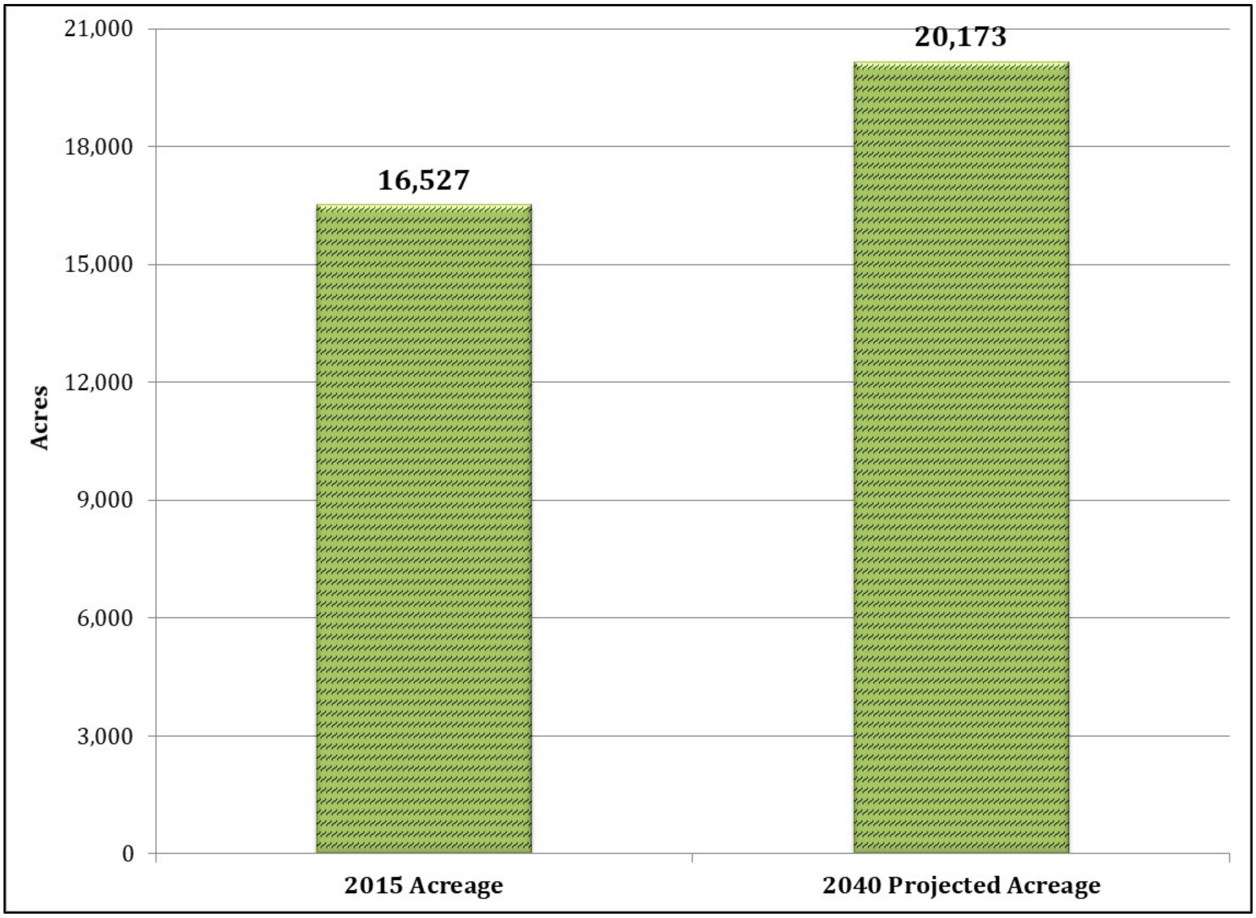


Figure A2-6: 2015 Agriculture Self-supply Acreage Estimates and 2040 Acreage Projections in Marion and North Lake Counties (FDACS 2017)

Commercial/Industrial/Institutional and Mining/Dewatering Demand

Total combined commercial/industrial/institutional and mining/dewatering water demand for Marion and North Lake counties is expected to increase by 1.0 mgd (28% to approximately 4.8 mgd) by 2040 (Figure A2-7).

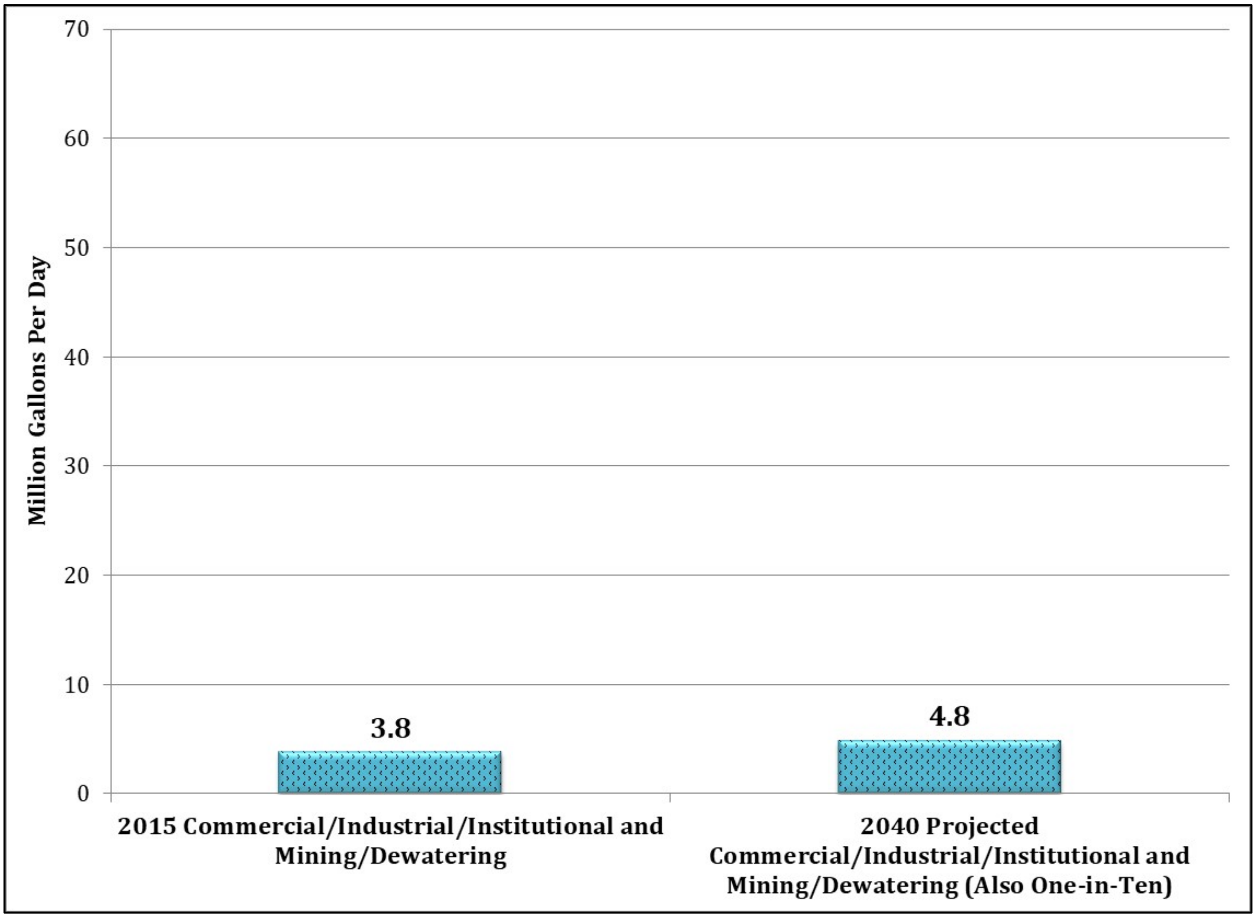


Figure A2-7: 2015 Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Use Estimates and 2040 Water Demand Projections in Marion and North Lake Counties

Landscape/Recreation/Aesthetic Demand

Total landscape/recreation/aesthetic (LRA) water demand for Marion and North Lake counties is expected to increase by 4.2 mgd (39% to 15.0 mgd) by 2040 (Figure A2-8). It is estimated that 2040 LRA water demand could increase by an additional 17 percent (2.6 mgd) if a 1-in-10 year drought occurred.

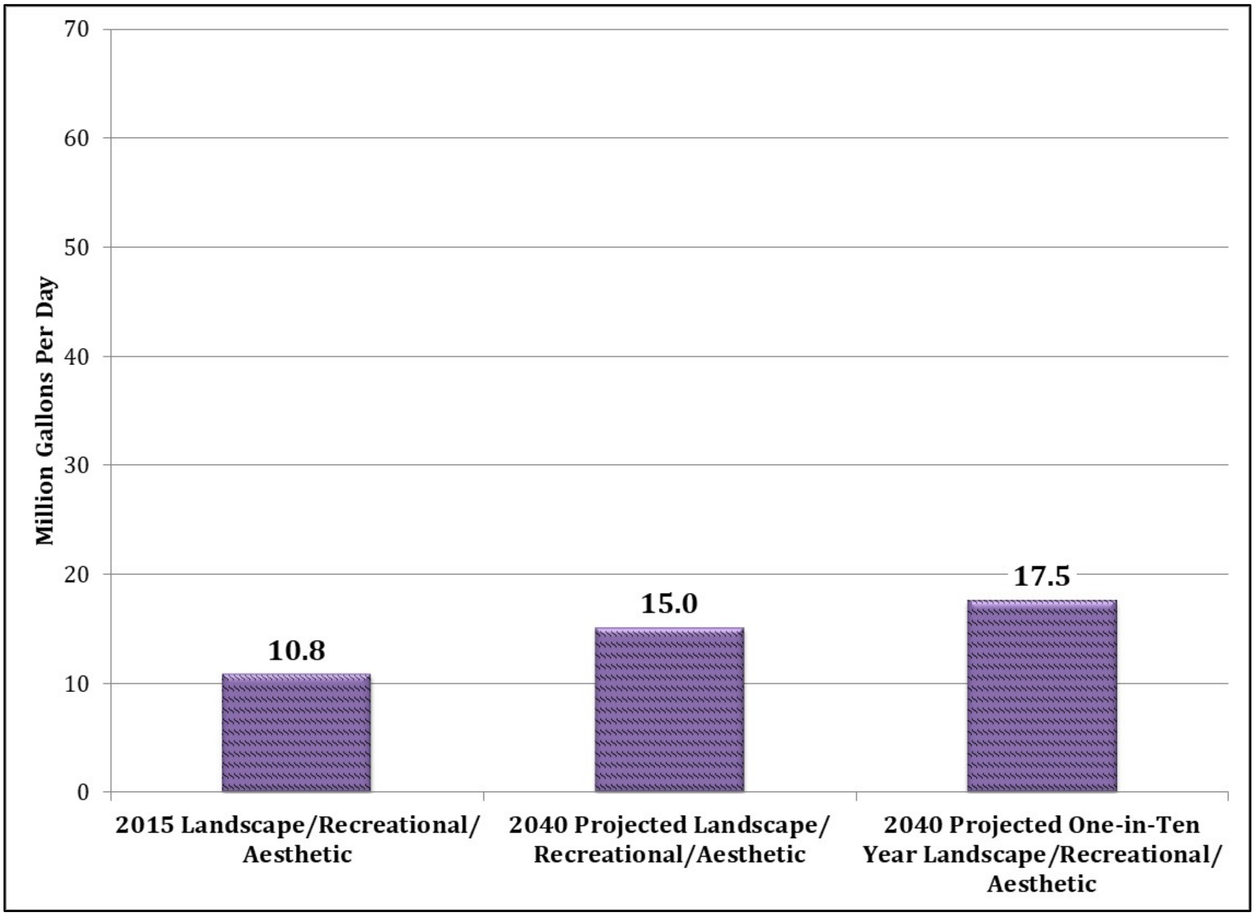


Figure A2-8: 2015 Landscape/Recreational/Aesthetic Self-supply Water Use Estimates and 2040 Water Demand Projections in Marion and North Lake Counties

Power Generation Demand

Total power generation water demand in Marion and North Lake counties is expected to increase by 0.1 mgd (39% to approximately 0.3 mgd) by 2040 (Figure A2-9).

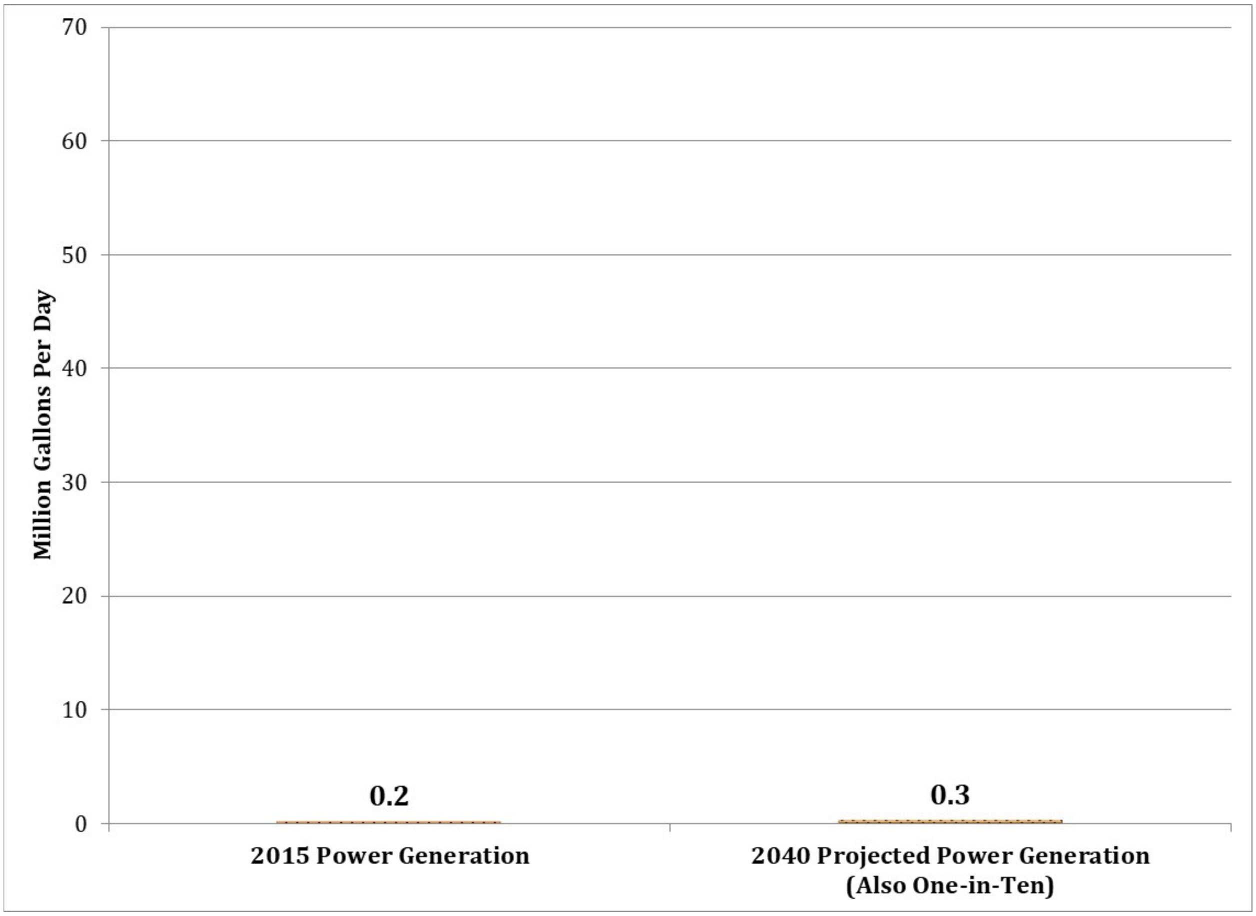


Figure A2-9: 2015 Power Generation Self-supply Water Use Estimates and 2040 Water Demand Projections in Marion and North Lake Counties

Reclaimed Water Projections

Existing Flows

Figure A2-10 displays 2015 reclaimed water flows, both beneficial and disposal, in Marion and North Lake counties. The relative size of the pie charts represents the magnitude of total flow. The yellow shading represents disposal, and the purple shading represents the beneficial use of reclaimed water. The values utilized for Figure A2-10 are provided in Table A2-1. Approximately 62 percent (10.1 mgd) of 2015 treated wastewater flows was used beneficially in Marion and North Lake counties, while the remaining 38 percent (6.1 mgd) was considered disposal. Recognizing the potential for increased beneficial reuse of existing flows, the St. Johns River Water Management District (SJRWMD) estimated that between 2.4 mgd and 4.5 mgd of the existing disposal flows could reasonably be utilized beneficially going forward.

Future Flows

SJRWMD estimated that increased future reclaimed water flows of approximately 3.7 mgd to 5.2 mgd could be used for beneficial purposes. When considered together with existing disposal flow that could be utilized beneficially, between 6.1 mgd and 9.7 mgd of total potential reclaimed water for reuse will be available by 2040 to potentially offset withdrawals from traditional water sources and predicted impacts within Marion and North Lake counties.

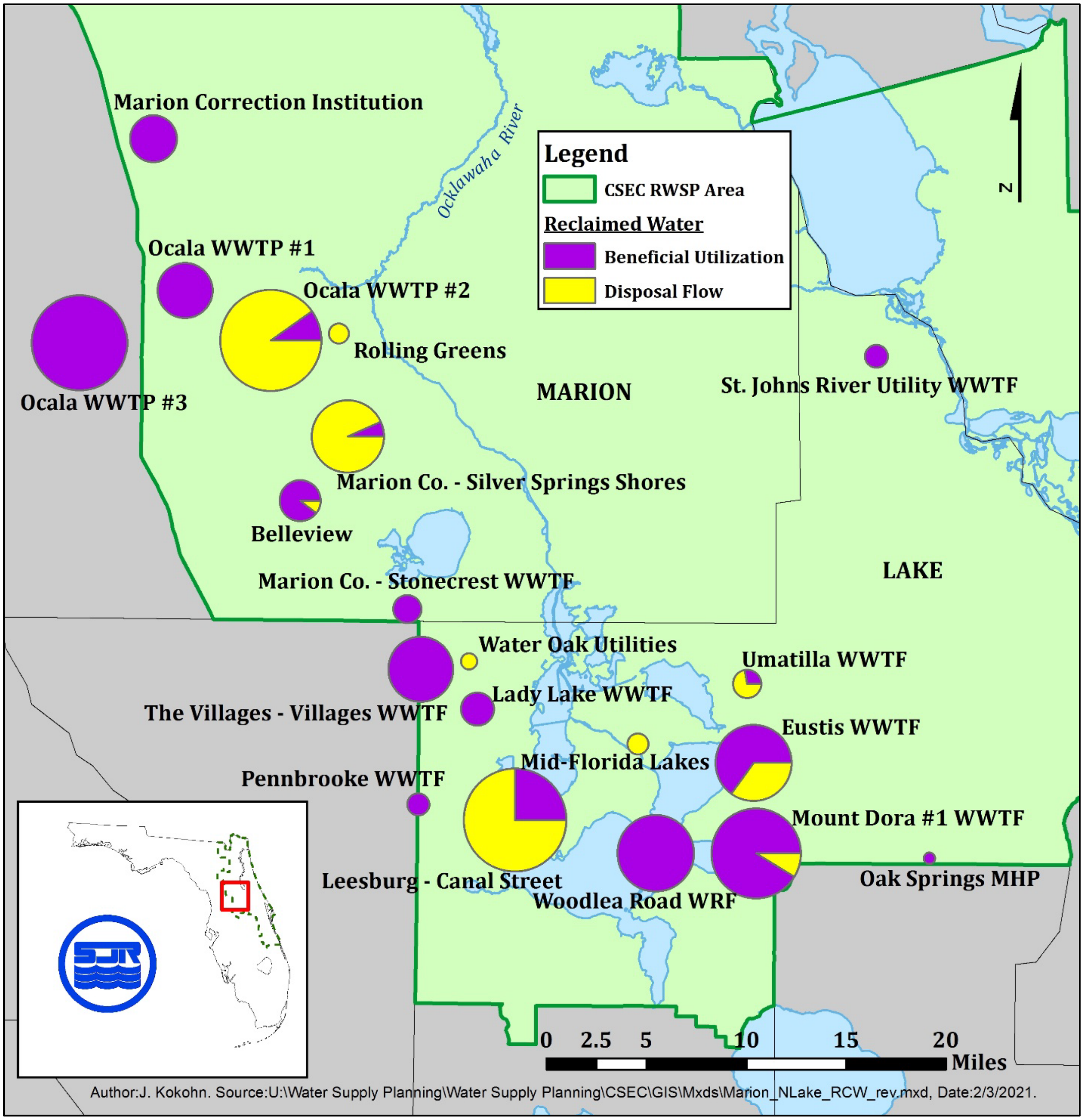


Figure A2-10: Summary of 2015 Reclaimed Water Flows in Marion and North Lake Counties

Table A2-1: Detailed Summary of 2015 Reclaimed Water Flows in Marion and North Lake Counties

Facility	2015 Total Treated Flow (mgd)[1]	Beneficial Utilization (mgd)	Disposal (mgd)
Belleview	0.4	0.3	<0.1
Eustis WWTF	1.3	0.9	0.5
Lady Lake WWTF	0.3	0.3	0.0
Leesburg – Canal Street	2.4	0.6	1.8
Marion Correctional Institution	0.5	0.5	0.0
Marion Co. – Silver Springs Shores	1.2	0.1	1.1
Marion Co. – Stonecrest WWTF	0.2	0.2	0.0
Mid-Florida Lakes	0.1	0.0	0.1
Mount Dora #1 WWTF	1.8	1.7	0.2
Oak Springs MHP	<0.1	<0.1	0.0
Ocala WRF #1	0.7	0.7	0.0
Ocala WRF #2	2.3	0.2	2.1
Ocala WRF #3[2]	2.1	2.1	0.0
Pennbrooke WWTF	0.1	0.1	0.0
Rolling Greens	0.1	0.0	0.1
St. Johns River Utility WWTF	0.1	0.1	0.0
Woodlea Road WRF	1.3	1.3	0.0
Umatilla WWTF	0.2	0.1	0.1
The Villages – Villages WWTF	1.0	1.0	0.0
Water Oak Utilities	0.1	0.0	0.1
Total[1]	**16.1**	**10.1**	**6.1**

Note: mgd = million gallons per day; WWTF = wastewater treatment facility; MHP = mobile home park; WRF = water reclamation facility

[1] Totals may be slightly different due to rounding of individual values.

[2] Although the Ocala WRF #3 is not located within SJRWMD, the City of Ocala's potable wells are located entirely within SJRWMD and any reclaimed water offsets would potentially reduce groundwater withdrawals within the SJRWMD portion of Marion County.

Water Conservation and Irrigation Efficiency

For the first scenario of water conservation and irrigation efficiency [using the CFWI Regional Water Supply Plan (RWSP) method (CFWI 2015) and FDACS' FSAID IV (FDACS 2017)], it is estimated that approximately 7.1 mgd of the projected demand for 2040 could be reduced by water conservation (Table A2-2).

For the second scenario, using the average 2011–2015 gross per capita rate for Marion and North Lake counties for public supply and applying the same percent reduction to DSS, it is estimated that water conservation could be increased by 3.1 mgd, potentially offsetting some future demand (Table A2-2).

Table A2-2: 2040 Water Conservation and Irrigation Efficiency Potential in Marion and North Lake Counties

Category	**2040 Low Conservation Potential (mgd)**	**2040 High Conservation Potential (mgd)**
Public Supply	2.5	5.1
Domestic Self-supply	0.8	1.3
Agriculture	3.3	3.3
Landscape/Recreation/Aesthetic Self-supply	0.4	0.4
Commercial/Industrial/Institutional Self-supply	0.1	0.1
Power Generation Self-supply	< 0.1	< 0.1
Total	**7.1**	**10.2**

Note: mgd = million gallons per day

Chapter 3: Assessment of Groundwater Conditions Associated with Future Water Demand Projections for Marion and North Lake Counties (Northern District Regional Groundwater Flow Model Modeling Simulations)

Northern District Groundwater Flow Model Overview

The Northern District Model Version 5 (NDMv5) was developed collaboratively with the Southwest Florida Water Management District (SWFWMD) in 2016, with the intent of both water management districts using the same model for resource assessments in Marion County (HGL et al. 2016). NDMv5 is a fully-three-dimensional model that uses a public domain version of the MODFLOW-SURFACT code. The model grid includes 275 rows and 212 columns, with a uniform grid spacing of 2,500 ft. The grid is aligned east-west/north-south with extents from Keystone Heights in the north, Tampa Bay to the south, the St. Johns River in Lake, Marion and Putnam counties along the eastern boundary, and the Gulf of Mexico on the west side of the model (Figure A2-11). NDMv5 includes seven layers, which represent the surficial, intermediate, Upper and Lower Floridan aquifers and their respective semi-confining units.

The model was calibrated to steady-state conditions representing hydrologic stresses for the year 1995. In addition, a transient model was developed that represented monthly hydrologic stresses for 1996 through 2006. NDMv5 was subsequently updated and the calibration verified using 2010 hydrologic conditions. All simulations performed in support of the Central Springs/East Coast (CSEC) RWSP utilized the 2010 boundary conditions with various water use stresses as determined by the specific analysis.

SJRWMD is working collaboratively with SWFWMD and other stakeholders to develop a new groundwater flow model with expanded boundaries that will replace NDMv5 and the Volusia model (utilized in the water resource assessment in Volusia County) This new model, named the Central Springs Model, will be utilized in future CSEC RWSP updates upon its completion.

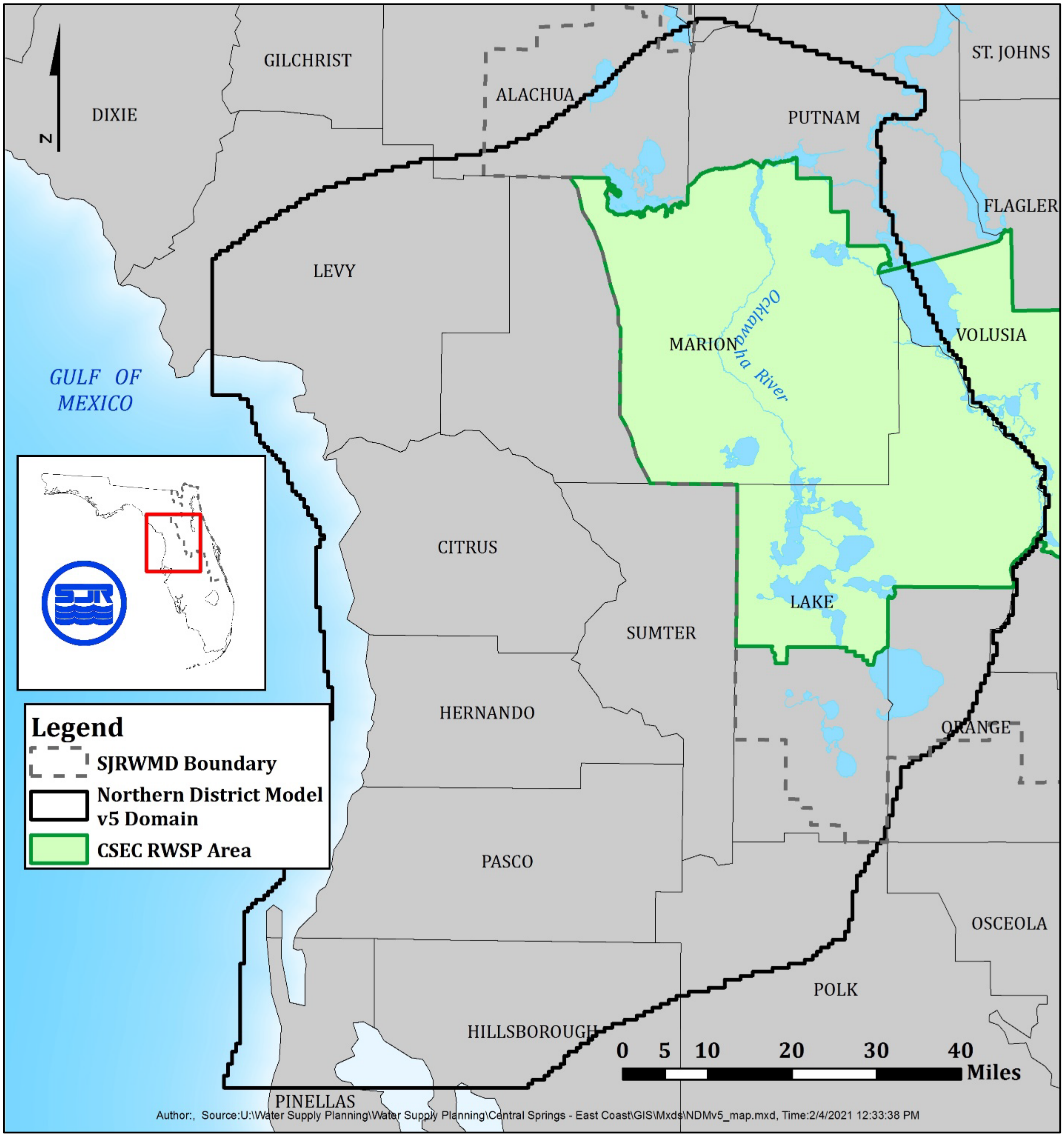


Figure A2-11: Northern District Model Version 5 Domain

Methodology

SJRWMD completed a water resource assessment using the NDMv5 to estimate the potential impacts through the planning horizon. The assessments addressed the potential impacts of groundwater withdrawals with respect to adopted minimum flow and minimum levels (MFLs) and wetlands within Marion and North Lake counties.

Four modeling scenarios and three comparisons, listed below, were performed as part of the Marion and North Lake counties water resource assessment and to predict the benefits of water supply and water resource development projects. Modeling of additional water use scenarios was performed to determine current (2015) MFL status and is described in Appendix C.

Scenarios

- Scenario 1: 2010 water use (verified baseline condition)
- Scenario 2: 2015 water use
- Scenario 3: 2040 projected water demand[2]
- Scenario 4: Scenario 3 with water supply and water resource development projects included

Comparisons

Comparison 1 was utilized to bring forward the 2010 freeboard values for the MFL springs to 2015, or current, water use conditions. Comparison 2 was performed to assess potential water resource impacts due to increases in groundwater withdrawals from 2015 to 2040 (see footnote [1]) within the NDMv5 groundwater model domain. Lastly, comparison 3 demonstrated the effectiveness of the water supply and water resource development projects summarized in Chapter 6.

Results of these comparisons are described in Chapters 4 and 5.

- Comparison 1: Updating 2010 freeboard flows for MFL springs (Scenario 2 minus Scenario 1)
- Comparison 2: MFL water bodies and wetland assessment (Scenario 3 minus Scenario 2)
- Comparison 3: Benefits of water supply and water resource development projects (Scenario 4 minus Scenario 3)

[2] Water use projections for 2040 were not available from all water management districts at the time of analysis, therefore, Scenario 3 contains 2040 projections for SJRWMD and Suwanee River Water Management District and 2035 projections for SWFWMD and South Florida Water Management District.

Chapter 4: Evaluation of Potential Effects of Projected Water Demand on Water Resources within Marion and North Lake Counties (Water Resource Assessment)

Water Resource Assessment Results

A water resource assessment was performed for Marion and North Lake counties at 2040 projected water demand. The results for the MFL, groundwater quality, and wetlands analyses are provided below along with a list of approved MFL prevention/recovery strategies applicable to the area.

MFLs

The MFL analysis results are summarized in Table A2-3 and then discussed by water type below. Additional details regarding the analysis are provided in Appendix F.

Table A2-3: Status of Assessed MFL Water Bodies within Marion and North Lake Counties

Type	Name	County	MFLs Status at 2040
Lake	Bowers	Marion	Met
Lake	Halfmoon	Marion	Met
Lake	Hopkins Prairie	Marion	Met
Lake	Kerr	Marion	Met
Lake	Nicotoon	Marion	Met
Lake	Smith	Marion	Met
Spring	Alexander	Lake	Met
Spring	Silver	Marion	Prevention
Spring	Silver Glen	Marion	Met

Lakes with MFLs

Results of the MFL lake analyses indicate that all six evaluated lakes in Marion and North Lake counties are meeting their MFLs under current conditions and are projected to meet their MFLs throughout the 2040 planning horizon.

Springs with MFLs

Results of the MFL springs analyses show that Alexander and Silver Glen springs are meeting their MFLs under current conditions and will continue to meet their MFLs throughout the planning horizon.

Based on a status evaluation of the Silver Springs MFLs, the MFLs were achieved at the 2010 baseline condition with 17 cubic feet per second (cfs) of available flow (freeboard) for consumptive uses of water (Table A2-4). In 2015, an overall county-wide decrease in withdrawals in Marion County resulted in an additional 2.2 cfs of freeboard, for a total of 19.2 cfs. At 2040 water use conditions, there is a deficit flow of -3.6 cfs indicating that the MFLs will not be met. Since the MFLs are currently being achieved but will not be achieved in 2040, Silver Springs will continue to be classified as being in prevention with respect to its MFLs.

Table A2-4: Silver Springs Predicted Freeboard/Deficit under 2010 (Baseline), 2015 (Current), and 2040 Projected Conditions

Year	Modeled Flow (cfs)	Freeboard/Deficit (cfs)	SJRWMD-Marion Withdrawals (mgd)
2010 (Baseline)	708.8	17	43.0
2015 (Current)	711.0	19.2	37.9
2040	688.3	-3.6	55.5

Note: cfs = cubic feet per second; mgd = million gallons per day

MFL Prevention and Recovery Strategies

The 2017 Prevention Strategy for the Implementation of Silver Springs Minimum Flows and Levels (Silver Springs Prevention Strategy; SJRWMD 2017) was approved by the SJRWMD Governing Board on April 11, 2017 and is included in Appendix G. New regulatory measures affecting water use permit holders in Marion County were included in the Silver Springs Prevention Strategy, which required ratification by the Florida Legislature. A bill ratifying the regulatory measures was signed by the Governor on March 19, 2018, with the regulatory measures becoming effective on this date.

Groundwater Quality (Saltwater Intrusion)

Lateral saltwater intrusion is not a significant problem in Marion and North Lake counties; therefore, permittees are not typically required to monitor water quality. All the analyzed wells in Marion and North Lake counties were district observation well network (DOWN) wells within the Upper Floridan aquifer (UFA).

Of the 32 DOWN wells evaluated, none had chloride concentrations increasing at a high (≥ 3 milligrams per liter per year (mg/L/yr)) or a medium (within the range ≥ 1 and < 3 mg/L/yr) rate of change. One evaluated DOWN well in North Lake County showed a decreasing chloride trend (Figure A2-12). Although not shown on Figure A2-12 since neither showed a statistically significant rate of change in chloride concentration, two wells in North Lake County had chloride concentrations currently exceeding the chloride secondary drinking water standard. Both wells are located in a groundwater discharge area near the St. Johns River where there is naturally occurring upwelling of relict sea water from the Lower Floridan aquifer.

Additional detailed information about individual wells is provided in Appendix D.

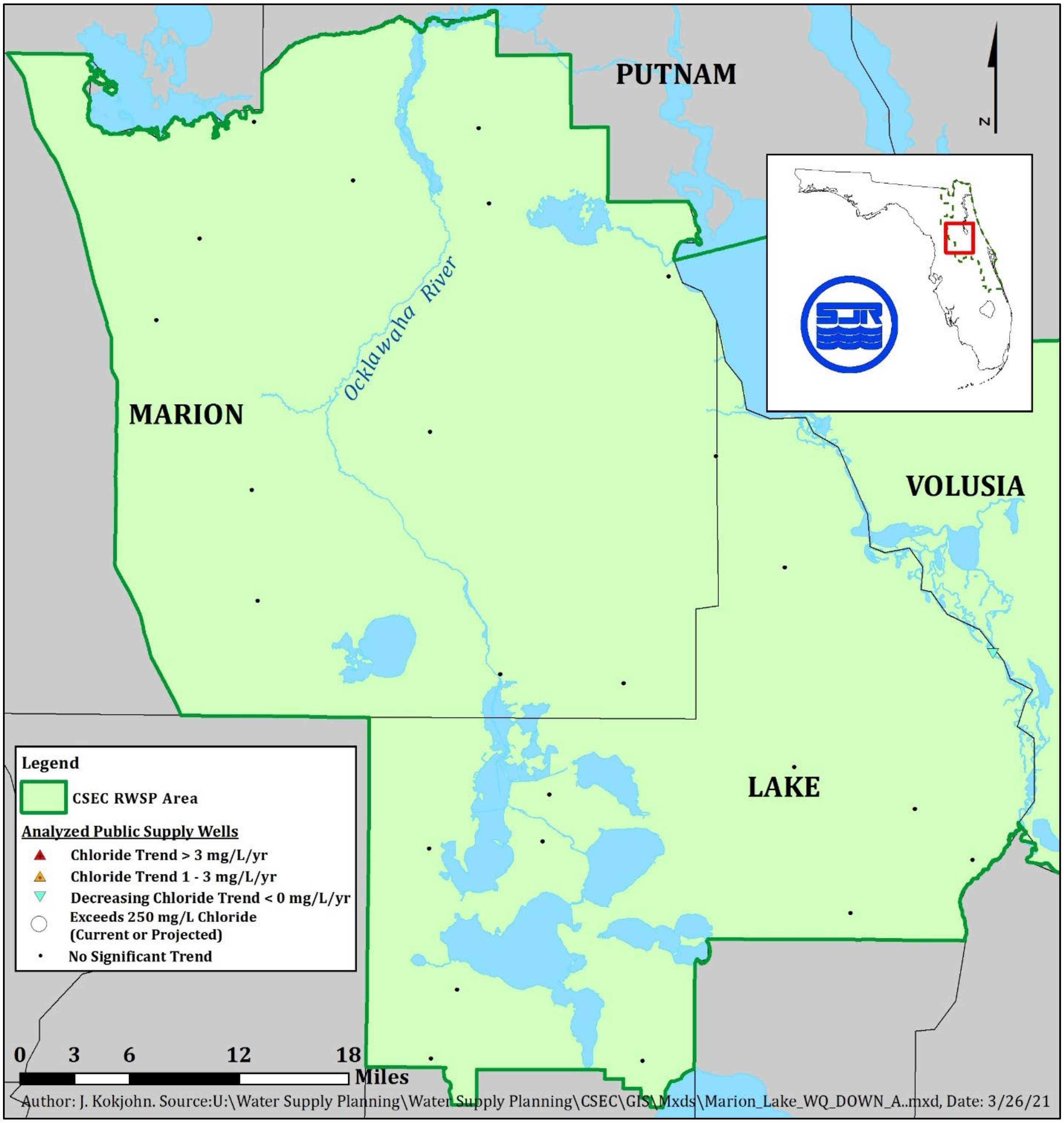


Figure A2-12: Spatial Summary of UFA Public Supply Well Chloride Trend Analysis in Marion and North Lake Counties

Wetlands

The wetland assessment identified 29,190 acres in Marion and North Lake counties that have a moderate or high potential for adverse change based on 2040 conditions within the NDMv5 domain (Table A2-5; Figure A2-13). The potential for adverse change does not necessarily correspond to realized adverse change due to the uncertainty with the analysis. As a result, field verification and monitoring, typically carried out for the SJRWMD regulatory program, is required when it is determined to be necessary to ensure the prevention of impacts from groundwater pumping. In 2015, the SJRWMD regulatory program implemented an enhanced wetland monitoring protocol that was developed and approved by stakeholders during the CFWI planning process (CFWI 2018). This new protocol results in a more comprehensive and defensible strategy to monitor for and prevent adverse change to wetlands resulting from groundwater withdrawals. The CSEC wetland assessment is not a replacement for the analysis of the specific potential of a proposed consumptive use to individually or cumulatively impact wetland systems, however, the spatial coverage of wetland acreage identified as being at risk for change can be utilized by regulatory staff for use as a screening tool to locate general areas where potential wetland impacts are more likely to occur.

Additional detailed information regarding the wetland assessment methodology is included in Appendix H.

Table A2-5: Wetland Acreage Identified as Having a Moderate or High Potential for Adverse Change to Wetland Function in Marion and North Lake Counties

County	**Potential Wetland Adverse Change at 2040 (acres)**
Marion	4,686
North Lake	24,504
Total	**29,190**

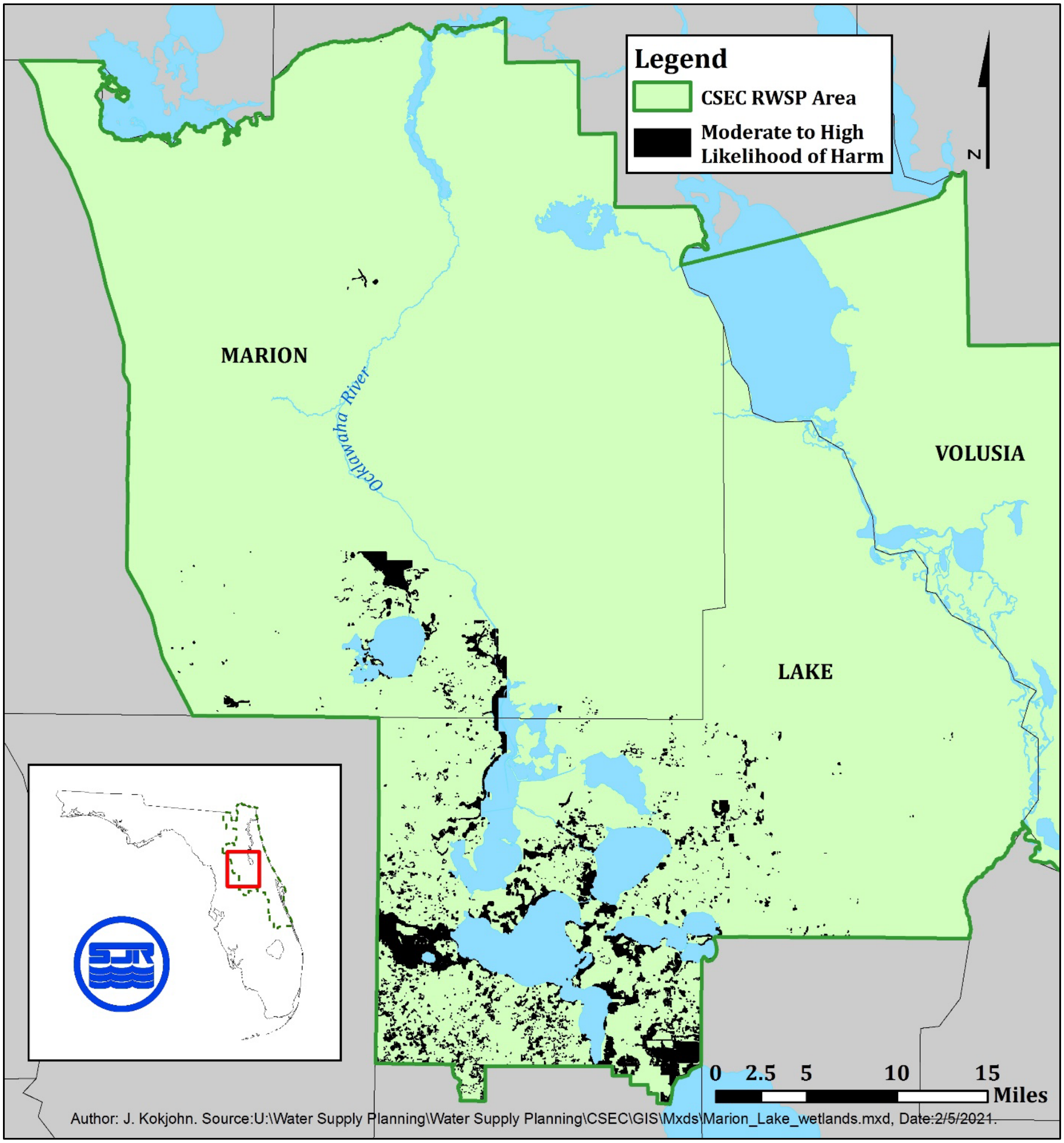


Figure A2-13: Wetlands at Risk of Adverse Change in Marion and North Lake Counties Due to 2040 Projected Withdrawals within the NDMv5 Domain

Chapter 5: Alternative Water Supply Needs Assessment and Delineation of Water Resource Caution Area for Marion and North Lake Counties (Sufficiency Analysis)

Sufficiency Analysis

Within Marion and North Lake counties, results of the MFLs and wetlands analyses demonstrate the potential water resource impacts associated with 30 mgd of future demand at 2040. Since the wetland analysis is a screening tool with monitoring and verification of impacts performed through the regulatory program, the focus of the suite of projects in Chapter 6 is to address potential impacts to MFL water bodies, specifically Silver Springs, which was identified as being in prevention.

As required by Chapter 373.709, F.S., SJRWMD has included the Silver Springs Prevention Strategy in the CSEC RWSP (Appendix G). By incorporating specific projects identified in the Silver Springs Prevention Strategy, along with new proposed projects, the CSEC RWSP provides assurance that the future water needs of Marion and North Lake counties will be met while sustaining water resources and related natural systems.

Using the NDMv5 model, SJRWMD assessed the effects of 36.7 mgd of water savings potential and water supply and water resource development projects. The modeling results demonstrated that implementation of the suite of projects is sufficient to provide the increase in spring flow required to ensure achievement of MFLs at 2040 demand. Seven listed projects are complete or in progress, with several projects currently under development.

MFL Water Bodies in Prevention

As mentioned previously, implementation of water conservation projects that meet the low potential as described in Chapter 2 along with the water supply and water resource development projects summarized in Chapter 6 is sufficient to ensure achievement of Marion and North Lake counties MFLs in 2040. Specific details regarding the MFL water body identified as being in prevention are provided below.

Silver Springs

Implementation of all projects identified within Chapter 6 will ensure achievement of the Silver Springs MFLs at 2040 projected demand with approximately 19 cfs of remaining freeboard. This excess benefit allows water users flexibility in selecting which projects to implement.

Water Quality

The water quality analysis results for Marion and North Lake counties indicate that water quality constraints due to lateral saltwater intrusion or upconing are not projected for this area. Lateral saltwater intrusion is unlikely in the central part of Florida, which is farther from coastal areas and closer to groundwater recharge areas.

Wetlands

Since the potential for adverse change does not necessarily correspond to realized adverse change (see Chapter 4), water supply and water resource project development did not focus on reducing the 29,190 acres of wetlands identified as having the potential for adverse change. However, implementation of the projects specified in the CSEC RWSP will reduce the acreage of potentially impacted wetlands, although these benefits were not quantified as a part of this plan. Furthermore, through the continued use of the enhanced wetland assessment protocol in conjunction with the spatial review of wetland acreage identified in the CSEC RWSP (see Chapter 4), SJRWMD regulatory staff will ensure the protection of wetland acreage within Marion and North Lake counties by preventing, or requiring mitigation for, adverse impacts to wetlands from both individual and cumulative permit-related groundwater withdrawals.

Water Resource Caution Area

Analyses performed as part of the CSEC RWSP effort support the 2017 designation of Silver Springs as being in prevention with regard to its MFLs. Projects identified in the Silver Springs Prevention Strategy have been incorporated into the CSEC RWSP, as they are necessary to ensure achievement of the Silver Springs MFLs at 2040 projected water demand. The CSEC RWSP, along with the Silver Springs Prevention Strategy, constrain the availability of traditional groundwater sources throughout Marion County and provide a technical basis for the constraint. Although current data suggests that MFLs will be achieved in North Lake County through the planning horizon, it is important to recognize the presence of water resource constraints to the north (Marion County) and to the south (southern Lake County in the CFWI). Groundwater withdrawals in North Lake County impact MFL water bodies across political boundaries and therefore should be considered in addressing regional MFL impacts. As such, the Marion and North Lake counties portion of the CSEC RWSP area is proposed for inclusion in the CSEC WRCA.

Chapter 6: Project Options for Marion and North Lake Counties

Water Resource Development Project Options

There is one water resource development project proposed within the Marion and North Lake subregion. The Ocala Wetland Groundwater Recharge Park, located in Marion County, consists of a wetland treatment and groundwater recharge project on a 33-acre site. The project will provide up to 5 mgd of beneficial recharge to the UFA and will cost $9.3 million to construct with operating and maintenance expenses estimated at $100,000 per year. Project details are provided in Appendix I.

Water Supply Development Project Options

A summary of water supply development options is shown in Table A2-6. Together, these projects provide 24.7 mgd of water in Marion and North Lake counties. Since several of the projects increase reclaimed water availability resulting from facility expansion and septic to sewer conversion, it is estimated that 8.1 mgd of reclaimed water will be available for additional future projects. These unspecified reclaimed water projects were considered in the sufficiency analysis presented in Chapter 5. Additional project details can be found in Appendix J.

Table A2-6: Summary of Water Supply Development Project Options in Marion and North Lake Counties

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Construction Cost (Million dollars)
Groundwater	5	19.1	$60.8
Reclaimed Water	8	5.6	$40.1
Total	**13**	**24.7**	**$100.9**

Note: mgd = million gallons per day

Water Conservation Project Options

Estimates for Marion and North Lake counties show the water conservation potential at 10.4 mgd (high estimate) at 2040 at a cost of approximately $15.8 million. Seventeen water conservation projects are completed or currently underway in Marion and North Lake counties with an estimated savings of 1.6 mgd of water for $2.6 million (Appendix K). Remaining conservation potential is estimated at 8.8 mgd and can be realized through the implementation of the various types of water conservation projects listed in the CSEC RWSP.

Summary of SJRWMD Project Funding in Marion and North Lake Counties

From fiscal year (FY) 2014 through FY 2020, the SJRWMD cost-share program has awarded Marion and North Lake cooperators approximately $33.6 million in total funds, with $13.5 million awarded specifically for water supply, natural systems, and water conservation projects (Appendix L). Once fully implemented, these projects will provide approximately 20.4 mgd of alternative water supplies and 1.8 mgd of water savings, with 4.4 mgd providing a natural systems benefit.

Chapter 7: Conclusions

The CSEC RWSP was developed consistent with the water supply planning requirements of Chapter 373, F.S. The CSEC RWSP concludes that the current and future water demands of Marion and North Lake counties can be met through the 2040 planning horizon while sustaining the water resources and related natural systems, through water conservation, management measures, and implementation of water resource and water supply development projects identified in Chapter 6.

Total water demands by all water use categories in Marion and North Lake counties are projected to increase from an estimated current use in 2015 of 96.4 mgd to approximately 126.4 mgd in 2040. SJRWMD has determined that fresh groundwater alone cannot supply the projected 30.0 mgd increase in water demand without causing unacceptable impacts to water resources.

Primary solutions identified for meeting the future water demands in Marion and North Lake counties while protecting the environment include enhanced water conservation, wellfield management, aquifer recharge, and alternative water supply projects. With all these options, SJRWMD and local stakeholders have identified up to 48.2 mgd of projects potentially available to offset the projected increase in water demand at 2040 under average (30.0 mgd) and 1-in-10 year drought conditions (47.3 mgd).

References

Central Florida Water Initiative (CFWI). 2015. *Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP): Volume I – Planning Document*. Available from: http://cfwiwater.com/

CFWI. 2018. *Central Florida Water Initiative (CFWI); Minimum Standards for Water Resource Data Collection, Site Establishment, and Field Data Collection Protocols*. Available from: https://cfwiwater.com/pdfs/DMIT-MinStandards-2018.pdf

FDACS. 2017. *Florida Statewide Agricultural Irrigation Demand.* Prepared by The Balmoral Group. FDACS, Tallahassee, FL.

HydroGeoLogic, Inc. (HGL) and Dynamic Solutions, LLC. 2016*. Northern District Groundwater Flow Model Version 5.0*. Prepared for SJRWMD and SWFWMD.

SJRWMD. 2017. *Prevention Strategy for the Implementation of Silver Springs Minimum Flows and Levels*. SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/ssmfl/Silver-Springs-Prevention-Strategy.pdf

A3: Regional Water Supply Plan Components for Brevard, Indian River and Okeechobee Counties

Chapter 1: Introduction to Brevard, Indian River, and Okeechobee Counties

Population

The estimated population in Brevard, Indian River, and Okeechobee counties during the base year, 2015, was just over 0.55 million. This does not include population from the City of Cocoa service area, which is included in the Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP).

Primary Surface Water Basins

The primary surface water basins located within Brevard, Indian River, and Okeechobee counties include portions of the Upper St. Johns River and Indian River Lagoon basins.

Springs

There are no documented first- or second-magnitude springs in the Brevard, Indian River, or Okeechobee portion of the Central Springs/East Coast (CSEC) RWSP area.

Chapter 2: Water Demand, Reclaimed Water and Water Conservation Projections for Brevard, Indian River, and Okeechobee Counties[1]

Population

Total population for Brevard, Indian River, and Okeechobee counties is expected to increase by 187,000 people (34% to approximately 740,000 people) by 2040 (Figure A3-1). For a breakdown of population by type (public supply versus domestic self-supply served) and by county, see Appendix B.

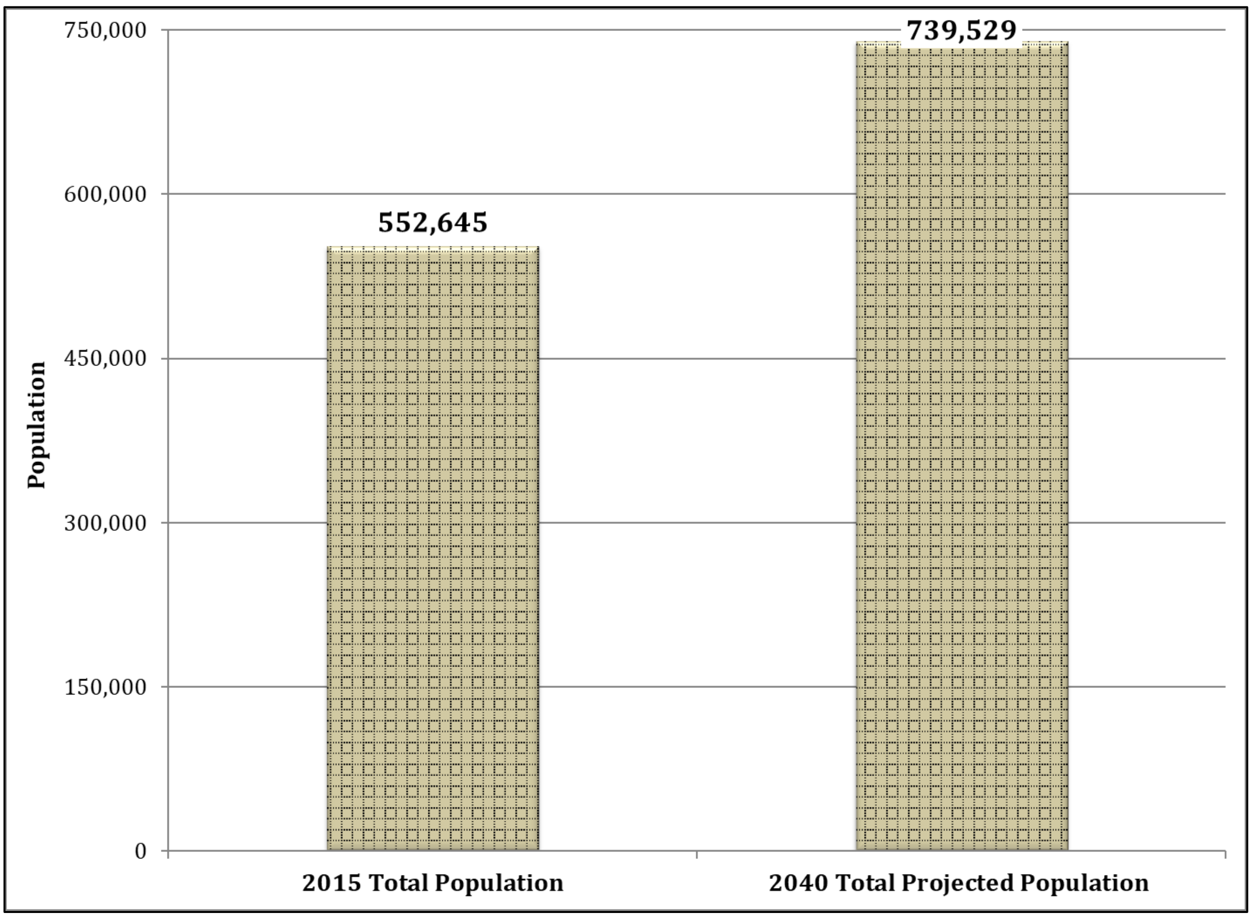


Figure A3-1: 2015 Population Estimate and 2040 Population Projection in Brevard, Indian River, and Okeechobee Counties

[1] Population and water use estimates and projections do not include the City of Cocoa service area, which is included in the Central Florida Water Initiative.

Water Demand

Total water demand in Brevard, Indian River, and Okeechobee counties is anticipated to increase from 168.4 million gallons per day (mgd) in 2015 to 191.9 mgd in 2040 (14%). Unlike the other two subregions of the CSEC RWSP area, agriculture represents the largest demand in Brevard, Indian River, and Okeechobee counties (40%), followed by public supply (33%), and landscape/recreation/aesthetic (LRA)(16%) (Figure A3-2). It is estimated that 2040 total water demand could increase by an additional 27 percent (52.1 mgd) if a 1-in-10 year drought occurred.

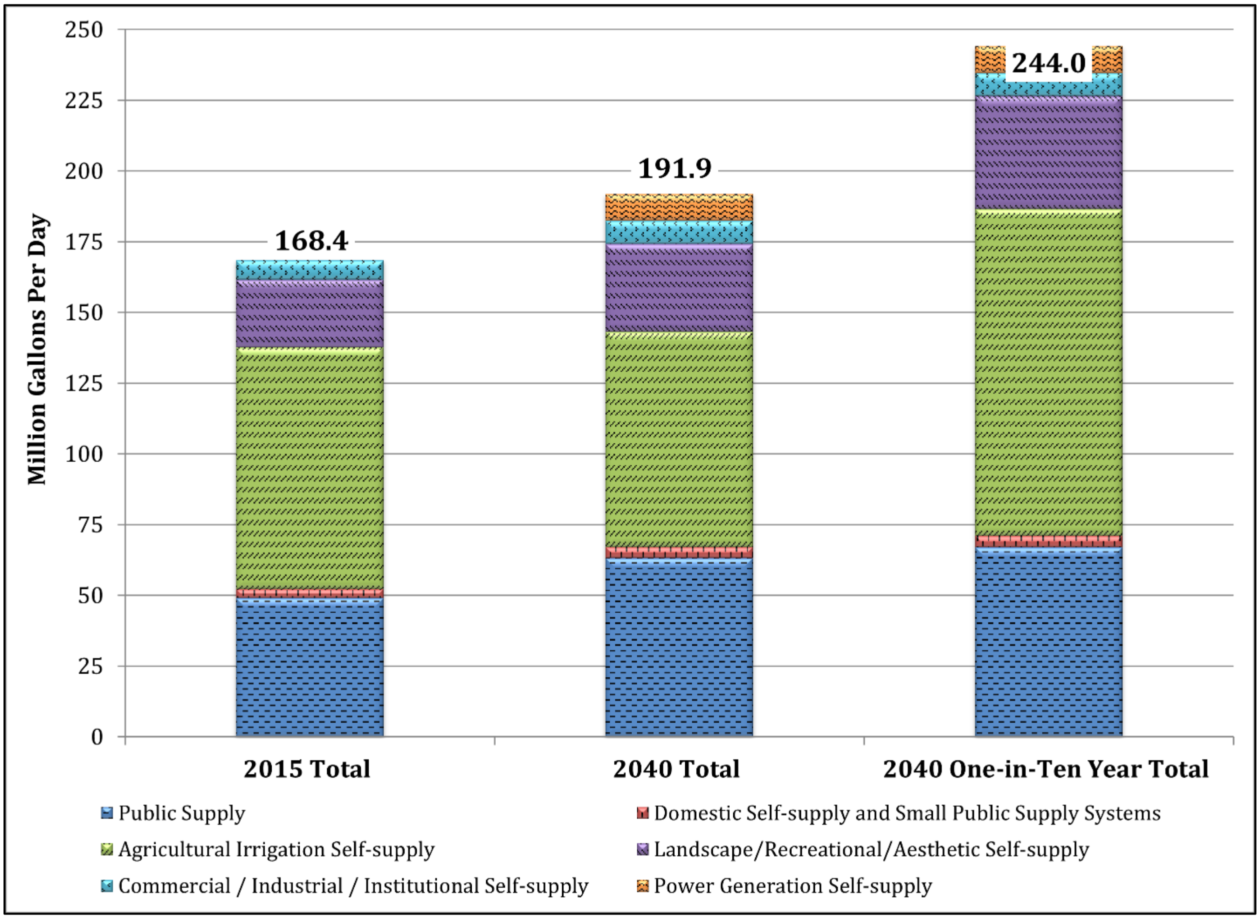


Figure A3-2: 2015 Water Use Estimates and 2040 Water Demand Projections in Brevard, Indian River, and Okeechobee Counties by Category

Public Supply Demand

Total public supply water demand for Brevard, Indian River, and Okeechobee counties is expected to increase by 14.2 mgd (29% to approximately 63.1 mgd) by 2040 (Figure A3-3). Public supply represents 33 percent of the 2040 projected water demand in Brevard, Indian River, and Okeechobee counties. Of note, public supply also represents 61 percent of the total increase in water demand in Brevard, Indian River, and Okeechobee counties. It is estimated that 2040 public supply water demand could increase by an additional 6 percent (4 mgd) if a 1-in-10 year drought occurred.

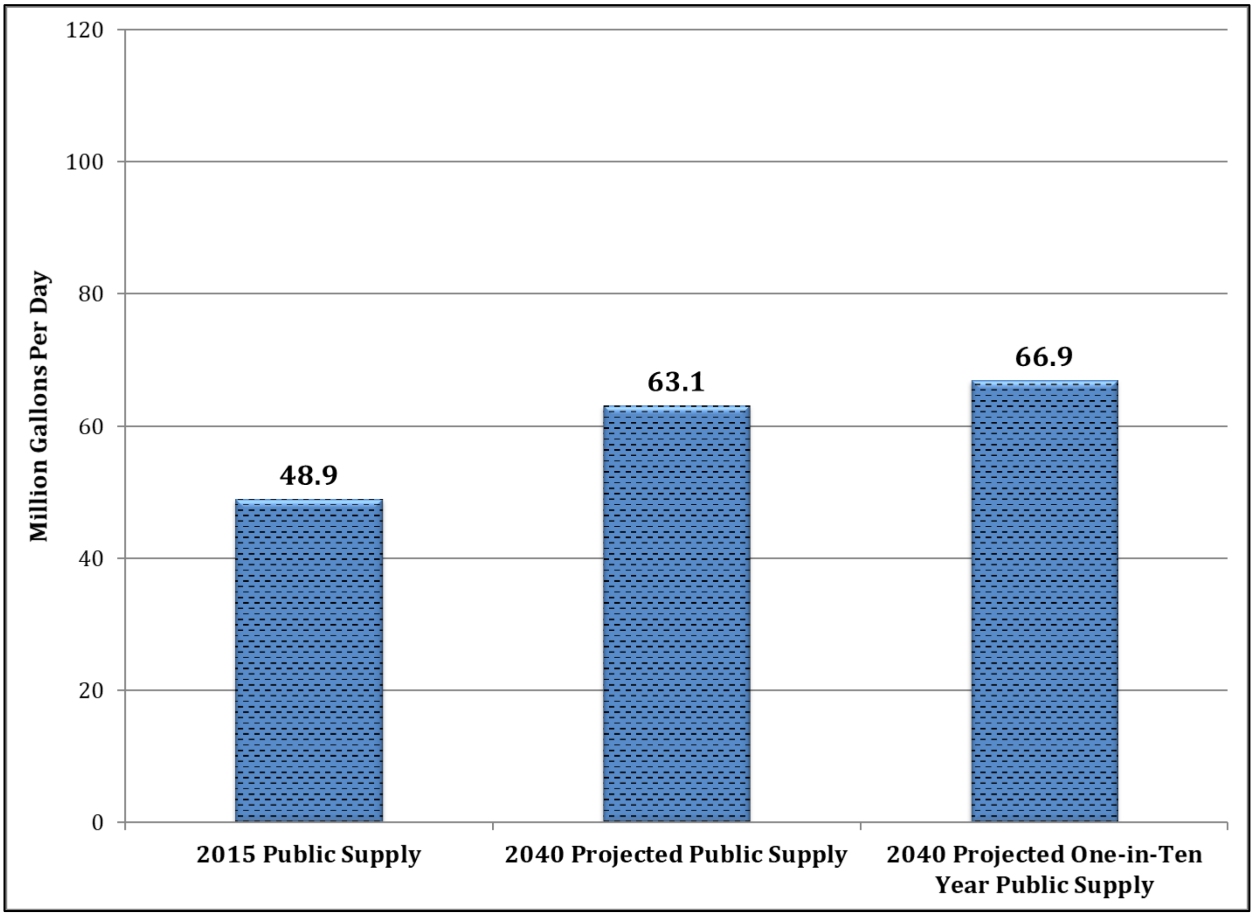


Figure A3-3: 2015 Public Supply Water Use Estimates and 2040 Water Demand Projections in Brevard, Indian River, and Okeechobee Counties

Domestic Self-Supply Demand

In Brevard, Indian River, and Okeechobee counties, total combined DSS water demand, which includes small public supply systems as defined in Chapter 3, is expected to increase by 0.6 mgd (15% to approximately 3.8 mgd) by 2040 (Figure A3-4). Of the 2040-combined DSS water demand, DSS wells represent 95 percent of the projected water demand (with small public supply systems representing the remaining 5%). It is estimated that 2040-combined DSS water demand could increase by an additional 6 percent (0.2 mgd) if a 1-in-10 year drought occurred.

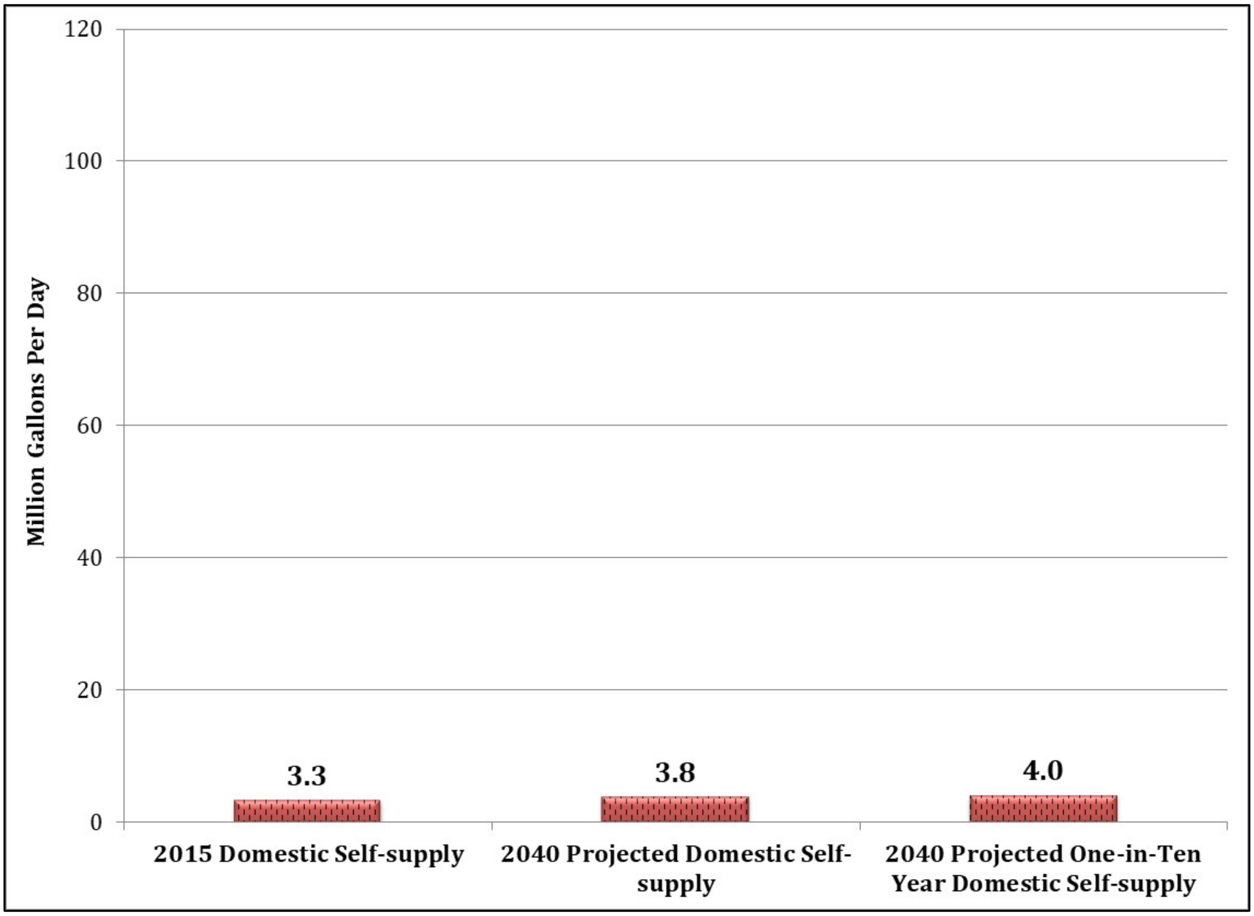


Figure A3-4: 2015 Combined Domestic Self-supply Water Use Estimates and 2040 Water Demand Projections in Brevard, Indian River, and Okeechobee Counties

Agriculture Acreage and Demand

Total agricultural water demand for Brevard, Indian River, and Okeechobee counties is expected to decrease by 9.2 mgd (11% to approximately 76.1 mgd) by 2040 and acreage is expected to decrease by 7,800 acres (16% to approximately 66,000 acres) (Figures A3-5 and A3-6). Florida Department of Agriculture and Consumer Services' (FDACS) Florida Statewide Agricultural Irrigation Demand (FSAID) IV estimates that 2040 agricultural water demand (which was based on a 5-in-10 year, or average, drought condition) could increase by an additional 52 percent (39.4 mgd) if a 1-in-10 year drought occurred (FDACS 2017).

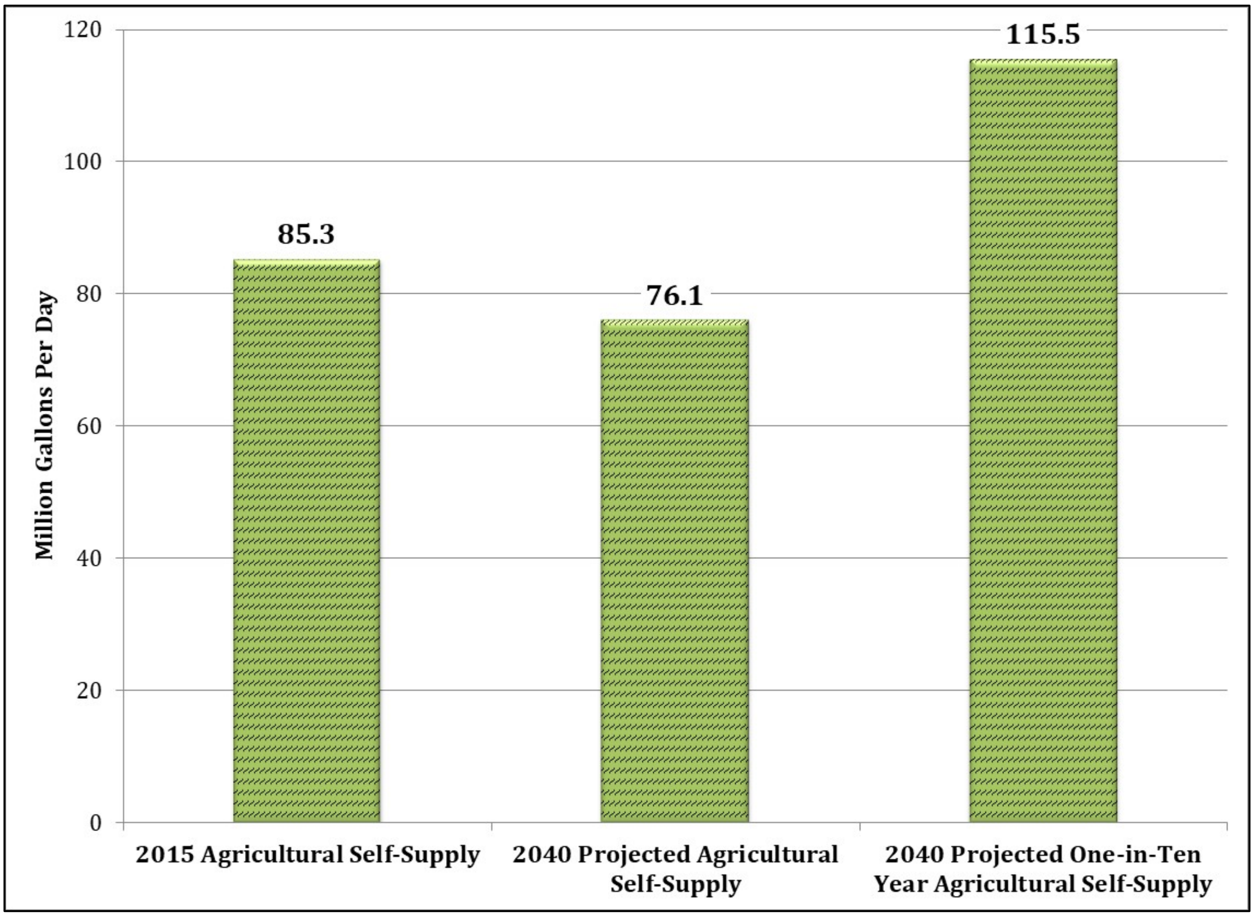


Figure A3-5: 2015 Agriculture Self-supply Water Use Estimates and 2040 Water Demand Projections in Brevard, Indian River, and Okeechobee Counties (FDACS 2017)

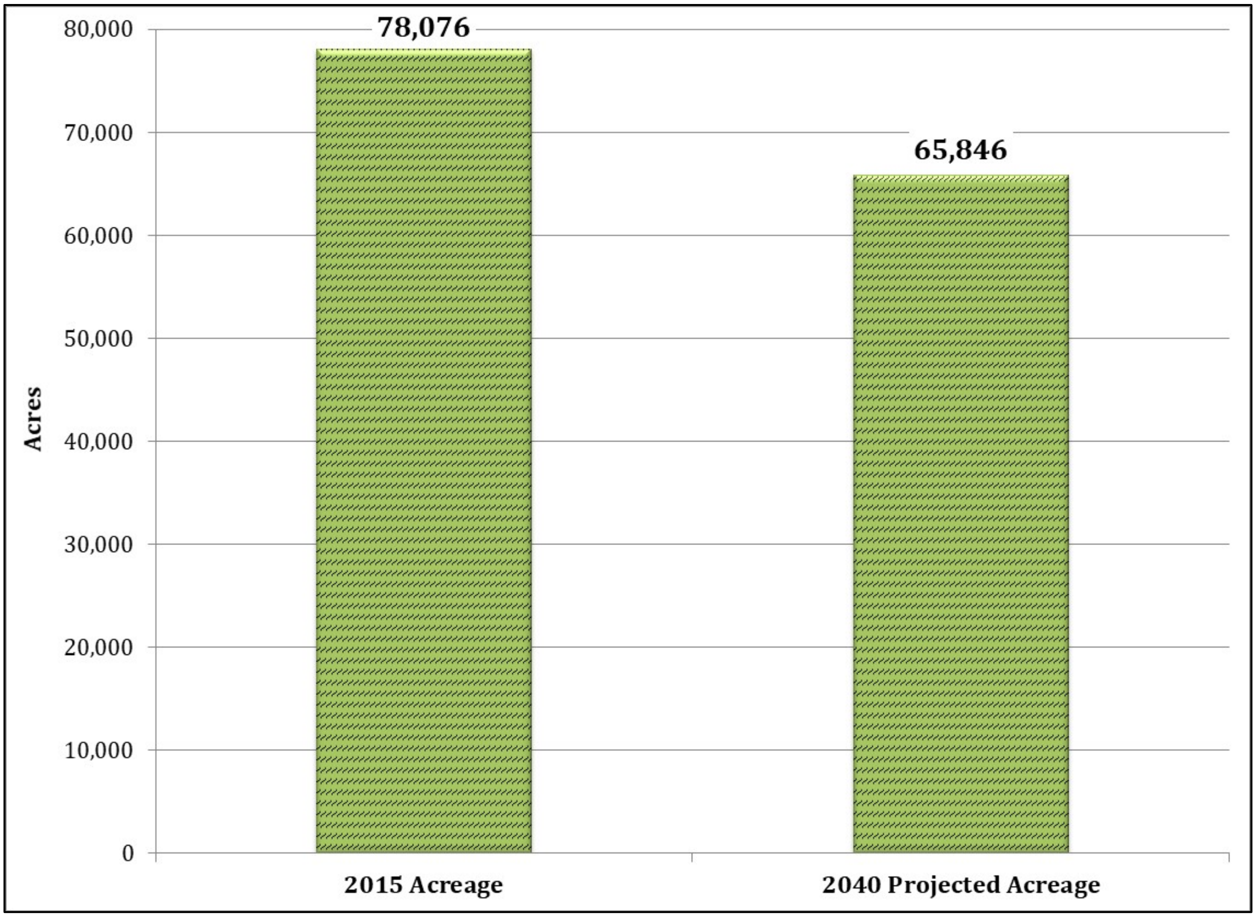


Figure A3-6: 2015 Agriculture Self-supply Acreage Estimates and 2040 Acreage Projections in Brevard, Indian River, and Okeechobee Counties (FDACS 2017)

Commercial/Industrial/Institutional and Mining/Dewatering Demand

Total combined commercial/industrial/institutional and mining/dewatering water demand for Brevard, Indian River, and Okeechobee counties is expected to increase by 1.3 mgd (20% to approximately 8.2 mgd) by 2040 (Figure A3-7).

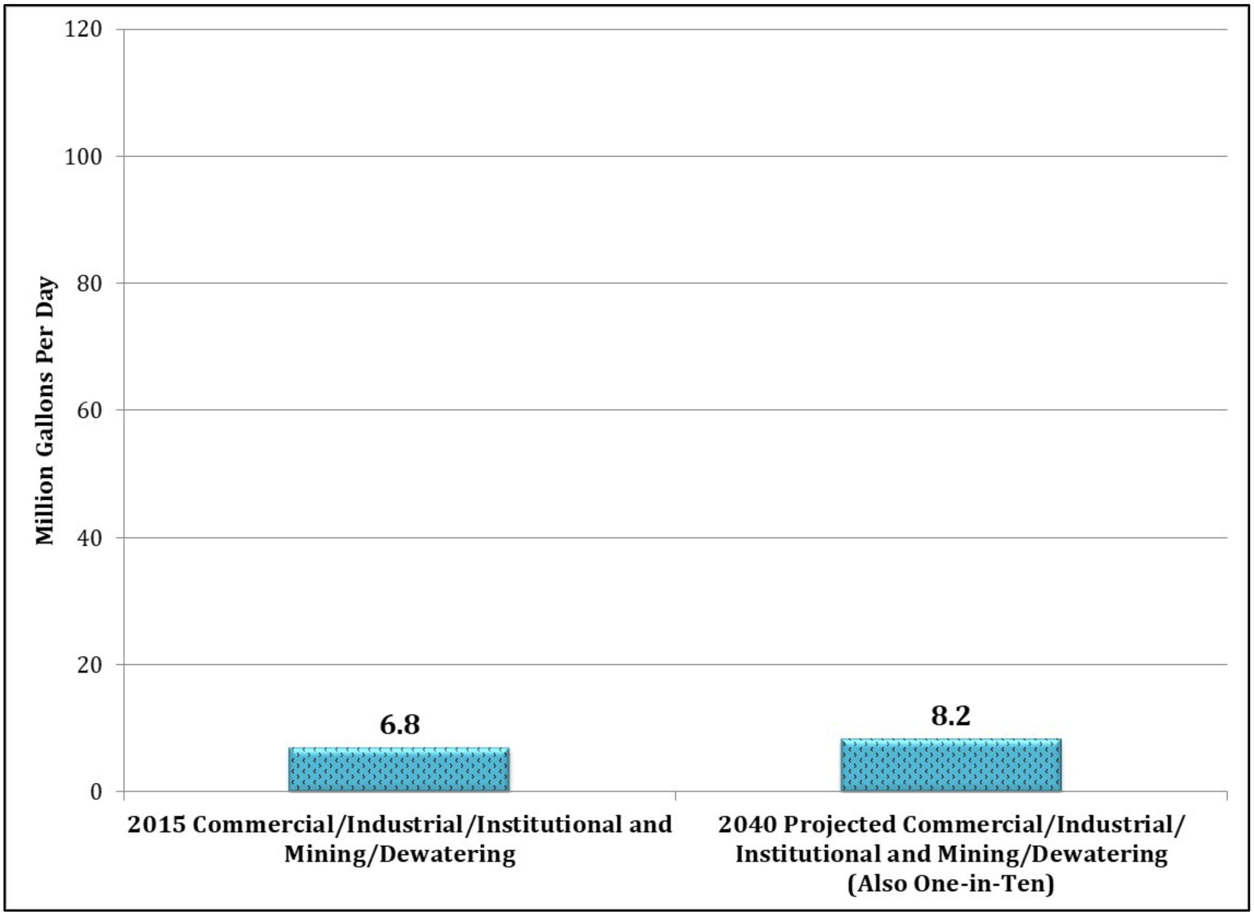


Figure A3-7: 2015 Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Use Estimates and 2040 Water Demand Projections in Brevard, Indian River, and Okeechobee Counties

Landscape/Recreation/Aesthetic Demand

Total LRA water demand for Brevard, Indian River, and Okeechobee counties is expected to increase by 7.2 mgd (30% to approximately 31.2 mgd) by 2040 (Figure A3-8). It is estimated that 2040 LRA water demand could increase by an additional 28 percent (8.6 mgd) if a 1-in-10 year drought occurred.

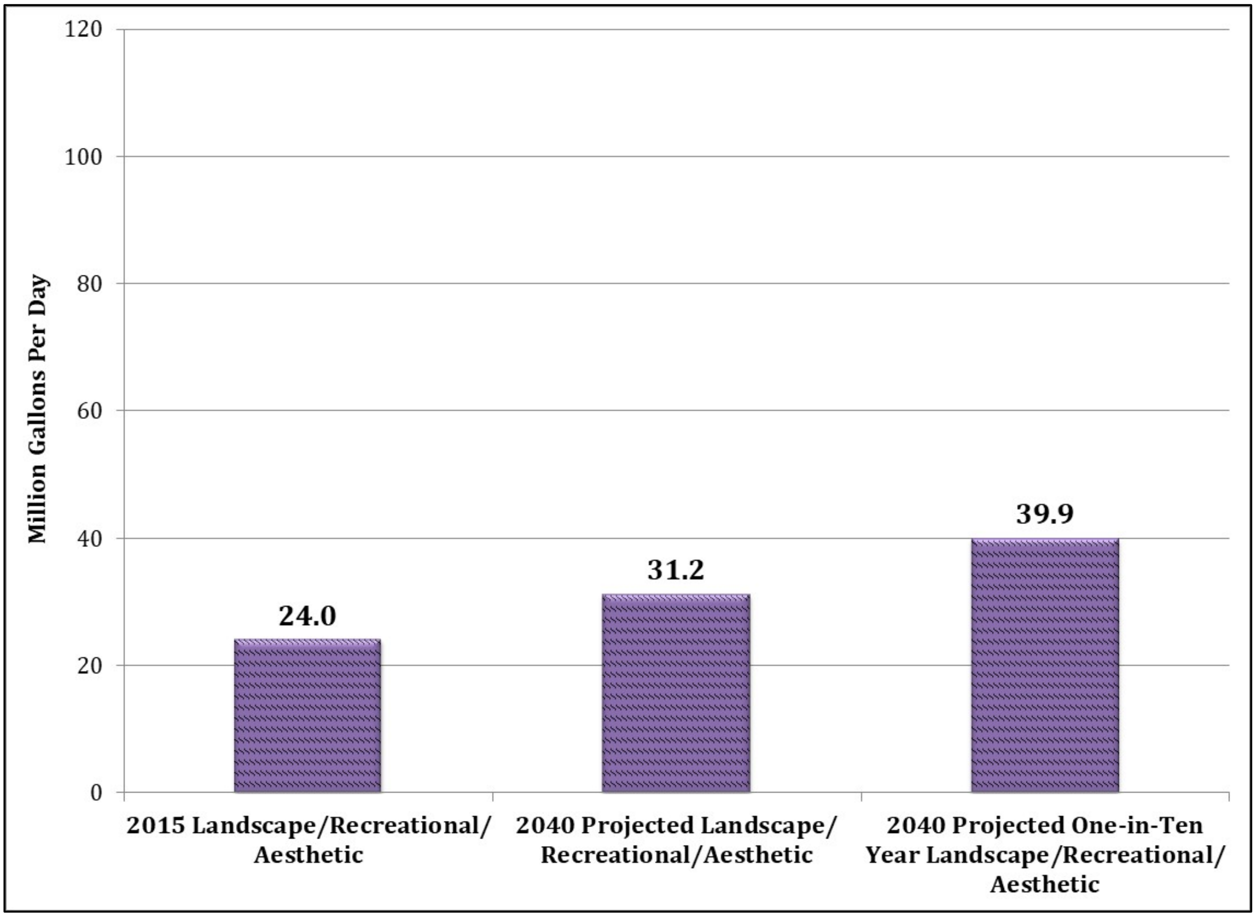


Figure A3-8: 2015 Landscape/Recreational/Aesthetic Self-supply Water Use Estimates and 2040 Water Demand Projections in Brevard, Indian River, and Okeechobee Counties

Power Generation Demand

Total power generation water demand for Brevard, Indian River, and Okeechobee counties is expected to increase by over 9 mgd (to approximately 9.5 mgd) by 2040 (Figure A3-9). This increase is due to a new power generation facility located in Okeechobee County (Florida Power & Light – Okeechobee Clean Energy Plant).

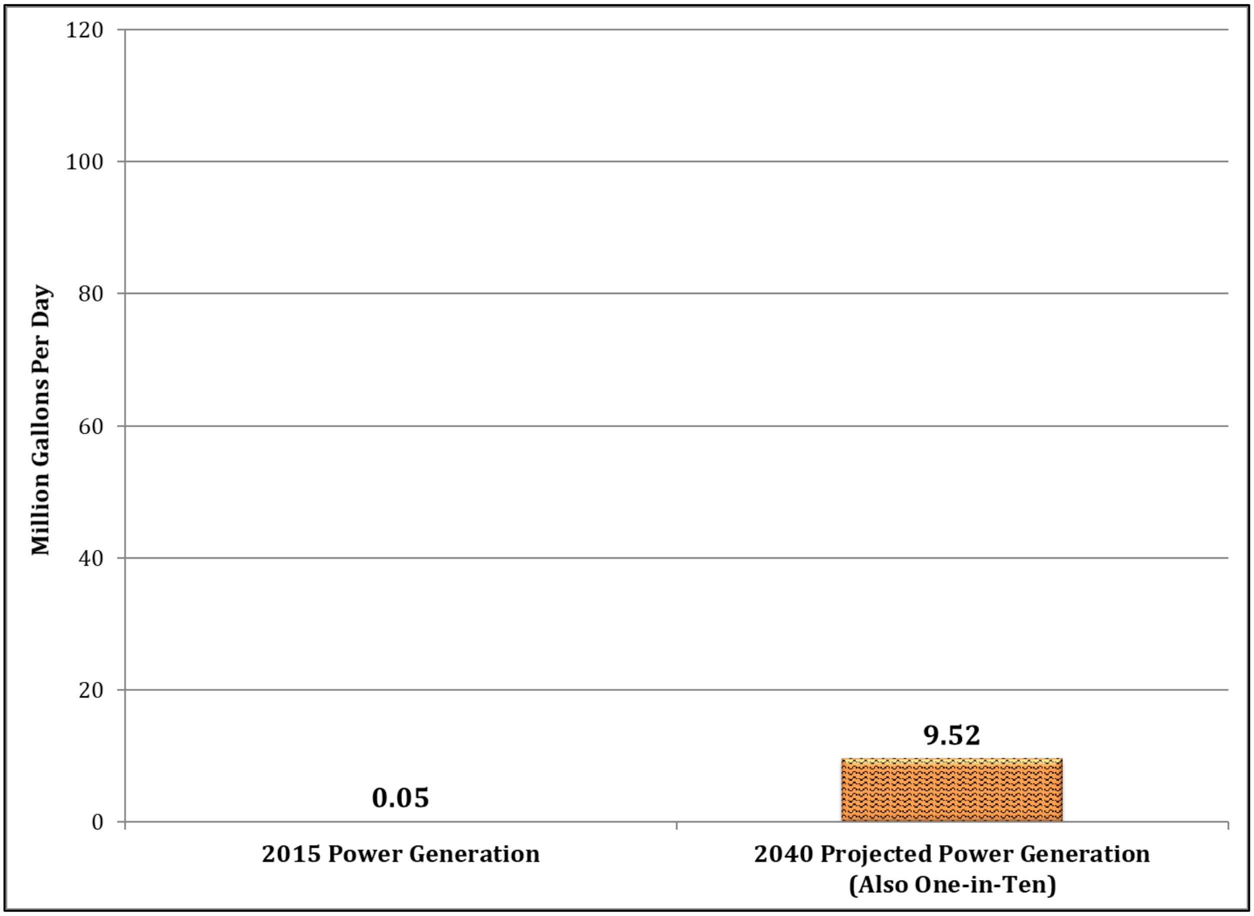


Figure A3-9: 2015 Power Generation Self-supply Water Use Estimates and 2040 Water Demand Projections in Brevard, Indian River, and Okeechobee Counties

Reclaimed Water Projections

Existing Flows

Figure A3-10 displays 2015 reclaimed water flows, both beneficial and disposal. The relative size of the pie charts represents the magnitude of total flow. The yellow shading represents disposal, and the purple shading represents the beneficial use of reclaimed water. The values utilized for Figure A3-10 are provided in Table A3-1. Approximately 48 percent (15.3 mgd) of 2015 treated wastewater flows was used beneficially in Brevard and Indian River counties, while the remaining 52 percent (16.7 mgd) was considered disposal. Recognizing the potential for increased beneficial reuse of existing flows, the St. Johns River Water Management District (SJRWMD) estimated that between 6.4 mgd and 12.6 mgd of the existing disposal flows could reasonably be utilized beneficially going forward. Of note, there are no wastewater treatment facilities located in the small section of Okeechobee County that fall within SJRWMD jurisdiction.

Table A3-1: Detailed Summary of 2015 Reclaimed Water Flows in Brevard, Indian River, and Okeechobee Counties

Facility[1]	**2015 Total Treated Flow (mgd)**	**Beneficial Utilization (mgd)**	**Disposal (mgd)**
Brevard Co. Utility Dept. (BCUD) – Barefoot Bay	0.5	0.5	0.1
BCUD – North Brevard Regional WWTF	0.3	0.2	0.1
BCUD – South Beaches WWTF	6.5	1.4	5.1
Indian River Co. Utility Dept. – West Regional WWTF	4.8	3.1	1.8
Melbourne – David B. Lee WWTF	7.2	2.2	5.0
Palm Bay	2.2	0.5	1.6
Ray Bullard WRF (West Melbourne)	1.6	0.8	0.8
Titusville WRF	5.2	3.7	1.5
Vero Beach WWTF	3.8	3.0	0.8
Total[2]	**32.1**	**15.3**	**16.7**

Note: mgd = million gallons per day; WWTF = wastewater treatment facility; WRF = water reclamation facility

[1] Wastewater treatment facilities that serve the City of Cocoa public supply service area are not included in the CSEC RWSP since the City of Cocoa service area is included in the CFWI.

[2] Total may be slightly different due to rounding of individual values.

Future Flows

SJRWMD estimated that increased future reclaimed water flows between 6.3 mgd and 10.1 mgd could be used for beneficial purposes. When considered together with existing disposal flow that could be utilized beneficially, between 12.6 mgd and 22.6 mgd of total potential reclaimed water for reuse will be available in 2040 to potentially offset withdrawals from traditional water sources and predicted impacts within Brevard, Indian River, and Okeechobee counties.

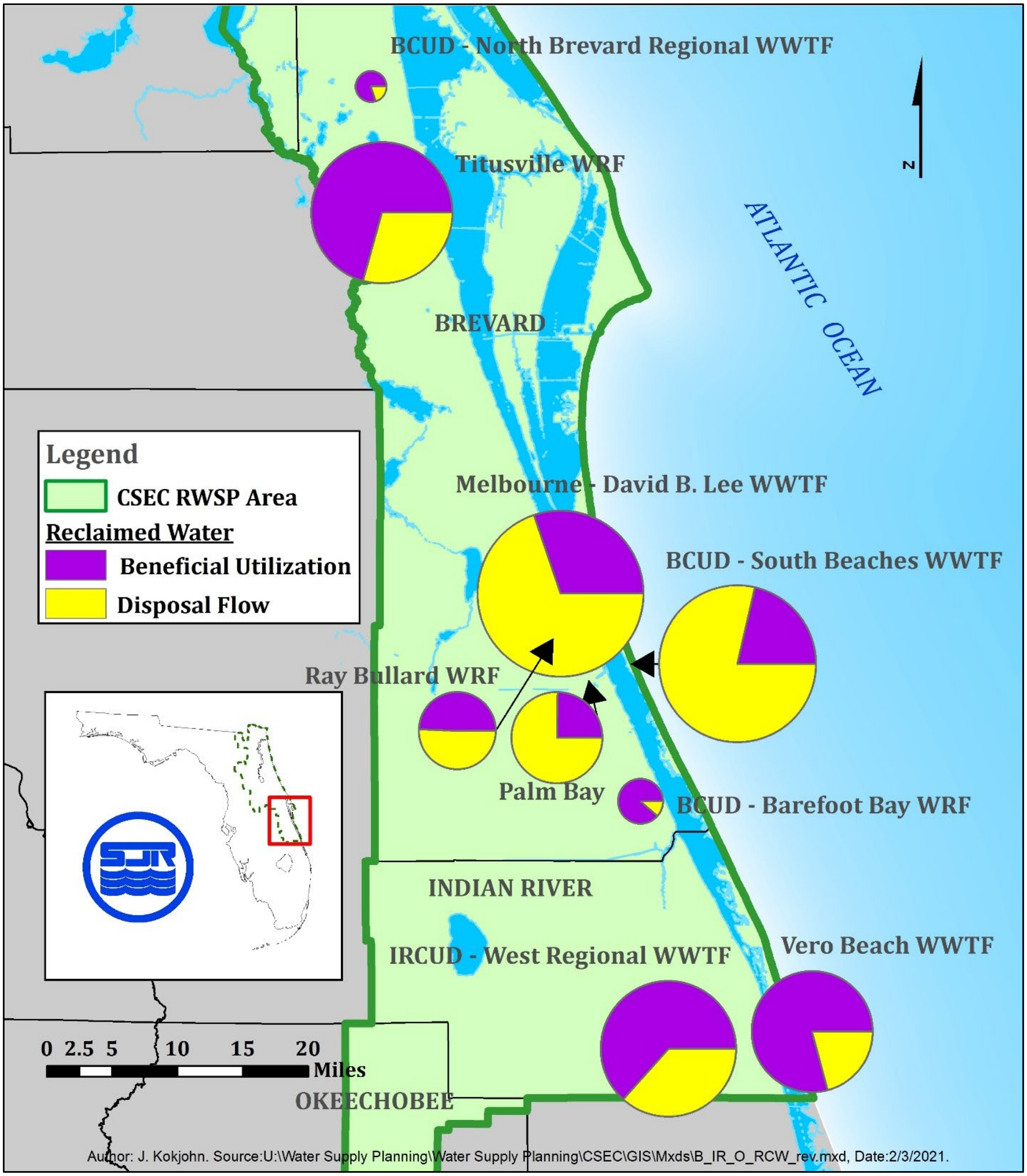


Figure A3-10: Summary of 2015 Reclaimed Water Flows in Brevard, Indian River, and Okeechobee Counties

Water Conservation and Irrigation Efficiency

For the first scenario of water conservation and irrigation efficiency (using the CFWI RWSP method (CFWI 2015) and FDACS' FSAID IV (FDACS 2017)), it is estimated that approximately 13.8 mgd of the projected demand for 2040 could be reduced by water conservation (Table A3-2).

For the second scenario, using the average 2011-2015 gross per capita rate Brevard, Indian River, and Okeechobee counties for public supply and applying the same percent reduction to DSS, it is estimated that water conservation could be increased by 4.5 mgd, potentially offsetting some future demand (Table A3-2).

Table A3-2: 2040 Water Conservation and Irrigation Efficiency Potential in Brevard, Indian River, and Okeechobee Counties

Category	2040 Low Conservation Potential (mgd)	2040 High Conservation Potential (mgd)
Public Supply	2.6	6.9
Domestic Self-supply	0.2	0.4
Agriculture	9.9	9.9
Landscape/Recreation/Aesthetic Self-supply	0.9	0.9
Commercial/Industrial/Institutional Self-supply	0.1	0.1
Power Generation Self-supply	0.1	0.1
Total	**13.8**	**18.3**

Note: mgd = million gallons per day

Chapter 3: Assessment of Groundwater Conditions Associated with Future Water Demand Projections for Brevard, Indian River, and Okeechobee Counties (East-Central Florida Transient Expanded Regional Groundwater Flow Modeling Simulations)

East-Central Florida Transient Expanded Model Overview

The East-Central Florida Transient Expanded Model (ECFTX) is the newest of the three models utilized for the CSEC RWSP effort (Figure A3-11). It was developed through a collaborative process between South Florida Water Management District, SJRWMD, and Southwest Florida Water Management District (CFWI 2020b). It is fully-three dimensional, United States Geologic Survey MODFLOW code based, with a model cell size/spacing of 1,250 ft using 603 rows and 704 columns. The model grid is aligned east-west/north-south, with Daytona Beach at its northern limit and extending south to the Charlotte-Desoto county line. The east and west limits of the model are the Atlantic Ocean and Gulf of Mexico, respectively. Freshwater aquifers systems and semi-confining layers within the central portion of the Florida peninsula are represented in the model by a total of 11 layers.

The model calibration was conducted in two phases. The first phase consisted of a steady-state simulation representing hydrologic conditions for calendar year 2003 (including groundwater withdrawals, return flows from irrigation and rapid infiltration basins, rainfall, evapotranspiration, spring flows, and baseflows to river systems). The final phase of the model calibration provided for an 11-year simulation, representing monthly hydrologic stresses for the period from 2004 through 2014.

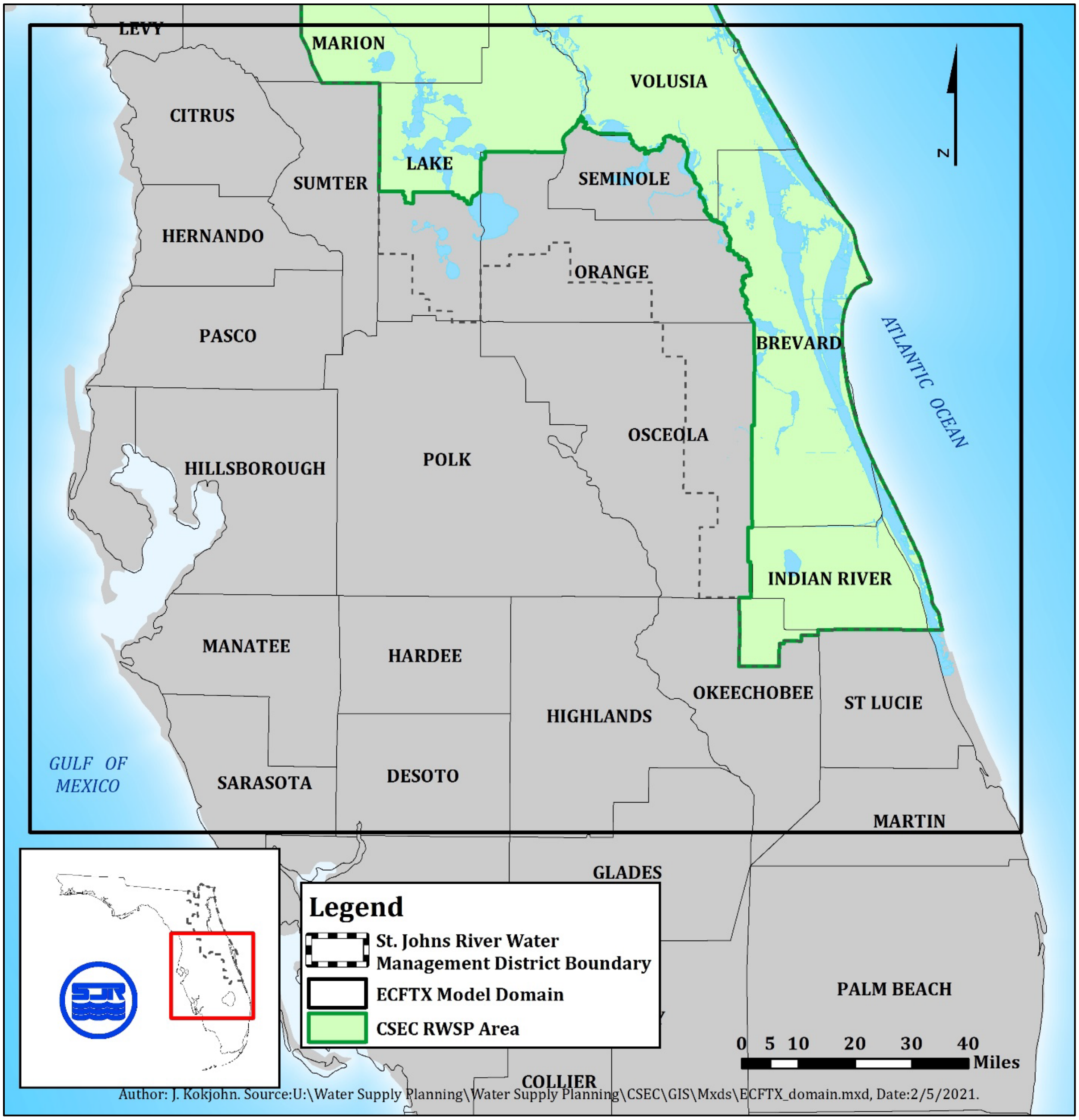


Figure A3-11: East-Central Florida Transient Extended Model Domain

Methodology

SJRWMD completed a water resource assessment using the ECFTX to estimate the potential impacts through the 2040 planning horizon. The assessments addressed the potential impacts of groundwater withdrawals with respect to adopted MFL water bodies and wetlands in Brevard, Indian River, and Okeechobee counties.

Two transient model scenarios and one comparison, listed below, were performed as part of the Brevard, Indian River, and Okeechobee counties water resource assessment. Since the estimated water conservation potential and reclaimed water availability at 2040 was greater than the projected increase in water demand at 2040 in Brevard, Indian River, and Okeechobee counties, a modeling scenario to evaluate the benefits of water supply and water resource development projects was not required.

Scenarios

- Scenario 1: 2014 reference condition
- Scenario 2: 2040 projected water demand

Comparison

The results from the two simulations were compared (Scenario 2 minus Scenario 1) to assess potential impacts to wetlands and MFL water bodies due to projected increases in groundwater withdrawals within Brevard, Indian River, and Okeechobee counties, a subset of the ECFTX domain. Results of this comparison are described in Chapters 4 and 5.

Chapter 4: Evaluation of Potential Effects of Projected Water Demand on Water Resources within Brevard, Indian River, and Okeechobee Counties (Water Resource Assessment)

Water Resource Assessment Results

A water resource assessment was performed for Brevard, Indian River, and Okeechobee counties at 2040 projected water demand. The results for the MFL, groundwater quality, and wetlands analyses are provided below. There are no approved MFL prevention or recovery strategies applicable to this area.

MFLs

Results of the MFLs analysis is summarized in Table A3-3 and discussed by water type below. Additional information regarding the MFLs analyses is included in Appendix F.

Table A3-3: Status of Assessed MFL Water Bodies in Brevard, Indian River, and Okeechobee Counties

Type	Name	County	MFLs Status at 2040
Lake	Fox	Brevard	Met
Lake	South	Brevard	Met
River	St. Johns downstream of Lake Washington weir	Brevard	Met

Lakes with MFLs

Results of the MFL lake analysis indicate that both evaluated lakes in the Brevard, Indian River, and Okeechobee portion of the CSEC RWSP area are meeting their MFLs under current conditions and are projected to meet their MFLs throughout the 2040 planning horizon. It is worth noting that both lakes are located in an area of Brevard County with minimal UFA withdrawals.

Rivers with MFLs

The MFL status assessment for the St. Johns River downstream of the Lake Washington weir revealed that the MFLs are met under current and 2040 projected water use conditions.

Groundwater Quality (Saltwater Intrusion)

The results from the water quality analysis for Brevard and Indian River counties are summarized below. There were no DOWN wells or monitored public supply or agricultural wells in the limited portion of Okeechobee County that is under the jurisdiction of SJRWMD. Additional information regarding the water quality analysis, including data for specific wells, can be found in Appendix D.

District Observation Well Network Wells

Of the 22 UFA District Observation Well Network (DOWN) wells evaluated in Brevard and Indian River counties, six showed increasing chloride concentrations at rates ≥ 3 mg/L/yr (high rate of change), and one showed increasing chloride concentrations at a rate within the range ≥ 1 and < 3 mg/L/yr (medium rate of change)(Table A3-3). Two of these wells are located on the Atlantic coast, four just west of the Indian River Lagoon, and one in central Indian River County (Figure A3-12). These seven trending wells do not meet the chloride secondary drinking water standard (SDWS) as the UFA is mostly brackish (>250 mg/L chlorides) in the region. Water quality changes in four of the seven DOWN wells with high and medium rates of chloride change may be indicative of lateral saltwater intrusion as they are located near the Atlantic coast or Indian River Lagoon in areas without significant quantities of UFA withdrawals. Water quality changes in the remaining three DOWN wells with high and medium rates of chloride increase may be the result of upconing from the influence of nearby production wells.

Finally, one DOWN well showed a statistically significant decreasing rate of change and has a current chloride concentration that exceeds the SDWS.

Although there was insufficient data to perform a statistical analysis on the SAS DOWN wells in this area, it is worth noting that six of the 18 actively monitored SAS DOWN wells in Brevard and Indian River counties currently exceed the chloride SDWS and one well shows a maximum concentration just below the SDWS.

Table A3-4: Analyzed UFA DOWN Wells with Statistically Significant High, Medium, or Decreasing Trends in Chloride Concentration in Brevard and Indian River Counties

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (6 wells)	6	---
Medium Rate of Change (1 well)	1	---
Decreasing Rate of Change (1 well)	1	NA

Note: mg/L = milligrams per liter

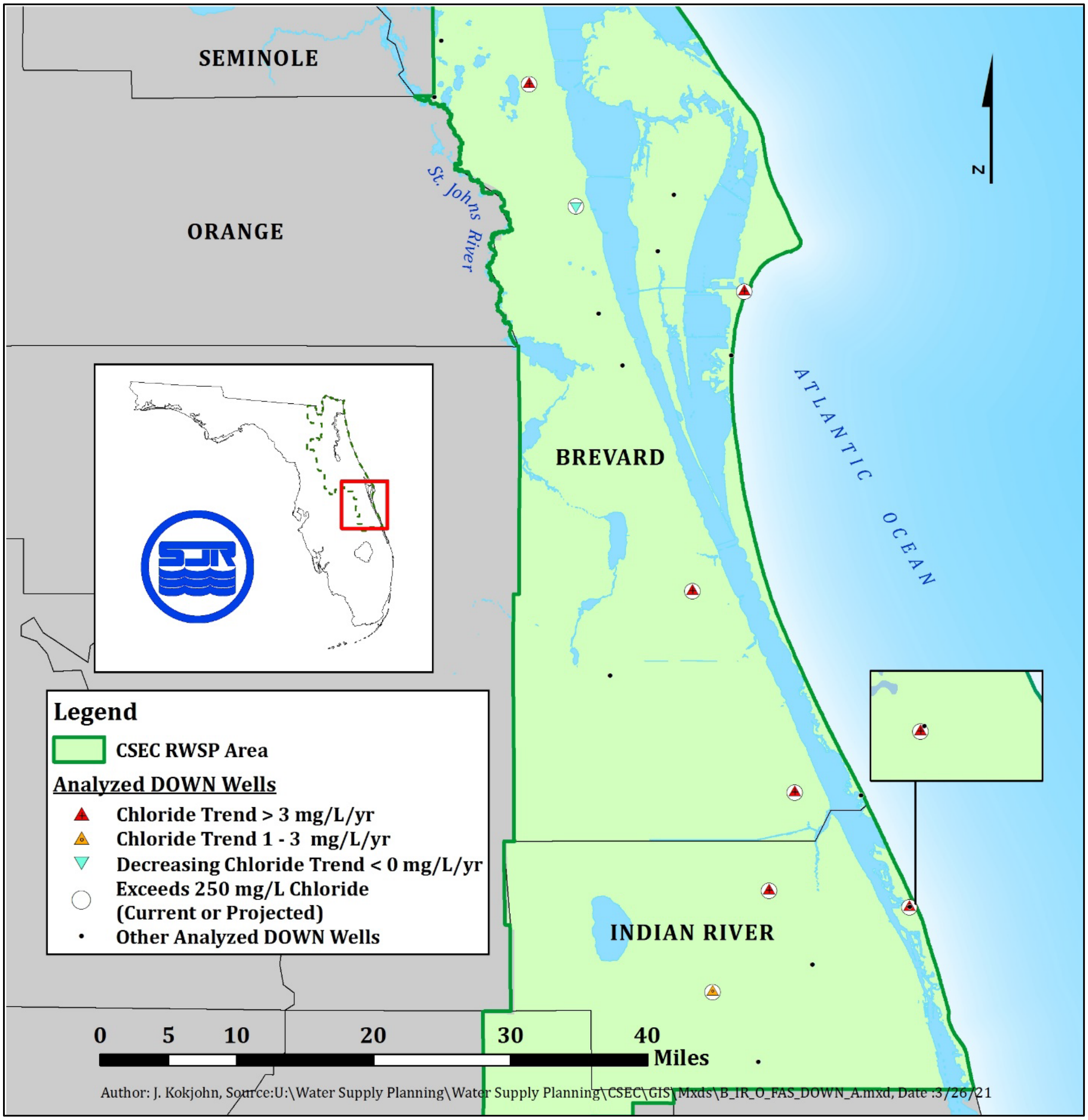


Figure A3-12: Spatial Summary of UFA DOWN Well Chloride Trend Analysis in Brevard and Indian River Counties

Public Supply Wells (Upper Floridan Aquifer)

Of the 35 UFA public supply wells evaluated in Brevard and Indian River counties, 15 showed increasing chloride concentrations at rates ≥ 3 mg/L/yr (high rate of change) (Table A3-5). Each of these 15 wells currently exceeds the chloride SDWS and is generally located along the Indian River Lagoon or Atlantic coastline (Figure A3-13). Most of these wells are located in clusters (i.e., within a wellfield), with some wells showing increasing trends while others in the cluster did not. Therefore, it is possible that water quality changes in these wells are from upconing resulting from individual or cumulative groundwater withdrawals. Public supply utilities that currently utilize reverse osmosis (RO) for treatment of brackish UFA water, generally, would not be impacted by increasing chloride concentrations. However, in this region, agricultural users rely, in part, on the UFA for irrigation. Increasing chloride concentrations could potentially impact agricultural operations in the area if levels exceed the tolerance of historically grown crops.

None of the UFA public supply wells showed increasing chloride concentrations at a rate within the range ≥ 1 and < 3 mg/L/yr (medium rate of change). Finally, of the five public supply wells that showed a statistically significant decreasing rate of change, one currently exceeds the chloride SWDS.

Table A3-5: Analyzed UFA Public Supply Wells with Statistically Significant High, Medium, or Increasing Trends in Chloride Concentration in Brevard and Indian River Counties

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (15 UFA wells)	15	---
Medium Rate of Change (0 UFA wells)	---	---
Decreasing Rate of Change (5 UFA wells)	1	NA

Note: mg/L = milligrams per liter

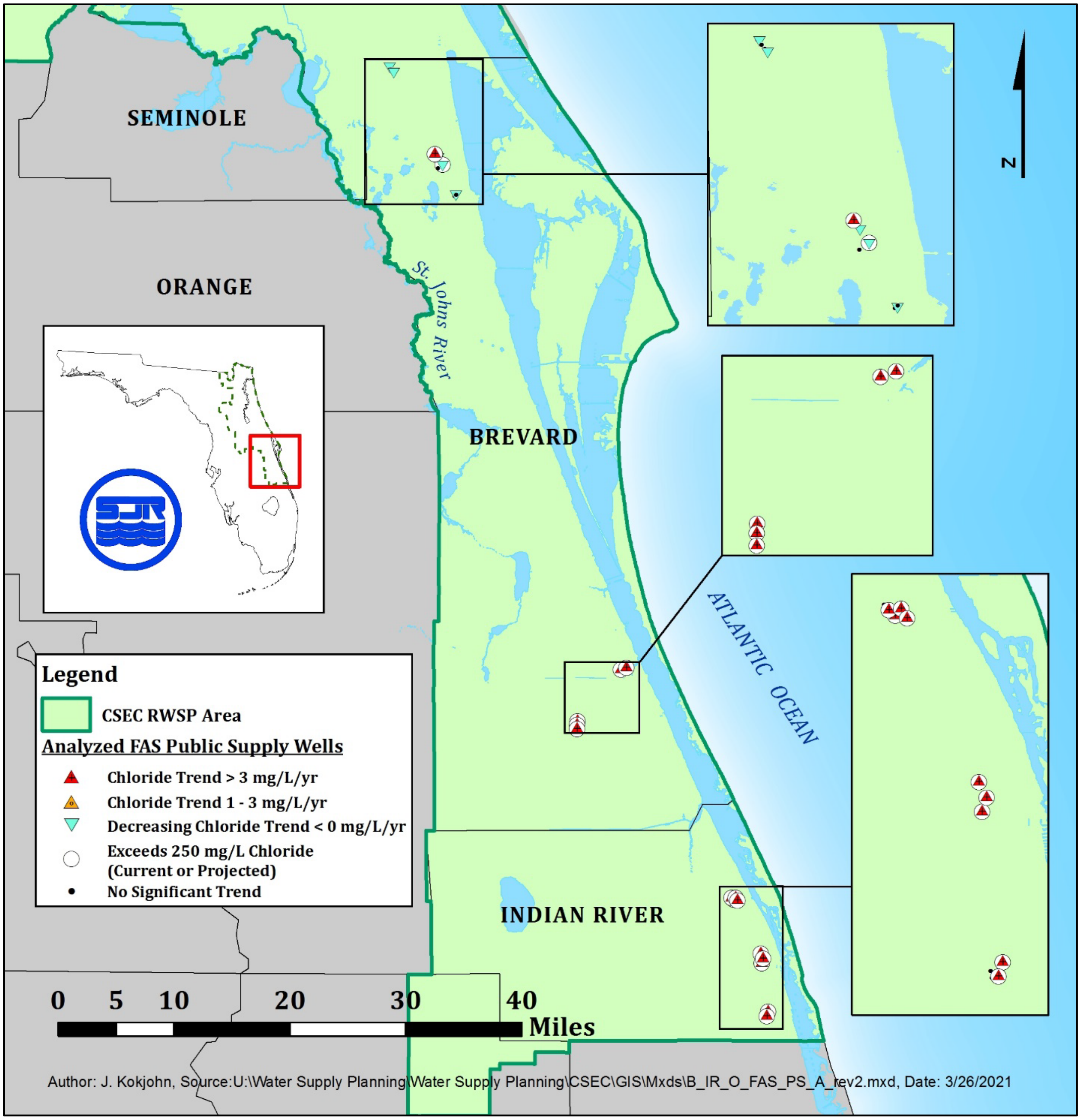


Figure A3-13: Spatial Summary of UFA Public Supply Well Chloride Trend Analysis in Brevard and Indian River Counties

Public Supply Wells (Surficial Aquifer System)

SJRWMD evaluated 101 Surficial Aquifer System (SAS) public supply wells in Brevard and Indian River counties. Twenty-two wells showed an increasing chloride rate change of ≥ 3 mg/L/yr (high rate of change) and nine wells showed an increasing chloride rate within the range ≥ 1 and < 3 mg/L/yr (medium rate of change)(Table A3-6). Of the 31 wells showing a high or medium rate of change, eight currently exceed the chloride SDWS, and 13 additional wells are projected to exceed the SDWS by 2040. All 31 wells are located just west of the Indian River Lagoon with the majority occurring in Brevard County (Figure A3-14).

Water quality degradation in the SAS tends to be an issue for communities near the Atlantic coast. Utilities that have historically relied on the SAS have needed to replace SAS withdrawals with an alternate source, often of a lower quality, to halt impacts. Although surficial aquifer withdrawals have generally decreased over the years, additional water quality impacts are projected based on current withdrawals. It is estimated that approximately 70 percent of the 2040 projected domestic self-supply demand in Brevard and Indian River counties will come from the SAS (CFWI 2020a). Although there have been no known complaints thus far regarding impacted DSS wells, increasing chloride concentrations beyond the SDWS would present a financial hardship to DSS users if additional treatment is needed to render the water potable. Adherence to surficial aquifer wellfield management plans by utilities can help to lessen the chloride trend increases in some cases, as evidenced by the 34 SAS production wells that showed a decreasing trend. However, where there is a significant cluster of wells with current and projected impacts, additional strategies may be required.

Table A3-6: Analyzed SAS Public Supply Wells with Statistically Significant High, Medium, or Decreasing Trends in Chloride Concentration in Brevard and Indian River Counties

Chloride Trend Category	**Number of SAS Wells Currently Exceeding 250 mg/L**	**Number of Additional SAS Wells Projected to Exceed 250 mg/L by 2040**
High Rate of Change (22 SAS wells)	8	12
Medium Rate of Change (9 SAS wells)	0	1
Decreasing Rate of Change (34 SAS wells)	4	NA

Note: mg/L = milligrams per liter

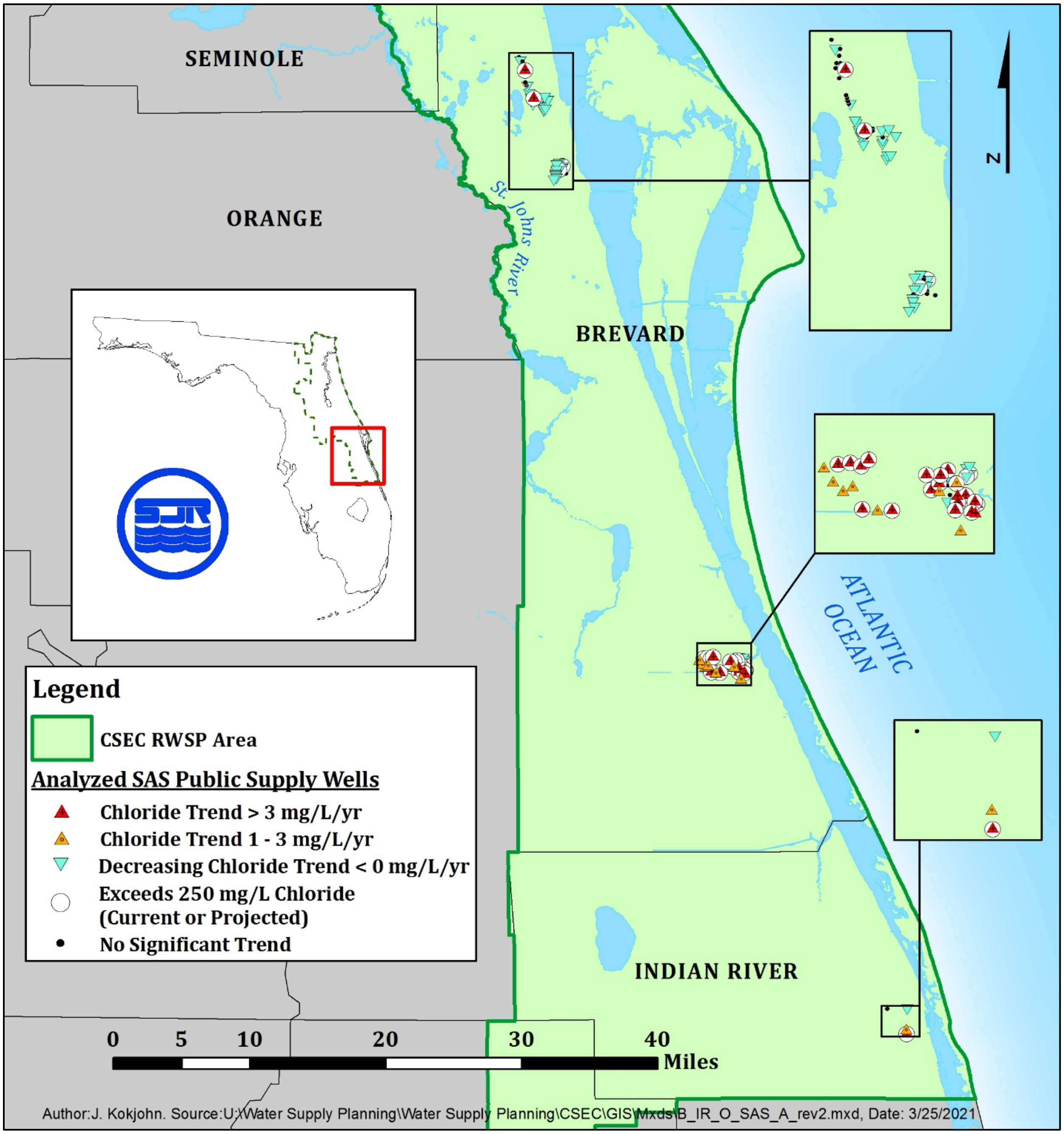


Figure A3-14: Spatial Summary of SAS Public Supply Well Chloride Trend Analysis in Brevard and Indian River Counties

Agricultural Wells

None of the 18 agricultural wells evaluated in Brevard and Indian River counties (all constructed into the UFA) showed a statistically significant increasing trend in chloride concentration (Table A3-7). Water quality data was limited to wells from four farming operations in Brevard County and one in Indian River County. Although the data does not show increasing trends, anecdotal descriptions from the farming community indicate historical increases in chlorides. Two wells associated with a single agricultural operation in central Indian River County showed a decreasing chloride trend (Figure A3-15). Both wells currently exceed the chloride SDWS. It is possible that the decreasing chloride trends are the result of implementation of additional water conservation measures and expansion of alternative water supplies by the permittee. SJRWMD will consider adding additional agricultural wells to the groundwater quality assessment performed for the five-year update of the CSEC RSWP.

Table A3-7: Analyzed UFA Agricultural Wells with Statistically Significant High, Medium, or Decreasing Trends in Chloride Concentration in Brevard and Indian River Counties

Chloride Trend Category	**Number of Wells Currently Exceeding 250 mg/L**	**Number of Additional Wells Projected to Exceed 250 mg/L by 2040**
High Rate of Change (0 wells)	---	---
Medium Rate of Change (0 wells)	---	---
Decreasing Rate of Change (2 wells)	2	NA

Note: mg/L = milligrams per liter

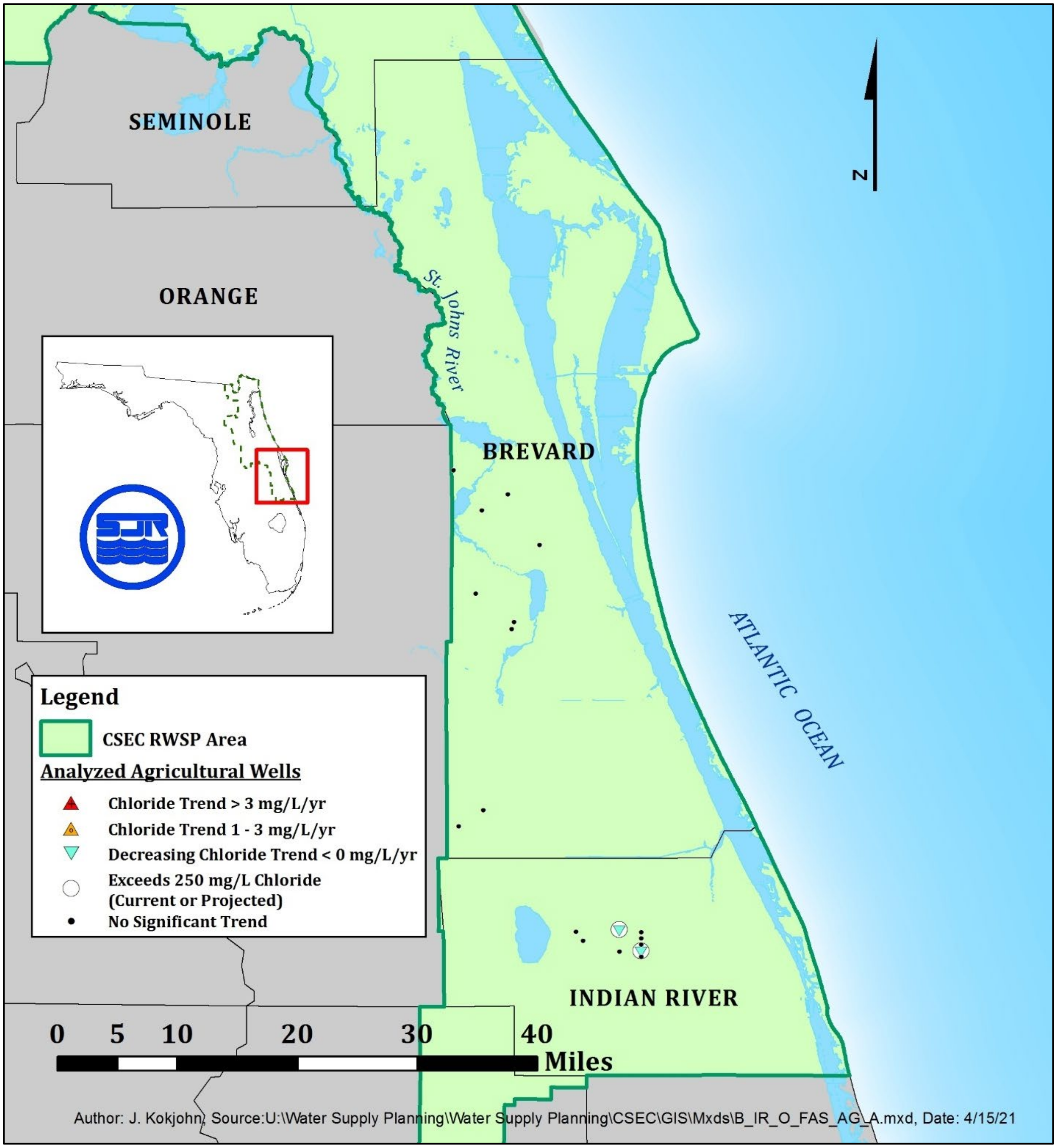


Figure A3-15: Spatial Summary of UFA Agricultural Well Chloride Trend Analysis in Brevard and Indian River Counties

Wetlands

The wetland assessment identified 373 acres that have a moderate or high potential for adverse change based on 2040 conditions within the Brevard, Indian River, and Okeechobee portion of the CSEC RWSP area (Table A3-8; Figure A3-16). The potential for adverse change does not necessarily correspond to realized adverse change due to the uncertainty with the analysis. As a result, field verification and monitoring, typically carried out for the SJRWMD regulatory program, is required when it is determined to be necessary to ensure the prevention of impacts from groundwater pumping. In 2015, the SJRWMD regulatory program implemented an enhanced wetland monitoring protocol that was developed and approved by stakeholders during the CFWI planning process (CFWI 2018). This new protocol results in a more comprehensive and defensible strategy to monitor for and prevent adverse change to wetlands resulting from groundwater withdrawals. The CSEC wetland assessment is not a replacement for the analysis of the specific potential of a proposed consumptive use to individually or cumulatively impact wetland systems, however, the spatial coverage of wetland acreage identified as being at risk for change can be utilized by regulatory staff for use as a screening tool to locate general areas where potential wetland impacts are more likely to occur.

Additional detailed information regarding the wetland assessment methodology is included in Appendix H.

Table A3-8: Wetland Acreage Identified as Having a Moderate or High Potential for Adverse Change to Wetland Function in Brevard, Indian River, and Okeechobee Counties

County	**Potential Wetland Adverse Change at 2040 (acres)**
Brevard	327
Indian River	7
Okeechobee	10
Total	**343** [1]

[1] Total may be slightly different due to rounding of county values.

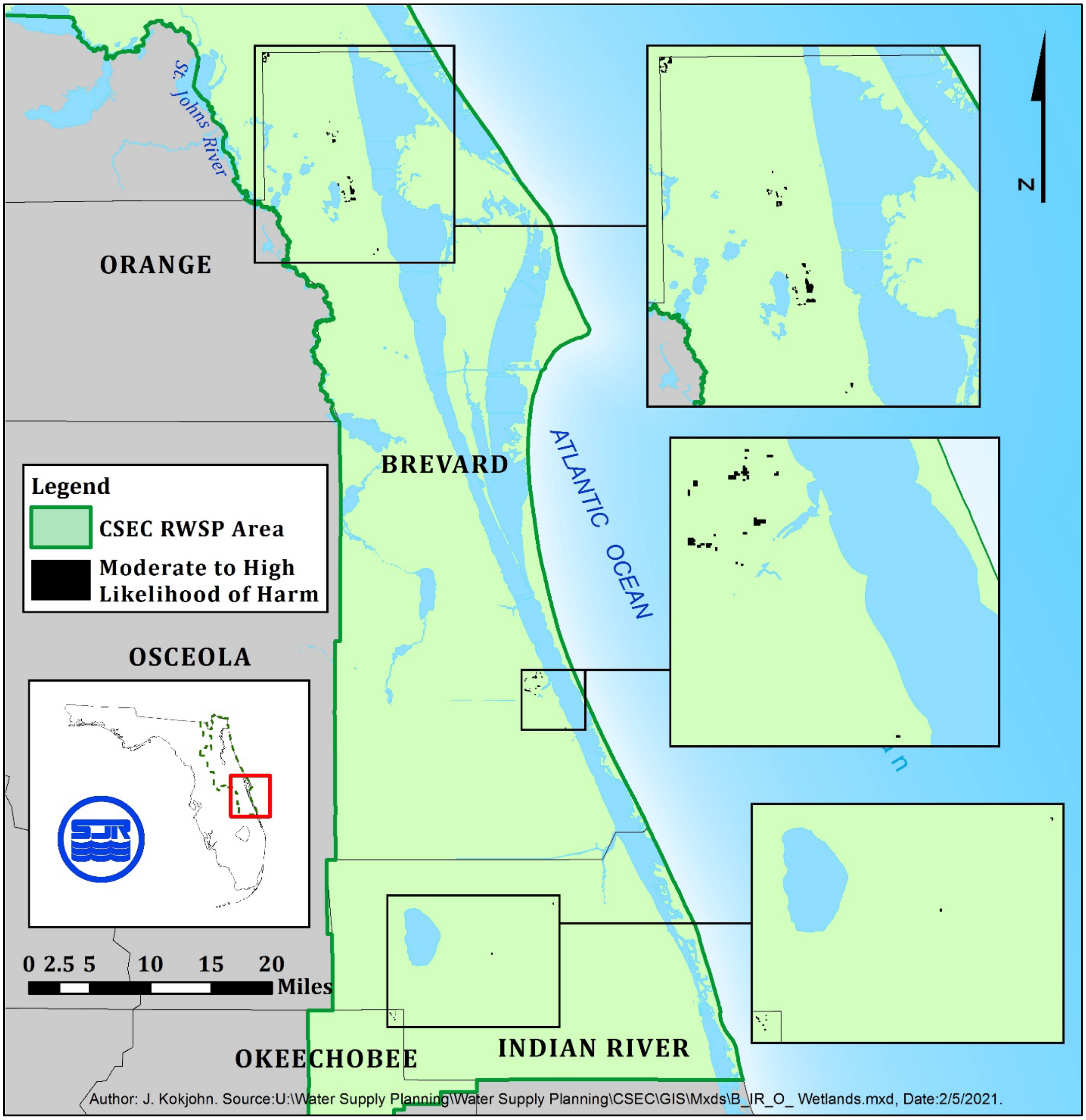


Figure A3-16: Wetlands at Risk of Adverse Change in Brevard, Indian River and Okeechobee Counties Due to 2040 Projected Withdrawals within the ECFTX Domain

Chapter 5: Alternative Water Supply Needs Assessment and Delineation of Water Resource Caution Area for Brevard, Indian River and Okeechobee Counties (Sufficiency Analysis)

Sufficiency Analysis

There are no projected MFL constraints within Brevard, Indian River, and Okeechobee counties. However, results of the water quality assessment demonstrate the potential for water resource impacts associated with 23.5 mgd of future demand at 2040. Since this increase in demand can be met through the implementation of water conservation strategies (low estimate of 13.8 mgd) and the provision of additional available reclaimed water (low estimate of 12.6 mgd), a project modeling scenario was not necessary to determine the sufficiency of projects. Although water quality issues related to saltwater intrusion are typically managed via the SJRWMD regulatory program, it is important to recognize the possibility of potential regional water quality impacts that may influence the future availability of water from traditional sources.

Water Resource Caution Area

SJRWMD evaluated the results of the water resource assessment to determine whether constraints exist to justify the inclusion of Brevard, Indian River, and Okeechobee counties in the CSEC water resource caution area (WRCA). As stated previously there are no MFL concerns associated with 2040 water demand in this area, however, projected water quality impacts may limit future groundwater withdrawals from current sources.

Water Quality

Thirty-two percent of the analyzed DOWN wells and 43 percent of the analyzed UFA public supply wells in Brevard and Indian River counties displayed increasing chloride concentrations at the high or medium rate of change. A spatial evaluation of the trending wells appears to suggest that upconing may be the cause of increasing chlorides in most cases. However, increasing chloride trends in two DOWN wells located on coastal barrier islands may be indicative of lateral saltwater intrusion. Many public supply utilities currently rely on alternative water supplies in this region, mostly brackish UFA and some surface water. Therefore, increased chloride levels should not impact their current treatment processes. However, since water quality data shows increasing chloride concentrations in over one-third of the analyzed UFA DOWN and public supply wells, consideration of potential impacts to other water users is warranted.

Groundwater withdrawals are projected to increase by 18.4 mgd through 2040 in Brevard, Indian River, and Okeechobee counties. Increased UFA groundwater withdrawals may exacerbate saltwater intrusion if not managed properly. Many agricultural operations in this region rely on the UFA to meet a portion of their irrigation needs, and increased chlorides in groundwater could result in farmers having to invest in alternate, less productive crops with a higher chloride tolerance. The agricultural community has expressed concerns regarding anecdotal increases in chloride concentrations within their UFA wells; however, none of the 18 analyzed agricultural wells in Brevard and Indian River counties showed increasing chloride trends. This may be the result of the limited number and spatial coverage of the analyzed wells or it may be related to recent land use changes and implementation of water conservation and water resource development projects.

By 2040, public supply water demand is projected to increase by 29 percent, while agricultural demand is projected to decrease by 11 percent. Conversion of agricultural land to developed parcels is occurring throughout the region and is projected to continue. Increased chlorides are not anticipated to impact the utilities utilizing RO treatment technologies to provide water to new developments, and a reduction in the number of farms may translate to a reduced concern for raw UFA water quality. A recent investigation by SJRWMD regulatory staff has revealed many farms in Indian River County no longer in operation or operating at a reduced capacity, which further supports projections of agricultural decline in the region.

In addition, the SJRWMD abandoned artesian well plugging program has been very successful in Brevard and Indian River counties. Both counties contribute funds on an annual basis to cost share on the proper abandonment (i.e., plugging) of free-flowing wells within their boundaries. During the last three-year contract cycle, 17 wells were plugged in Indian River County having a combined flow of 9 mgd. In Brevard County, 19 wells with flows totaling 1.5 mgd were plugged in the first year of the three-year contract. Continuation of these programs will further reduce unnecessary flow from the UFA and may help to lessen or reverse increasing chloride trends.

Thirty-one percent of public supply SAS production wells showed increasing rates of chloride concentration in the high and medium category with 21 currently exceeding, or projected by 2040 to exceed, the chloride SDWS. Since approximately 70 percent of domestic supply-wells in Brevard and Indian River counties rely on the surficial aquifer, increasing chloride levels may be a potential concern. Chloride levels beyond the SDWS can render DSS wells non-potable forcing homeowners to invest in expensive treatment systems. Through the careful managing of withdrawals, coastal utilities who rely on the surficial aquifer can often avoid water quality degradation. Based on communications with SJRWMD regulatory staff, deviations to established wellfield management plans likely contributed to the increasing chloride trends in many impacted wells. Strict adherence to existing or enhanced wellfield management plans can lessen or reverse increasing chloride trends in some of the wells. However, where the majority of wells within a wellfield show signs of degradation, reducing the strain on the surficial aquifer by decreasing withdrawals may be necessary. In the case of the impacted SAS wellfield in Brevard County, the utility is implementing projects that will almost double their RO treatment capacity within the next 10 years and provide additional reclaimed water for reuse (Appendix J). Project implementation will result in decreased withdrawals from the surficial aquifer and will allow chloride concentrations to potentially stabilize or improve.

> Results of the water quality analysis show that UFA saltwater intrusion in Brevard and Indian River counties may be a result of upconing in response to groundwater withdrawals from a single well and/or combined withdrawals. However, water quality changes in two DOWN UFA wells may be the result of lateral saltwater intrusion. In addition, the water quality analysis demonstrates current and projected impacts to the surficial aquifer indicative of a potentially strained and limited freshwater supply. When viewed together, the conclusion is that groundwater quality may constrain the availability of groundwater sources in Brevard and Indian River counties. The SJRWMD Regulatory Program will continue to evaluate the potential for harmful upconing and lateral intrusion during consumptive use permit (CUP) application review to ensure all permitting criteria are met prior to permit issuance. In addition, SJRWMD will investigate instances of unforeseen harmful water quality impacts potentially resulting from consumptive uses of water, and if verified, will require mitigation by the responsible permittee(s).

Based on the above water quality constraints, the Brevard, Indian River, and Okeechobee portion of the CSEC RWSP area is proposed for inclusion in the CSEC WRCA.

Additional Water Resource Concerns

There are additional water resource concerns in this sub-region that, although are not quantifiable at this time, are worth including in the CSEC RWSP. The South Florida Water Management District (SFWMD) implemented a restricted allocation area (RAA) that includes St. Lucie County, which borders Indian River County to the south (SFWMD 2016). The RAA in St. Lucie County restricts the use of well pumps within the Upper Permeable Zone (UPZ) of the UFA. Agricultural users in this area rely on the UPZ as a backup irrigation source, as surface water within the canals is not sufficient to meet irrigation demand in certain drought scenarios. Since the potentiometric surface of the UPZ is above land surface, these UPZ wells flow without pumps. The RAA helps to prevent a decline in the potentiometric surface that would result in loss of artesian flow for agricultural irrigation. Although SJRWMD has only received one complaint regarding the loss of artesian flow in this region, which has been mitigated by the responsible party, increased water demand resulting from growth has the potential to impact additional wells. The SJRWMD Regulatory program will continue to evaluate the potential for interference to existing legal users during CUP application review to ensure all permitting criteria are met prior to permit issuance. If unforeseen interference does occur subsequent to permit issuance, SJRWMD will require mitigation by the responsible permittee(s).

The South Florida Water Management District has also raised concerns regarding potential impacts to water quality within the UPZ. The current water quality supports the existing crops being propagated; however, declining water quality may necessitate a change to a more salt tolerant crop. Groundwater modeling performed by SFWMD shows areas within Indian River County that have the potential to contribute to cumulative potentiometric surface declines and water quality changes in St. Lucie County (SFWMD 2016). SJRWMD will continue to coordinate with SFWMD regarding use of the UPZ in Indian River and St. Lucie counties.

In addition, this portion of the CSEC RWSP area is bordered by two WRCAs: the CFWI, verified as a WRCA in 2020 (CFWI 2020a); and the Upper East Coast region of the SFWMD, designated a WRCA in 2014 via an amendment to the 2011 Upper East Coast Water Supply Plan update (SFWMD 2014). Furthermore, to the north, Volusia County UFA withdrawals are constrained by MFL water bodies. Groundwater withdrawals from Brevard, Indian River, and Okeechobee counties have the potential to contribute to cumulative water resource impacts in neighboring counties with water resource constraints.

Chapter 6: Project Options for Brevard, Indian River, and Okeechobee Counties

Water Resource Development Project Options

A summary of water resource development project options for Brevard, Indian River, and Okeechobee counties is shown in Table A3-9. Additional project details can be found in Appendix I.

Table A3-9: Summary of Water Resource Development Project Options in Brevard, Indian River, and Okeechobee Counties

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Construction Cost (Million dollars)
Surface Water	2	14.9	$38.7
Groundwater (brackish)	3	22.5	$0.3
Total	**5**	**37.4**	**$39.0**

Note: mgd = million gallons per day

Water Supply Development Project Options

A summary of water supply development options is shown in Table A3-10. Together, these projects provide 29.2 mgd of alternative water supplies in Brevard, Indian River, and Okeechobee counties. Since two projects increase reclaimed water availability due to storage expansion, it is estimated that 21.2 mgd of reclaimed water will be available for additional future projects. Additional project details can be found in Appendix J.

Table A3-10: Summary of Water Supply Development Project Options in Brevard, Indian River, and Okeechobee counties

Type	Number of Projects	Quantity Water Produced (mgd)	Estimated Construction Cost (Million dollars)
Groundwater (brackish)	7	18.2	$107.7
Surface Water	3	3.6	$10.5
Reclaimed Water	6	7.3	$67.1
Total	**16**	**29.2**	**$185.3**

Note: mgd = million gallons per day

Water Conservation Project Options

Estimates for Brevard, Indian River, and Okeechobee counties indicate a potential water conservation of 18.2 mgd (high estimate) by 2040 at a cost of approximately $32.7 million. Sixteen water conservation projects have been completed or are currently underway in Brevard, Indian River, and Okeechobee counties with an estimated water savings of 1.4 mgd of water for $2.8 million (Appendix K). Remaining conservation potential is estimated at 16.8 mgd and can be realized through the implementation of the various types of water conservation projects listed in the CSEC RWSP.

Summary of SJRWMD Project Funding in Brevard, Indian River, and Okeechobee Counties

From fiscal year (FY) 2014 through FY 2020, the SJRWMD cost-share program has awarded Brevard, Indian River, and Okeechobee cooperators approximately $12.9 million in total construction funds, with $3.8 million awarded specifically for water supply and water conservation projects (Appendix L). Once fully implemented, these projects will provide approximately 2.9 mgd of alternative water supplies and 4.1 mgd of water savings.

Chapter 7: Conclusions

The CSEC RWSP was developed consistent with the water supply planning requirements of Chapter 373, F.S. The CSEC RWSP concludes that the current and future water demands of Brevard, Indian River, and Okeechobee counties can be met through the 2040 planning horizon while sustaining the water resources and related natural systems, through water conservation, management measures, and implementation of water resource and water supply development projects identified in Chapter 6.

Total water demands by all water use categories in Brevard, Indian River, and Okeechobee counties are projected to increase from an estimated current use in 2015 of 168.4 mgd to approximately 191.9 mgd in 2040. SJRWMD has determined that current groundwater sources may not be able to supply the projected 23.5 mgd increase in water demand without causing unacceptable impacts to water resources.

Primary solutions identified for meeting the future water demands in Brevard, Indian River, and Okeechobee counties while protecting the environment include enhanced water conservation, wellfield management, and water resource development and alternative water supply projects. With all these options, SJRWMD and local stakeholders have identified up to 105.1 mgd of projects potentially available to offset the projected increase in water demand at 2040 under average (23.5 mgd) and 1-in-10 year drought conditions (75.6 mgd).

References

Central Florida Water Initiative (CFWI). 2015. *Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP): Volume I – Planning Document*. Available from: http://cfwiwater.com/

CFWI. 2018. *Central Florida Water Initiative (CFWI); Minimum Standards for Water Resource Data Collection, Site Establishment, and Field Data Collection Protocols*. Available from: https://cfwiwater.com/pdfs/DMIT-MinStandards-2018.pdf

CFWI. 2020a. *Central Florida Water Initiative; Regional Water Supply Plan 2020, Planning Document*. Available from https://cfwiwater.com/planning.html

CFWI. 2020b. *Model Documentation Report East-Central Florida Transient Expanded (ECFTX) Model*. Prepared by the CFWI Hydrologic Analysis Team. Available from https://cfwiwater.com/pdfs/ECFTX_Model_Final_Report_Feb_2020.pdf

FDACS. 2017. *Florida Statewide Agricultural Irrigation Demand.* Prepared by The Balmoral Group. FDACS, Tallahassee, FL.

SFWMD. 2014. Final Order on the 2014 Amendment to the 2011 Upper East Coast Water Supply Plan Update. Order No.: 2014-022-DAO-WS. SFWMD, West Palm Beach, FL.

SFWMD. 2016. *Upper East Coast Water Supply Plan Update; Planning Document*. SFWMD, West Palm Beach, FL.

APPENDIX B

POPULATION AND WATER DEMAND PROJECTIONS

<u>APPENDIX B</u>

<u>POPULATION AND WATER DEMAND PROJECTIONS</u>

<u>Introduction</u>

This Appendix contains information on the methodology and data utilized in the development of the water demand estimates and projections for the Central Springs/East Coast (CSEC) Regional Water Supply Plan (RWSP) for six water use categories, as well as future reclaimed water supply and estimates of potential conservation. It also describes the methodologies used to determine the spatial distribution of projected groundwater withdrawals used in the groundwater flow model scenarios.

<u>Background and Water Use Categories</u>

The planning horizon for the 2020 CSEC RWSP is 2020 to 2040. Population and water demand estimates and projections are a cornerstone for assessing the water needs and availability in regional water supply planning. The St. Johns River Water Management District (SJRWMD) develops water demand projections to evaluate "existing legal uses, anticipated future needs, and existing and reasonably anticipated sources of water and conservation efforts," as set forth in subparagraph 373.036(2)(b)4a, *Florida Statutes* (F.S.). SJRWMD's goal is to project water demands that are reasonable and based on the best information available.

The base year, 2015 for the CSEC RWSP, is the year that acts as the starting point for water demand projections and is based on the best available data of reported and estimated water use. Water use in the base year is not a projection, but rather actual or estimated use. Future water use is projected throughout the planning horizon and must include water demand projections at five-year intervals, pursuant to subparagraph 62-40.531(1)(a), Florida Administrative Code (F.A.C.). The interval years should end on 5 or 0 (e.g., 2020, 2025, 2030, etc.) as directed by the state formats and guidelines for regional water supply planning.

Water demands for this CSEC RWSP are estimated in five-year increments for the following six water use categories established by the Florida Department of Environmental Protection (FDEP) and the state's five water management districts:

1. Public Supply (PS) — This category includes water provided by any municipality, county, regional water supply authority, special district, public or privately-owned water utility, or multijurisdictional water supply authority for human consumption and other purposes with average annual permitted quantities of 0.1 million gallons per day (mgd) or greater.

2. Domestic Self-supply and Small Public Supply Systems (DSS)

a. The DSS category consists of residential dwellings that are self-supplied water from a dedicated, on-site well and are not connected to a central utility.

b. The DSS category also includes centralized Small Public Supply Systems (SPSS) that provide water for human consumption with average annual permitted quantities of less than 0.1 mgd.

3. Agricultural (AG) — The AG category consists of water use associated with the irrigation of crops and other miscellaneous water uses associated with agricultural production (e.g., aquaculture, livestock).

4. Landscape/Recreational/Aesthetic (LRA) — The LRA category consists of self-supplied water use associated with the irrigation, maintenance, and operation of golf courses, cemeteries, parks, medians, attractions, common areas in residential areas, and other large green areas. This category also includes water use associated with ornamental or decorative puposes, such as fountains and waterfalls.

5. Commercial/Industrial/Institutional (CII) and Mining/Dewatering (MD)

   a. The CII category consists of self-supplied water use associated with the production of goods or provisions of services by CII establishments (e.g., general businesses, office complexes, commercial cooling and heating, bottled water, food and beverage processing, restaurants, gas stations, hotels, car washes, churches, hospitals, and prisons).

   b. The MD category consists of water use associated with mining (extraction and processing of subsurface materials and minerals) and long-term dewatering (removal of water to control surface or groundwater levels during construction or excavation activities).

6. Power Generation (PG) — The PG category consists of self-supplied water use associated with power plant and power generation facilities, including but not limited to, water for steam generation, cooling, and replenishment of cooling reservoirs.

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

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

Methodology

Data and Information Sources

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

1. Finished water supplied by PS and SPSS collected by FDEP through Monthly Operating Reports (MORs).
2. Water use data reported by permittees to SJRWMD through the Consumptive Use Permit (CUP) program.
3. SJRWMD published annual water use inventory data (SJRWMD 2012–2016).
4. Permitted quantities and percentages of water use as reported in CUPs.
5. University of Florida's Bureau of Economic and Business Research (BEBR) publications (BEBR 2016–2017).
6. FDEP Annual Reuse Inventory Report (FDEP 2016).
7. Power Plant 10-Year Site Plans collected by the Public Service Commission (PSC).

PS and DSS Population Estimates and Projections

In developing RWSPs, SJRWMD must consider BEBR medium population projections pursuant to subsection 373.709(2)(a)1a, F.S. The population projections developed by BEBR are commonly used in planning efforts throughout Florida. These projections are made at the county-level only (Rayer and Wang 2017) and require distribution among PS (and SPSS) service areas and DSS parcels.

SJRWMD developed a model that distributes BEBR county-level estimates and projections to the individual parcel level (SJRWMD 2017). Using this model, SJRWMD aggregated the parcel level population to each PS (and SPSS) service area in the CSEC RWSP area. This effort provided historic, future, and build-out permanent resident populations for each PS and SPSS. Because of the service area boundary characteristics, the estimated historic service area population may differ from estimates of utility population served. This difference can occur when a service area includes self-supplied populations that may be currently unserved by the respective utility.

DSS population was the population for all parcels outside of PS and SPSS service areas, aggregated in five-year increments from 2015 to 2040. In some cases, a DSS population within PS and SPSS service areas was identified through previously submitted account level billing data and well completion reports; this population was attributed to the DSS category. The DSS population by county (after adding the total population for each SPSS for each respective county) is shown in a Table B-6.

PS Water Demand

Gross Per Capita Water Use

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

A PS/SPSS specific gross gpcd was applied to each respective PS/SPSS service area projected residential population to calculate future average-year water demands. The source of the data varied (metered data or raw water withdrawals and MOR data or finished water withdrawals), however most of the treatment methods currently used in the CSEC RWSP area have minimal treatment losses and any differences are assumed to be negligible. Water demand projections were based on the 2011–2015 five-year average gross per capita rate (the most recent calculated five-year average at the time the projections were developed), which accounts for annual variations in water use with respect to rainfall and recent implementation of conservation programs. In cases where water use data were not available from the sources identified, SJRWMD estimated values from historical data and trends.

For this CSEC RWSP it is assumed that current levels of water conservation and use of reclaimed water will continue through the 2040 planning horizon; additional conservation and the use of additional reclaimed water will be effective in reducing future water demands.

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

Base year (2015) water use and projected water demand for each individual PS is shown in Table B-5a (and by county in Table B-5) with projections provided in five-year increments. A water demand projection for 2040 during a 1-in-10 year drought is also shown. Water demand for SPSS (individually listed in Table B-6a) was aggregated for each county and was added to the respective county demand for the DSS category (shown in Table B-6).

To calculate the 1-in-10 year water demand projections, the average year water demands were multiplied by 1.06 (corresponding to a 6 percent increase). The 1-in-10 year Drought Subcommittee of the Water Planning Coordination Group (WPCG) concluded that a 6 percent increase in water demand would occur in such an event for the PS water use category (WDPS 1998).

Spatial Groundwater Distribution

For groundwater modeling purposes, the projected groundwater demand and associated location of withdrawals needed to be determined. For example, there are some PS within the CSEC RWSP area that have surface water withdrawals (limited to the City of Melbourne and the Village Center Service Area). For the CUPs with surface water withdrawals, groundwater demand was estimated as the total water demand minus the permitted surface water withdrawal. The projected groundwater demand, specific to each PS and SPSS, was distributed evenly to their respective active or proposed wells/stations contained in their CUP. For those PS systems with multiple wellfields and/or specific wellfield allocations, the associated water demand was divided proportionally amongst the respective wellfields and then further to the wellfields' respective wells/stations.

DSS Water Demand

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

Residential Per Capita Water Use

For DSS, the residential per capita water use (also referred to as household) is defined as the water use for solely residential (indoor and outdoor) purposes. The residential gpcd was estimated from the county level residential population served and residential water use. To achieve this, the total water use for each year (2011–2015) for each PS and SPSS was reduced to reflect only the indoor and outdoor residential portion of the total PS and SPSS water use. This was calculated using data reported directly from PS and SPSS systems, as well as the percent of residential water use identified in a CUP. The resulting residential water use values for each PS and SPSS system were summed to the county level and divided by the total PS service area population (at county level) to obtain the county-level average 2011–2015 residential gpcd. The average 2011–2015 county level residential gpcd was then multiplied by the projected 2020, 2025, 2030, 2035, and 2040 DSS population (by county).

The DSS base year (2015) and projected water demand by county (after adding the total water demand for SPSS) is shown in Table B-6 with projections provided in five-year increments. A water demand projection for a 2040 during a 1-in-10 year drought is also included. Identical to PS, to calculate the 1-in-10 year water demand projections for DSS, the average year water demands were multiplied by 1.06.

Spatial Groundwater Distribution

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

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

Agricultural Water Demand

Section 570.93, F.S., directs the Florida Department of Agriculture and Consumer Services (FDACS) to develop annual statewide agricultural acreage and water demand projections based on the same 20-year planning horizon used in water supply planning. Pursuant to section 373.709(2)(a), F.S., SJRWMD is required to consider agricultural water demand projections produced by FDACS and that any adjustment or deviation from data provided by FDACS must be fully described, and the original data must be presented along with the adjusted data. FDACS publishes 20-year agricultural acreage and associated water demand projections in the annual Florida Statewide Agricultural Irrigation Demand (FSAID) reports, through a contract with The Balmoral Group. The fourth annual report (referred to as FSAID IV), which was published in June 2017 (FDACS 2017), contains estimated and projected agricultural acreage and water demand projections for the State of Florida for five-year increments from 2015 to 2040, as well as a water demand projection for 2040 during a 1-in-10 year drought. Detailed methodology can be found in the FSAID IV Report.

Acreage

The acreage estimates and projections were taken directly from FSAID IV. The estimated and projected irrigated agricultural acreage by county is shown in Table B-7 in five-year increments from 2015 to 2040. Acreage by crop type is included in Table B-7a.

Demand

As stated above, water use estimates and water demand projections were taken directly from the FSAID IV Report. The estimated and projected agricultural water demand by county is shown in Table B-7 in five-year increments from 2015 to 2040. Water demand for 2040 during a 1-in-10 year drought is also included. Water demand by crop type and miscellaneous type uses are included in Tables B-7a and B-7b.

Spatial Groundwater Distribution

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

Landscape/Recreational/Aesthetic Water Demand

Water demand for the LRA category was projected at the county level using a respective historic LRA average gpcd. The county specific LRA average gpcd was calculated from LRA average water use for 2011-2015 and BEBR estimates of county population for 2011–2015 (BEBR 2012-2015, 2017).

The average LRA gpcd was applied to the additional population projected by BEBR (BEBR 2017) for each five-year increment and the associated water demand was added to the 2015 baseline year water use.

The base year (2015) and projected LRA water demand by county is shown in Table B-8 with projections provided in five-year increments. Water demand for 2040 during a 1-in-10 year drought is also included.

The 1-in-10 year Drought Subcommittee of the WPCG, as stated in their final report, determined that values using agricultural (irrigation) models, historic data, and net irrigation ratios are acceptable when calculating the 1-in-10 year water demand projection (WDPS 1998). A factor was developed for each county, using the highest year water use from 2007–2015 and the corresponding percent increase from the 2007–2015 annual average LRA water use. For example, if water use in 2012 was X percent higher than the 2007–2015 annual average, X percent was applied to the 2040 water demand to project a 2040 1-in-10 year water demand.

Spatial Groundwater Distribution

The projected water demand for the LRA category is only estimated at the county level. For groundwater modeling purposes, the groundwater demand and associated location of withdrawals needed to be determined. Several LRA CUPs have surface water withdrawals; future groundwater demand for the respective future years at the county level was calculated using the 2015 percent split between groundwater and surface water (via reported CUP data and the SJRWMD's published report (SJRWMD 2016)).

The county level groundwater demand for future year scenarios was then distributed to the CUP level using a percent share method of permitted allocation. For example, if an LRA CUP's groundwater allocation represented 10 percent of the county's total groundwater allocation in 2015, then the LRA CUP allocation also maintained 10 percent of the county groundwater allocation in 2040. The estimated projected groundwater demand specific to each LRA CUP was then distributed evenly to their respective active or proposed stations. For counties located in more than one water management district (e.g., Marion County), the projected LRA water demand was only applied to the respective LRA CUPs and stations identified within the SJRWMD portion of the county. While future land use and potential new locations of LRA polygons was not taken into consideration, the method applied is generally accepted as a valid method for regional planning purposes.

Commercial/Industrial/Institutional and Mining/Dewatering Water Demand

Water demands for the CII/MD category were projected at the county level using a respective historic CII/MD average gpcd. The county specific CII/MD average gpcd was calculated from CII/MD average water use for 2011–2015. CII/MD historic water use and water demand consists of only consumptive uses; recycled surface water and non-consumptive uses were removed. For this CSEC RWSP, surface water use by mining operations represents 5 percent of surface water withdrawn, to account for the loss of water in mining products and evaporation. The remaining surface water was assumed to be recirculated in the mining process and, therefore, is considered nonconsumptive. For clarification, consumptive use for planning purposes is defined by SJRWMD as any use of water that reduces the supply from which it is withdrawn or diverted.

The CII/MD average gpcd was applied to the additional population projected by BEBR (BEBR 2017) for each five-year increment and the associated water demand added to the 2015 base year water use.

The base year (2015) and projected CII/MD water demand by county is shown in Table B-9 with projections provided in five-year increments.

The 1-in-10 year Drought Subcommittee of the WPCG, as stated in their final report, determined that drought events do not have significant effects on water use in the CII/MD category (WDPS 1998). Water use for the CII category is related primarily to processing and production needs and therefore, the average water demands and 1-in-10 water demands are assumed to be equal. Water use for the MD category is also not expected to increase during drought conditions.

Spatial Groundwater Distribution

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

Power Generation Water Demand

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

The PSC requires that each PG facility produce detailed ten-year site plans for each of its facilities. These plans include planned facilities and generating capacity expansion. The 2016 ten-year site plans for each PG facility within the CSEC RWSP area were downloaded from the PSC website (http://www.psc.state.fl.us) and were used in developing the PG water demand projections.

In order to project future water demand, this CSEC RWSP utilized a methodology that incorporated historic and projected customers, historic and projected megawatts, and the average daily gallon per megawatt use for 2011–2015. Each ten-year site plan contains information regarding historic and projected customers and megawatts, as well as planned capacity expansions or facility closures. The majority of the ten-year site plans extended through year 2024. The average customer growth rate was used to extrapolate projected customers beyond the ten-year site plans through the planning period of 2040. Using the last year data in each ten-year site plan, a megawatt use per customer was calculated and then applied to the future customers to project future megawatts. Future groundwater demand for 2020–2040 was calculated by applying the (2011–2015) average gallons used per historic megawatt to the projected megawatts specific to each PG facility.

The base year (2015) and projected PG water demand by county is shown in Table B-10 with projections provided in five-year increments. The projections for individual PG facilities is included in Table B-10a.

The 1-in-10 year Drought Subcommittee of the WPCG, as stated in their final report, determined that drought events do not have significant effects on water use in the PG category (WDPS 1998). Water use for this category is related primarily to processing and cooling needs and therefore, the average water demands and 1-in-10 water demands are assumed to be equal.

Spatial Groundwater Distribution

Similar to the PS category, future water demand was projected in five-year increments through 2040 for each PG facility in the CSEC RWSP area. However, groundwater and surface water was projected separately for each facility based on the five-year (2011–2015) average gallons used per historic megawatt. The future groundwater demand, specific to each PG facility, was distributed evenly to their respective active or proposed wells/stations in their CUP or FDEP power plant siting act plan.

2040 Reclaimed Water Projections

Projections of future reclaimed water flows were made for domestic wastewater treatment facilities (WWTF) with 2015 permitted wastewater treatment capacities equal to or greater than 0.1 mgd (FDEP 2016).

Existing Flows

The 2015 base year flows were separated by total WWTF flow and beneficial reuse.

For this CSEC RWSP, beneficial reuse was considered to be only those uses in which reclaimed water takes the place of an existing or potential use of higher quality water for which reclaimed water is suitable, such as water used for landscape irrigation. Generally, delivery of reclaimed water to sprayfields, absorption fields, and rapid infiltration basins (RIBs) is not considered beneficial reuse, unless located in recharge areas.

Recognizing the potential for increased beneficial reuse of existing flows, SJRWMD employed two methodologies for estimating a reasonable quantity that could be utilized. The first method used the FDEP statewide reuse utilization goal of 75 percent (FDEP 2003). For the CSEC RWSP, the amount of WWTF flows not being utilized beneficially in 2015 was multiplied by 75 percent, and the result was considered as additional existing reclaimed water that could be used for beneficial reuse.

For the second method, SJRWMD applied the 2015 percent beneficial utilization for each facility to the quantity of 2015 wastewater flows that was not utilized beneficially. The result provided a second estimate of a reasonable quantity of additional existing flows that could be utilized. It is recognized that each WWTF is unique and items such as system upgrades and treatment, additional storage, system expansion, customer availability, etc., have to be taken into consideration.

Future Flows

Using public water service area boundaries and CUPs, the SJRWMD identified areas that have the potential to be connected to central sewer systems as a result of population growth. The 2015–2040 increase in population associated for each WWTF service area identified was obtained using the parcel level projections, as described above. It was assumed that 95 percent of the identified population increase will receive sewer service and thereby return wastewater for treatment to a WWTF (CFWI 2015a). It is acknowledged that the actual percentage of sewered population growth and resulting wastewater flows will vary for individual service providers due to a number of factors.

It was further assumed that the increased sewered population will generate approximately 84 gpcd of wastewater flows to the local WWTF. The 84 gpcd represents an average of 69 gpcd of wastewater generated by residential customers (indoor use) and 15 gpcd of wastewater generated by CII customers (indoor use), based upon the same projected population. The 84 gpcd is based upon empirical sources for residential flows (Vickers 2001, Mayer 1999). The 69 gpcd, for residential indoor wastewater, is also supported by the American Water Works Association (AWWA 1999). Additionally, Chapter 64E-6, F.A.C., "Standards for Onsite Sewage Treatment and Disposal Systems," Rule 64E-6.008 System Size Determinations, Section (1)(B) Table I (effective date 6/25/2009) — System Design, supports designs for wastewater return flows averaging 15 gpcd for employees at a commercial/industrial facility.

For the purposes of the CSEC RWSP, SJRWMD also created a future reclaimed water scenario using the 2015 percent beneficial reuse utilization for existing and future flows; which assumes that no changes to current treatment processes are made (e.g., WWTF upgrade).

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

Reclaimed water systems are unique to each utility and the potential WWTF flow estimated for this CSEC RWSP may not necessarily represent the amount of reclaimed water that could be used in projects. Current treatment processes, WWTF capacities, storage and infrastructure, and inflow and infiltration reduction programs should be considered and could potentially impact the utilization cost of additional or currently available reclaimed water. Likewise, future and existing reclaimed water utilization may be higher than the scenarios presented if the WWTF provided reclaimed water for reuse to more efficient customers. In addition, potential future wastewater flows could be less if additional residential indoor water conservation is achieved. For example, AWWA has identified on their website (www.Drinktap.org) that if residences installed, for every instance, more efficient water fixtures and regularly checked for leaks, daily indoor water use (and associated wastewater flow) could potentially be reduced to 45.2 gpcd (Vickers 2001).

Detailed 2015 flows and 2040 projections for each identified WWTF are included in Tables B-13 and B-14.

Spatial Distribution

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

2040 Estimated Water Conservation Potential

The water conservation potential for the CSEC RWSP area was calculated in an effort to gauge the future impact of water conservation. It is important to note that reductions in water use resulting from current and historical water conservation efforts are reflected in the 2040 water demand projections that were calculated for this CSEC RWSP.

For this CSEC RWSP, SJRWMD created two scenarios of potential water conservation for the PS and DSS categories. Irrigation efficiency estimates for agriculture can be found in the FSAID IV Final Report (FDACS 2017). For the remaining water use categories, SJRWMD employed the methodology developed during the Central Florida Water Initiative RWSP process (CFWI 2015a and CFWI 2015b).

For the first scenario for the PS and DSS categories, as well as all other categories excluding agriculture, the conservation potential was derived from the percent reduction in water use by category associated with the implementation of specific best management practices (BMPs) as calculated within the 2015 CFWI Final RWSP (CFWI 2015a). Estimates of water conservation potential for DSS, CII, LRA, and PG were based on the implementation of relevant public supply BMPs.

For the second public supply and DSS conservation scenario, SJRWMD calculated the average 2011–2015 gross per capita rate for each of the three sub-regions in the CSEC RWSP area. For the utilities whose gross per capita was greater than their sub-region average, the sub-region average gross per capita was multiplied by the utility's 2040 population projections to calculate a revised demand. The corresponding percent reduction in public supply demand by county was then applied to DSS. Estimates of water conservation potential can be found in Tables B-16 and B-17.

Review of Population and Water Demand Projections

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

Summary of Population and Water Demand Projections

The methodologies for calculating population and water demand projections for the six water use categories, as well as future reclaimed water flows are consistent with the specific plans of major water users at the time projections were made. The projections in this CSEC RWSP assume that the current levels of water conservation efforts and the use of reclaimed water will continue through the year 2040 planning horizon. If water conservation efforts and the use of reclaimed water within the CSEC RWSP area are implemented at rates higher than historic rates, then 2040 actual water use will be less than projected under average climatic conditions.

References

AWWA. 1999. *Residential End Users of Water, Report 90781*. AWWA, Denver, CO. Available from: http://www.waterrf.org

BEBR. 2012. *Florida Estimates of Population 2011, April 1, 2011*. BEBR, University of Florida. Gainesville, FL.

BEBR. 2013. *Florida Estimates of Population 2012, April 1, 2012*. BEBR, University of Florida. Gainesville, FL.

BEBR. 2014. *Florida Estimates of Population 2013, April 1, 2013*. BEBR, University of Florida. Gainesville, FL.

BEBR,. 2015. *Florida Estimates of Population 2014, April 1, 2014*. BEBR, University of Florida. Gainesville, FL.

BEBR. 2016. *Projections of Florida Population by County, 2020–2045, with Estimates for 2015*. Volume 49, Bulletin 174. BEBR, University of Florida. Gainesville, FL.

BEBR. 2017. *Projections of Florida Population by County, 2020–2045, with Estimates for 2016*. Volume 50, Bulletin 177. BEBR, University of Florida. Gainesville, FL.

CFWI. 2015a. *Central Florida Water Initiative Regional Water Supply Plan: Volume 1 – Planning Document*. Available from: http://cfwiwater.com.

CFWI. 2015b. *Central Florida Water Initiative Regional Water Supply Plan: Volume 1a – Appendices*. Available from: http://cfwiwater.com.

FDACS. 2017. *Florida Statewide Agricultural Irrigation Demand Estimated Agricultural Water Demand, 2015-2040*. Prepared by The Balmoral Group. FDACS, Tallahassee, FL. Available from: https://www.freshfromflorida.com.

FDEP. 2003. *Water Reuse for Florida: Strategies for Effective Uses of Reclaimed Water.* FDEP, Tallahassee, FL. Available from: http://www.dep.state.fl.us/water/reuse/docs/valued_resource_FinalReport.pdf.

FDEP. 2016. *2015 Reuse Inventory: Florida Department of Environmental Protection Water Reuse Program*. FDEP, Tallahassee, FL. Available from: https://floridadep.gov.

FDOH. 2016. *Florida Water Management Inventory*. Florida Department of Health, Elke Ursin. FDOH, Tallahassee, FL. Available from: http://www.floridahealth.gov.

Mayer, P and W. DeOreo. 1999. *Residential End Uses of Water*. AWWA Research Foundation. Denver, Co.

Rayer, S., and Y. Wang. 2017. *Projections of Florida Population by County, 2020–2045, with Estimates for 2016. Volume 50, Bulletin 177.* BEBR, University of Florida. Gainesville, FL.

SJRWMD. 2012. *2011 Survey of Estimated Annual Water Use for St. Johns River Water Management District*. Technical Publication SJ2012-FS1. SJRWMD, Palatka, FL.

SJRWMD. 2013. *2012 Survey of Estimated Annual Water Use for St. Johns River Water Management District*. Technical Publication SJ2013-FS1. SJRWMD, Palatka, FL.

SJRWMD,. 2014. *2013 Annual Water Use Survey*. Technical Publication SJ2014-FS4. SJRWMD, Palatka, FL.

SJRWMD. 2015. *2014 Annual Water Use Survey*. Technical Publication SJ2015-FS1. SJRWMD, Palatka, FL.

SJRWMD. 2016. *2015 Annual Water Use Survey*. Technical Publication SJ2016-FS1. SJRWMD, Palatka, FL.

SJRWMD. 2017. Technical Memorandum, Generating Utility-Level Projections and Buildout Estimates Using Parcel Data, Yassert Gonzalez. SJRWMD, Palatka, FL.

SJRWMD. 2018. Distributing FSAID VI ILG to GROBINSO.WUP_Stations. St Johns River Water Management District, Yassert Gonzalez. SJRWMD, Palatka, FL.

Switt, R.S. 2011. *EZ Guide Online User's Guide, Conserve Florida Water Clearinghouse*. University of Florida, Gainesville, FL.

WDPS. 1998. *Final Report: 1-in-10-year Drought Requirement in Florida's Water Supply Planning Process*. SJRWMD, Palatka, FL.

Vickers, A. 2001. *Handbook of Water Use and Conservation: Homes, Landscapes, Industries, Businesses, Farms*. WaterPlow Press, Amherst, MA.

Table B-1. Population Estimates for 2015 and Population Projections for 2020-2040, by County, for the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	BEBR County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	SJRWMD Population Percent Change 2015-2040
	2015				2020				2025				2030				2035				2040				
Brevard (Minus Cocoa)	561,714	406,850	365,994	40,856	595,700	463,039	419,811	43,228	625,500	486,862	441,484	45,378	649,200	502,331	455,304	47,027	666,300	520,244	472,027	48,217	681,700	537,618	488,330	49,288	32%
Indian River	143,326	144,353	138,821	5,532	156,600	167,860	161,810	6,050	168,400	178,525	172,020	6,505	178,300	186,770	179,882	6,888	186,900	193,777	186,557	7,220	194,800	200,211	192,686	7,525	39%
Lake (Non-CFWI)	316,569	210,834	162,507	48,327	355,300	232,816	183,308	49,508	391,600	251,082	197,676	53,406	422,800	263,963	208,389	55,574	451,300	280,562	222,831	57,731	478,400	297,252	237,067	60,185	41%
Marion	341,205	216,408	122,605	93,803	367,500	227,836	128,501	99,335	392,800	235,366	131,777	103,589	414,800	241,560	133,888	107,672	434,700	247,879	136,072	111,807	452,000	256,286	139,691	116,595	18%
Okeechobee	40,052	1,442	0	1,442	41,900	1,453	0	1,453	43,100	1,464	0	1,464	44,000	1,476	0	1,476	44,700	1,591	0	1,591	45,300	1,700	0	1,700	18%
Volusia	510,494	527,966	464,017	63,949	540,300	581,407	513,814	67,593	565,300	604,227	533,591	70,636	586,000	626,627	553,472	73,155	604,600	647,389	571,970	75,419	621,000	670,854	593,439	77,415	27%
CSEC Total	**1,913,360**	**1,507,853**	**1,253,944**	**253,909**	**2,057,300**	**1,674,411**	**1,407,244**	**267,167**	**2,186,700**	**1,757,526**	**1,476,548**	**280,978**	**2,295,100**	**1,822,727**	**1,530,935**	**291,792**	**2,388,500**	**1,891,442**	**1,589,457**	**301,985**	**2,473,200**	**1,963,921**	**1,651,213**	**312,708**	**30%**

Notes:
1.) Rounding errors account for nominal discrepancies.
2.) 2020 to 2040 county population projections were obtained from BEBR Population Projections: Volume 50, Bulletin 177, Published April 2017. BEBR county population shown here represents the entire county, not just the portion within the SJRWMD.
3.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
4.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the populations served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply populations estimated by SJRWMD often includes some domestic self-supply population. In certain counties the domestic self-supply population is projected to decrease.
5.) Brevard County total shown here does not include the City of Cocoa, as the City of Cocoa is shown in Region 3.

Table B-1 (2-Part I). Population Estimates for 2015 and Population Projections for 2020-2040, by County, for Volusia Couty in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	SJRWMD Population Percent Change 2015-2040
	2015				2020				2025				2030				2035				2040				
Volusia	510,494	527,966	464,017	63,949	540,300	581,407	513,814	67,593	565,300	604,227	533,591	70,636	586,000	626,627	553,472	73,155	604,600	647,389	571,970	75,419	621,000	670,854	593,439	77,415	27%
Part I Total	**510,494**	**527,966**	**464,017**	**63,949**	**540,300**	**581,407**	**513,814**	**67,593**	**565,300**	**604,227**	**533,591**	**70,636**	**586,000**	**626,627**	**553,472**	**73,155**	**604,600**	**647,389**	**571,970**	**75,419**	**621,000**	**670,854**	**593,439**	**77,415**	**27%**

Notes:
1.) Rounding errors account for nominal discrepancies.
2.) 2020 to 2040 county population projections were obtained from BEBR Population Projections: Volume 50, Bulletin 177, Published April 2017. BEBR county population shown here represents the entire county, not just the portion within the SJRWMD.
3.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
4.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the populations served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply populations estimated by SJRWMD often includes some domestic self-supply population. In certain counties the domestic self-supply population is projected to decrease.

Table B-1 (3-Part II). Population Estimates for 2015 and Population Projections for 2020-2040, by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	SJRWMD Population Percent Change 2015-2040
	2015				2020				2025				2030				2035				2040				
Lake (Non-CFWI)	316,569	210,834	162,507	48,327	355,300	232,816	183,308	49,508	391,600	251,082	197,676	53,406	422,800	263,963	208,389	55,574	451,300	280,562	222,831	57,731	478,400	297,252	237,067	60,185	41%
Marion	341,205	216,408	122,605	93,803	367,500	227,836	128,501	99,335	392,800	235,366	131,777	103,589	414,800	241,560	133,888	107,672	434,700	247,879	136,072	111,807	452,000	256,286	139,691	116,595	18%
Part II Total	**657,774**	**427,242**	**285,112**	**142,130**	**722,800**	**460,652**	**311,809**	**148,843**	**784,400**	**486,448**	**329,453**	**156,995**	**837,600**	**505,523**	**342,277**	**163,246**	**886,000**	**528,441**	**358,903**	**169,538**	**930,400**	**553,538**	**376,758**	**176,780**	**30%**

Notes:
1.) Rounding errors account for nominal discrepancies.
2.) 2020 to 2040 county population projections were obtained from BEBR Population Projections: Volume 50, Bulletin 177, Published April 2017. BEBR county population shown here represents the entire county, not just the portion within the SJRWMD.
3.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
4.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the populations served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply populations estimated by SJRWMD often includes some domestic self-supply population. In certain counties the domestic self-supply population is projected to decrease.

Table B-1 (4-Part III). Population Estimates for 2015 and Population Projections for 2020-2040, by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	County Population	SJRWMD Population	SJRWMD Public Supply Population	SJRWMD Domestic and Small Public Supply Systems Population	SJRWMD Population Percent Change 2015-2040
	2015				2020				2025				2030				2035				2040				
Brevard (Minus Cocoa)	561,714	406,850	365,994	40,856	595,700	463,039	419,811	43,228	625,500	486,862	441,484	45,378	649,200	502,331	455,304	47,027	666,300	520,244	472,027	48,217	681,700	537,618	488,330	49,288	32%
Indian River	143,326	144,353	138,821	5,532	156,600	167,860	161,810	6,050	168,400	178,525	172,020	6,505	178,300	186,770	179,882	6,888	186,900	193,777	186,557	7,220	194,800	200,211	192,686	7,525	39%
Okeechobee	40,052	1,442	0	1,442	41,900	1,453	0	1,453	43,100	1,464	0	1,464	44,000	1,476	0	1,476	44,700	1,591	0	1,591	45,300	1,700	0	1,700	18%
Part III Total	**745,092**	**552,645**	**504,815**	**47,830**	**794,200**	**632,352**	**581,621**	**50,731**	**837,000**	**666,851**	**613,504**	**53,347**	**871,500**	**690,577**	**635,186**	**55,391**	**897,900**	**715,612**	**658,584**	**57,028**	**921,800**	**739,529**	**681,016**	**58,513**	**34%**

Notes:
1.) Rounding errors account for nominal discrepancies.
2.) 2020 to 2040 county population projections were obtained from BEBR Population Projections: Volume 50, Bulletin 177, Published April 2017. BEBR county population shown here represents the entire county, not just the portion within the SJRWMD.
3.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
4.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the populations served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply populations estimated by SJRWMD often includes some domestic self-supply population. In certain counties the domestic self-supply population is projected to decrease.
5.) Brevard County total shown here does not include the City of Cocoa, as the City of Cocoa is shown in Region 3.

Table B-2. Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use, for the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			2015-2040	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		Ground	Surface	Total
Public Supply	132.76	14.89	**147.65**	147.12	17.95	**165.31**	153.94	18.02	**172.52**	159.29	18.06	**178.22**	165.16	18.06	**184.56**	171.30	18.06	**191.02**	29%	184.40	18.06	**202.46**
Domestic Self-supply and Small Public Supply Systems	26.75	0.00	**26.75**	25.88	0.00	**25.88**	27.29	0.00	**27.29**	28.27	0.00	**28.27**	29.20	0.00	**29.20**	30.27	0.00	**30.27**	13%	32.09	0.00	**32.09**
Agricultural Irrigation Self-supply	91.51	30.18	**121.69**	93.18	25.94	**119.12**	93.75	25.71	**119.46**	94.89	25.82	**120.71**	95.71	25.89	**121.60**	96.92	25.99	**122.91**	1%	137.69	38.81	**176.50**
Landscape/Recreational/Aesthetic Self-supply	7.78	33.23	**41.01**	8.74	37.42	**46.16**	9.22	39.39	**48.61**	9.59	40.93	**50.52**	9.99	42.37	**52.36**	10.39	43.80	**54.19**	32%	13.00	55.03	**68.03**
Commercial / Industrial / Institutional Self-supply	12.87	0.93	**13.80**	13.79	1.07	**14.86**	14.33	1.15	**15.48**	14.78	1.19	**15.97**	15.17	1.24	**16.41**	15.56	1.30	**16.86**	22%	15.56	1.30	**16.86**
Thermoelectric Power Generation Self-supply	0.52	1.75	**2.27**	10.06	2.08	**12.14**	10.08	2.18	**12.26**	10.10	2.32	**12.42**	10.12	2.47	**12.59**	10.12	2.50	**12.62**	456%	10.12	2.50	**12.62**
CSEC Total	**272.19**	**80.98**	**353.17**	**298.77**	**84.46**	**383.47**	**308.61**	**86.45**	**395.62**	**316.92**	**88.32**	**406.11**	**325.35**	**90.03**	**416.72**	**334.56**	**91.65**	**427.87**	**21%**	**392.86**	**115.70**	**508.56**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-2 (2-Part I). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			2015-2040	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		Ground	Surface	Total
Public Supply	52.45	0.00	**52.45**	58.52	0.00	**58.52**	60.50	0.00	**60.50**	62.44	0.00	**62.44**	64.47	0.00	**64.47**	66.79	0.00	**66.79**	27%	70.79	0.00	**70.79**
Domestic Self-supply and Small Public Supply Systems	6.81	0.00	**6.81**	5.84	0.00	**5.84**	6.10	0.00	**6.10**	6.31	0.00	**6.31**	6.50	0.00	**6.50**	6.67	0.00	**6.67**	-2%	7.07	0.00	**7.07**
Agricultural Irrigation Self-supply	15.44	2.21	**17.65**	17.64	2.53	**20.17**	17.85	2.55	**20.40**	18.20	2.60	**20.80**	18.53	2.65	**21.18**	18.84	2.70	**21.54**	22%	22.47	3.22	**25.69**
Landscape/Recreational/Aesthetic Self-supply	1.24	4.98	**6.22**	1.40	5.60	**7.00**	1.45	5.80	**7.25**	1.50	6.00	**7.50**	1.55	6.18	**7.73**	1.60	6.39	**7.99**	28%	2.13	8.50	**10.63**
Commercial / Industrial / Institutional Self-supply	3.24	0.00	**3.24**	3.52	0.00	**3.52**	3.61	0.00	**3.61**	3.70	0.00	**3.70**	3.78	0.00	**3.78**	3.87	0.00	**3.87**	19%	3.87	0.00	**3.87**
Thermoelectric Power Generation Self-supply	0.28	1.71	**1.99**	0.28	2.02	**2.30**	0.30	2.12	**2.42**	0.32	2.26	**2.58**	0.34	2.41	**2.75**	0.34	2.44	**2.78**	40%	0.34	2.44	**2.78**
Part I Total	**79.46**	**8.90**	**88.36**	**87.20**	**10.15**	**97.35**	**89.81**	**10.47**	**100.28**	**92.47**	**10.86**	**103.33**	**95.17**	**11.24**	**106.41**	**98.11**	**11.53**	**109.64**	**24%**	**106.67**	**14.16**	**120.83**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-2 (3-Part II). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			2015-2040	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		Ground	Surface	Total
Public Supply	45.67	0.59	**46.26**	49.05	2.13	**51.18**	51.75	2.13	**53.88**	53.77	2.13	**55.90**	56.35	2.13	**58.48**	58.97	2.13	**61.10**	32%	62.62	2.13	**64.75**
Domestic Self-supply and Small Public Supply Systems	16.63	0.00	**16.63**	16.73	0.00	**16.73**	17.70	0.00	**17.70**	18.34	0.00	**18.34**	18.98	0.00	**18.98**	19.79	0.00	**19.79**	19%	20.98	0.00	**20.98**
Agricultural Irrigation Self-supply	17.12	1.60	**18.72**	17.81	1.80	**19.61**	18.88	1.67	**20.55**	20.54	1.74	**22.28**	21.65	1.79	**23.44**	23.42	1.87	**25.29**	35%	32.68	2.60	**35.28**
Landscape/Recreational/Aesthetic Self-supply	3.75	7.04	**10.79**	4.26	7.96	**12.22**	4.54	8.47	**13.01**	4.74	8.84	**13.58**	4.99	9.30	**14.29**	5.25	9.78	**15.03**	39%	6.13	11.40	**17.53**
Commercial / Industrial / Institutional Self-supply	3.33	0.43	**3.76**	3.65	0.48	**4.13**	3.82	0.51	**4.33**	3.95	0.52	**4.47**	4.10	0.54	**4.64**	4.26	0.57	**4.83**	28%	4.26	0.57	**4.83**
Thermoelectric Power Generation Self-supply	0.23	0.00	**0.23**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	39%	0.32	0.00	**0.32**
Part II Total	**86.73**	**9.66**	**96.39**	**91.82**	**12.37**	**104.19**	**97.01**	**12.78**	**109.79**	**101.66**	**13.23**	**114.89**	**106.39**	**13.76**	**120.15**	**112.01**	**14.35**	**126.36**	**31%**	**126.99**	**16.70**	**143.69**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-2 (4-Part III). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			2015-2040	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		Ground	Surface	Total
Public Supply	34.64	14.30	**48.94**	39.55	15.82	**55.61**	41.69	15.89	**58.14**	43.08	15.93	**59.88**	44.34	15.93	**61.61**	45.54	15.93	**63.13**	29%	50.99	15.93	**66.92**
Domestic Self-supply and Small Public Supply Systems	3.31	0.00	**3.31**	3.31	0.00	**3.31**	3.49	0.00	**3.49**	3.62	0.00	**3.62**	3.72	0.00	**3.72**	3.81	0.00	**3.81**	15%	4.04	0.00	**4.04**
Agricultural Irrigation Self-supply	58.95	26.37	**85.32**	57.73	21.61	**79.34**	57.02	21.49	**78.51**	56.15	21.48	**77.63**	55.53	21.45	**76.98**	54.66	21.42	**76.08**	-11%	82.54	32.99	**115.53**
Landscape/Recreational/Aesthetic Self-supply	2.79	21.21	**24.00**	3.08	23.86	**26.94**	3.23	25.12	**28.35**	3.35	26.09	**29.44**	3.45	26.89	**30.34**	3.54	27.63	**31.17**	30%	4.74	35.13	**39.87**
Commercial / Industrial / Institutional Self-supply	6.30	0.50	**6.80**	6.62	0.59	**7.21**	6.90	0.64	**7.54**	7.13	0.67	**7.80**	7.29	0.70	**7.99**	7.43	0.73	**8.16**	20%	7.43	0.73	**8.16**
Thermoelectric Power Generation Self-supply	0.01	0.04	**0.05**	9.46	0.06	**9.52**	9.46	0.06	**9.52**	9.46	0.06	**9.52**	9.46	0.06	**9.52**	9.46	0.06	**9.52**	18940%	9.46	0.06	**9.52**
Part III Total	**106.00**	**62.42**	**168.42**	**119.75**	**61.94**	**181.93**	**121.79**	**63.2**	**185.55**	**122.79**	**64.23**	**187.89**	**123.79**	**65.03**	**190.16**	**124.44**	**65.77**	**191.87**	**14%**	**159.20**	**84.84**	**244.04**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-3. Total Water Use for 2015 and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County for the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Brevard	46.72	20.16	**66.88**	53.34	22.05	**75.63**	55.15	22.37	**78.08**	55.37	22.56	**78.80**	55.80	22.67	**79.81**	56.26	22.77	**80.69**	21%	70.63	26.24	**96.87**
Indian River	56.44	42.14	**98.58**	50.77	39.61	**90.38**	51.79	40.58	**92.37**	52.68	41.42	**94.10**	53.39	42.12	**95.51**	53.95	42.78	**96.73**	-2%	72.06	58.28	**130.34**
Lake (Non-CFWI)	48.00	6.30	**54.30**	51.82	8.94	**60.76**	51.70	9.00	**60.70**	53.58	9.26	**62.84**	55.95	9.62	**65.57**	58.49	9.99	**68.48**	26%	64.85	11.40	**76.25**
Marion	38.73	3.36	**42.09**	40.00	3.43	**43.43**	45.31	3.78	**49.09**	48.08	3.97	**52.05**	50.44	4.14	**54.58**	53.52	4.36	**57.88**	38%	62.14	5.30	**67.44**
Okeechobee	2.84	0.12	**2.96**	15.64	0.28	**15.92**	14.85	0.25	**15.10**	14.74	0.25	**14.99**	14.60	0.24	**14.84**	14.23	0.22	**14.45**	388%	16.51	0.32	**16.83**
Volusia	79.46	8.90	**88.36**	87.20	10.15	**97.35**	89.81	10.47	**100.28**	92.47	10.86	**103.33**	95.17	11.24	**106.41**	98.11	11.53	**109.64**	24%	106.67	14.16	**120.83**
CSEC Total	**272.19**	**80.98**	**353.17**	**298.77**	**84.46**	**383.47**	**308.61**	**86.45**	**395.62**	**316.92**	**88.32**	**406.11**	**325.35**	**90.03**	**416.72**	**334.56**	**91.65**	**427.87**	**21%**	**392.86**	**115.70**	**508.56**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-3 (2-Part I). Total Water Use for 2015 and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Volusia	79.46	8.90	**88.36**	87.20	10.15	**97.35**	89.81	10.47	**100.28**	92.47	10.86	**103.33**	95.17	11.24	**106.41**	98.11	11.53	**109.64**	24%	106.67	14.16	**120.83**
Part I Total	**79.46**	**8.90**	**88.36**	**87.20**	**10.15**	**97.35**	**89.81**	**10.47**	**100.28**	**92.47**	**10.86**	**103.33**	**95.17**	**11.24**	**106.41**	**98.11**	**11.53**	**109.64**	**24%**	**106.67**	**14.16**	**120.83**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-3 (3-Part II). Total Water Use for 2015 and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Lake (Non-CFWI)	48.00	6.30	**54.30**	51.82	8.94	**60.76**	51.70	9.00	**60.70**	53.58	9.26	**62.84**	55.95	9.62	**65.57**	58.49	9.99	**68.48**	26%	64.85	11.40	**76.25**
Marion	38.73	3.36	**42.09**	40.00	3.43	**43.43**	45.31	3.78	**49.09**	48.08	3.97	**52.05**	50.44	4.14	**54.58**	53.52	4.36	**57.88**	38%	62.14	5.30	**67.44**
Part II Total	**86.73**	**9.66**	**96.39**	**91.82**	**12.37**	**104.19**	**97.01**	**12.78**	**109.79**	**101.66**	**13.23**	**114.89**	**106.39**	**13.76**	**120.15**	**112.01**	**14.35**	**126.36**	**31%**	**126.99**	**16.70**	**143.69**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-3 (4-Part III). Total Water Use for 2015 and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County for Brevard, Indian River and Okeechobee Cointies in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Brevard	46.72	20.16	**66.88**	53.34	22.05	**75.63**	55.15	22.37	**78.08**	55.37	22.56	**78.80**	55.80	22.67	**79.81**	56.26	22.77	**80.69**	21%	70.63	26.24	**96.87**
Indian River	56.44	42.14	**98.58**	50.77	39.61	**90.38**	51.79	40.58	**92.37**	52.68	41.42	**94.10**	53.39	42.12	**95.51**	53.95	42.78	**96.73**	-2%	72.06	58.28	**130.34**
Okeechobee	2.84	0.12	**2.96**	15.64	0.28	**15.92**	14.85	0.25	**15.10**	14.74	0.25	**14.99**	14.60	0.24	**14.84**	14.23	0.22	**14.45**	388%	16.51	0.32	**16.83**
Part III Total	**106.00**	**62.42**	**168.42**	**119.75**	**61.94**	**181.93**	**121.79**	**63.20**	**185.55**	**122.79**	**64.23**	**187.89**	**123.79**	**65.03**	**190.16**	**124.44**	**65.77**	**191.87**	**14%**	**159.20**	**84.84**	**244.04**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Brevard County in this region excludes the City of Cocoa.

Table B-4. Public Supply Population Served and Water Use for 2015, Public Supply Population and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

County	Population Served	Population Projections					Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
							2015			2020			2025			2030			2035			2040				2040		
	2015	2020	2025	2030	2035	2040	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Brevard	365,994	419,811	441,484	455,304	472,027	488,330	17.70	14.30	**32.00**	21.45	15.82	**37.51**	22.55	15.89	**39.00**	23.15	15.93	**39.95**	23.80	15.93	**41.07**	24.52	15.93	**42.11**	32%	28.70	15.93	**44.63**
Indian River	138,821	161,810	172,020	179,882	186,557	192,686	16.94	0.00	**16.94**	18.10	0.00	**18.10**	19.14	0.00	**19.14**	19.93	0.00	**19.93**	20.54	0.00	**20.54**	21.02	0.00	**21.02**	24%	22.29	0.00	**22.29**
Lake (Non-CFWI)	162,507	183,308	197,676	208,389	222,831	237,067	27.32	0.59	**27.91**	28.60	2.13	**30.73**	30.79	2.13	**32.92**	32.49	2.13	**34.62**	34.73	2.13	**36.86**	36.97	2.13	**39.10**	40%	39.30	2.13	**41.43**
Marion	122,605	128,501	131,777	133,888	136,072	139,691	18.35	0.00	**18.35**	20.45	0.00	**20.45**	20.96	0.00	**20.96**	21.28	0.00	**21.28**	21.62	0.00	**21.62**	22.00	0.00	**22.00**	20%	23.32	0.00	**23.32**
Okeechobee	0	0	0	0	0	0	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0%	0.00	0.00	**0.00**
Volusia	464,017	513,814	533,591	553,472	571,970	593,439	52.45	0.00	**52.45**	58.52	0.00	**58.52**	60.50	0.00	**60.50**	62.44	0.00	**62.44**	64.47	0.00	**64.47**	66.79	0.00	**66.79**	27%	70.79	0.00	**70.79**
CSEC Total	**1,253,944**	**1,407,244**	**1,476,548**	**1,530,935**	**1,589,457**	**1,651,213**	**132.76**	**14.89**	**147.65**	**147.12**	**17.95**	**165.31**	**153.94**	**18.02**	**172.52**	**159.29**	**18.06**	**178.22**	**165.16**	**18.06**	**184.56**	**171.30**	**18.06**	**191.02**	**29%**	**184.40**	**18.06**	**202.46**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.

Table B-4 (2-Part I). Public Supply Population Served and Water Use for 2015, Public Supply Population and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County for Volusia County in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

County	Population Served	Population Projections					Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
							2015			2020			2025			2030			2035			2040				2040		
	2015	2020	2025	2030	2035	2040	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Volusia	464,017	513,814	533,591	553,472	571,970	593,439	52.45	0.00	**52.45**	58.52	0.00	**58.52**	60.50	0.00	**60.50**	62.44	0.00	**62.44**	64.47	0.00	**64.47**	66.79	0.00	**66.79**	27%	70.79	0.00	**70.79**
Part I Total	**464,017**	**513,814**	**533,591**	**553,472**	**571,970**	**593,439**	**52.45**	**0.00**	**52.45**	**58.52**	**0.00**	**58.52**	**60.50**	**0.00**	**60.50**	**62.44**	**0.00**	**62.44**	**64.47**	**0.00**	**64.47**	**66.79**	**0.00**	**66.79**	**27%**	**70.79**	**0.00**	**70.79**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.

Table B-4 (3-Part II). Public Supply Population Served and Water Use for 2015, Public Supply Population and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County for Marion and North Lake Counties in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

County	Population Served	Population Projections					Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
							2015			2020			2025			2030			2035			2040				2040		
	2015	2020	2025	2030	2035	2040	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Lake (Non-CFWI)	162,507	183,308	197,676	208,389	222,831	237,067	27.32	0.59	**27.91**	28.60	2.13	**30.73**	30.79	2.13	**32.92**	32.49	2.13	**34.62**	34.73	2.13	**36.86**	36.97	2.13	**39.10**	40%	39.30	2.13	**41.43**
Marion	122,605	128,501	131,777	133,888	136,072	139,691	18.35	0.00	**18.35**	20.45	0.00	**20.45**	20.96	0.00	**20.96**	21.28	0.00	**21.28**	21.62	0.00	**21.62**	22.00	0.00	**22.00**	20%	23.32	0.00	**23.32**
Part II Total	**285,112**	**311,809**	**329,453**	**342,277**	**358,903**	**376,758**	**45.67**	**0.59**	**46.26**	**49.05**	**2.13**	**51.18**	**51.75**	**2.13**	**53.88**	**53.77**	**2.13**	**55.90**	**56.35**	**2.13**	**58.48**	**58.97**	**2.13**	**61.10**	**32%**	**62.62**	**2.13**	**64.75**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.

Table B-4 (4-Part III). Public Supply Population Served and Water Use for 2015, Public Supply Population and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

County	Population Served	Population Projections					Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
							2015			2020			2025			2030			2035			2040				2040		
	2015	2020	2025	2030	2035	2040	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Brevard	365,994	419,811	441,484	455,304	472,027	488,330	17.70	14.30	**32.00**	21.45	15.82	**37.51**	22.55	15.89	**39.00**	23.15	15.93	**39.95**	23.80	15.93	**41.07**	24.52	15.93	**42.11**	32%	28.70	15.93	**44.63**
Indian River	138,821	161,810	172,020	179,882	186,557	192,686	16.94	0.00	**16.94**	18.10	0.00	**18.10**	19.14	0.00	**19.14**	19.93	0.00	**19.93**	20.54	0.00	**20.54**	21.02	0.00	**21.02**	24%	22.29	0.00	**22.29**
Okeechobee	0	0	0	0	0	0	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	0.00	0.00	**0.00**
Part III Total	**504,815**	**581,621**	**613,504**	**635,186**	**658,584**	**681,016**	**34.64**	**14.30**	**48.94**	**39.55**	**15.82**	**55.61**	**41.69**	**15.89**	**58.14**	**43.08**	**15.93**	**59.88**	**44.34**	**15.93**	**61.61**	**45.54**	**15.93**	**63.13**	**29%**	**50.99**	**15.93**	**66.92**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
4.) Brevard County in this region excludes the City of Cocoa.

Table B-5. Public Supply Population Served and Water Use for 2015 and Public Supply Population Projections for 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served	Population Projections					Buildout	Percent Change 2015-2040	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	2011-2015 Avg Gross GPCD	Demand Projections (1-in-10)		
											2015			2020			2025			2030			2035			2040					2040		
			2015	2020	2025	2030	2035	2040			GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total			GW	SW	Total
Brevard (Minus Cocoa)	Palm Bay Utilities	202	114,587	128,622	141,956	148,581	159,291	171,342	289,720	50%	6.76	0.00	6.76	7.72	0.00	7.72	8.52	0.00	8.52	8.91	0.00	8.91	9.56	0.00	9.56	10.28	0.00	10.28	52%	60	10.90	0.00	10.90
	Brevard County Utility Services / North Brevard	233	7,893	8,368	9,357	9,619	9,619	9,709	20,333	23%	0.63	0.00	0.63	0.75	0.00	0.75	0.84	0.00	0.84	0.87	0.00	0.87	0.87	0.00	0.87	0.87	0.00	0.87	38%	90	0.92	0.00	0.92
	Brevard County Utility Services / Barefoot Bay	236	9,603	12,519	12,678	13,520	13,520	13,520	17,275	41%	0.44	0.00	0.44	0.59	0.00	0.59	0.60	0.00	0.60	0.64	0.00	0.64	0.64	0.00	0.64	0.64	0.00	0.64	45%	47	0.68	0.00	0.68
	South Brevard County Utilities	1606	1,023	1,623	1,666	1,666	1,666	1,666	2,724	63%	0.12	0.00	0.12	0.18	0.00	0.18	0.18	0.00	0.18	0.18	0.00	0.18	0.18	0.00	0.18	0.18	0.00	0.18	50%	109	0.19	0.00	0.19
	Service Management Systems Inc	1719	699	868	893	893	893	893	1,136	28%	0.05	0.00	0.05	0.45	0.00	0.45	0.46	0.00	0.46	0.46	0.00	0.46	0.46	0.00	0.46	0.46	0.00	0.46	820%	518	0.49	0.00	0.49
	South Shores Utility Assoc	1749	699	1,059	1,071	1,071	1,071	1,071	1,071	53%	0.07	0.00	0.07	0.07	0.00	0.07	0.07	0.00	0.07	0.07	0.00	0.07	0.07	0.00	0.07	0.07	0.00	0.07	0%	66	0.07	0.00	0.07
	City of Titusville	10647, 99052	49,938	59,698	65,983	70,677	76,690	80,852	90,093	62%	2.66	0.00	2.66	4.36	0.00	4.60	4.52	0.00	5.08	4.57	0.00	5.44	4.57	0.00	5.91	4.57	0.00	6.23	134%	77	6.60	0.00	6.60
	City of Melbourne	50301	162,434	187,780	188,513	189,083	189,083	189,083	247,949	16%	5.21	14.30	19.51	5.77	15.82	21.59	5.79	15.89	21.68	5.81	15.93	21.74	5.81	15.93	21.74	5.81	15.93	21.74	11%	115	7.11	15.93	23.04
	City of West Melbourne	89992	19,118	19,274	19,367	20,194	20,194	20,194	32,243	6%	1.76	0.00	1.76	1.56	0.00	1.56	1.57	0.00	1.57	1.64	0.00	1.64	1.64	0.00	1.64	1.64	0.00	1.64	-7%	81	1.74	0.00	1.74
	Brevard (Minus Cocoa) Total		**365,994**	**419,811**	**441,484**	**455,304**	**472,027**	**488,330**	**702,544**	**33%**	**17.70**	**14.30**	**32.00**	**21.45**	**15.82**	**37.51**	**22.55**	**15.89**	**39.00**	**23.15**	**15.93**	**39.95**	**23.80**	**15.93**	**41.07**	**24.52**	**15.93**	**42.11**	**32%**	**N/A**	**28.70**	**15.93**	**44.63**
Indian River	City of Fellsmere	2377	4,465	4,808	4,918	5,004	6,796	11,477	115,301	157%	0.31	0.00	0.31	0.31	0.00	0.31	0.32	0.00	0.32	0.33	0.00	0.33	0.44	0.00	0.44	0.75	0.00	0.75	142%	65	0.80	0.00	0.80
	Indian River County Utilities	10524	97,048	119,321	129,044	136,440	140,938	141,998	169,453	46%	10.49	0.00	10.49	11.69	0.00	11.69	12.65	0.00	12.65	13.37	0.00	13.37	13.81	0.00	13.81	13.92	0.00	13.92	33%	98	14.76	0.00	14.76
	City of Vero Beach	10705	37,308	37,681	38,058	38,438	38,823	39,211	51,244	5%	6.14	0.00	6.14	6.10	0.00	6.10	6.17	0.00	6.17	6.23	0.00	6.23	6.29	0.00	6.29	6.35	0.00	6.35	3%	162	6.73	0.00	6.73
	Indian River Total		**138,821**	**161,810**	**172,020**	**179,882**	**186,557**	**192,686**	**335,998**	**39%**	**16.94**	**0.00**	**16.94**	**18.10**	**0.00**	**18.10**	**19.14**	**0.00**	**19.14**	**19.93**	**0.00**	**19.93**	**20.54**	**0.00**	**20.54**	**21.02**	**0.00**	**21.02**	**24%**	**N/A**	**22.29**	**0.00**	**22.29**
Lake (Non-CFWI)	City of Leesburg	94	34,159	38,692	44,288	49,806	55,877	62,073	86,553	82%	5.93	0.00	5.93	7.04	0.00	7.04	8.06	0.00	8.06	9.06	0.00	9.06	10.17	0.00	10.17	11.30	0.00	11.30	91%	182	11.98	0.00	11.98
	Harbor Hills Utilities Ltd.	279	1,219	1,326	1,326	1,326	1,326	1,326	1,961	9%	0.69	0.00	0.69	0.73	0.00	0.73	0.73	0.00	0.73	0.73	0.00	0.73	0.73	0.00	0.73	0.73	0.00	0.73	6%	552	0.77	0.00	0.77
	Water Oak Utilities	282	1,539	1,548	1,548	1,548	1,548	1,548	2,431	1%	0.28	0.00	0.28	0.29	0.00	0.29	0.29	0.00	0.29	0.29	0.00	0.29	0.29	0.00	0.29	0.29	0.00	0.29	4%	185	0.31	0.00	0.31
	Sunlake Estates	2454	637	637	637	637	637	637	1,173	0%	0.15	0.00	0.15	0.27	0.00	0.27	0.27	0.00	0.27	0.27	0.00	0.27	0.27	0.00	0.27	0.27	0.00	0.27	80%	422	0.29	0.00	0.29
	City of Fruitland Park	2482	5,127	6,173	7,503	7,561	8,201	8,304	13,183	62%	0.56	0.00	0.56	0.77	0.00	0.77	0.94	0.00	0.94	0.95	0.00	0.95	1.03	0.00	1.03	1.04	0.00	1.04	86%	125	1.10	0.00	1.10
	Town of Howey-in-the-Hills	2596	1,167	1,534	1,765	2,039	2,133	2,439	8,085	109%	0.25	0.00	0.25	0.27	0.00	0.27	0.31	0.00	0.31	0.36	0.00	0.36	0.37	0.00	0.37	0.43	0.00	0.43	72%	175	0.46	0.00	0.46
	Aqua Utilities of Florida, Inc. / Carlton Village	2605	577	968	1,015	1,015	1,015	1,015	1,597	76%	0.05	0.00	0.05	0.07	0.00	0.07	0.08	0.00	0.08	0.08	0.00	0.08	0.08	0.00	0.08	0.08	0.00	0.08	60%	76	0.08	0.00	0.08
	Aqua Utilities of Florida, Inc. / Lake Utilities - Valencia Terrace	2632	332	335	335	335	335	335	635	1%	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0%	130	0.04	0.00	0.04
	City of Eustis	2634, 84879, 85195	25,450	30,741	32,891	33,330	35,679	37,829	50,882	49%	3.02	0.00	3.02	4.18	0.00	4.18	4.47	0.00	4.47	4.53	0.00	4.53	4.85	0.00	4.85	5.14	0.00	5.14	70%	136	5.45	0.00	5.45
	Aqua Utilities of Florida, Inc. / Silver Lakes - Western Shores	2644	3,776	4,064	4,064	4,064	4,064	4,066	5,618	8%	0.41	0.00	0.41	0.45	0.00	0.45	0.45	0.00	0.45	0.45	0.00	0.45	0.45	0.00	0.45	0.45	0.00	0.45	10%	110	0.48	0.00	0.48
	City of Umatilla	2646	3,894	4,652	5,620	7,263	7,513	8,234	27,840	111%	0.46	0.00	0.46	0.51	0.00	0.51	0.62	0.00	0.62	0.80	0.00	0.80	0.83	0.00	0.83	0.91	0.00	0.91	98%	110	0.96	0.00	0.96
	Mission Inn Golf & Tennis Resort / Las Colinas	2662	435	453	457	457	457	465	758	7%	0.13	0.00	0.13	0.56	0.00	0.56	0.57	0.00	0.57	0.57	0.00	0.57	0.57	0.00	0.57	0.58	0.00	0.58	346%	1,238	0.61	0.00	0.61
	Aqua Source Inc. / Kings Cove	2701	506	512	514	514	514	514	514	2%	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0%	81	0.04	0.00	0.04
	Utilities, Inc. of Florida	2717	2,488	2,496	2,496	2,496	2,496	2,496	2,496	0%	0.41	0.00	0.41	0.44	0.00	0.44	0.44	0.00	0.44	0.44	0.00	0.44	0.44	0.00	0.44	0.44	0.00	0.44	7%	175	0.47	0.00	0.47
	Plantation at Leesburg	2718	5,061	5,063	5,063	5,063	5,063	5,063	5,299	0%	1.23	0.00	1.23	1.22	0.00	1.22	1.22	0.00	1.22	1.22	0.00	1.22	1.22	0.00	1.22	1.22	0.00	1.22	-1%	241	1.29	0.00	1.29
	City of Tavares	2765	18,326	20,789	22,017	22,653	23,486	25,349	42,176	38%	2.59	0.00	2.59	2.93	0.00	2.93	3.10	0.00	3.10	3.19	0.00	3.19	3.31	0.00	3.31	3.57	0.00	3.57	38%	141	3.78	0.00	3.78
	Lake Griffin Isles	2810	237	238	238	238	238	238	911	0%	0.07	0.00	0.07	0.07	0.00	0.07	0.07	0.00	0.07	0.07	0.00	0.07	0.07	0.00	0.07	0.07	0.00	0.07	0%	313	0.07	0.00	0.07
	Hawthorne at Leesburg	2860	1,787	1,809	1,809	1,809	1,809	1,809	2,003	1%	0.39	0.00	0.39	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00	0.40	0.40	0.00	0.40	3%	219	0.42	0.00	0.42
	Mid Florida Lakes	2888	1,709	1,709	1,709	1,709	1,709	1,709	2,102	0%	0.22	0.00	0.22	0.29	0.00	0.29	0.29	0.00	0.29	0.29	0.00	0.29	0.29	0.00	0.29	0.29	0.00	0.29	32%	172	0.31	0.00	0.31
	Town of Lady Lake	50049	5,688	6,863	8,056	8,304	10,081	10,746	24,980	89%	0.70	0.00	0.70	0.86	0.00	0.86	1.01	0.00	1.01	1.04	0.00	1.04	1.26	0.00	1.26	1.34	0.00	1.34	91%	125	1.42	0.00	1.42
	City of Mount Dora	50147	23,718	27,538	29,033	30,750	33,151	35,371	42,356	49%	4.82	0.00	4.82	2.99	1.00	3.99	3.21	1.00	4.21	3.46	1.00	4.46	3.81	1.00	4.81	4.13	1.00	5.13	6%	145	4.44	1.00	5.44
	Wedgewood Homeowners Assoc. Inc.	50152	721	768	768	768	768	768	1,045	7%	0.12	0.00	0.12	0.14	0.00	0.14	0.14	0.00	0.14	0.14	0.00	0.14	0.14	0.00	0.14	0.14	0.00	0.14	17%	176	0.15	0.00	0.15
	St. Johns River Utility inc.	50178	3,873	4,083	4,198	4,286	4,313	4,315	5,415	11%	0.25	0.00	0.25	0.30	0.00	0.30	0.30	0.00	0.30	0.31	0.00	0.31	0.31	0.00	0.31	0.31	0.00	0.31	24%	72	0.32	0.00	0.32
	Village Center Service Area	50279	17,588	17,588	17,588	17,588	17,588	17,588	17,588	0%	3.79	0.59	4.38	3.27	1.13	4.40	3.27	1.13	4.40	3.27	1.13	4.40	3.27	1.13	4.40	3.27	1.13	4.40	0%	250	3.53	1.13	4.66
	Park at Wolf Branch Oaks	50334	281	285	285	285	285	285	317	1%	0.09	0.00	0.09	0.11	0.00	0.11	0.11	0.00	0.11	0.11	0.00	0.11	0.11	0.00	0.11	0.11	0.00	0.11	22%	380	0.12	0.00	0.12
	Aqua Utilities of Florida, Inc. / Fairways at Mt. Plymouth	62724	583	712	712	712	712	712	811	22%	0.08	0.00	0.08	0.11	0.00	0.11	0.11	0.00	0.11	0.11	0.00	0.11	0.11	0.00	0.11	0.11	0.00	0.11	38%	154	0.12	0.00	0.12
	Leesburg Associates Limited Partnership / Holiday Travel Resort	107839	1,004	1,004	1,013	1,013	1,013	1,013	1,694	1%	0.11	0.00	0.11	0.12	0.00	0.12	0.12	0.00	0.12	0.12	0.00	0.12	0.12	0.00	0.12	0.12	0.00	0.12	9%	115	0.13	0.00	0.13
	Black Bear Reserve / Formerly Upson Downs	128295	625	728	728	820	820	820	1,227	31%	0.44	0.00	0.44	0.13	0.00	0.13	0.13	0.00	0.13	0.15	0.00	0.15	0.15	0.00	0.15	0.15	0.00	0.15	-66%	181	0.16	0.00	0.16
	Lake (Non-CFWI) Total		**162,507**	**183,308**	**197,676**	**208,389**	**222,831**	**237,067**	**351,650**	**46%**	**27.32**	**0.59**	**27.91**	**28.60**	**2.13**	**30.73**	**30.79**	**2.13**	**32.92**	**32.49**	**2.13**	**34.62**	**34.73**	**2.13**	**36.86**	**36.97**	**2.13**	**39.10**	**40%**	**N/A**	**39.30**	**2.13**	**41.43**
Marion	Sunshine Utilities / South Marion Regional System	2993	1,411	1,528	1,614	1,614	1,620	1,620	3,673	15%	0.18	0.00	0.18	0.23	0.00	0.23	0.24	0.00	0.24	0.24	0.00	0.24	0.24	0.00	0.24	0.24	0.00	0.24	33%	148	0.25	0.00	0.25
	Tradewinds Utilities Inc	2995	1,313	1,344	1,362	1,362	1,362	1,362	1,518	4%	0.09	0.00	0.09	0.10	0.00	0.10	0.10	0.00	0.10	0.10	0.00	0.10	0.10	0.00	0.10	0.10	0.00	0.10	11%	76	0.11	0.00	0.11
	Ocala East Villas	3016	575	577	577	577	577	577	577	0%	0.09	0.00	0.09	0.10	0.00	0.10	0.10	0.00	0.10	0.10	0.00	0.10	0.10	0.00	0.10	0.10	0.00	0.10	11%	169	0.11	0.00	0.11
	Sunshine Utilities / Ocala Heights	3019	684	806	826	826	826	826	826	21%	0.07	0.00	0.07	0.07	0.00	0.07	0.08	0.00	0.08	0.08	0.00	0.08	0.08	0.00	0.08	0.08	0.00	0.08	14%	91	0.08	0.00	0.08
	Rolling Greens Communities	3021	2,318	2,323	2,323	2,323	2,323	2,323	2,323	0%	0.33	0.00	0.33	0.35	0.00	0.35	0.35	0.00	0.35	0.35	0.00	0.35	0.35	0.00	0.35	0.35	0.00	0.35	6%	149	0.37	0.00	0.37
	Aqua Utilities of Florida, Inc. / Ocala Oaks	3043	1,478	1,520	1,662	1,662	1,662	1,662	1,902	12%	0.16	0.00	0.16	0.17	0.00	0.17	0.19	0.00	0.19	0.19	0.00	0.19	0.19	0.00	0.19	0.19	0.00	0.19	19%	112	0.20	0.00	0.20
	Oak Bend Mobile Home Park	3061	550	550	550	550	550	550	550	0%	0.01	0.00	0.01	0.05	0.00	0.05	0.05	0.00	0.05	0.05	0.00	0.05	0.05	0.00	0.05	0.05	0.00	0.05	400%	84	0.05	0.00	0.05
	Marion Utilities, Inc. / Fore Acres	3094	1,126	1,169	1,169	1,169	1,169	1,169	1,239	4%	0.10	0.00	0.10	0.11	0.00	0.11	0.11	0.00	0.11	0.11	0.00	0.11	0.11	0.00	0.11	0.11	0.00	0.11	10%	91	0.12	0.00	0.12
	Marion Utilities, Inc. / Green Fields - Indian Pines	3101	1,081	1,091	1,098	1,098	1,098	1,098	1,255	2%	0.12	0.00	0.12	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	8%	118	0.14	0.00	0.14
	Sunshine Utilities / Sun Ray Estates	3130	1,238	1,253	1,253	1,253	1,253	1,253	1,737	1%	0.15	0.00	0.15	0.15	0.00	0.15	0.15	0.00	0.15	0.15	0.00	0.15	0.15	0.00	0.15	0.15	0.00	0.15	0%	123	0.16	0.00	0.16
	City of Belleview	3137	8,433	8,901	9,274	9,589	9,880	10,316	33,715	22%	0.74	0.00	0.74	0.86	0.00	0.86	0.90	0.00	0.90	0.93	0.00	0.93	0.96	0.00	0.96	1.00	0.00	1.00	35%	97	1.06	0.00	1.06
	Marion County Utilities - Consolidated Permit	4578	40,371	42,542	44,247	45,664	46,982	49,947	191,688	24%	5.18	0.00	5.18	6.62	0.00	6.62	6.89	0.00	6.89	7.11	0.00	7.11	7.31	0.00	7.31	7.62	0.00	7.62	47%	153	8.08	0.00	8.08
	Grand Lake RV & Golf Resort	7017	150	157	164	169	174	182	N/A	21%	0.02	0.00	0.02	0.05	0.00	0.05	0.05	0.00	0.05	0.05	0.00	0.05	0.06	0.00	0.06	0.06	0.00	0.06	200%	323	0.06	0.00	0.06
	City of Ocala	50324	61,877	64,740	65,658	66,032	66,596	66,806	76,621	8%	11.11	0.00	11.11	11.46	0.00	11.46	11.62	0.00	11.62	11.69	0.00	11.69	11.79	0.00	11.79	11.82	0.00	11.82	6%	177	12.53	0.00	12.53
	Marion Total		**122,605**	**128,501**	**131,777**	**133,888**	**136,072**	**139,691**	**317,624**	**14%**	**18.35**	**0.00**	**18.35**	**20.45**	**0.00**	**20.45**	**20.96**	**0.00**	**20.96**	**21.28**	**0.00**	**21.28**	**21.62**	**0.00**	**21.62**	**22.00**	**0.00**	**22.00**	**20%**	**N/A**	**23.32**	**0.00**	**23.32**
Volusia	City of Lake Helen	382	2,700	3,751	4,041	4,045	4,095	4,095	4,916	52%	0.24	0.00	0.24	0.32	0.00	0.32	0.35	0.00	0.35	0.35	0.00	0.35	0.35	0.00	0.35	0.35	0.00	0.35	46%	86	0.37	0.00	0.37
	Town of Pierson	4244	2,657	2,877	3,287	3,460	3,615	3,704	10,227	39%	0.16	0.00	0.16	0.14	0.00	0.14	0.15	0.00	0.15	0.16	0.00	0.16	0.17	0.00	0.17	0.17	0.00	0.17	6%	47	0.18	0.00	0.18
	Lake Beresford Water Assoc. Inc.	4391	1,858	2,040	2,113	2,113	2,113	2,113	3,007	14%	0.14	0.00	0.14	0.18	0.00	0.18	0.19	0.00	0.19	0.19	0.00	0.19	0.19	0.00	0.19	0.19	0.00	0.19	36%	89	0.20	0.00	0.20
	City of Holly Hill	8528	13,437	13,932	13,949	13,949	13,949	13,949	33,405	4%	1.12	0.00	1.12	1.18	0.00	1.18	1.19	0.00	1.19	1.19	0.00	1.19	1.19	0.00	1.19	1.19	0.00	1.19	6%	85	1.26	0.00	1.26
	City of Port Orange	8595	66,913	69,539	69,824	69,834	70,231	70,784	77,067	6%	5.95	0.00	5.95	6.26	0.00	6.26	6.28	0.00	6.28	6.29	0.00	6.29	6.32	0.00	6.32	6.37	0.00	6.37	7%	90	6.75	0.00	6.75
	City of Deltona	8658	75,322	79,476	87,833	95,103	95,988	98,739	218,243	31%	7.62	0.00	7.62	8.11	0.00	8.11	8.96	0.00	8.96	9.70	0.00	9.70	9.79	0.00	9.79	10.07	0.00	10.07	32%	102	10.67	0.00	10.67
	Utilities Commission of New Smyrna Beach	8747	55,304	64,417	67,953	71,488	75,024	78,560	78,560	42%	5.06	0.00	5.06	5.54	0.00	5.54	5.84	0.00	5.84	6.15	0.00	6.15	6.45	0.00	6.45	6.76	0.00	6.76	34%	86	7.17	0.00	7.17
	City of Daytona Beach	8834	74,068	85,633	86,045	86,116	89,681	92,559	115,456	25%	12.81	0.00	12.81	14.56	0.00	14.56	14.63	0.00	14.63	14.64	0.00	14.64	15.25	0.00	15.25	15.74	0.00	15.74	23%	170	16.68	0.00	16.68
	City of Ormond Beach	8932	50,665	57,977	58,361	58,378	58,753	61,230	78,425	21%	6.01	0.00	6.01	7.42	0.00	7.42	7.47	0.00	7.47	7.47	0.00	7.47	7.52	0.00	7.52	7.83	0.00	7.83	30%	128	8.30	0.00	8.30
	City of Edgewater	9157	23,575	25,425	27,178	27,697	28,047	28,422	80,652	21%	2.20	0.00	2.20	2.16	0.00	2.16	2.31	0.00	2.31	2.35	0.00	2.35	2.38	0.00	2.38	2.42	0.00	2.42	10%	85	2.57	0.00	2.57
	City of Orange City	9373	10,867	13,072	13,253	13,610	13,925	13,925	13,925	28%	1.74	0.00	1.74	2.18	0.00	2.18	2.21	0.00	2.21	2.27	0.00	2.27	2.32	0.00	2.32	2.32	0.00	2.32	33%	167	2.46	0.00	2.46
	City of DeLand	50116	48,420	53,335	56,017	56,483	58,717	60,657	101,592	25%	5.10	0.00	5.10	5.81	0.00	5.81	6.11	0.00	6.11	6.16	0.00	6.16	6.40	0.00	6.40	6.61	0.00	6.61	30%	109	7.01	0.00	7.01
	Volusia County Utilities	50157, 50659, 86278	38,231	42,340	43,737	45,371	45,632	46,127	72,837	21%	4.30	0.00	4.30	4.66	0.00	4.66	4.81	0.00	4.81	4.99	0.00	4.99	5.02	0.00	5.02	5.07	0.00	5.07	18%	110	5.37	0.00	5.37
	D & E Water Resources , LLC / Heart Island	112981	0	0	0	0	0	0	586	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	128	0.00	0.00	0.00
	Farmton Services LLC	127579	0	0	0	5,825	12,200	18,575	46,020	N/A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53	0.00	0.53	1.12	0.00	1.12	1.70	0.00	1.70	N/A	92	1.80	0.00	1.80
	Volusia Total		**464,017**	**513,814**	**533,591**	**553,472**	**571,970**	**593,439**	**934,918**	**28%**	**52.45**	**0.00**	**52.45**	**58.52**	**0.00**	**58.52**	**60.50**	**0.00**	**60.50**	**62.44**	**0.00**	**62.44**	**64.47**	**0.00**	**64.47**	**66.79**	**0.00**	**66.79**	**27%**	**N/A**	**70.79**	**0.00**	**70.79**
CSEC Total			**1,253,944**	**1,407,244**	**1,476,548**	**1,530,935**	**1,589,457**	**1,651,213**	**2,642,734**	**32%**	**132.76**	**14.89**	**147.65**	**147.12**	**17.95**	**165.31**	**153.94**	**18.02**	**172.52**	**159.29**	**18.06**	**178.22**	**165.16**	**18.06**	**184.56**	**171.30**	**18.06**	**191.02**	**29%**	**N/A**	**184.40**	**18.06**	**202.46**

Notes:
1.) All water use and demand projections are shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 Estimate from BEBR: Volume 49, Bulletin 174, Published January 2016. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011-2015 and is calculated as (Total Water Use / Total Estimated Population). This per capita is commonly referred to as a gross per capita, as it includes all uses within a utility.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) SW quantities were obtained from permits.
8.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the water use demand served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply water demands estimated often include some domestic self-supply demand.

Table B-5 (2-Part I). Public Supply Population Served and Water Use for 2015 and Public Supply Population Projections for 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, for Volusia County in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served	Population Projections					Buildout	Percent Change 2015-2040	Water Use		
											2015		
			2015	2020	2025	2030	2035	2040			GW	SW	Total
Volusia	City of Lake Helen	382	2,700	3,751	4,041	4,045	4,095	4,095	4,916	52%	0.24	0.00	**0.24**
	Town of Pierson	4244	2,657	2,877	3,287	3,460	3,615	3,704	10,227	39%	0.16	0.00	**0.16**
	Lake Beresford Water Assoc. Inc.	4391	1,858	2,040	2,113	2,113	2,113	2,113	3,007	14%	0.14	0.00	**0.14**
	City of Holly Hill	8528	13,437	13,932	13,949	13,949	13,949	13,949	33,405	4%	1.12	0.00	**1.12**
	City of Port Orange	8595	66,913	69,539	69,824	69,834	70,231	70,784	77,067	6%	5.95	0.00	**5.95**
	City of Deltona	8658	75,322	79,476	87,833	95,103	95,988	98,739	218,243	31%	7.62	0.00	**7.62**
	Utilities Commission of New Smyrna Beach	8747	55,304	64,417	67,953	71,488	75,024	78,560	78,560	42%	5.06	0.00	**5.06**
	City of Daytona Beach	8834	74,068	85,633	86,045	86,116	89,681	92,559	115,456	25%	12.81	0.00	**12.81**
	City of Ormond Beach (Also in Flagler)	8932	50,665	57,977	58,361	58,378	58,753	61,230	78,425	21%	6.01	0.00	**6.01**
	City of Edgewater	9157	23,575	25,425	27,178	27,697	28,047	28,422	80,652	21%	2.20	0.00	**2.20**
	City of Orange City	9373	10,867	13,072	13,253	13,610	13,925	13,925	13,925	28%	1.74	0.00	**1.74**
	City of DeLand	50116	48,420	53,335	56,017	56,483	58,717	60,657	101,592	25%	5.10	0.00	**5.10**
	Volusia County Utilities (Also in Flagler)	50157, 50659, 86278	38,231	42,340	43,737	45,371	45,632	46,127	72,837	21%	4.30	0.00	**4.30**
	D & E Water Resources , LLC / Heart Island (Also in Flagler)	112981	0	0	0	0	0	0	586	N/A	0.00	0.00	**0.00**
	Farmton Services LLC	127579	0	0	0	5,825	12,200	18,575	46,020	N/A	0.00	0.00	**0.00**
	Volusia Total		**464,017**	**513,814**	**533,591**	**553,472**	**571,970**	**593,439**	**934,918**	**28%**	**52.45**	**0.00**	**52.45**
Part I Total			**464,017**	**513,814**	**533,591**	**553,472**	**571,970**	**593,439**	**934,918**	**28%**	**52.45**	**0.00**	**52.45**

Utility	Demand Projections (5-in-10)															Percent Change 2015-2040	2011-2015 Avg Gross GPCD	Demand Projections (1-in-10)		
	2020			2025			2030			2035			2040					2040		
	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total			GW	SW	Total
City of Lake Helen	0.32	0.00	**0.32**	0.35	0.00	**0.35**	0.35	0.00	**0.35**	0.35	0.00	**0.35**	0.35	0.00	**0.35**	46%	86	0.37	0.00	**0.37**
Town of Pierson	0.14	0.00	**0.14**	0.15	0.00	**0.15**	0.16	0.00	**0.16**	0.17	0.00	**0.17**	0.17	0.00	**0.17**	6%	47	0.18	0.00	**0.18**
Lake Beresford Water Assoc. Inc.	0.18	0.00	**0.18**	0.19	0.00	**0.19**	0.19	0.00	**0.19**	0.19	0.00	**0.19**	0.19	0.00	**0.19**	36%	89	0.20	0.00	**0.20**
City of Holly Hill	1.18	0.00	**1.18**	1.19	0.00	**1.19**	1.19	0.00	**1.19**	1.19	0.00	**1.19**	1.19	0.00	**1.19**	6%	85	1.26	0.00	**1.26**
City of Port Orange	6.26	0.00	**6.26**	6.28	0.00	**6.28**	6.29	0.00	**6.29**	6.32	0.00	**6.32**	6.37	0.00	**6.37**	7%	90	6.75	0.00	**6.75**
City of Deltona	8.11	0.00	**8.11**	8.96	0.00	**8.96**	9.70	0.00	**9.70**	9.79	0.00	**9.79**	10.07	0.00	**10.07**	32%	102	10.67	0.00	**10.67**
Utilities Commission of New Smyrna Beach	5.54	0.00	**5.54**	5.84	0.00	**5.84**	6.15	0.00	**6.15**	6.45	0.00	**6.45**	6.76	0.00	**6.76**	34%	86	7.17	0.00	**7.17**
City of Daytona Beach	14.56	0.00	**14.56**	14.63	0.00	**14.63**	14.64	0.00	**14.64**	15.25	0.00	**15.25**	15.74	0.00	**15.74**	23%	170	16.68	0.00	**16.68**
City of Ormond Beach (Also in Flagler)	7.42	0.00	**7.42**	7.47	0.00	**7.47**	7.47	0.00	**7.47**	7.52	0.00	**7.52**	7.83	0.00	**7.83**	30%	128	8.30	0.00	**8.30**
City of Edgewater	2.16	0.00	**2.16**	2.31	0.00	**2.31**	2.35	0.00	**2.35**	2.38	0.00	**2.38**	2.42	0.00	**2.42**	10%	85	2.57	0.00	**2.57**
City of Orange City	2.18	0.00	**2.18**	2.21	0.00	**2.21**	2.27	0.00	**2.27**	2.32	0.00	**2.32**	2.32	0.00	**2.32**	33%	167	2.46	0.00	**2.46**
City of DeLand	5.81	0.00	**5.81**	6.11	0.00	**6.11**	6.16	0.00	**6.16**	6.40	0.00	**6.40**	6.61	0.00	**6.61**	30%	109	7.01	0.00	**7.01**
Volusia County Utilities (Also in Flagler)	4.66	0.00	**4.66**	4.81	0.00	**4.81**	4.99	0.00	**4.99**	5.02	0.00	**5.02**	5.07	0.00	**5.07**	18%	110	5.37	0.00	**5.37**
D & E Water Resources , LLC / Heart Island (Also in Flagler)	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	128	0.00	0.00	**0.00**
Farmton Services LLC	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.53	0.00	**0.53**	1.12	0.00	**1.12**	1.70	0.00	**1.70**	N/A	92	1.80	0.00	**1.80**
Volusia Total	**58.52**	**0.00**	**58.52**	**60.50**	**0.00**	**60.50**	**62.44**	**0.00**	**62.44**	**64.47**	**0.00**	**64.47**	**66.79**	**0.00**	**66.79**	**27%**	**N/A**	**70.79**	**0.00**	**70.79**
Part I Total	**58.52**	**0.00**	**58.52**	**60.50**	**0.00**	**60.50**	**62.44**	**0.00**	**62.44**	**64.47**	**0.00**	**64.47**	**66.79**	**0.00**	**66.79**	**27%**	**N/A**	**70.79**	**0.00**	**70.79**

Notes:
1.) All water use and demand projections are shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 Estimate from BEBR: Volume 49, Bulletin 174, Published January 2016. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011-2015 and is calculated as (Total Water Use / Total Estimated Population). This per capita is commonly referred to as a gross per capita, as it includes all uses within a utility.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) SW quantities were obtained from permits.
8.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the water use demand served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply water demands estimated often include some domestic self-supply demand.

Table B-5 (3-Part II). Public Supply Population Served and Water Use for 2015 and Public Supply Population Projections for 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, for Marion and North Lake Counties in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served	Population Projections					Buildout	Percent Change 2015-2040	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	2011-2015 Avg Gross GPCD	Demand Projections (1-in-10)		
											2015			2020			2025			2030			2035			2040					2040		
			2015	2020	2025	2030	2035	2040			GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total			GW	SW	Total
Lake (Non-CFWI)	City of Leesburg	94	34,159	38,692	44,288	49,806	55,877	62,073	86,553	82%	5.93	0.00	**5.93**	7.04	0.00	**7.04**	8.06	0.00	**8.06**	9.06	0.00	**9.06**	10.17	0.00	**10.17**	11.30	0.00	**11.30**	91%	182	11.98	0.00	**11.98**
	Harbor Hills Utilities Ltd.	279	1,219	1,326	1,326	1,326	1,326	1,326	1,961	9%	0.69	0.00	**0.69**	0.73	0.00	**0.73**	0.73	0.00	**0.73**	0.73	0.00	**0.73**	0.73	0.00	**0.73**	0.73	0.00	**0.73**	6%	552	0.77	0.00	**0.77**
	Water Oak Utilities	282	1,539	1,548	1,548	1,548	1,548	1,548	2,431	1%	0.28	0.00	**0.28**	0.29	0.00	**0.29**	0.29	0.00	**0.29**	0.29	0.00	**0.29**	0.29	0.00	**0.29**	0.29	0.00	**0.29**	4%	185	0.31	0.00	**0.31**
	Sunlake Estates	2454	637	637	637	637	637	637	1,173	0%	0.15	0.00	**0.15**	0.27	0.00	**0.27**	0.27	0.00	**0.27**	0.27	0.00	**0.27**	0.27	0.00	**0.27**	0.27	0.00	**0.27**	80%	422	0.29	0.00	**0.29**
	City of Fruitland Park	2482	5,127	6,173	7,503	7,561	8,201	8,304	13,183	62%	0.56	0.00	**0.56**	0.77	0.00	**0.77**	0.94	0.00	**0.94**	0.95	0.00	**0.95**	1.03	0.00	**1.03**	1.04	0.00	**1.04**	86%	125	1.10	0.00	**1.10**
	Town of Howey-in-the-Hills	2596	1,167	1,534	1,765	2,039	2,133	2,439	8,085	109%	0.25	0.00	**0.25**	0.27	0.00	**0.27**	0.31	0.00	**0.31**	0.36	0.00	**0.36**	0.37	0.00	**0.37**	0.43	0.00	**0.43**	72%	175	0.46	0.00	**0.46**
	Aqua Utilities of Florida, Inc. / Carlton Village	2605	577	968	1,015	1,015	1,015	1,015	1,597	76%	0.05	0.00	**0.05**	0.07	0.00	**0.07**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	60%	76	0.08	0.00	**0.08**
	Aqua Utilities of Florida, Inc. / Lake Utilities - Valencia Terrace	2632	332	335	335	335	335	335	635	1%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	130	0.04	0.00	**0.04**
	City of Eustis	2634, 84879, 85195	25,450	30,741	32,891	33,330	35,679	37,829	50,882	49%	3.02	0.00	**3.02**	4.18	0.00	**4.18**	4.47	0.00	**4.47**	4.53	0.00	**4.53**	4.85	0.00	**4.85**	5.14	0.00	**5.14**	70%	136	5.45	0.00	**5.45**
	Aqua Utilities of Florida, Inc. / Silver Lakes - Western Shores	2644	3,776	4,064	4,064	4,064	4,064	4,066	5,618	8%	0.41	0.00	**0.41**	0.45	0.00	**0.45**	0.45	0.00	**0.45**	0.45	0.00	**0.45**	0.45	0.00	**0.45**	0.45	0.00	**0.45**	10%	110	0.48	0.00	**0.48**
	City of Umatilla	2646	3,894	4,652	5,620	7,263	7,513	8,234	27,840	111%	0.46	0.00	**0.46**	0.51	0.00	**0.51**	0.62	0.00	**0.62**	0.80	0.00	**0.80**	0.83	0.00	**0.83**	0.91	0.00	**0.91**	98%	110	0.96	0.00	**0.96**
	Mission Inn Golf & Tennis Resort / Las Colinas	2662	435	453	457	457	457	465	758	7%	0.13	0.00	**0.13**	0.56	0.00	**0.56**	0.57	0.00	**0.57**	0.57	0.00	**0.57**	0.57	0.00	**0.57**	0.58	0.00	**0.58**	346%	1,238	0.61	0.00	**0.61**
	Aqua Source Inc. / Kings Cove	2701	506	512	514	514	514	514	514	2%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	81	0.04	0.00	**0.04**
	Pennbrooke Utilities	2717	2,488	2,496	2,496	2,496	2,496	2,496	2,496	0%	0.41	0.00	**0.41**	0.44	0.00	**0.44**	0.44	0.00	**0.44**	0.44	0.00	**0.44**	0.44	0.00	**0.44**	0.44	0.00	**0.44**	7%	175	0.47	0.00	**0.47**
	Plantation at Leesburg	2718	5,061	5,063	5,063	5,063	5,063	5,063	5,299	0%	1.23	0.00	**1.23**	1.22	0.00	**1.22**	1.22	0.00	**1.22**	1.22	0.00	**1.22**	1.22	0.00	**1.22**	1.22	0.00	**1.22**	-1%	241	1.29	0.00	**1.29**
	City of Tavares	2765	18,326	20,789	22,017	22,653	23,486	25,349	42,176	38%	2.59	0.00	**2.59**	2.93	0.00	**2.93**	3.10	0.00	**3.10**	3.19	0.00	**3.19**	3.31	0.00	**3.31**	3.57	0.00	**3.57**	38%	141	3.78	0.00	**3.78**
	Lake Griffin Isles	2810	237	238	238	238	238	238	911	0%	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0%	313	0.07	0.00	**0.07**
	Hawthorne at Leesburg	2860	1,787	1,809	1,809	1,809	1,809	1,809	2,003	1%	0.39	0.00	**0.39**	0.40	0.00	**0.40**	0.40	0.00	**0.40**	0.40	0.00	**0.40**	0.40	0.00	**0.40**	0.40	0.00	**0.40**	3%	219	0.42	0.00	**0.42**
	Mid Florida Lakes	2888	1,709	1,709	1,709	1,709	1,709	1,709	2,102	0%	0.22	0.00	**0.22**	0.29	0.00	**0.29**	0.29	0.00	**0.29**	0.29	0.00	**0.29**	0.29	0.00	**0.29**	0.29	0.00	**0.29**	32%	172	0.31	0.00	**0.31**
	Town of Lady Lake	50049	5,688	6,863	8,056	8,304	10,081	10,746	24,980	89%	0.70	0.00	**0.70**	0.86	0.00	**0.86**	1.01	0.00	**1.01**	1.04	0.00	**1.04**	1.26	0.00	**1.26**	1.34	0.00	**1.34**	91%	125	1.42	0.00	**1.42**
	City of Mount Dora	50147	23,718	27,538	29,033	30,750	33,151	35,371	42,356	49%	4.82	0.00	**4.82**	2.99	1.00	**3.99**	3.21	1.00	**4.21**	3.46	1.00	**4.46**	3.81	1.00	**4.81**	4.13	1.00	**5.13**	6%	145	4.44	1.00	**5.44**
	Wedgewood Homeowners Assoc. Inc.	50152	721	768	768	768	768	768	1,045	7%	0.12	0.00	**0.12**	0.14	0.00	**0.14**	0.14	0.00	**0.14**	0.14	0.00	**0.14**	0.14	0.00	**0.14**	0.14	0.00	**0.14**	17%	176	0.15	0.00	**0.15**
	St. Johns River Utility inc.	50178	3,873	4,083	4,198	4,286	4,313	4,315	5,415	11%	0.25	0.00	**0.25**	0.30	0.00	**0.30**	0.30	0.00	**0.30**	0.31	0.00	**0.31**	0.31	0.00	**0.31**	0.31	0.00	**0.31**	24%	72	0.32	0.00	**0.32**
	Village Center Service Area	50279	17,588	17,588	17,588	17,588	17,588	17,588	17,588	0%	3.79	0.59	**4.38**	3.27	1.13	**4.40**	3.27	1.13	**4.40**	3.27	1.13	**4.40**	3.27	1.13	**4.40**	3.27	1.13	**4.40**	0%	250	3.53	1.13	**4.66**
	Park at Wolf Branch Oaks	50334	281	285	285	285	285	285	317	1%	0.09	0.00	**0.09**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	22%	380	0.12	0.00	**0.12**
	Aqua Utilities of Florida, Inc. / Fairways at Mt. Plymouth	62724	583	712	712	712	712	712	811	22%	0.08	0.00	**0.08**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	38%	154	0.12	0.00	**0.12**
	Leesburg Associates Limited Partnership / Holiday Travel Resort	107839	1,004	1,004	1,013	1,013	1,013	1,013	1,694	1%	0.11	0.00	**0.11**	0.12	0.00	**0.12**	0.12	0.00	**0.12**	0.12	0.00	**0.12**	0.12	0.00	**0.12**	0.12	0.00	**0.12**	9%	115	0.13	0.00	**0.13**
	Black Bear Reserve / Formerly Upson Downs	128295	625	728	728	820	820	820	1,227	31%	0.44	0.00	**0.44**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.15	0.00	**0.15**	0.15	0.00	**0.15**	0.15	0.00	**0.15**	-66%	181	0.16	0.00	**0.16**
	Lake (Non-CFWI) Total		**162,507**	**183,308**	**197,676**	**208,389**	**222,831**	**237,067**	**351,650**	**46%**	**27.32**	**0.59**	**27.91**	**28.60**	**2.13**	**30.73**	**30.79**	**2.13**	**32.92**	**32.49**	**2.13**	**34.62**	**34.73**	**2.13**	**36.86**	**36.97**	**2.13**	**39.10**	**40%**	**N/A**	**39.30**	**2.13**	**41.43**
Marion	Sunshine Utilities / South Marion Regional System	2993	1,411	1,528	1,614	1,614	1,620	1,620	3,673	15%	0.18	0.00	**0.18**	0.23	0.00	**0.23**	0.24	0.00	**0.24**	0.24	0.00	**0.24**	0.24	0.00	**0.24**	0.24	0.00	**0.24**	33%	148	0.25	0.00	**0.25**
	Tradewinds Utilities Inc	2995	1,313	1,344	1,362	1,362	1,362	1,362	1,518	4%	0.09	0.00	**0.09**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	11%	76	0.11	0.00	**0.11**
	Ocala East Villas	3016	575	577	577	577	577	577	577	0%	0.09	0.00	**0.09**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	11%	169	0.11	0.00	**0.11**
	Sunshine Utilities / Ocala Heights	3019	684	806	826	826	826	826	826	21%	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	14%	91	0.08	0.00	**0.08**
	Rolling Greens Communities	3021	2,318	2,323	2,323	2,323	2,323	2,323	2,323	0%	0.33	0.00	**0.33**	0.35	0.00	**0.35**	0.35	0.00	**0.35**	0.35	0.00	**0.35**	0.35	0.00	**0.35**	0.35	0.00	**0.35**	6%	149	0.37	0.00	**0.37**
	Aqua Utilities of Florida, Inc. / Ocala Oaks	3043	1,478	1,520	1,662	1,662	1,662	1,662	1,902	12%	0.16	0.00	**0.16**	0.17	0.00	**0.17**	0.19	0.00	**0.19**	0.19	0.00	**0.19**	0.19	0.00	**0.19**	0.19	0.00	**0.19**	19%	112	0.20	0.00	**0.20**
	Oak Bend Mobile Home Park	3061	550	550	550	550	550	550	550	0%	0.01	0.00	**0.01**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	400%	84	0.05	0.00	**0.05**
	Marion Utilities, Inc. / Fore Acres	3094	1,126	1,169	1,169	1,169	1,169	1,169	1,239	4%	0.10	0.00	**0.10**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	10%	91	0.12	0.00	**0.12**
	Marion Utilities, Inc. / Green Fields - Indian Pines	3101	1,081	1,091	1,098	1,098	1,098	1,098	1,255	2%	0.12	0.00	**0.12**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	8%	118	0.14	0.00	**0.14**
	Sunshine Utilities / Sun Ray Estates	3130	1,238	1,253	1,253	1,253	1,253	1,253	1,737	1%	0.15	0.00	**0.15**	0.15	0.00	**0.15**	0.15	0.00	**0.15**	0.15	0.00	**0.15**	0.15	0.00	**0.15**	0.15	0.00	**0.15**	0%	123	0.16	0.00	**0.16**
	City of Belleview	3137	8,433	8,901	9,274	9,589	9,880	10,316	33,715	22%	0.74	0.00	**0.74**	0.86	0.00	**0.86**	0.90	0.00	**0.90**	0.93	0.00	**0.93**	0.96	0.00	**0.96**	1.00	0.00	**1.00**	35%	97	1.06	0.00	**1.06**
	Marion County Utilities - Consolidated Permit	4578	40,371	42,542	44,247	45,664	46,982	49,947	191,688	24%	5.18	0.00	**5.18**	6.62	0.00	**6.62**	6.89	0.00	**6.89**	7.11	0.00	**7.11**	7.31	0.00	**7.31**	7.62	0.00	**7.62**	47%	153	8.08	0.00	**8.08**
	Grand Lake RV & Golf Resort	N/A	150	157	164	169	174	182	N/A	21%	0.02	0.00	**0.02**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	200%	323	0.06	0.00	**0.06**
	City of Ocala	50324	61,877	64,740	65,658	66,032	66,596	66,806	76,621	8%	11.11	0.00	**11.11**	11.46	0.00	**11.46**	11.62	0.00	**11.62**	11.69	0.00	**11.69**	11.79	0.00	**11.79**	11.82	0.00	**11.82**	6%	177	12.53	0.00	**12.53**
	Marion Total		**122,605**	**128,501**	**131,777**	**133,888**	**136,072**	**139,691**	**317,624**	**14%**	**18.35**	**0.00**	**18.35**	**20.45**	**0.00**	**20.45**	**20.96**	**0.00**	**20.96**	**21.28**	**0.00**	**21.28**	**21.62**	**0.00**	**21.62**	**22.00**	**0.00**	**22.00**	**20%**	**N/A**	**23.32**	**0.00**	**23.32**
Part II Total			**285,112**	**311,809**	**329,453**	**342,277**	**358,903**	**376,758**	**669,274**	**32%**	**45.67**	**0.59**	**46.26**	**49.05**	**2.13**	**51.18**	**51.75**	**2.13**	**53.88**	**53.77**	**2.13**	**55.90**	**56.35**	**2.13**	**58.48**	**58.97**	**2.13**	**61.10**	**60%**	**N/A**	**62.62**	**2.13**	**64.75**

Notes:
1.) All water use and demand projections are shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 Estimate from BEBR: Volume 49, Bulletin 174, Published January 2016. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011-2015 and is calculated as (Total Water Use / Total Estimated Population). This per capita is commonly referred to as a gross per capita, as it includes all uses within a utility.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) SW quantities were obtained from permits.
8.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the water use demand served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply water demands estimated often include some domestic self-supply demand.

Table B-5 (4-Part III). Public Supply Population Served and Water Use for 2015 and Public Supply Population Projections for 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served	Population Projections					Buildout	Percent Change 2015-2040	Water Use		
											2015		
			2015	2020	2025	2030	2035	2040			GW	SW	Total
Brevard (Minus Cocoa)	Palm Bay Utilities	202	114,587	128,622	141,956	148,581	159,291	171,342	289,720	50%	6.76	0.00	**6.76**
	Brevard County Utility Services / North Brevard	233	7,893	8,368	9,357	9,619	9,619	9,709	20,333	23%	0.63	0.00	**0.63**
	Brevard County Utility Services / Barefoot Bay	236	9,603	12,519	12,678	13,520	13,520	13,520	17,275	41%	0.44	0.00	**0.44**
	South Brevard County Utilities	1606	1,023	1,623	1,666	1,666	1,666	1,666	2,724	63%	0.12	0.00	**0.12**
	Service Management Systems Inc	1719	699	868	893	893	893	893	1,136	28%	0.05	0.00	**0.05**
	South Shores Utility Assoc	1749	699	1,059	1,071	1,071	1,071	1,071	1,071	53%	0.07	0.00	**0.07**
	City of Titusville	10647, 99052	49,938	59,698	65,983	70,677	76,690	80,852	90,093	62%	2.66	0.00	**2.66**
	City of Melbourne	50301	162,434	187,780	188,513	189,083	189,083	189,083	247,949	16%	5.21	14.30	**19.51**
	City of West Melbourne	89992	19,118	19,274	19,367	20,194	20,194	20,194	32,243	6%	1.76	0.00	**1.76**
	Brevard (Minus Cocoa) Total		**365,994**	**419,811**	**441,484**	**455,304**	**472,027**	**488,330**	**702,544**	**33%**	**17.70**	**14.30**	**32.00**
Indian River	City of Fellsmere	2377	4,465	4,808	4,918	5,004	6,796	11,477	115,301	157%	0.31	0.00	**0.31**
	Indian River County Utilities	10524	97,048	119,321	129,044	136,440	140,938	141,998	169,453	46%	10.49	0.00	**10.49**
	City of Vero Beach	10705	37,308	37,681	38,058	38,438	38,823	39,211	51,244	5%	6.14	0.00	**6.14**
	Indian River Total		**138,821**	**161,810**	**172,020**	**179,882**	**186,557**	**192,686**	**335,998**	**39%**	**16.94**	**0.00**	**16.94**
Part III Total			**504,815**	**581,621**	**613,504**	**635,186**	**658,584**	**681,016**	**1,038,542**	**35%**	**34.64**	**14.30**	**48.94**

Utility	Demand Projections (5-in-10)								
	2020			2025			2030		
	GW	SW	Total	GW	SW	Total	GW	SW	Total
Palm Bay Utilities	7.72	0.00	**7.72**	8.52	0.00	**8.52**	8.91	0.00	**8.91**
Brevard County Utility Services / North Brevard	0.75	0.00	**0.75**	0.84	0.00	**0.84**	0.87	0.00	**0.87**
Brevard County Utility Services / Barefoot Bay	0.59	0.00	**0.59**	0.60	0.00	**0.60**	0.64	0.00	**0.64**
South Brevard County Utilities	0.18	0.00	**0.18**	0.18	0.00	**0.18**	0.18	0.00	**0.18**
Service Management Systems Inc	0.45	0.00	**0.45**	0.46	0.00	**0.46**	0.46	0.00	**0.46**
South Shores Utility Assoc	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**
City of Titusville	4.36	0.00	**4.60**	4.52	0.00	**5.08**	4.57	0.00	**5.44**
City of Melbourne	5.77	15.82	**21.59**	5.79	15.89	**21.68**	5.81	15.93	**21.74**
City of West Melbourne	1.56	0.00	**1.56**	1.57	0.00	**1.57**	1.64	0.00	**1.64**
Brevard (Minus Cocoa) Total	**21.45**	**15.82**	**37.51**	**22.55**	**15.89**	**39.00**	**23.15**	**15.93**	**39.95**
City of Fellsmere	0.31	0.00	**0.31**	0.32	0.00	**0.32**	0.33	0.00	**0.33**
Indian River County Utilities	11.69	0.00	**11.69**	12.65	0.00	**12.65**	13.37	0.00	**13.37**
City of Vero Beach	6.10	0.00	**6.10**	6.17	0.00	**6.17**	6.23	0.00	**6.23**
Indian River Total	**18.10**	**0.00**	**18.10**	**19.14**	**0.00**	**19.14**	**19.93**	**0.00**	**19.93**
Part III Total	**39.55**	**15.82**	**55.61**	**41.69**	**15.89**	**58.14**	**43.08**	**15.93**	**59.88**

Utility	Demand Projections (5-in-10)						Percent Change 2015-2040	2011-2015 Avg Gross GPCD	Demand Projections (1-in-10)		
	2035			2040					2040		
	GW	SW	Total	GW	SW	Total			GW	SW	Total
Palm Bay Utilities	9.56	0.00	**9.56**	10.28	0.00	**10.28**	52%	60	10.90	0.00	**10.90**
Brevard County Utility Services / North Brevard	0.87	0.00	**0.87**	0.87	0.00	**0.87**	38%	90	0.92	0.00	**0.92**
Brevard County Utility Services / Barefoot Bay	0.64	0.00	**0.64**	0.64	0.00	**0.64**	45%	47	0.68	0.00	**0.68**
South Brevard County Utilities	0.18	0.00	**0.18**	0.18	0.00	**0.18**	50%	109	0.19	0.00	**0.19**
Service Management Systems Inc	0.46	0.00	**0.46**	0.46	0.00	**0.46**	820%	518	0.49	0.00	**0.49**
South Shores Utility Assoc	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0%	66	0.07	0.00	**0.07**
City of Titusville	4.57	0.00	**5.91**	4.57	0.00	**6.23**	134%	77	6.60	0.00	**6.60**
City of Melbourne	5.81	15.93	**21.74**	5.81	15.93	**21.74**	11%	115	7.11	15.93	**23.04**
City of West Melbourne	1.64	0.00	**1.64**	1.64	0.00	**1.64**	-7%	81	1.74	0.00	**1.74**
Brevard (Minus Cocoa) Total	**23.80**	**15.93**	**41.07**	**24.52**	**15.93**	**42.11**	**32%**	**N/A**	**28.70**	**15.93**	**44.63**
City of Fellsmere	0.44	0.00	**0.44**	0.75	0.00	**0.75**	142%	65	0.80	0.00	**0.80**
Indian River County Utilities	13.81	0.00	**13.81**	13.92	0.00	**13.92**	33%	98	14.76	0.00	**14.76**
City of Vero Beach	6.29	0.00	**6.29**	6.35	0.00	**6.35**	3%	162	6.73	0.00	**6.73**
Indian River Total	**20.54**	**0.00**	**20.54**	**21.02**	**0.00**	**21.02**	**24%**	**N/A**	**22.29**	**0.00**	**22.29**
Part III Total	**44.34**	**15.93**	**61.61**	**45.54**	**15.93**	**63.13**	**29%**	**N/A**	**50.99**	**15.93**	**66.92**

Notes:
1.) All water use and demand projections are shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 Estimate from BEBR: Volume 49, Bulletin 174, Published January 2016. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011-2015 and is calculated as (Total Water Use / Total Estimated Population). This per capita is commonly referred to as a gross per capita, as it includes all uses within a utility.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) SW quantities were obtained from permits.
8.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the water use demand served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply water demands estimated often include some domestic self-supply demand.
9.) Brevard County in this region excludes the City of Cocoa.

Table B-5a. 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Equal to or Greater than 0.10 mgd, in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use					Population					2011-2015 Average Gross GPCD	Notes
					2011	2012	2013	2014	2015	2011	2012	2013	2014	2015		
202	Palm Bay Utilities	Palm Bay Utilities	Palm Bay / Town of Malabar	Brevard	6.370	6.418	6.606	6.542	6.759	102,698	102,698	110,638	112,025	114,587	60	
233	Brevard County Utility Services	Brevard County Utility Services	North Brevard	Brevard	0.866	0.784	0.729	0.750	0.629	8,988	8,988	7,867	7,893	7,893	90	
236	Brevard County Utility Services	Brevard County Utility Services	Former Barefoot Bay Water and Sewer District - Barefoot and Crystal Bay. Snug Harbor	Brevard	0.450	0.450	0.450	0.452	0.443	9,603	9,603	9,603	9,603	9,603	47	
1606	South Brevard Water CO-OP Inc	South Brevard County Utilities		Brevard	0.101	0.110	0.103	0.126	0.117	1,023	1,023	1,023	1,023	1,023	109	
1719	Service Management Systems Inc	Service Management Systems Inc	Aquarina	Brevard	0.393	0.586	0.417	0.363	0.052	699	699	699	699	699	518	
1749	South Shores Utility Assoc	South Shores Utility Assoc	South Shores	Brevard	0.042	0.049	0.036	0.039	0.066	699	699	699	699	699	66	
10647, 99052	City of Titusville	City of Titusville		Brevard	4.088	3.555	3.411	4.510	3.646	49,869	49,869	49,869	49,938	49,938	77	
50301	City of Melbourne	City of Melbourne		Brevard	17.340	19.532	16.888	16.420	19.513	150,731	152,401	153,666	159,617	162,434	115	
89992	City of West Melbourne	City of West Melbourne	Wholesale Importer of City of Melbourne	Brevard	1.406	1.407	1.621	1.483	1.762	18,712	19,118	19,118	19,118	19,118	81	Wholesale importer
Brevard Total					**31.056**	**32.891**	**30.261**	**30.685**	**32.987**	**343,022**	**345,098**	**353,182**	**360,615**	**365,994**	**89**	
2377	City of Fellsmere	City of Fellsmere		Indian River	0.341	0.309	0.252	0.290	0.309	5,310	4,465	4,465	4,465	4,465	65	
10524	Indian River County Utilities	Indian River County Utilities		Indian River	7.969	9.124	9.310	9.819	10.493	92,479	99,853	92,479	94,356	97,048	98	
10705	City of Vero Beach	City of Vero Beach		Indian River	6.529	5.810	6.257	5.658	6.142	37,563	37,653	37,308	37,308	37,308	162	
Indian River Total					**14.839**	**15.243**	**15.819**	**15.767**	**16.944**	**135,352**	**141,971**	**134,252**	**136,129**	**138,821**	**115**	
94	City of Leesburg	City of Leesburg		Lake	6.053	5.505	5.896	5.946	5.934	28,937	30,473	33,885	34,159	34,159	182	
279	Harbor Hills Utilities Ltd.	Harbor Hills Utilities Ltd.		Lake	0.664	0.692	0.613	0.587	0.694	1,091	1,135	1,219	1,219	1,219	552	
282	Sun Communities Inc	Water Oak Utilities	Water Oak Country Club Estates	Lake	0.303	0.328	0.286	0.253	0.281	1,698	1,539	1,539	1,539	1,539	185	
2454	Community Sunlake Joint Venture	Sunlake Estates		Lake	0.341	0.342	0.328	0.251	0.146	713	713	637	637	637	422	
2482	City of Fruitland Park	City of Fruitland Park		Lake	0.638	0.641	0.649	0.568	0.560	4,554	4,596	5,127	5,127	5,127	125	
2596	Town of Howey-in-the-Hills	Town of Howey-in-the-Hills		Lake	0.229	0.225	0.199	0.200	0.252	1,329	1,329	1,329	1,150	1,167	175	
2605	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Carlton Village	Lake	0.046	0.042	0.036	0.044	0.053	581	577	577	577	577	76	
2632	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Lake Utilities / Valencia Terrace	Lake	0.048	0.044	0.042	0.042	0.039	332	332	332	332	332	130	
2634, 84879, 85195	City of Eustis	City of Eustis	CUPs 81906 and 83231 are separate permits for GC.	Lake	3.450	3.357	3.223	3.230	3.023	22,486	22,961	23,815	25,450	25,450	136	
2644	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Silver Lakes / Western Shores	Lake	0.502	0.418	0.373	0.384	0.407	3,776	3,776	3,776	3,776	3,776	110	
2646	City of Umatilla	City of Umatilla		Lake	0.365	0.366	0.440	0.450	0.456	3,572	3,572	3,874	3,894	3,894	110	
2662	Mission Golf & Tennis Resort	Mission Golf & Tennis Resort	Las Colinas	Lake	0.734	0.802	0.441	0.687	0.125	461	461	461	435	435	1,238	Includes Golf Course. Per capita of 305 for just PS.
2701	Aqua Source Inc.	Aqua Source Inc.	Kings Cove	Lake	0.052	0.040	0.036	0.033	0.039	470	470	506	506	506	81	
2717	Utilities, Inc. of Florida	Utilities, Inc. of Florida	Pennbrooke	Lake	0.531	0.418	0.414	0.364	0.405	2,357	2,357	2,488	2,488	2,488	175	
2718	Plantation at Leesburg	Plantation at Leesburg		Lake	1.379	1.255	1.205	1.031	1.231	5,061	5,061	5,061	5,061	5,061	241	
2765	City of Tavares	City of Tavares	Per Bill Adams CUP # 2741 is being retired and will be served by Tavares.	Lake	2.600	2.519	2.441	2.390	2.590	17,398	17,802	17,802	17,802	18,326	141	
2810	Lake Griffin Isles	Lake Griffin Isles		Lake	0.077	0.080	0.078	0.069	0.067	237	237	237	237	237	313	
2860	Hawthorne Residents Coop Assoc	Hawthorne at Leesburg		Lake	0.444	0.403	0.378	0.365	0.392	1,787	1,787	1,886	1,787	1,787	219	
2888	Mid Florida Lakes	Mid Florida Lakes	Mid Florida Lakes MHP	Lake	0.347	0.300	0.308	0.292	0.223	1,709	1,709	1,709	1,709	1,709	172	
50049	Town of Lady Lake	Town of Lady Lake		Lake	0.690	0.705	0.646	0.683	0.699	4,847	5,629	5,629	5,629	5,688	125	
50147	City of Mount Dora	City of Mount Dora		**Lake**, Orange	3.008	3.331	3.163	2.765	4.822	22,817	23,718	23,718	23,718	23,718	145	
50152	Wedgewood Homeowners Assoc. Inc.	Wedgewood Homeowners Assoc. Inc.	Wedgewood Club	Lake	0.139	0.123	0.140	0.113	0.120	721	721	721	721	721	176	
50178	St. Johns River Utility Inc.	St. Johns River Utility Inc.		**Lake**, Volusia	0.265	0.258	0.255	0.262	0.250	3,920	4,080	3,920	2,946	2,946	72	
50279	Village Center Service Area	Village Center Community Development District	Villages of Lady Lake. (Villages of Marion / Little Sumter Service Area. The permit 63454 that Steve Brown has listed is actually an ERP, not CUP. This area is served by wells located in Sumter County in the SWFWMD.)	Lake	4.809	4.561	4.245	3.979	4.385	17,588	17,588	17,588	17,588	17,588	250	
50334	Park at Wolf Branch Oaks	Park at Wolf Branch Oaks		Lake	0.123	0.113	0.109	0.095	0.094	281	281	281	281	281	380	
62724	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Fairways at Mt. Plymouth	Lake	0.121	0.090	0.080	0.077	0.082	583	583	583	583	583	154	
107839	Leesburg Associates Limited Partnership	Leesburg Associates Limited Partnership	Holiday Travel Resort	Lake	0.116	0.119	0.111	0.120	0.113	1,004	1,004	1,004	1,004	1,004	115	
128295	Black Bear Reserve Water Corporation	Black Bear Reserve	Formerly Upson Downs. PS CUP 2959 was changed to a LRA permit only and a new permit for PS portion was issued 7/6/2011.	Lake	0.057	0.299	0.386	0.383	0.437	592	592	618	625	625	512	181 gpcd from TSR used due to lack of population.
Lake (Non-CFWI) Total					**28.131**	**27.376**	**26.521**	**25.663**	**27.919**	**150,902**	**155,083**	**160,322**	**160,980**	**161,580**	**172**	

Table B-5a, Continued. 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Equal to or Greater than 0.10 mgd, in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use					Population					2011-2015 Average Gross GPCD	Notes
					2011	2012	2013	2014	2015	2011	2012	2013	2014	2015		
2993	Sunshine Utilities	Sunshine Utilities	South Marion Regional System (Little Lake Weir, Lakeview Hills, Hilltop at Lake Weir, Town of Ocklawaha, Belleview Oaks Estates)	Marion	0.212	0.159	0.163	0.153	0.177	1,159	1,090	1,090	1,090	1,411	148	
2995	Tradewinds Utilities Inc	Tradewinds Utilities Inc	Tradewinds	Marion	0.114	0.098	0.093	0.103	0.094	1,313	1,313	1,313	1,313	1,313	76	
3016	Ocala East Villas	Ocala East Villas		Marion	0.118	0.108	0.086	0.092	0.085	583	583	583	575	575	169	
3019	Sunshine Utilities	Sunshine Utilities	Ocala Heights	Marion	0.062	0.058	0.058	0.063	0.071	684	684	684	684	684	91	
3021	Camelot Communities	Rolling Greens Communities	Rolling Greens MHP	Marion	0.421	0.400	0.255	0.333	0.334	2,348	2,348	2,348	2,318	2,318	149	
3043	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Ocala Oaks	Marion	0.150	0.145	0.206	0.173	0.156	1,478	1,478	1,478	1,478	1,478	112	
3061	Oak Bend Mobile Home Park	Oak Bend Mobile Home Park	Oak Bend MHC	Marion	0.064	0.055	0.050	0.049	0.012	550	550	550	550	550	84	
3094	Marion Utilities Inc.	Marion Utilities Inc.	Fore Acres	Marion	0.118	0.108	0.095	0.092	0.101	1,126	1,126	1,126	1,126	1,126	91	
3101	Marion Utilities Inc.	Marion Utilities Inc.	Greenfields / Indian Pines	Marion	0.146	0.131	0.121	0.117	0.122	1,081	1,081	1,081	1,081	1,081	118	
3130	Sunshine Utilities	Sunshine Utilities	Sun Ray Estates	Marion	0.168	0.154	0.144	0.141	0.153	1,238	1,238	1,238	1,238	1,238	123	
3137	City of Belleview	City of Belleview		Marion	0.804	0.809	0.829	0.763	0.741	7,945	7,945	7,945	8,453	8,433	97	
4578	Marion County Utilities	Marion County Utilities	Consolidated permit	Marion	6.221	5.463	5.106	4.674	5.180	31,571	32,119	34,479	34,014	40,371	154	
N/A	Grand Lake RV & Golf Resort	Grand Lake RV & Golf Resort	Permit expired, but utility still active	Marion	0.091	0.091	0.020	0.020	0.020	150	150	150	150	150	323	
50324	City of Ocala	City of Ocala	CUP 51172 allocations were transferred to Ocala and the wells are inactive, Raven Hills is now served by Ocala.	Marion	10.964	10.747	10.386	10.099	11.111	58,990	59,559	60,090	61,082	61,877	177	
Marion Total					**19.653**	**18.526**	**17.612**	**16.872**	**18.357**	**110,216**	**111,264**	**114,155**	**115,152**	**122,605**	**159**	
382	City of Lake Helen	City of Lake Helen		Volusia	0.272	0.262	0.243	0.229	0.238	3,020	3,020	3,020	2,700	2,700	86	
4244	Town of Pierson	Town of Pierson		Volusia	0.088	0.134	0.131	0.111	0.159	2,657	2,657	2,657	2,657	2,657	47	
4391	Lake Beresford Water Assoc. Inc.	Lake Beresford Water Assoc. Inc.		Volusia	0.177	0.166	0.127	0.134	0.135	1,540	1,540	1,540	1,858	1,858	89	
8528	City of Holly Hill	City of Holly Hill		Volusia	1.141	1.129	1.246	1.128	1.119	13,134	13,134	13,924	13,924	13,437	85	
8595	City of Port Orange	City of Port Orange	Also serves the Town of Ponce Inlet.	Volusia	5.751	5.782	5.797	5.774	5.950	63,072	63,072	63,072	66,913	66,913	90	
8658	City of Deltona	City of Deltona	Deltona Lakes	Volusia	9.306	8.422	7.972	7.230	7.623	85,233	85,281	76,293	75,322	75,322	102	
8747	Utilities Commission of New Smyrna Beach	Utilities Commission of New Smyrna Beach	Sugar Mill Country Club & Estates	Volusia	4.973	4.499	5.179	4.668	5.060	55,304	55,838	56,726	56,882	58,596	86	
8834	City of Daytona Beach	City of Daytona Beach		Volusia	11.988	12.024	12.681	13.091	12.812	72,774	72,773	74,068	74,068	74,068	170	
8932	City of Ormond Beach	City of Ormond Beach	All wells are in Volusia County.	Flagler, **Volusia**	7.063	7.003	6.268	5.728	6.012	48,630	51,921	50,852	49,300	50,632	128	
9157	City of Edgewater	City of Edgewater		Volusia	1.968	1.884	1.993	1.858	2.195	23,243	23,243	23,243	23,476	23,575	85	
9373	City of Orange City	City of Orange City		Volusia	1.555	1.581	1.491	1.795	1.739	11,130	11,130	11,684	10,969	10,867	146	
50116	City of DeLand	City of DeLand		Volusia	5.560	4.925	4.922	4.686	5.102	43,345	42,743	48,195	48,420	48,420	109	
50157, 50659, 86278	Volusia County Utilities	Volusia County Utilities		Flagler, **Volusia**	4.186	3.866	4.085	4.230	4.303	37,582	37,582	37,852	37,852	37,852	110	
112981	D & E Water Resources, LLC	D & E Water Resources, LLC	Heart Island Water System	Flagler, **Volusia**	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0	N/A	128 gpcd from TSR used due to lack of population.
127579	Farmton Services LLC	Farmton Services LLC		Volusia	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0	N/A	92 gpcd from TSR.
Volusia Total					**54.028**	**51.677**	**52.135**	**50.662**	**52.447**	**460,664**	**463,934**	**463,126**	**464,341**	**466,897**	**113**	
CSEC Total					**147.707**	**145.713**	**142.348**	**139.649**	**148.654**	**1,200,156**	**1,217,350**	**1,225,037**	**1,237,217**	**1,255,897**	**118**	

Notes:

1.) All water use is shown in million gallons per day.

2.) Rounding errors account for nominal discrepancies.

3.) 2011-2015 water use obtained from SJRWMD metered EN50 data and DEP MOR data.

4.) 2011-2015 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Base Facility Report Data, parcel data and permittee surveys.

Table B-5a (2-Part I). 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Equal to or Greater than 0.10 mgd, for Volusia County in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use					Population					2011-2015 Average Gross GPCD	Notes
					2011	2012	2013	2014	2015	2011	2012	2013	2014	2015		
382	City of Lake Helen	City of Lake Helen		Volusia	0.272	0.262	0.243	0.229	0.238	3,020	3,020	3,020	2,700	2,700	86	
4244	Town of Pierson	Town of Pierson		Volusia	0.088	0.134	0.131	0.111	0.159	2,657	2,657	2,657	2,657	2,657	47	
4391	Lake Beresford Water Assoc. Inc.	Lake Beresford Water Assoc. Inc.		Volusia	0.177	0.166	0.127	0.134	0.135	1,540	1,540	1,540	1,858	1,858	89	
8528	City of Holly Hill	City of Holly Hill		Volusia	1.141	1.129	1.246	1.128	1.119	13,134	13,134	13,924	13,924	13,437	85	
8595	City of Port Orange	City of Port Orange	Also serves the Town of Ponce Inlet.	Volusia	5.751	5.782	5.797	5.774	5.950	63,072	63,072	63,072	66,913	66,913	90	
8658	City of Deltona	City of Deltona	Deltona Lakes	Volusia	9.306	8.422	7.972	7.230	7.623	85,233	85,281	76,293	75,322	75,322	102	
8747	Utilities Commission of New Smyrna Beach	Utilities Commission of New Smyrna Beach	Sugar Mill Country Club & Estates	Volusia	4.973	4.499	5.179	4.668	5.060	55,304	55,838	56,726	56,882	58,596	86	
8834	City of Daytona Beach	City of Daytona Beach		Volusia	11.988	12.024	12.681	13.091	12.812	72,774	72,773	74,068	74,068	74,068	170	
8932	City of Ormond Beach	City of Ormond Beach	All wells are in Volusia County.	Flagler, **Volusia**	7.063	7.003	6.268	5.728	6.012	48,630	51,921	50,852	49,300	50,632	128	
9157	City of Edgewater	City of Edgewater		Volusia	1.968	1.884	1.993	1.858	2.195	23,243	23,243	23,243	23,476	23,575	85	
9373	City of Orange City	City of Orange City		Volusia	1.555	1.581	1.491	1.795	1.739	11,130	11,130	11,684	10,969	10,867	146	
50116	City of DeLand	City of DeLand		Volusia	5.560	4.925	4.922	4.686	5.102	43,345	42,743	48,195	48,420	48,420	109	
50157, 50659, 86278	Volusia County Utilities	Volusia County Utilities		Flagler, **Volusia**	4.186	3.866	4.085	4.230	4.303	37,582	37,582	37,852	37,852	37,852	110	
112981	D & E Water Resources, LLC	D & E Water Resources, LLC	Heart Island Water System	Flagler, **Volusia**	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0	N/A	128 gpcd from TSR used due to lack of population.
127579	Farmton Services LLC	Farmton Services LLC		Volusia	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0	N/A	92 gpcd from TSR.
Volusia Total					**54.028**	**51.677**	**52.135**	**50.662**	**52.447**	**460,664**	**463,934**	**463,126**	**464,341**	**466,897**	**113**	
Part I Total					**54.028**	**51.677**	**52.135**	**50.662**	**52.447**	**460,664**	**463,934**	**463,126**	**464,341**	**466,897**	**113**	

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2011-2015 water use obtained from SJRWMD metered EN50 data and DEP MOR data.
4.) 2011-2015 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Base Facility Report Data, parcel data and permittee surveys.

Table B-5a (3-Part II). 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Equal to or Greater than 0.10 mgd, for Marion and North Lake Counties in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use					Population					2011-2015 Average Gross GPCD	Notes
					2011	2012	2013	2014	2015	2011	2012	2013	2014	2015		
94	City of Leesburg	City of Leesburg		Lake	6.053	5.505	5.896	5.946	5.934	28,937	30,473	33,885	34,159	34,159	182	
279	Harbor Hills Utilities Ltd.	Harbor Hills Utilities Ltd.		Lake	0.664	0.692	0.613	0.587	0.694	1,091	1,135	1,219	1,219	1,219	552	
282	Sun Communities Inc	Water Oak Utilities	Water Oak Country Club Estates	Lake	0.303	0.328	0.286	0.253	0.281	1,698	1,539	1,539	1,539	1,539	185	
2454	Community Sunlake Joint Venture	Sunlake Estates		Lake	0.341	0.342	0.328	0.251	0.146	713	713	637	637	637	422	
2482	City of Fruitland Park	City of Fruitland Park		Lake	0.638	0.641	0.649	0.568	0.560	4,554	4,596	5,127	5,127	5,127	125	
2596	Town of Howey-in-the-Hills	Town of Howey-in-the-Hills		Lake	0.229	0.225	0.199	0.200	0.252	1,329	1,329	1,329	1,150	1,167	175	
2605	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Carlton Village	Lake	0.046	0.042	0.036	0.044	0.053	581	577	577	577	577	76	
2632	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Lake Utilities / Valencia Terrace	Lake	0.048	0.044	0.042	0.042	0.039	332	332	332	332	332	130	
2634, 84879, 85195	City of Eustis	City of Eustis	CUPs 81906 and 83231 are separate permits for GC.	Lake	3.450	3.357	3.223	3.230	3.023	22,486	22,961	23,815	25,450	25,450	136	
2644	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Silver Lakes / Western Shores	Lake	0.502	0.418	0.373	0.384	0.407	3,776	3,776	3,776	3,776	3,776	110	
2646	City of Umatilla	City of Umatilla		Lake	0.365	0.366	0.440	0.450	0.456	3,572	3,572	3,874	3,894	3,894	110	
2662	Mission Golf & Tennis Resort	Mission Golf & Tennis Resort	Las Colinas	Lake	0.734	0.802	0.441	0.687	0.125	461	461	461	435	435	1,238	Includes Golf Course. Per capita of 305 for just PS.
2701	Aqua Source Inc.	Aqua Source Inc.	Kings Cove	Lake	0.052	0.040	0.036	0.033	0.039	470	470	506	506	506	81	
2717	Utilities Inc. of Pennbrooke	Pennbrooke Utilities	Pennbrooke	Lake	0.531	0.418	0.414	0.364	0.405	2,357	2,357	2,488	2,488	2,488	175	
2718	Plantation at Leesburg	Plantation at Leesburg		Lake	1.379	1.255	1.205	1.031	1.231	5,061	5,061	5,061	5,061	5,061	241	
2765	City of Tavares	City of Tavares	Per Bill Adams CUP # 2741 is being retired and will be served by Tavares.	Lake	2.600	2.519	2.441	2.390	2.590	17,398	17,802	17,802	17,802	18,326	141	
2810	Lake Griffin Isles	Lake Griffin Isles		Lake	0.077	0.080	0.078	0.069	0.067	237	237	237	237	237	313	
2860	Hawthorne Residents Coop Assoc	Hawthorne at Leesburg		Lake	0.444	0.403	0.378	0.365	0.392	1,787	1,787	1,886	1,787	1,787	219	
2888	Mid Florida Lakes	Mid Florida Lakes	Mid Florida Lakes MHP	Lake	0.347	0.300	0.308	0.292	0.223	1,709	1,709	1,709	1,709	1,709	172	
50049	Town of Lady Lake	Town of Lady Lake		Lake	0.690	0.705	0.646	0.683	0.699	4,847	5,629	5,629	5,629	5,688	125	
50147	City of Mount Dora	City of Mount Dora		**Lake**, Orange	3.008	3.331	3.163	2.765	4.822	22,817	23,718	23,718	23,718	23,718	145	
50152	Wedgewood Homeowners Assoc. Inc.	Wedgewood Homeowners Assoc. Inc.	Wedgewood Club	Lake	0.139	0.123	0.140	0.113	0.120	721	721	721	721	721	176	
50178	St. Johns River Utility Inc.	St. Johns River Utility Inc.		**Lake**, Volusia	0.265	0.258	0.255	0.262	0.250	3,920	4,080	3,920	2,946	2,946	72	
50279	Village Center Service Area	Village Center Community Development District	Villages of Lady Lake. (Villages of Marion / Little Sumter Service Area. The permit 63454 that Steve Brown has listed is actually an ERP, not CUP. This area is served by wells located in Sumter County in the SWFWMD.)	Lake	4.809	4.561	4.245	3.979	4.385	17,588	17,588	17,588	17,588	17,588	250	
50334	Park at Wolf Branch Oaks	Park at Wolf Branch Oaks		Lake	0.123	0.113	0.109	0.095	0.094	281	281	281	281	281	380	
62724	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Fairways at Mt. Plymouth	Lake	0.121	0.090	0.080	0.077	0.082	583	583	583	583	583	154	
107839	Leesburg Associates Limited Partnership	Leesburg Associates Limited Partnership	Holiday Travel Resort	Lake	0.116	0.119	0.111	0.120	0.113	1,004	1,004	1,004	1,004	1,004	115	
128295	Black Bear Reserve Water Corporation	Black Bear Reserve	Formerly Upson Downs. PS CUP 2959 was changed to a LRA permit only and a new permit for PS portion was issued 7/6/2011.	Lake	0.057	0.299	0.386	0.383	0.437	592	592	618	625	625	512	181 gpcd from TSR used due to lack of population.
Lake (Non-CFWI) Total					**28.131**	**27.376**	**26.521**	**25.663**	**27.919**	**150,902**	**155,083**	**160,322**	**160,980**	**161,580**	**172**	
2993	Sunshine Utilities	Sunshine Utilities	South Marion Regional System (Little Lake Weir, Lakeview Hills, Hilltop at Lake Weir, Town of Ocklawaha, Belleview Oaks Estates)	Marion	0.212	0.159	0.163	0.153	0.177	1,159	1,090	1,090	1,090	1,411	148	
2995	Tradewinds Utilities Inc	Tradewinds Utilities Inc	Tradewinds	Marion	0.114	0.098	0.093	0.103	0.094	1,313	1,313	1,313	1,313	1,313	76	
3016	Ocala East Villas	Ocala East Villas		Marion	0.118	0.108	0.086	0.092	0.085	583	583	583	575	575	169	
3019	Sunshine Utilities	Sunshine Utilities	Ocala Heights	Marion	0.062	0.058	0.058	0.063	0.071	684	684	684	684	684	91	
3021	Camelot Communities	Rolling Greens Communities	Rolling Greens MHP	Marion	0.421	0.400	0.255	0.333	0.334	2,348	2,348	2,348	2,318	2,318	149	
3043	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Ocala Oaks	Marion	0.150	0.145	0.206	0.173	0.156	1,478	1,478	1,478	1,478	1,478	112	
3061	Oak Bend Mobile Home Park	Oak Bend Mobile Home Park	Oak Bend MHC	Marion	0.064	0.055	0.050	0.049	0.012	550	550	550	550	550	84	
3094	Marion Utilities Inc.	Marion Utilities Inc.	Fore Acres	Marion	0.118	0.108	0.095	0.092	0.101	1,126	1,126	1,126	1,126	1,126	91	
3101	Marion Utilities Inc.	Marion Utilities Inc.	Greenfields / Indian Pines	Marion	0.146	0.131	0.121	0.117	0.122	1,081	1,081	1,081	1,081	1,081	118	
3130	Sunshine Utilities	Sunshine Utilities	Sun Ray Estates	Marion	0.168	0.154	0.144	0.141	0.153	1,238	1,238	1,238	1,238	1,238	123	
3137	City of Belleview	City of Belleview		Marion	0.804	0.809	0.829	0.763	0.741	7,945	7,945	7,945	8,453	8,433	97	
4578	Marion County Utilities	Marion County Utilities	Silver Springs Regional Water & Sewer	Marion	6.221	5.463	5.106	4.674	5.180	31,571	32,119	34,479	34,014	40,371	154	
7017	Grand Lake RV & Golf Resort	Grand Lake RV & Golf Resort	Permit expired, but utility still active	Marion	0.091	0.091	0.020	0.020	0.020	150	150	150	150	150	323	
50324	City of Ocala	City of Ocala	CUP 51172 allocations were transferred to Ocala and the wells are inactive, Raven Hills is now served by Ocala.	Marion	10.964	10.747	10.386	10.099	11.111	58,990	59,559	60,090	61,082	61,877	177	
Marion Total					**19.653**	**18.526**	**17.612**	**16.872**	**18.357**	**110,216**	**111,264**	**114,155**	**115,152**	**122,605**	**159**	
Part II Total					**47.784**	**45.902**	**44.133**	**42.535**	**46.276**	**261,118**	**266,347**	**274,477**	**276,132**	**284,185**	**166**	

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2011-2015 water use obtained from SJRWMD metered EN50 data and DEP MOR data.
4.) 2011-2015 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Base Facility Report Data, parcel data and permittee surveys.

Table B-5a (4-Part III). 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Equal to or Greater than 0.10 mgd, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use					Population					2011-2015 Average Gross GPCD	Notes
					2011	2012	2013	2014	2015	2011	2012	2013	2014	2015		
202	Palm Bay Utilities	Palm Bay Utilities	Palm Bay / Town of Malabar	Brevard	6.370	6.418	6.606	6.542	6.759	102,698	102,698	110,638	112,025	114,587	60	
233	Brevard County Utility Services	Brevard County Utility Services	North Brevard	Brevard	0.866	0.784	0.729	0.750	0.629	8,988	8,988	7,867	7,893	7,893	90	
236	Brevard County Utility Services	Brevard County Utility Services	Former Barefoot Bay Water and Sewer District - Barefoot and Crystal Bay. Snug Harbor	Brevard	0.450	0.450	0.450	0.452	0.443	9,603	9,603	9,603	9,603	9,603	47	
1606	South Brevard Water CO-OP Inc	South Brevard County Utilities		Brevard	0.101	0.110	0.103	0.126	0.117	1,023	1,023	1,023	1,023	1,023	109	
1719	Service Management Systems Inc	Service Management Systems Inc	Aquarina	Brevard	0.393	0.586	0.417	0.363	0.052	699	699	699	699	699	518	
1749	South Shores Utility Assoc	South Shores Utility Assoc	South Shores	Brevard	0.042	0.049	0.036	0.039	0.066	699	699	699	699	699	66	
10647, 99052	City of Titusville	City of Titusville		Brevard	4.088	3.555	3.411	4.510	3.646	49,869	49,869	49,869	49,938	49,938	77	
50301	City of Melbourne	City of Melbourne		Brevard	17.340	19.532	16.888	16.420	19.513	150,731	152,401	153,666	159,617	162,434	115	
89992	City of West Melbourne	City of West Melbourne	Wholesale Importer of City of Melbourne	Brevard	1.406	1.407	1.621	1.483	1.762	18,712	19,118	19,118	19,118	19,118	81	Wholesale Importer
Brevard Total					**31.056**	**32.891**	**30.261**	**30.685**	**32.987**	**343,022**	**345,098**	**353,182**	**360,615**	**365,994**	**89**	
2377	City of Fellsmere	City of Fellsmere		Indian River	0.341	0.309	0.252	0.290	0.309	5,310	4,465	4,465	4,465	4,465	65	
10524	Indian River County Utilities	Indian River County Utilities		Indian River	7.969	9.124	9.310	9.819	10.493	92,479	99,853	92,479	94,356	97,048	98	
10705	City of Vero Beach	City of Vero Beach		Indian River	6.529	5.810	6.257	5.658	6.142	37,563	37,653	37,308	37,308	37,308	162	
Indian River Total					**14.839**	**15.243**	**15.819**	**15.767**	**16.944**	**135,352**	**141,971**	**134,252**	**136,129**	**138,821**	**115**	
Part III Total					**45.895**	**48.134**	**46.080**	**46.452**	**49.931**	**478,374**	**487,069**	**487,434**	**496,744**	**504,815**	**96**	

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2011-2015 water use obtained from SJRWMD metered EN50 data and DEP MOR data.
4.) 2011-2015 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Base Facility Report Data, parcel data and permittee surveys.

Table B-6. Domestic Self-supply and Small Public Supply Systems Population and Water Use for 2015 and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Population	Population Projections					Percent Change	Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
								2015			2020			2025			2030			2035			2040				2040		
	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Brevard	40,856	43,228	45,378	47,027	48,217	49,288	21%	2.97	0.00	2.97	2.97	0.00	2.97	3.13	0.00	3.13	3.25	0.00	3.25	3.33	0.00	3.33	3.40	0.00	3.40	14%	3.60	0.00	3.60
Indian River	5,532	6,050	6,505	6,888	7,220	7,525	36%	0.21	0.00	0.21	0.21	0.00	0.21	0.23	0.00	0.23	0.24	0.00	0.24	0.25	0.00	0.25	0.26	0.00	0.26	24%	0.28	0.00	0.28
Lake (Non-CFWI)	48,327	49,508	53,406	55,574	57,731	60,185	25%	7.38	0.00	7.38	6.61	0.00	6.61	7.13	0.00	7.13	7.41	0.00	7.41	7.68	0.00	7.68	8.01	0.00	8.01	9%	8.49	0.00	8.49
Marion	93,803	99,335	103,589	107,672	111,807	116,595	24%	9.25	0.00	9.25	10.12	0.00	10.12	10.57	0.00	10.57	10.93	0.00	10.93	11.30	0.00	11.30	11.78	0.00	11.78	27%	12.49	0.00	12.49
Okeechobee	1,442	1,453	1,464	1,476	1,591	1,700	18%	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.14	0.00	0.14	0.15	0.00	0.15	15%	0.16	0.00	0.16
Volusia	63,949	67,593	70,636	73,155	75,419	77,415	21%	6.81	0.00	6.81	5.84	0.00	5.84	6.10	0.00	6.10	6.31	0.00	6.31	6.50	0.00	6.50	6.67	0.00	6.67	-2%	7.07	0.00	7.07
CSEC Total	**253,909**	**267,167**	**280,978**	**291,792**	**301,985**	**312,708**	23%	**26.75**	**0.00**	**26.75**	**25.88**	**0.00**	**25.88**	**27.29**	**0.00**	**27.29**	**28.27**	**0.00**	**28.27**	**29.20**	**0.00**	**29.20**	**30.27**	**0.00**	**30.27**	**13%**	**32.09**	**0.00**	**32.09**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, the Districts do not have sufficient information to separate the populations served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply populations estimated often include some domestic self-supply population.
4.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.

Table B-6 (2-Part I). Domestic Self-supply and Small Public Supply Systems Population and Water Use for 2015 and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County, for Volusia Coty in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Population	Population Projections					Percent Change	Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
								2015			2020			2025			2030			2035			2040				2040		
	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Volusia	63,949	67,593	70,636	73,155	75,419	77,415	21%	6.81	0.00	6.81	5.84	0.00	5.84	6.10	0.00	6.10	6.31	0.00	6.31	6.50	0.00	6.50	6.67	0.00	6.67	-2%	7.07	0.00	7.07
Part I Total	63,949	**67,593**	**70,636**	**73,155**	**75,419**	**77,415**	**21%**	**6.81**	**0.00**	**6.81**	**5.84**	**0.00**	**5.84**	**6.10**	**0.00**	**6.10**	**6.31**	**0.00**	**6.31**	**6.50**	**0.00**	**6.50**	**6.67**	**0.00**	**6.67**	**-2%**	**7.07**	**0.00**	**7.07**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, the District does not have sufficient information to separate the populations served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply populations estimated often include some domestic self-supply population.
4.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.

Table B-6 (3-Part II). Domestic Self-supply and Small Public Supply Systems Population and Water Use for 2015 and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Population	Population Projections					Percent Change	Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
								2015			2020			2025			2030			2035			2040				2040		
	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Lake (Non-CFWI)	48,327	49,508	53,406	55,574	57,731	60,185	25%	7.38	0.00	7.38	6.61	0.00	6.61	7.13	0.00	7.13	7.41	0.00	7.41	7.68	0.00	7.68	8.01	0.00	8.01	9%	8.49	0.00	8.49
Marion	93,803	99,335	103,589	107,672	111,807	116,595	24%	9.25	0.00	9.25	10.12	0.00	10.12	10.57	0.00	10.57	10.93	0.00	10.93	11.30	0.00	11.30	11.78	0.00	11.78	27%	12.49	0.00	12.49
Part II Total	142,130	**148,843**	**156,995**	**163,246**	**169,538**	**176,780**	**24%**	**16.63**	**0.00**	**16.63**	**16.73**	**0.00**	**16.73**	**17.70**	**0.00**	**17.70**	**18.34**	**0.00**	**18.34**	**18.98**	**0.00**	**18.98**	**19.79**	**0.00**	**19.79**	**19%**	**20.98**	**0.00**	**20.98**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, the District does not have sufficient information to separate the populations served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply populations estimated often include some domestic self-supply population.
4.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.

Table B-6 (4-Part III). Domestic Self-supply and Small Public Supply Systems Population and Water Use for 2015 and 5-in-10 Year Water Demand Projections for 2020-2040, and 1-in-10 Year Water Demand Projections for 2040 by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Population	Population Projections					Percent Change	Water Use			Demand Projections (5-in-10)															Percent Change	Demand Projections (1-in-10)		
								2015			2020			2025			2030			2035			2040				2040		
	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Brevard	40,856	43,228	45,378	47,027	48,217	49,288	21%	2.97	0.00	2.97	2.97	0.00	2.97	3.13	0.00	3.13	3.25	0.00	3.25	3.33	0.00	3.33	3.40	0.00	3.40	14%	3.60	0.00	3.60
Indian River	5,532	6,050	6,505	6,888	7,220	7,525	36%	0.21	0.00	0.21	0.21	0.00	0.21	0.23	0.00	0.23	0.24	0.00	0.24	0.25	0.00	0.25	0.26	0.00	0.26	24%	0.28	0.00	0.28
Okeechobee	1,442	1,453	1,464	1,476	1,591	1,700	18%	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.14	0.00	0.14	0.15	0.00	0.15	15%	0.16	0.00	0.16
Part III Total	**47,830**	**50,731**	**53,347**	**55,391**	**57,028**	**58,513**	**22%**	**3.31**	**0.00**	**3.31**	**3.31**	**0.00**	**3.31**	**3.49**	**0.00**	**3.49**	**3.62**	**0.00**	**3.62**	**3.72**	**0.00**	**3.72**	**3.81**	**0.00**	**3.81**	**15%**	**4.04**	**0.00**	**4.04**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, the District does not have sufficient information to separate the populations served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply populations estimated often include some domestic self-supply population.
4.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.

Table B-6a. Domestic Self-Supply Population and Water Use for 2015 and Population Projections for 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Population	Population Projections					Percent Change 2015-2040	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	2011-2015 Avg GPCD	Demand Projections (1-in-10)		
								2015			2020			2025			2030			2035			2040					2040		
	2015	2020	2025	2030	2035	2040		GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total			GW	SW	Total
Brevard	38,889	41,242	43,305	44,946	46,130	47,196	21%	2.79	0.00	**2.79**	2.80	0.00	**2.80**	2.94	0.00	**2.94**	3.06	0.00	**3.06**	3.14	0.00	**3.14**	3.21	0.00	**3.21**	15%	68	3.40	0.00	**3.40**
Indian River	4,505	4,922	5,293	5,604	5,874	6,122	36%	0.20	0.00	**0.20**	0.20	0.00	**0.20**	0.22	0.00	**0.22**	0.23	0.00	**0.23**	0.24	0.00	**0.24**	0.25	0.00	**0.25**	25%	41	0.27	0.00	**0.27**
Lake (Non-CFWI)	35,815	35,931	39,226	41,367	43,498	45,927	28%	5.83	0.00	**5.83**	4.67	0.00	**4.67**	5.10	0.00	**5.10**	5.38	0.00	**5.38**	5.65	0.00	**5.65**	5.97	0.00	**5.97**	2%	130	6.33	0.00	**6.33**
Marion	81,222	86,292	90,344	93,772	96,936	101,680	25%	8.12	0.00	**8.12**	8.80	0.00	**8.80**	9.22	0.00	**9.22**	9.56	0.00	**9.56**	9.89	0.00	**9.89**	10.37	0.00	**10.37**	28%	102	10.99	0.00	**10.99**
Okeechobee	1,442	1,453	1,464	1,476	1,591	1,700	18%	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.14	0.00	**0.14**	0.15	0.00	**0.15**	15%	90	0.16	0.00	**0.16**
Volusia	62,134	65,762	68,805	71,324	73,588	75,584	22%	6.65	0.00	**6.65**	5.59	0.00	**5.59**	5.85	0.00	**5.85**	6.06	0.00	**6.06**	6.25	0.00	**6.25**	6.42	0.00	**6.42**	-3%	85	6.81	0.00	**6.81**
CSEC Total	**224,007**	**235,602**	**248,437**	**258,489**	**267,617**	**278,209**	**24%**	**23.72**	**0.00**	**23.72**	**22.19**	**0.00**	**22.19**	**23.46**	**0.00**	**23.46**	**24.42**	**0.00**	**24.42**	**25.31**	**0.00**	**25.31**	**26.37**	**0.00**	**26.37**	**11%**	**N/A**	**27.96**	**0.00**	**27.96**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Domestic Self-Supply Population is calculated using BEBR Medium county growth rates. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011-2015 and is calculated as (Total County-wide Residential Water Use / Total Estimated Population). This per capita is commonly referred to as a residential per capita, as it only includes the indoor and outdoor residential uses.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) All demands are expected to come from groundwater, thus surface water projections are zero.
8.) Due to lack of Public Supply in SJRWMD portion of Okeechobee County use data, the SJRWMD 2011-2015 residential average per capita for the entire SJRWMD was used to estimate Okeechobee County Domestic Self-supply projections.
9.) 2015 estimates of domestic self-supply water use obtained from SJRWMD Annual Water Use Surveys and USGS data.

Table B-6a (2-Part I). Domestic Self-Supply Population and Water Use for 2015 and Population Projections for 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Population	Population Projections					Percent Change 2015-2040	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	2011-2015 Avg GPCD	Demand Projections (1-in-10)		
								2015			2020			2025			2030			2035			2040					2040		
	2015	2020	2025	2030	2035	2040		GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total			GW	SW	Total
Volusia	62,134	65,762	68,805	71,324	73,588	75,584	22%	6.65	0.00	**6.65**	5.59	0.00	**5.59**	5.85	0.00	**5.85**	6.06	0.00	**6.06**	6.25	0.00	**6.25**	6.42	0.00	**6.42**	-3%	85	6.81	0.00	**6.81**
Part I Total	**62,134**	**65,762**	**68,805**	**71,324**	**73,588**	**75,584**	**22%**	**6.65**	**0.00**	**6.65**	**5.59**	**0.00**	**5.59**	**5.85**	**0.00**	**5.85**	**6.06**	**0.00**	**6.06**	**6.25**	**0.00**	**6.25**	**6.42**	**0.00**	**6.42**	-3%	**N/A**	**6.81**	**0.00**	**6.81**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Domestic Self-Supply Population is calculated using BEBR Medium county growth rates. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011-2015 and is calculated as (Total County-wide Residential Water Use / Total Estimated Population). This per capita is commonly referred to as a residential per capita, as it only includes the indoor and outdoor residential uses.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) All demands are expected to come from groundwater, thus surface water projections are zero.
8.) 2015 estimates of domestic self-supply water use obtained from SJRWMD Annual Water Use Surveys and USGS data.

Table B-6a (3-Part II). Domestic Self-Supply Population and Water Use for 2015 and Population Projections for 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Population	Population Projections					Percent Change 2015-2040	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	2011-2015 Avg GPCD	Demand Projections (1-in-10)		
								2015			2020			2025			2030			2035			2040					2040		
	2015	2020	2025	2030	2035	2040		GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total			GW	SW	Total
Lake (Non-CFWI)	35,815	35,931	39,226	41,367	43,498	45,927	28%	5.83	0.00	**5.83**	4.67	0.00	**4.67**	5.10	0.00	**5.10**	5.38	0.00	**5.38**	5.65	0.00	**5.65**	5.97	0.00	**5.97**	2%	130	6.33	0.00	**6.33**
Marion	81,222	86,292	90,344	93,772	96,936	101,680	25%	8.12	0.00	**8.12**	8.80	0.00	**8.80**	9.22	0.00	**9.22**	9.56	0.00	**9.56**	9.89	0.00	**9.89**	10.37	0.00	**10.37**	28%	102	10.99	0.00	**10.99**
Part II Total	**117,037**	**122,223**	**129,570**	**135,139**	**140,434**	**147,607**	**26%**	**13.95**	**0.00**	**13.95**	**13.47**	**0.00**	**13.47**	**14.32**	**0.00**	**14.32**	**14.94**	**0.00**	**14.94**	**15.54**	**0.00**	**15.54**	**16.34**	**0.00**	**16.34**	17%	**N/A**	**17.32**	**0.00**	**17.32**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Domestic Self-Supply Population is calculated using BEBR Medium county growth rates. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011-2015 and is calculated as (Total County-wide Residential Water Use / Total Estimated Population). This per capita is commonly referred to as a residential per capita, as it only includes the indoor and outdoor residential uses.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) All demands are expected to come from groundwater, thus surface water projections are zero.
8.) 2015 estimates of domestic self-supply water use obtained from SJRWMD Annual Water Use Surveys and USGS data.

Table B-6a (4-Part III). Domestic Self-Supply Population and Water Use for 2015 and Population Projections for 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Population	Population Projections					Percent Change 2015-2040	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	2011-2015 Avg GPCD	Demand Projections (1-in-10)		
								2015			2020			2025			2030			2035			2040					2040		
	2015	2020	2025	2030	2035	2040		GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total			GW	SW	Total
Brevard	38,889	41,242	43,305	44,946	46,130	47,196	21%	2.79	0.00	**2.79**	2.80	0.00	**2.80**	2.94	0.00	**2.94**	3.06	0.00	**3.06**	3.14	0.00	**3.14**	3.21	0.00	**3.21**	15%	68	3.40	0.00	**3.40**
Indian River	4,505	4,922	5,293	5,604	5,874	6,122	36%	0.20	0.00	**0.20**	0.20	0.00	**0.20**	0.22	0.00	**0.22**	0.23	0.00	**0.23**	0.24	0.00	**0.24**	0.25	0.00	**0.25**	25%	41	0.27	0.00	**0.27**
Okeechobee	1,442	1,453	1,464	1,476	1,591	1,700	18%	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.14	0.00	**0.14**	0.15	0.00	**0.15**	15%	90	0.16	0.00	**0.16**
Part III Total	**44,836**	**47,617**	**50,062**	**52,026**	**53,595**	**55,018**	**23%**	**3.12**	**0.00**	**3.12**	**3.13**	**0.00**	**3.13**	**3.29**	**0.00**	**3.29**	**3.42**	**0.00**	**3.42**	**3.52**	**0.00**	**3.52**	**3.61**	**0.00**	**3.61**	16%	**N/A**	**3.83**	**0.00**	**3.83**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Domestic Self-Supply Population is calculated using BEBR Medium county growth rates. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011-2015 and is calculated as (Total County-wide Residential Water Use / Total Estimated Population). This per capita is commonly referred to as a residential per capita, as it only includes the indoor and outdoor residential uses.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) All demands are expected to come from groundwater, thus surface water projections are zero.
8.) Due to lack of Public Supply in SJRWMD portion of Okeechobee County use data, the SJRWMD 2011-2015 residential average per capita for the entire SJRWMD was used to estimate Okeechobee County Domestic Self-supply projections.
9.) 2015 estimates of domestic self-supply water use obtained from SJRWMD Annual Water Use Surveys and USGS data.

Table B-6b. 2011-2015 Residential Water Use and Five-Year Residential Per Capita Averages for All Public Supply Permittees in Counties Wholly or Partially Within the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

CUP Number	Owner	Utility Category	County	2011 Water Use	2011 % Household	2011 Household Use	2011 Population	2011 Residential GPCD	2012 Water Use	2012 % Household	2012 Household Use	2012 Population	2012 Residential GPCD	2013 Water Use	2013 % Household	2013 Household Use	2013 Population	2013 Residential GPCD	2014 Water Use	2014 % Household	2014 Household Use	2014 Population	2014 Residential GPCD	2015 Water Use	2015 % Household	2015 Household Use	2015 Population	2015 Residential GPCD	2011-2015 Average Residential GPCD
202	Palm Bay Utilities	Large	Brevard	6.371	65.0%	4.141	102,698	40	6.418	65.0%	4.172	102,698	41	6.600	65.0%	4.290	110,638	39	6.630	65.0%	4.310	112,025	38	6.759	65.0%	4.393	114,587	38	39
233	Brevard County Utility Services	Large	Brevard	0.866	100.0%	0.866	8,988	96	0.796	100.0%	0.796	8,988	89	0.729	100.0%	0.729	7,867	93	0.750	100.0%	0.750	7,893	95	0.629	100.0%	0.629	7,893	80	91
236	Brevard County Utility Services	Large	Brevard	0.472	100.0%	0.472	9,603	49	0.450	100.0%	0.450	9,603	47	0.450	100.0%	0.450	9,603	47	0.460	100.0%	0.460	9,603	48	0.443	100.0%	0.443	9,603	36	45
1606	South Brevard Water CO-OP Inc	Large	Brevard	0.101	100.0%	0.101	1,023	99	0.125	100.0%	0.125	1,023	122	0.103	100.0%	0.103	1,023	101	0.130	100.0%	0.130	1,023	127	0.117	100.0%	0.117	1,023	114	113
1719	Service Management Systems Inc	Small	Brevard	0.032	15.4%	0.005	699	7	0.032	15.4%	0.005	699	7	0.033	15.4%	0.005	699	7	0.027	15.4%	0.004	699	6	0.052	15.4%	0.008	699	11	8
1738	Riverview Florida Associates, LLC	Small	Brevard	0.045	40.4%	0.018	250	73	0.024	40.4%	0.010	250	39	0.024	40.4%	0.010	250	39	0.020	40.4%	0.008	250	32	0.017	40.4%	0.007	250	27	42
1742	San Sebastian Water LLC	Small	Brevard	0.018	100.0%	0.018	61	295	0.016	100.0%	0.016	107	150	0.019	100.0%	0.019	107	178	0.030	100.0%	0.030	115	261	0.037	100.0%	0.037	115	322	241
1749	South Shores Utility Assoc	Large	Brevard	0.042	78.2%	0.033	699	47	0.049	78.2%	0.038	699	55	0.036	66.5%	0.024	699	34	0.040	66.5%	0.027	699	38	0.066	66.5%	0.044	699	63	47
1783	Northgate Properties Inc.	Small	Brevard	0.020	78.9%	0.016	812	19	0.019	78.9%	0.015	816	18	0.030	78.9%	0.024	816	29	0.020	78.9%	0.016	812	19	0.017	78.9%	0.014	812	17	20
1804	Bonnie Douglas - River Grove Mobile Home Village I & II	Small	Brevard	0.035	88.0%	0.031	401	77	0.025	88.0%	0.022	403	55	0.043	88.0%	0.038	403	94	0.040	88.0%	0.035	401	88	0.032	88.0%	0.028	401	71	77
1808	Summit Cove Condo Assoc	Small	Brevard	0.022	55.2%	0.012	195	62	0.007	55.2%	0.004	196	20	0.007	55.2%	0.004	196	20	0.010	55.2%	0.006	196	28	0.015	55.2%	0.008	196	42	34
1831	Lighthouse Cove Condominimium Association	Small	Brevard	0.007	41.9%	0.003	193	15	0.006	41.9%	0.003	193	13	0.007	41.9%	0.003	193	15	0.010	41.9%	0.004	193	22	0.009	41.9%	0.004	193	19	17
10647, 99052	City of Titusville	Large	Brevard	4.088	62.6%	2.559	49,869	51	3.555	62.6%	2.225	49,869	45	3.411	66.4%	2.265	49,869	45	4.510	66.4%	2.995	49,938	60	3.646	66.4%	2.421	49,938	48	50
50245	City of Cocoa	Large	Brevard	23.217	75.2%	17.459	165,442	106	22.375	75.2%	16.826	168,419	100	25.083	75.2%	18.862	171,397	110	21.990	75.2%	16.536	171,397	96	22.943	75.2%	17.253	171,397	101	103
50301	City of Melbourne	Large	Brevard	17.340	51.5%	8.930	150,731	59	19.532	51.5%	10.059	152,401	66	16.888	51.5%	8.697	153,666	57	17.900	51.5%	9.219	159,617	58	19.513	50.5%	9.854	162,434	61	60
89992	City of West Melbourne	Large	Brevard	1.406	51.5%	0.724	18,712	39	1.407	51.5%	0.725	19,118	38	1.638	51.5%	0.844	19,118	44	1.483	51.5%	0.764	19,118	40	1.762	51.5%	0.908	19,118	47	42
Brevard County Total				**54.082**	**65.4%**	**35.388**	**510,376**	**69**	**54.836**	**64.7%**	**35.491**	**515,482**	**69**	**55.101**	**66.0%**	**36.367**	**526,544**	**69**	**54.050**	**65.3%**	**35.294**	**533,979**	**66**	**56.057**	**64.5%**	**36.168**	**539,358**	**67**	**68**
2377	City of Fellsmere	Large	Indian River	0.341	100.0%	0.341	5,310	64	0.309	100.0%	0.309	4,465	69	0.252	100.0%	0.252	4,465	56	0.290	100.0%	0.290	4,465	65	0.309	100.0%	0.309	4,465	69	65
10524	Indian River County Utilities	Large	Indian River	8.170	21.3%	1.740	92,479	19	9.124	21.3%	1.943	99,853	19	9.306	21.3%	1.982	92,479	21	9.950	21.3%	2.119	94,356	22	10.493	21.3%	2.235	97,048	23	21
10705	City of Vero Beach	Large	Indian River	6.751	57.0%	3.848	37,563	102	5.810	57.0%	3.312	37,653	88	6.256	52.9%	3.308	37,308	89	5.730	52.9%	3.030	37,308	81	6.142	52.9%	3.248	37,308	87	89
50203	Manufactured Home Communities Inc.	Small	Indian River	0.005	50.0%	0.003	1,027	2	0.005	50.0%	0.003	1,027	2	0.005	50.0%	0.003	1,027	2	0.020	50.0%	0.010	1,027	10	0.000	50.0%	0.000	0	N/A	4
Indian River County Total				**15.267**	**38.9%**	**5.932**	**136,379**	**43**	**15.248**	**36.5%**	**5.567**	**142,998**	**39**	**15.819**	**35.1%**	**5.545**	**135,279**	**41**	**15.990**	**34.1%**	**5.449**	**137,156**	**40**	**16.944**	**34.2%**	**5.792**	**138,821**	**42**	**41**
N/A	Timber Village Mobile Home Pk	Small	Lake	0.021	100.0%	0.021	176	119	0.019	100.0%	0.019	176	108	0.015	100.0%	0.015	176	86	0.015	100.0%	0.015	176	84	0.000	100.0%	0.000	0	N/A	99
94	City of Leesburg	Large	Lake	6.054	55.4%	3.354	28,937	116	5.505	55.4%	3.050	30,473	100	5.895	61.1%	3.602	33,885	106	6.030	61.1%	3.684	34,159	108	5.934	61.1%	3.626	34,159	106	107
279	Harbor Hills Utilities Ltd.	Large	Lake	0.736	54.5%	0.401	1,091	368	0.692	54.5%	0.377	1,135	332	0.692	54.5%	0.377	1,219	309	1.190	54.5%	0.649	1,219	532	0.694	54.5%	0.378	1,219	310	370
282	Sun Communities Inc	Large	Lake	0.303	85.2%	0.258	1,698	152	0.328	85.2%	0.279	1,539	182	0.613	85.2%	0.522	1,539	339	0.260	94.0%	0.244	1,539	159	0.281	94.0%	0.264	1,539	172	201
288	Lake Joanna Estates Assoc Inc	Small	Lake	0.040	15.3%	0.006	104	59	0.006	15.3%	0.001	104	9	0.006	15.3%	0.001	111	8	0.010	15.3%	0.002	104	15	0.010	15.3%	0.002	104	15	21
289	Harbor Oaks Homeowners Cooperative, Inc.	Small	Lake	0.073	88.0%	0.064	376	171	0.076	88.0%	0.067	376	178	0.078	88.0%	0.069	421	163	0.070	88.0%	0.062	376	164	0.113	88.0%	0.099	376	264	188
290	Midway Manor MHP	Small	Lake	0.007	100.0%	0.007	157	45	0.008	100.0%	0.008	157	51	0.008	100.0%	0.008	157	51	0.010	100.0%	0.010	157	64	0.013	100.0%	0.013	157	83	59
292	Citrus Circle Water Systems Inc	Small	Lake	0.007	100.0%	0.007	66	106	0.007	100.0%	0.007	66	106	0.006	100.0%	0.006	66	91	0.010	100.0%	0.010	66	152	0.010	100.0%	0.010	66	152	121
2392	Cagan Management Corp	Large	Lake	1.443	99.0%	1.429	7,204	198	1.760	99.0%	1.742	7,204	242	1.396	99.0%	1.382	8,237	168	1.480	99.0%	1.465	7,204	203	1.651	99.0%	1.634	7,204	227	208
2416	Oak Springs LLC	Small	Lake	0.064	94.8%	0.061	779	78	0.062	94.8%	0.059	779	75	0.049	94.8%	0.046	779	60	0.050	94.8%	0.047	779	61	0.081	94.8%	0.077	779	99	75
2447	Beauclaire Homeowners Association	Small	Lake	0.012	92.0%	0.011	65	170	0.013	92.0%	0.012	65	184	0.012	92.0%	0.011	65	170	0.010	92.0%	0.009	65	142	0.026	92.0%	0.024	65	368	207
2453	City of Mascotte	Large	Lake	0.368	94.6%	0.348	4,450	78	0.347	94.6%	0.328	4,450	74	0.349	94.6%	0.330	4,450	74	0.370	93.0%	0.344	4,844	71	0.358	93.0%	0.333	4,880	68	73
2454	Community Sunlake Joint Venture	Large	Lake	0.309	82.5%	0.255	713	358	0.320	82.5%	0.264	713	370	0.328	94.5%	0.310	637	487	0.250	94.3%	0.236	637	370	0.146	94.3%	0.138	637	216	360
2472	Springs Park Area Inc	Small	Lake	0.048	87.0%	0.042	321	130	0.043	87.0%	0.037	321	117	0.039	87.0%	0.034	321	106	0.040	87.0%	0.035	321	108	0.060	87.0%	0.052	321	163	125
2473	Century Estates Utilities Inc	Small	Lake	0.020	97.4%	0.019	193	101	0.022	97.4%	0.021	193	111	0.020	97.4%	0.019	193	101	0.020	97.4%	0.019	193	101	0.023	97.4%	0.022	193	116	106
2477	Fisherman's Wharf	Small	Lake	0.005	90.0%	0.005	50	90	0.005	90.0%	0.005	50	90	0.004	90.0%	0.004	50	72	0.003	90.0%	0.002	50	50	0.008	90.0%	0.007	50	144	89
2478	City of Clermont	Large	Lake	5.855	89.7%	5.252	28,283	186	5.861	89.7%	5.257	28,731	183	5.551	89.7%	4.979	30,201	165	5.320	89.7%	4.772	30,201	158	7.836	89.7%	7.029	30,804	228	184
2482	City of Fruitland Park	Large	Lake	0.638	72.0%	0.459	4,554	101	0.641	72.0%	0.462	4,596	100	0.605	72.0%	0.436	5,127	85	0.580	72.0%	0.418	5,127	81	0.560	72.0%	0.403	5,127	79	89
2483	Country Life LLC	Small	Lake	0.036	75.0%	0.027	378	71	0.049	75.0%	0.037	378	97	0.040	75.0%	0.030	242	124	0.028	75.0%	0.021	378	55	0.071	75.0%	0.053	378	141	98
2488	Aqua Utilities of Florida, Inc.	Small	Lake	0.019	94.6%	0.018	256	70	0.017	94.6%	0.016	256	63	0.015	94.6%	0.014	256	55	0.040	94.6%	0.038	256	148	0.023	94.6%	0.022	256	85	84
2513	Molokai Co-op	Small	Lake	0.076	35.7%	0.027	397	68	0.019	35.7%	0.007	397	17	0.022	35.7%	0.008	397	20	0.090	35.7%	0.032	397	81	0.028	35.7%	0.010	397	25	42
2530	Blue Parrot RV Resort	Small	Lake	0.040	95.2%	0.038	262	145	0.037	95.2%	0.035	262	134	0.030	95.2%	0.029	262	109	0.070	95.2%	0.067	262	254	0.037	95.2%	0.035	262	134	155
2531	Thousand Trails Inc	Large	Lake	0.147	65.0%	0.096	1,590	60	0.134	65.0%	0.087	1,590	55	0.153	65.0%	0.099	1,590	63	0.200	65.0%	0.130	1,590	82	0.208	65.0%	0.135	1,590	85	69
2535	Lake Yale Treatment Assoc Inc	Small	Lake	0.035	94.0%	0.033	140	235	0.006	94.0%	0.006	140	40	0.009	94.0%	0.009	140	61	0.012	94.0%	0.011	136	81	0.000	74.0%	0.000	136	N/A	104
2565	Chateau Communities Inc	Small	Lake	0.021	88.0%	0.018	595	31	0.054	88.0%	0.048	595	80	0.042	81.7%	0.034	595	58	0.090	79.2%	0.071	610	117	0.080	79.2%	0.063	610	104	78
2575	Brendenwood Water Systems	Small	Lake	0.024	90.9%	0.022	140	156	0.024	90.9%	0.022	140	156	0.022	90.9%	0.020	140	143	0.030	90.9%	0.027	130	210	0.036	90.9%	0.033	130	252	183
2596	Town of Howey-in-the-Hills	Large	Lake	0.229	75.0%	0.172	1,329	129	0.225	75.0%	0.169	1,329	127	0.199	75.0%	0.149	1,329	112	0.210	75.0%	0.158	1,150	137	0.252	75.0%	0.189	1,167	162	133
2598	Haines Creek RV Village	Small	Lake	0.008	100.0%	0.008	166	48	0.003	100.0%	0.003	166	18	0.003	100.0%	0.003	166	18	0.010	100.0%	0.010	166	60	0.004	100.0%	0.004	166	24	34
2604	Aqua Utilities of Florida, Inc.	Small	Lake	0.037	100.0%	0.037	436	85	0.032	100.0%	0.032	436	73	0.031	100.0%	0.031	436	71	0.040	100.0%	0.040	436	92	0.047	100.0%	0.047	437	108	86
2605	Aqua Utilities of Florida, Inc.	Large	Lake	0.046	89.0%	0.041	581	70	0.041	89.0%	0.036	577	63	0.036	89.0%	0.032	577	56	0.040	89.0%	0.036	577	62	0.053	89.0%	0.047	577	82	67
2606	Aqua Utilities of Florida, Inc.	Small	Lake	0.002	100.0%	0.002	27	74	0.002	100.0%	0.002	27	74	0.000	100.0%	0.000	27	N/A	0.000	100.0%	0.000	27	N/A	0.000	100.0%	0.000	27	N/A	74
2607	Aqua Utilities of Florida, Inc.	Small	Lake	0.013	100.0%	0.013	428	30	0.014	100.0%	0.014	428	33	0.016	100.0%	0.016	428	37	0.020	100.0%	0.020	428	47	0.022	100.0%	0.022	428	51	40
2608	Aqua Utilities of Florida, Inc.	Small	Lake	0.024	100.0%	0.024	411	58	0.023	100.0%	0.023	411	56	0.021	100.0%	0.021	411	51	0.020	100.0%	0.020	440	45	0.034	100.0%	0.034	440	77	57
2609	Aqua Utilities of Florida, Inc.	Small	Lake	0.029	100.0%	0.029	365	79	0.025	100.0%	0.025	373	67	0.024	100.0%	0.024	373	64	0.020	100.0%	0.020	374	53	0.033	100.0%	0.033	374	88	70
2610	Aqua Utilities of Florida, Inc.	Small	Lake	0.007	77.3%	0.005	85	64	0.007	77.3%	0.005	85	64	0.007	77.3%	0.005	85	64	0.010	77.3%	0.008	85	91	0.012	77.3%	0.009	85	109	78
2611	Aqua Utilities of Florida, Inc.	Small	Lake	0.023	100.0%	0.023	303	76	0.022	100.0%	0.022	303	73	0.024	100.0%	0.024	303	79	0.020	100.0%	0.020	286	70	0.023	100.0%	0.023	286	80	76
2612	Aqua Utilities of Florida, Inc.	Small	Lake	0.010	100.0%	0.010	102	98	0.006	100.0%	0.006	102	59	0.006	100.0%	0.006	102	59	0.006	100.0%	0.006	102	56	0.012	100.0%	0.012	102	118	78
2613	Aqua Utilities of Florida, Inc.	Small	Lake	0.013	100.0%	0.013	181	72	0.013	100.0%	0.013	181	72	0.014	100.0%	0.014	256	55	0.010	100.0%	0.010	198	51	0.021	100.0%	0.021	198	106	71
2614	Aqua Utilities of Florida, Inc.	Small	Lake	0.025	100.0%	0.025	216	116	0.016	100.0%	0.016	216	74	0.018	100.0%	0.018	216	83	0.020	100.0%	0.020	216	93	0.021	100.0%	0.021	216	97	93
2621	Astatula Estates	Small	Lake	0.059	90.0%	0.053	177	300	0.033	90.0%	0.030	128	232	0.043	84.5%	0.036	128	284	0.050	84.5%	0.042	122	346	0.087	84.5%	0.074	122	603	353
2622	Brittany Estates Residents Owners Assoc Inc	Small	Lake	0.053	88.0%	0.047	194	240	0.052	88.0%	0.046	194	236	0.054	88.0%	0.048	194	245	0.050	88.0%	0.044	194	227	0.081	88.0%	0.071	194	367	263
2628	Lakeside Village LTD	Small	Lake	0.037	87.0%	0.032	141	228	0.034	87.0%	0.030	141	210	0.035	87.0%	0.030	141	216	0.030	89.7%	0.027	141	191	0.021	89.7%	0.019	141	134	196
2632	Aqua Utilities of Florida, Inc.	Large	Lake	0.048	100.0%	0.048	332	145	0.044	100.0%	0.044	332	133	0.042	76.0%	0.032	332	96	0.040	76.0%	0.030	332	92	0.039	76.0%	0.030	332	89	111
2634, 84879,	City of Eustis	Large	Lake	3.450	79.4%	2.739	22,486	122	3.357	79.4%	2.665	22,961	116	3.223	79.4%	2.559	23,815	107	3.230	79.4%	2.565	25,450	101	3.023	79.4%	2.400	25,450	94	108
2644	Aqua Utilities of Florida, Inc.	Large	Lake	0.502	88.0%	0.442	3,776	117	0.418	88.0%	0.368	3,776	97	0.373	88.0%	0.328	3,776	87	0.390	88.0%	0.343	3,776	91	0.407	88.0%	0.358	3,776	95	97
2646	City of Umatilla	Large	Lake	0.366	100.0%	0.366	3,572	102	0.366	100.0%	0.366	3,572	102	0.440	70.1%	0.308	3,874	80	0.460	70.1%	0.322	3,894	83	0.456	70.1%	0.320	3,894	82	90
2659	Hometown America	Small	Lake	0.117	98.0%	0.115	190	603	0.041	98.0%	0.040	190	211	0.039	98.0%	0.038	190	201	0.030	98.0%	0.029	190	155	0.049	98.0%	0.048	190	253	285
2662	Mission Golf & Tennis Resort	Large	Lake	0.255	34.1%	0.087	461	189	0.074	21.5%	0.016	461	35	0.071	21.5%	0.015	461	33	0.090	21.5%	0.019	435	45	0.125	21.5%	0.027	435	62	73
2671	Town of Monteverde	Large	Lake	0.190	56.3%	0.107	1,463	73	0.194	56.3%	0.109	1,468	74	0.191	56.3%	0.108	1,498	72	0.180	75.9%	0.137	1,498	91	0.192	75.9%	0.146	1,498	97	81
2700	Lake Utility Services Inc.	Large	Lake	5.777	58.2%	3.362	21,129	159	4.621	58.2%	2.689	21,129	127	4.376	58.2%	2.547	21,976	116	4.010	88.0%	3.529	21,976	161	4.382	88.0%	3.856	21,976	175	148
2701	Aqua Source Inc.	Large	Lake	0.052	93.0%	0.048	470	103	0.040	93.0%	0.037	470	79	0.037	93.0%	0.034	506	68	0.040	93.0%	0.037	506	74	0.039	93.0%	0.036	506	72	79
2717	Utilities, Inc. of Florida	Large	Lake	0.531	82.2%	0.436	2,357	185	0.418	82.2%	0.344	2,357	146	0.414	82.2%	0.340	2,488	137	0.370	82.2%	0.304	2,488	122	0.405	82.2%	0.333	2,488	134	145
2718	Plantation at Leesburg	Large	Lake	1.379	70.2%	0.968	5,061	191	1.255	70.2%	0.881	5,061	174	1.203	70.2%	0.845	5,061	167	1.050	70.2%	0.737	5,061	146	1.231	70.2%	0.864	5,061	171	170
2765	City of Tavares	Large	Lake	2.618	70.0%	1.833	17,398	105	2.519	70.0%	1.763	17,802	99	2.441	70.0%	1.709	17,802	96	2.420	70.0%	1.694	17,802	95	2.590	70.0%	1.813	18,326	99	99
2775	Ridgecrest Management Co. LLC	Small	Lake	0.030	87.0%	0.026	253	103	0.019	87.0%	0.017	253	65	0.023	87.0%	0.020	253	79	0.010	87.0%	0.009	253	34	0.020	83.0%	0.017	253	66	69
2778	Waterwood Community Assoc. Inc.	Small	Lake	0.080	71.0%	0.057	286	199	0.078	71.0%	0.055	286	194	0.075	71.0%	0.053	286	186	0.070	71.0%	0.050	295	168	0.114	71.0%	0.081	295	274	204
2782	Raintree Utilities Inc.	Small	Lake	0.052	82.2%	0.043	275	155	0.050	82.2%	0.041	275	149	0.042	82.2%	0.035	275	126	0.040	82.2%	0.033	265	124	0.069	82.2%	0.057	265	214	154
2796, 2913	City of Groveland	Large	Lake	1.450	75.4%	1.093	12,454	88	1.612	75.4%	1.215	13,402	91	1.561	75.4%	1.177	13,681	86	1.630	75.4%	1.229	13,681	90	1.666	75.4%	1.256	13,681	92	89
2810	Lake Griffin Isles	Large	Lake	0.085	95.5%	0.081	237	343	0.080	95.5%	0.076	237	322	0.078	95.5%	0.074	237	314	0.070	95.5%	0.067	237	282	0.067	95.5%	0.064	237	270	306
2840	Woodlands Church Lake LLC	Large	Lake	0.148	87.2%	0.129	346	373	0.142	87.2%	0.124	346	358	0.119	87.2%	0.104	346	300	0.072	87.2%	0.063	346	181	0.107	87.2%	0.093	346	270	296
2847	Vacation Village Condominium Association	Small	Lake	0.024	75.0%	0.018	494	36	0.031	75.0%	0.023	494	47	0.029	75.0%	0.022	494	44	0.030	75.0%	0.023	479	47	0.055	75.0%	0.041	479	86	52
2858	Pine Island Fish Camp	Small	Lake	0.001	100.0%	0.001	25	40	0.001	100.0%	0.001	25	40	0.000	100.0%	0.000	25	N/A	0.000	100.0%	0.000	25	N/A	0.000	100.0%	0.000	25	N/A	40
2860	Hawthorne Residents Coop Assoc	Large	Lake	0.449	88.2%	0.396	1,787	222	0.405	88.7%	0.359	1,787	201	0.380	89.5%	0.340	1,886	180	0.370	89.1%	0.330	1,787	184	0.392	89.1%	0.349	1,787	195	196
2862	Lady Lake Mobile Home Park Inc	Small	Lake	0.044	86.3%	0.038	253	150	0.041	86.3%	0.035	253	140	0.034	86.3%	0.029	253	116	0.030	86.3%	0.026	270	96	0.042	86.3%	0.036	270	134	127
2863	Bonfire Cooperative Assoc Inc	Small	Lake	0.025	65.6%	0.016	400	41	0.033	65.6%	0.022	400	54	0.029	72.0%	0.021	400	52	0.020	72.0%	0.014	400	36	0.051	72.0%	0.037	400	92	55
2865	Community of Christ	Small	Lake	0.010	100.0%	0.010	25	400	0.006	100.0%	0.006	25	240	0.000	100.0%	0.000	25	N/A	0.000	100.0%	0.000	25	N/A	0.000	100.0%	0.000	25	N/A	320
2867	T & T Inc dba Country Squire Mobile Home Village	Small	Lake	0.018	86.0%	0.015	298	52	0.029	86.0%	0.025	298	84	0.026	86.0%	0.022	298	75	0.020	86.0%	0.017	240	72	0.035	86.0%	0.030	240	125	82
2886	City of Minneola	Large	Lake	1.552	74.0%	1.148	11,161	103	1.536	74.0%	1.137	11,417	100	1.497	74.0%	1.108	11,773	94	1.530	74.0%	1.132	11,773	96	1.649	74.0%	1.220	11,933	102	99
2888	Mid Florida Lakes	Large	Lake	0.347	83.5%	0.290	1,709	170	0.312	83.5%	0.261	1,709	152	0.307	83.5%	0.256	1,709	150	0.300	82.0%	0.246	1,709	144	0.223	82.0%	0.183	1,709	107	145
2890	Monteverde Mobile Home Subd Assn Inc	Small	Lake	0.031	100.0%	0.031	678	46	0.030	96.9%	0.029	678	43	0.032	96.9%	0.031	678	46	0.030	96.9%	0.029	670	43	0.059	96.9%	0.057	670	85	53
2891	Corley Island Mobile Manor	Small	Lake	0.028	98.4%	0.028	200	138	0.029	98.4%	0.029	200	143	0.030	98.4%	0.030	250	118	0.030	98.4%	0.030	200	148	0.048	98.4%	0.047	200	236	157
2893	Torch Lite MHP LLC	Small	Lake	0.011	94.2%	0.010	74	140	0.013	94.2%	0.012	74	165	0.014	94.2%	0.013	50	264	0.010	94.2%	0.009	50	188	0.019	94.2%	0.018	50	358	223
2900	Ginn-LA Pine Island LTD LLLP	Large	Lake	0.044	23.9%	0.011	17	619	0.060	23.9%	0.014	17	844	0.045	23.9%	0.011	30	359	0.060	23.9%	0.014	30	478	0.121	23.9%	0.029	30	964	653
2901	Pine Harbour Water Utilities	Small	Lake	0.015	89.9%	0.013	123	110	0.017	89.9%	0.015	123	124	0.015	89.9%	0.013	123	110	0.020	89.9%	0.018	132	136	0.019	89.9%	0.017	132	129	122
2973	Lakes of Lady Lake Homeowners Assocation, Inc.	Small	Lake	0.021	66.0%	0.014	100	139	0.039	66.0%	0.026	100	257	0.041	66.0%	0.027	100	271	0.040	65.0%	0.026	100	260	0.057	65.0%	0.037	100	371	260
2989	Citrus Cove Homeowners Association Water System	Small	Lake	0.021	90.0%	0.019	94	201	0.023	90.0%	0.021	94	220	0.017	90.0%	0.015	94	163	0.020	90.0%	0.018	94	191	0.031	90.0%	0.028	94	297	214

Table B-6b, Continued. 2011-2015 Residential Water Use and Five-Year Residential Per Capita Averages for All Public Supply Permittees in Counties Wholly or Partially Within the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management

CUP Number	Owner	Utility Category	County	2011 Water Use	2011 % Household	2011 Household Use	2011 Population	2011 Residential GPCD	2012 Water Use	2012 % Household	2012 Household Use	2012 Population	2012 Residential GPCD	2013 Water Use	2013 % Household	2013 Household Use	2013 Population	2013 Residential GPCD	2014 Water Use	2014 % Household	2014 Household Use	2014 Population	2014 Residential GPCD	2015 Water Use	2015 % Household	2015 Household Use	2015 Population	2015 Residential GPCD	2011-2015 Average Residential GPCD
4487	Edgewater Beach Homeowners Assoc	Small	Lake	0.005	90.2%	0.005	32	141	0.005	90.2%	0.005	32	141	0.000	90.2%	0.000	32	N/A	0.000	90.2%	0.000	32	N/A	0.000	90.2%	0.000	32	N/A	141
4493	Aqua Utilities of Florida, Inc.	Small	Lake	0.015	100.0%	0.015	490	31	0.015	100.0%	0.015	490	31	0.015	100.0%	0.015	490	31	0.020	100.0%	0.020	490	41	0.024	100.0%	0.024	490	49	37
4512	Cypress Creek Mobile Home Park	Small	Lake	0.027	100.0%	0.027	251	108	0.026	100.0%	0.026	251	104	0.028	100.0%	0.028	251	112	0.030	100.0%	0.030	251	120	0.036	100.0%	0.036	251	143	117
4545	Aqua Utilities of Florida, Inc.	Small	Lake	0.014	100.0%	0.014	186	75	0.014	100.0%	0.014	231	61	0.012	100.0%	0.012	231	52	0.010	100.0%	0.010	231	43	0.025	100.0%	0.025	181	138	74
4555	Aqua Utilities of Florida, Inc.	Small	Lake	0.027	100.0%	0.027	532	51	0.028	100.0%	0.028	532	53	0.034	100.0%	0.034	532	64	0.030	100.0%	0.030	532	56	0.054	100.0%	0.054	532	102	65
4565	Tara Village	Small	Lake	0.035	85.0%	0.030	273	109	0.024	85.0%	0.020	283	72	0.019	85.0%	0.016	283	57	0.020	85.0%	0.017	266	64	0.036	85.0%	0.031	266	115	83
5753	WBB Utilities Inc	Small	Lake	0.056	95.5%	0.053	164	326	0.056	95.5%	0.053	164	326	0.039	95.5%	0.037	164	227	0.040	95.5%	0.038	164	233	0.061	95.5%	0.058	164	355	293
6398	Clerbrook Golf and RV Resort	Large	Lake	0.108	50.0%	0.054	2,364	23	0.129	50.0%	0.065	2,364	27	0.095	50.0%	0.048	2,364	20	0.100	50.0%	0.050	2,364	21	0.084	50.0%	0.042	2,364	18	22
6781	Shangri-La by the Lake Utilities Inc	Small	Lake	0.028	90.6%	0.025	407	62	0.025	90.6%	0.023	407	56	0.025	90.6%	0.023	407	56	0.030	90.6%	0.027	407	67	0.048	90.6%	0.043	407	107	70
10846	Presco Associates LLC	Large	Lake	0.000	86.1%	0.000	0	N/A	0.000	86.1%	0.000	0	N/A	0.000	86.1%	0.000	0	N/A	0.000	86.1%	0.000	0	N/A	0.000	86.1%	0.000	0	N/A	N/A
50049	Town of Lady Lake	Large	Lake	0.690	100.0%	0.690	4,847	142	0.705	100.0%	0.705	5,629	125	0.646	100.0%	0.646	5,629	115	0.690	100.0%	0.690	5,629	123	0.699	100.0%	0.699	5,688	123	126
50094	Lake Utility Services, Inc.	Small	Lake	0.008	100.0%	0.008	109	73	0.009	100.0%	0.009	109	83	0.009	100.0%	0.009	109	83	0.010	100.0%	0.010	109	92	0.021	100.0%	0.021	161	130	92
50115	Ginn-LA Pine Island II LLLP	Large	Lake	0.457	28.3%	0.129	138	937	0.331	28.3%	0.094	111	844	0.734	28.3%	0.208	111	1,871	0.480	28.3%	0.136	111	1,224	0.251	28.3%	0.071	111	640	1103
50147	City of Mount Dora	Large	Lake	3.008	78.0%	2.346	22,817	103	3.331	78.0%	2.598	23,718	110	3.160	78.0%	2.465	23,718	104	2.800	78.0%	2.184	23,718	92	4.822	73.0%	3.520	23,718	148	111
50152	Wedgewood Homeowners Assoc. Inc.	Large	Lake	0.139	87.0%	0.121	721	168	0.123	87.0%	0.107	721	148	0.140	87.0%	0.122	721	169	0.110	87.0%	0.096	721	133	0.120	87.0%	0.104	721	145	153
50178	St. Johns River Utility Inc.	Large	Lake	0.265	100.0%	0.265	3,920	68	0.258	100.0%	0.258	3,920	66	0.255	100.0%	0.255	3,920	65	0.270	100.0%	0.270	2,946	92	0.250	100.0%	0.250	2,946	85	75
50218	Highlands MHP and Sales Inc	Small	Lake	0.018	100.0%	0.018	103	175	0.016	100.0%	0.016	130	123	0.020	100.0%	0.020	130	154	0.020	100.0%	0.020	130	154	0.030	100.0%	0.030	130	231	167
50254	Treasure Island Estates Inc	Small	Lake	0.010	94.9%	0.009	89	107	0.015	94.9%	0.014	89	160	0.009	94.9%	0.009	89	96	0.020	94.9%	0.019	89	213	0.034	94.9%	0.032	89	363	188
50279	Village Center Service Area	Large	Lake	4.809	72.0%	3.462	17,588	197	4.561	72.0%	3.284	17,588	187	4.245	72.0%	3.056	17,588	174	3.979	72.0%	2.865	17,588	163	4.385	74.0%	3.245	17,588	185	181
50307	Lake-Ulmerton Corporation	Small	Lake	0.021	80.6%	0.017	414	41	0.025	80.6%	0.020	414	49	0.028	80.6%	0.023	414	55	0.030	80.6%	0.024	414	58	0.050	80.6%	0.040	414	97	60
50334	Park at Wolf Branch Oaks	Large	Lake	0.123	73.9%	0.091	281	323	0.214	73.9%	0.158	281	563	0.109	73.9%	0.081	281	287	0.100	73.9%	0.074	281	263	0.094	73.9%	0.069	281	247	337
50780	Cove Water System Incorporated	Small	Lake	0.008	95.4%	0.008	134	57	0.010	95.4%	0.010	134	71	0.009	95.4%	0.009	134	64	0.010	95.4%	0.010	134	71	0.018	95.4%	0.017	134	128	78
62724	Aqua Utilities of Florida, Inc.	Large	Lake	0.121	89.6%	0.108	583	186	0.090	89.6%	0.081	583	138	0.080	89.6%	0.072	583	123	0.080	89.6%	0.072	583	123	0.082	90.7%	0.074	583	128	140
98980	Raintree Utilities Inc.	Small	Lake	0.004	90.0%	0.004	4	900	0.004	90.0%	0.004	4	900	0.000	90.0%	0.000	21	N/A	0.000	90.0%	0.000	21	N/A	0.000	90.0%	0.000	21	N/A	900
103822	Colina Bay Water Company	Large	Lake	0.001	79.0%	0.001	0	0	0.184	79.0%	0.145	0	N/A	0.171	79.0%	0.135	65	2,067	0.170	79.0%	0.134	175	767	0.166	79.0%	0.131	175	749	896
107839	Leesburg Associates Limited Partnership	Large	Lake	0.116	83.4%	0.097	1,004	96	0.119	83.4%	0.099	1,004	99	0.111	83.4%	0.093	1,004	92	0.120	83.4%	0.100	1,004	100	0.113	83.4%	0.094	1,004	94	96
110807	Lake County Acreage LLC	Small	Lake	0.007	97.1%	0.007	9	755	0.000	97.1%	0.000	0	N/A	0.000	97.1%	0.000	7	N/A	0.000	97.1%	0.000	7	N/A	0.156	97.1%	0.151	7	N/A	755
114536	Lake County	Small	Lake	0.053	84.0%	0.045	400	111	0.042	84.0%	0.035	438	81	0.042	84.0%	0.035	438	81	0.042	84.0%	0.035	438	81	0.000	84.0%	0.000	438	N/A	89
120333	Aqua Utilities of Florida, Inc.	Small	Lake	0.007	94.0%	0.007	90	73	0.007	94.0%	0.007	90	73	0.007	94.0%	0.007	90	73	0.010	94.0%	0.009	90	104	0.012	94.0%	0.011	90	125	90
128295	Black Bear Reserve Water Corporation	Large	Lake	0.291	100.0%	0.291	592	492	0.319	100.0%	0.319	592	539	0.387	100.0%	0.387	618	626	0.390	100.0%	0.390	625	624	0.437	100.0%	0.437	625	699	596
	Lake County Total			**47.258**	**73.7%**	**34.824**	**256,643**	**136**	**45.221**	**74.7%**	**33.802**	**262,364**	**129**	**44.203**	**74.6%**	**32.960**	**271,897**	**121**	**43.157**	**77.4%**	**33.390**	**271,937**	**123**	**48.900**	**78.4%**	**38.325**	**273,163**	**140**	**130**
N/A	Aqua Utilities of Florida, Inc.	Small	Marion	0.088	100.0%	0.088	0	N/A	0.100	100.0%	0.100	0	N/A	0.097	100.0%	0.097	0	N/A	0.102	100.0%	0.102	0	N/A	0.089	100.0%	0.089	0	N/A	N/A
N/A	Debra Demers	Small	Marion	0.004	100.0%	0.004	32	125	0.004	100.0%	0.004	32	125	0.004	100.0%	0.004	112	32	0.005	100.0%	0.005	112	44	0.004	100.0%	0.004	112	36	72
N/A	Marion Utilities Inc.	Small	Marion	0.210	100.0%	0.210	1,573	134	0.209	100.0%	0.209	1,573	133	0.181	100.0%	0.181	3,489	52	0.182	100.0%	0.182	3,489	52	0.210	100.0%	0.210	3,522	60	86
N/A	Ocala Garden Apartments Inc.	Small	Marion	0.004	100.0%	0.004	48	83	0.004	100.0%	0.004	48	83	0.003	100.0%	0.003	48	63	0.003	100.0%	0.003	48	53	0.003	100.0%	0.003	48	63	69
N/A	Sunshine Utilities	Small	Marion	0.023	100.0%	0.023	268	86	0.023	100.0%	0.023	268	86	0.020	100.0%	0.020	399	51	0.021	100.0%	0.021	399	51	0.024	100.0%	0.024	399	60	67
N/A	Sunshine Utilities of Central Fl Inc.	Small	Marion	0.010	100.0%	0.010	85	118	0.009	100.0%	0.009	85	106	0.009	100.0%	0.009	126	71	0.007	100.0%	0.007	126	55	0.009	100.0%	0.009	126	71	84
N/A	Sunshine Utilities of Central Fl Inc.	Small	Marion	0.017	100.0%	0.017	143	119	0.017	100.0%	0.017	143	119	0.013	100.0%	0.013	214	62	0.014	100.0%	0.014	214	64	0.017	100.0%	0.017	189	90	91
104	Shady Road Villas	Small	Marion	0.032	71.0%	0.023	287	79	0.029	71.0%	0.021	287	72	0.048	71.0%	0.034	287	119	0.020	71.0%	0.014	287	49	0.054	71.0%	0.038	287	134	91
108	Marion County Utilities	Small	Marion	0.041	20.1%	0.008	342	24	0.045	20.1%	0.009	342	26	0.034	20.1%	0.007	342	20	0.045	20.1%	0.009	342	26	0.051	20.1%	0.010	342	30	25
2993	Sunshine Utilities	Large	Marion	0.195	75.2%	0.147	1,159	127	0.167	75.2%	0.126	1,090	115	0.162	75.2%	0.122	1,090	112	0.160	75.2%	0.120	1,090	110	0.177	75.2%	0.133	1,411	94	112
2995	Tradewinds Utilities Inc.	Large	Marion	0.128	64.4%	0.082	1,313	63	0.104	67.7%	0.070	1,313	54	0.093	65.5%	0.061	1,313	46	0.110	65.5%	0.072	1,313	55	0.094	65.5%	0.062	1,313	47	53
2996	Sunshine Utilities	Small	Marion	0.019	100.0%	0.019	186	102	0.016	100.0%	0.016	186	86	0.015	100.0%	0.015	186	81	0.020	100.0%	0.020	186	108	0.020	100.0%	0.020	186	108	97
2998	Mr Juerg and Germaine Mueller	Small	Marion	0.001	100.0%	0.001	25	40	0.001	100.0%	0.001	25	40	0.001	100.0%	0.001	25	40	0.001	100.0%	0.001	25	40	0.000	100.0%	0.000	50	N/A	40
3002	Marion County Utilities	Large	Marion	0.294	87.2%	0.256	1,796	143	0.252	87.2%	0.220	1,796	122	0.223	87.2%	0.194	1,796	108	0.200	87.2%	0.174	1,796	97	0.224	87.2%	0.195	1,796	109	116
3008	East Marion Sanitary Systems Inc	Small	Marion	0.016	92.0%	0.015	150	98	0.020	92.0%	0.018	150	123	0.017	92.0%	0.016	150	104	0.010	92.0%	0.009	150	61	0.033	92.0%	0.030	150	202	118
3010	Windstream Utilities Company	Small	Marion	0.085	100.0%	0.085	301	282	0.070	100.0%	0.070	301	233	0.073	100.0%	0.073	301	243	0.060	100.0%	0.060	301	199	0.104	100.0%	0.104	301	346	261
3013	Sunshine Utilities	Small	Marion	0.053	100.0%	0.053	362	146	0.049	100.0%	0.049	362	135	0.047	100.0%	0.047	362	130	0.050	100.0%	0.050	362	138	0.070	100.0%	0.070	362	193	148
3016	Ocala East Villas	Large	Marion	0.118	54.5%	0.064	583	110	0.108	54.5%	0.059	583	101	0.086	54.5%	0.047	583	80	0.090	54.5%	0.049	575	85	0.085	54.5%	0.046	575	81	91
3019	Sunshine Utilities	Large	Marion	0.062	95.9%	0.059	684	87	0.059	95.9%	0.057	684	83	0.058	95.9%	0.056	684	81	0.060	95.9%	0.058	684	84	0.071	95.9%	0.068	684	100	87
3021	Camelot Communities	Large	Marion	0.371	67.3%	0.250	2,348	106	0.400	67.3%	0.269	2,348	115	0.255	67.3%	0.172	2,348	73	0.340	67.3%	0.229	2,318	99	0.334	67.3%	0.225	2,318	97	98
3043	Aqua Utilities of Florida, Inc.	Large	Marion	0.150	90.7%	0.136	1,478	92	0.145	90.7%	0.132	1,478	89	0.205	91.3%	0.187	1,478	127	0.180	91.3%	0.164	1,478	111	0.156	91.3%	0.142	1,478	96	103
3054, 50381, 51173	Marion County Utilities	Large	Marion	1.954	78.2%	1.528	14,076	109	1.702	78.2%	1.331	14,076	95	1.464	78.2%	1.145	16,436	70	1.547	78.2%	1.210	16,436	74	1.667	78.2%	1.304	19,569	67	83
3060	Aqua Utilities of Florida, Inc.	Small	Marion	0.023	91.2%	0.021	237	89	0.021	91.2%	0.019	237	81	0.021	91.2%	0.019	237	80	0.021	91.2%	0.019	362	52	0.000	91.2%	0.000	362	N/A	76
3061	Oak Bend Mobile Home Park	Large	Marion	0.064	91.1%	0.058	550	106	0.055	91.1%	0.050	550	91	0.050	91.1%	0.046	550	83	0.050	91.1%	0.046	550	83	0.012	91.1%	0.011	550	20	77
3077	GMN Landfair LTD	Small	Marion	0.026	89.0%	0.023	545	42	0.026	89.0%	0.023	545	42	0.031	89.0%	0.028	545	51	0.030	89.0%	0.027	580	46	0.041	89.0%	0.036	580	63	49
3079	Marion County Utilities	Large	Marion	0.056	100.0%	0.056	803	70	0.060	100.0%	0.060	766	78	0.055	100.0%	0.055	766	72	0.056	100.0%	0.056	652	86	0.057	100.0%	0.057	1,141	50	71
3080	Sunshine Utilities of Central Fla Inc	Small	Marion	0.032	91.7%	0.029	96	306	0.028	91.7%	0.026	96	267	0.037	91.7%	0.034	96	353	0.040	91.7%	0.037	103	356	0.051	91.7%	0.047	103	454	347
3083	Lake Oklawaha RV Resort Inc.	Small	Marion	0.003	58.1%	0.002	399	4	0.002	58.1%	0.001	399	3	0.002	58.1%	0.001	399	3	0.002	58.1%	0.001	399	3	0.008	58.1%	0.005	399	12	5
3087	Tropicana Village Homeowners Assoc Inc	Small	Marion	0.026	100.0%	0.026	261	100	0.017	100.0%	0.017	261	65	0.016	100.0%	0.016	261	61	0.020	100.0%	0.020	261	77	0.024	100.0%	0.024	261	92	79
3092	Willow Reed Inc	Small	Marion	0.005	100.0%	0.005	80	63	0.005	100.0%	0.005	80	63	0.005	100.0%	0.005	80	63	0.005	100.0%	0.005	80	63	0.000	100.0%	0.000	80	N/A	63
3093	Sunshine Utilities	Small	Marion	0.043	97.0%	0.042	407	102	0.050	97.0%	0.049	407	119	0.047	97.0%	0.046	407	112	0.040	97.0%	0.039	433	90	0.047	97.0%	0.046	473	96	104
3094	Marion Utilities Inc.	Large	Marion	0.118	100.0%	0.118	1,126	105	0.108	100.0%	0.108	1,126	96	0.095	100.0%	0.095	1,126	84	0.090	100.0%	0.090	1,126	80	0.101	100.0%	0.101	1,126	90	91
3095	Aqua Utilities of Florida, Inc.	Small	Marion	0.025	100.0%	0.025	310	81	0.023	100.0%	0.023	310	74	0.023	100.0%	0.023	310	74	0.020	100.0%	0.020	310	65	0.034	100.0%	0.034	310	110	81
3101	Marion Utilities Inc.	Large	Marion	0.146	100.0%	0.146	1,081	135	0.131	100.0%	0.131	1,081	121	0.121	100.0%	0.121	1,081	112	0.120	100.0%	0.120	1,081	111	0.122	100.0%	0.122	1,081	113	118
3127	Town of McIntosh	Small	Marion	0.074	100.0%	0.074	588	126	0.065	100.0%	0.065	588	111	0.059	100.0%	0.059	588	100	0.060	100.0%	0.060	588	102	0.101	100.0%	0.101	588	172	122
3130	Sunshine Utilities	Large	Marion	0.168	100.0%	0.168	1,238	136	0.160	100.0%	0.160	1,238	129	0.144	100.0%	0.144	1,238	116	0.140	100.0%	0.140	1,238	113	0.153	100.0%	0.153	1,238	124	124
3131	Sunshine Utilities	Small	Marion	0.026	100.0%	0.026	233	112	0.019	100.0%	0.019	233	82	0.023	100.0%	0.023	233	99	0.019	100.0%	0.019	233	83	0.024	100.0%	0.024	233	103	96
3132	Sunshine Utilities	Small	Marion	0.022	97.7%	0.021	235	91	0.031	97.7%	0.030	235	129	0.031	97.7%	0.030	235	129	0.027	97.7%	0.026	235	112	0.046	97.7%	0.045	235	191	130
3137	City of Belleview	Large	Marion	0.805	56.2%	0.452	7,945	57	0.809	56.2%	0.455	7,945	57	0.828	56.2%	0.465	7,945	59	0.770	56.2%	0.433	8,453	51	0.741	56.2%	0.416	8,433	49	55
4573	Forest Green Merchants and Homeowners Assoc Inc	Small	Marion	0.005	94.6%	0.005	181	26	0.004	94.6%	0.004	181	21	0.006	94.6%	0.006	181	31	0.003	94.6%	0.002	181	13	0.005	94.6%	0.005	181	26	23
4578	Marion County Utilities	Large	Marion	0.378	22.3%	0.084	1,832	46	0.215	22.3%	0.048	1,659	29	0.379	22.3%	0.084	1,659	51	0.731	22.3%	0.163	1,659	98	0.296	22.3%	0.066	1,659	40	53
4580	Marion Utilities Inc.	Small	Marion	0.013	95.9%	0.012	176	71	0.014	95.9%	0.013	176	76	0.014	95.9%	0.013	176	76	0.010	95.9%	0.010	176	54	0.021	95.9%	0.020	176	114	78
4581	Marion Utilities Inc.	Small	Marion	0.039	89.8%	0.035	338	104	0.037	89.8%	0.033	338	98	0.034	89.8%	0.031	338	90	0.034	89.8%	0.031	338	90	0.045	89.8%	0.040	338	120	100
4582	Aqua Utilities of Florida, Inc.	Small	Marion	0.056	88.1%	0.049	712	69	0.051	88.1%	0.045	712	63	0.043	88.1%	0.038	712	53	0.050	88.1%	0.044	758	58	0.069	88.1%	0.061	758	80	65
6850	Sunshine Utilities	Small	Marion	0.001	100.0%	0.001	668	1	0.032	100.0%	0.032	668	48	0.030	100.0%	0.030	406	74	0.030	100.0%	0.030	406	74	0.051	100.0%	0.051	406	126	65
6858	Smith Lake Shores Village	Small	Marion	0.041	97.7%	0.040	368	109	0.051	97.7%	0.050	368	135	0.055	97.7%	0.054	368	146	0.040	97.7%	0.039	368	106	0.079	97.7%	0.077	368	210	141
6893	Wilderness RV Park Estates LLC	Small	Marion	0.048	88.1%	0.042	383	110	0.020	88.1%	0.018	383	46	0.019	88.1%	0.017	383	44	0.020	88.1%	0.018	378	47	0.029	88.1%	0.026	378	68	63
N/A	Grand Lake RV & Golf Resort	Large	Marion	0.091	100.0%	0.091	150	607	0.091	100.0%	0.091	150	607	0.020	100.0%	0.020	150	131	0.019	100.0%	0.019	150	130	0.020	100.0%	0.020	150	136	322
7116	Aqua Utilities of Florida, Inc.	Small	Marion	0.043	100.0%	0.043	512	84	0.040	100.0%	0.040	512	78	0.030	100.0%	0.030	512	59	0.032	100.0%	0.032	512	63	0.000	100.0%	0.000	512	N/A	71
50324	City of Ocala	Large	Marion	11.150	55.4%	6.177	58,990	105	11.165	55.4%	6.185	59,559	104	10.382	55.4%	5.752	60,090	96	10.230	55.4%	5.667	61,082	93	11.111	55.4%	6.155	61,877	99	99
50425	Marion County Utilities	Small	Marion	0.030	84.6%	0.025	966	26	0.030	84.6%	0.025	966	26	0.015	84.6%	0.013	966	13	0.020	84.6%	0.017	966	18	0.024	84.6%	0.020	966	21	21
71676, 82827	Marion County Utilities	Large	Marion	1.896	76.9%	1.458	4,559	320	1.763	76.9%	1.356	4,559	297	1.383	76.9%	1.064	4,559	233	0.895	76.9%	0.688	5,393	128	1.484	76.9%	1.141	8,128	140	224
82064	Marion County Utilities	Large	Marion	1.586	89.3%	1.416	7,185	197	1.391	89.3%	1.242	7,943	156	1.313	89.3%	1.173	7,943	148	1.172	89.3%	1.047	6,745	155	1.366	89.3%	1.220	6,745	181	167
82743	Silver City Oaks Inc	Small	Marion	0.013	95.4%	0.012	108	115	0.011	95.4%	0.010	108	97	0.025	95.4%	0.024	108	221	0.010	95.4%	0.010	108	88	0.012	95.4%	0.011	108	106	125
97447	Marion County Utilities	Small	Marion	0.005	100.0%	0.005	12	417	0.005	100.0%	0.005	12	417	0.240	100.0%	0.240	12	20,000	0.008	100.0%	0.008	25	320	0.011	100.0%	0.011	25	440	4319
102623	Marion County Utilities	Large	Marion	0.000	91.4%	0.000	0	N/A	0.000	91.4%	0.000	0	N/A	0.000	91.4%	0.000	0	N/A	0.000	91.4%	0.000	0	N/A	0.000	91.4%	0.000	0	N/A	N/A
107292	Regatta Construction LLC	Small	Marion	0.000	80.3%	0.000	0	N/A	0.005	80.3%	0.004	0	N/A	0.000	80.3%	0.000	0	N/A	0.000	80.3%	0.000	0	N/A	0.000	80.3%	0.000	0	N/A	N/A
112657	River Creek LLC	Small	Marion	0.000	97.9%	0.000	0	N/A	0.000	97.9%	0.000	0	N/A	0.000	97.9%	0.000	0	N/A	0.000	97.9%	0.000	0	N/A	0.000	97.9%	0.000	0	N/A	N/A
	Marion County Total			**20.932**	**66.3%**	**13.869**	**120,513**	**115**	**20.068**	**66.1%**	**13.256**	**121,561**	**109**	**18.684**	**65.8%**	**12.303**	**126,429**	**97**	**18.041**	**64.1%**	**11.556**	**127,660**	**91**	**19.681**	**65.8%**	**12.949**	**135,186**	**96**	**102**
382	City of Lake Helen	Large	Volusia	0.272	67.2%	0.183	3,020	61	0.299	67.2%	0.201	3,020	67	0.243	67.2%	0.163	3,020	54	0.230	67.2%	0.155	2,700	57	0.238	67.2%	0.160	2,700	59	60
4244	Town of Pierson	Large	Volusia	0.138	87.0%	0.120	2,657	45	0.134	87.0%	0.117	2,657	44	0.131	87.0%	0.114	2,657	43	0.110	87.0%	0.096	2,657	36	0.159	87.0%	0.138	2,657	52	44
4385	Meadowlea Deland LLC	Small	Volusia	0.038	100.0%	0.038	454	84	0.029	100.0%	0.029	454	64	0.028	100.0%	0.028	462	61	0.000	100.0%	0.000	438	0	0.000	100.0%	0.000	179	0	42
4391	Lake Beresford Water Assoc. Inc.	Large	Volusia	0.179	100.0%	0.179	1,540	116	0.166	100.0%	0.166	1,540	108	0.128	100.0%	0.128	1,540	83	0.140	100.0%	0.140	1,858	75	0.135	100.0%	0.135	1,858	73	91
8528	City of Holly Hill	Large	Volusia	1.516	65.9%	0.999	13,134	76	1.129	65.9%	0.744	13,134	57	1.249	65.9%	0.823	13,924	59	1.140	65.9%	0.751	13,924	54	1.119	65.9%	0.737	13,437	55	60
8595	City of Port Orange	Large	Volusia	6.030	60.3%	3.636	63,072	58	6.134	60.3%	3.699	63,072	59	5.971	60.3%	3.601	63,072	57	5.850	60.3%	3.528	66,913	53	5.950	60.3%	3.588	66,913	54	56
8658	City of Deltona	Large	Volusia	9.716	79.0%	7.676	85,233	90	8.979	79.0%	7.093	85,281	83	7.968	79.0%	6.295	76,293	83	7.380	79.0%	5.830	75,322	77	7.623	79.0%	6.022	75,322	80	83
8747	Utilities Commission of New Smyrna Beach	Large	Volusia	4.973	66.0%	3.282	55,304	59	4.499	66.0%	2.969	55,838	53	5.171	66.0%	3.413	56,726	60	4.590	66.0%	3.029	56,882	53	5.060	66.0%	3.340	58,596	57	56

Table B-6b, Continued. 2011-2015 Residential Water Use and Five-Year Residential Per Capita Averages for All Public Supply Permittees in Counties Wholly or Partially Within the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management

CUP Number	Owner	Utility Category	County	2011 Water Use	2011 % Household	2011 Household Use	2011 Population	2011 Residential GPCD	2012 Water Use	2012 % Household	2012 Household Use	2012 Population	2012 Residential GPCD	2013 Water Use	2013 % Household	2013 Household Use	2013 Population	2013 Residential GPCD	2014 Water Use	2014 % Household	2014 Household Use	2014 Population	2014 Residential GPCD	2015 Water Use	2015 % Household	2015 Household Use	2015 Population	2015 Residential GPCD	2011-2015 Average Residential GPCD
8834	City of Daytona Beach	Large	Volusia	11.988	82.4%	9.878	72,774	136	12.296	82.4%	10.132	72,773	139	12.882	82.4%	10.615	74,068	143	13.270	82.4%	10.934	74,068	148	12.812	82.4%	10.557	74,068	143	142
8932	City of Ormond Beach	Large	Volusia	7.139	68.2%	4.869	48,630	100	7.046	68.2%	4.805	51,921	93	6.296	68.2%	4.294	50,852	84	5.800	68.2%	3.956	49,300	80	6.012	68.2%	4.100	50,632	81	88
9157	City of Edgewater	Large	Volusia	1.969	75.5%	1.487	23,243	64	1.891	75.5%	1.428	23,243	61	1.991	75.5%	1.503	23,243	65	1.900	75.5%	1.435	23,476	61	2.195	75.5%	1.657	23,575	70	64
9165	Lakes of Pine Run Condominimum Assoc.	Small	Volusia	0.023	63.0%	0.014	300	48	0.024	63.0%	0.015	268	56	0.020	63.0%	0.013	268	47	0.020	63.0%	0.013	258	49	0.033	63.0%	0.021	258	81	56
9373	City of Orange City	Large	Volusia	1.555	55.9%	0.869	11,130	78	1.225	55.9%	0.685	11,130	62	1.490	55.9%	0.833	11,684	71	1.820	55.9%	1.017	10,969	93	1.739	55.9%	0.972	10,867	89	79
9385	NHC-FL6 LP	Small	Volusia	0.030	90.0%	0.027	427	63	0.034	90.0%	0.031	427	72	0.026	90.0%	0.023	427	55	0.020	90.0%	0.018	427	42	0.037	90.0%	0.033	427	78	62
50116	City of DeLand	Large	Volusia	5.633	86.0%	4.844	43,345	112	5.168	86.0%	4.444	42,743	104	4.919	86.0%	4.230	48,195	88	4.780	86.0%	4.111	48,420	85	5.102	86.0%	4.388	48,420	91	96
50157, 50659, 86278	Volusia County Utilities	Large	Volusia	4.186	77.1%	3.227	37,582	86	3.866	77.1%	2.981	37,852	79	4.085	77.1%	3.150	37,852	83	4.230	77.1%	3.261	37,852	86	4.303	77.1%	3.318	37,852	88	84
86903	Eldorado Estates LLC	Small	Volusia	0.017	77.0%	0.013	292	45	0.021	77.0%	0.016	303	53	0.018	77.0%	0.014	303	46	0.020	77.0%	0.015	263	59	0.029	77.0%	0.022	263	85	58
112981	D & E Water Resources, LLC	Large	Volusia	0.000	93.0%	0.000	0	N/A	0.000	93.0%	0.000	0	N/A	0.000	93.0%	0.000	0	N/A	0.000	93.0%	0.000	0	N/A	0.000	93.0%	0.000	0	N/A	N/A
120858	Aqua Utilities of Florida, Inc.	Small	Volusia	0.019	81.5%	0.015	200	77	0.019	81.5%	0.015	200	77	0.018	81.5%	0.015	200	73	0.020	81.5%	0.016	200	82	0.034	81.5%	0.028	200	139	90
120859	Aqua Utilities of Florida, Inc.	Small	Volusia	0.036	87.7%	0.032	450	70	0.032	87.7%	0.028	450	62	0.035	87.7%	0.031	450	68	0.040	87.7%	0.035	488	72	0.058	87.7%	0.051	488	104	75
Volusia County Total				**55.457**	**74.6%**	**41.388**	**462,787**	**89**	**52.991**	**74.7%**	**39.598**	**466,306**	**85**	**52.669**	**74.6%**	**39.286**	**465,236**	**84**	**51.360**	**74.6%**	**38.340**	**466,415**	**82**	**52.638**	**74.6%**	**39.267**	**468,712**	**84**	**85**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2011-2015 water use obtained from SJRWMD Annual Water Use Survey and USGS data.
4.) 2011-2015 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Base Facility Report Data, parcel data and permittee surveys.
5.) Any missing years data or erroneous was obtained from Technical Staff Reports.

Table B-6c. Small Public Supply Population Served and Water Use for 2015, Small Public Supply Population Projections 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served 2015	Population Projections 2020	Population Projections 2025	Population Projections 2030	Population Projections 2035	Population Projections 2040	Buildout	Percent Change 2015-2040	Water Use 2015 GW	Water Use 2015 SW	Water Use 2015 Total	Demand Projections (5-in-10) 2020 GW	2020 SW	2020 Total	2025 GW	2025 SW	2025 Total	2030 GW	2030 SW	2030 Total	2035 GW	2035 SW	2035 Total	2040 GW	2040 SW	2040 Total	Percent Change 2015-2040	2011-2015 Avg GPCD	Demand Projections (1-in-10) 2040 GW	2040 SW	2040 Total
Brevard	Riverview Florida Associates, LLC	1738	250	250	250	250	250	250	110	0%	0.05	0.00	**0.05**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-40%	102	0.03	0.00	**0.03**
	San Sebastian Water LLC	1742	115	115	192	192	192	192	1,242	67%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	150%	238	0.05	0.00	**0.05**
	Northgate Properties Inc.	1783	812	819	819	819	819	819	210	1%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	26	0.02	0.00	**0.02**
	Bonnie Douglas - River Grove Mobile Home Village I & II	1804	401	401	401	401	401	401	23	0%	0.06	0.00	**0.06**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	-33%	102	0.04	0.00	**0.04**
	Sebastian Inlet State Park	1807	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	N/A	N/A	0.03	0.00	**0.03**
	Summit Cove Condo Assoc	1808	196	196	196	196	196	196	169	0%	0.02	0.00	**0.02**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	-50%	60	0.01	0.00	**0.01**
	Lighthouse Cove Condominimium Association	1831	193	205	215	223	229	234	262	21%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	38	0.01	0.00	**0.01**
	Brevard Total		**1,967**	**1,986**	**2,073**	**2,081**	**2,087**	**2,092**	**2,016**	**6%**	**0.18**	**0.00**	**0.18**	**0.17**	**0.00**	**0.17**	**0.19**	**0.00**	**0.19**	**0.19**	**0.00**	**0.19**	**0.19**	**0.00**	**0.19**	**0.19**	**0.00**	**0.19**	**6%**	**N/A**	**0.19**	**0.00**	**0.19**
Indian River	Manufactured Home Communities Inc.	50203	1,027	1,128	1,212	1,284	1,346	1,403	1,203	37%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	6	0.01	0.00	**0.01**
	Indian River Total		**1,027**	**1,128**	**1,212**	**1,284**	**1,346**	**1,403**	**1,203**	**37%**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0%**	**N/A**	**0.01**	**0.00**	**0.01**
Lake (Non-CFWI)	General Utilities Corporation	288	104	104	104	104	104	104	113	0%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	59	0.01	0.00	**0.01**
	General Utilities Corporation	289	376	376	376	376	376	376	345	0%	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0%	191	0.07	0.00	**0.07**
	Midway Manor MHP	290	157	157	157	157	157	157	226	0%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	55	0.01	0.00	**0.01**
	Citrus Circle Water Systems Inc	292	66	68	68	68	68	68	82	3%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	97	0.01	0.00	**0.01**
	Winn Dixie Scout Reservation	2403	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	N/A	N/A	0.02	0.00	**0.02**
	Oak Springs Mobile Home Park	2416	779	862	862	862	862	862	2,002	11%	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0%	78	0.07	0.00	**0.07**
	General Utilities Corporation	2447	65	71	78	84	90	95	102	46%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	231	0.02	0.00	**0.02**
	Springs Park Area Inc	2472	321	367	367	367	367	367	392	14%	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0%	143	0.05	0.00	**0.05**
	Century Estates Utilities Inc	2473	193	213	235	253	270	286	2,182	48%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	108	0.03	0.00	**0.03**
	Fisherman's Wharf	2477	50	50	50	50	50	50	819	0%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	-100%	88	0.00	0.00	**0.00**
	Country Life LLC	2483	378	378	378	378	378	378	1,501	0%	0.04	0.00	**0.04**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	25%	141	0.05	0.00	**0.05**
	Aqua Utilities of Florida, Inc.	2488	256	256	256	256	256	256	302	0%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	70	0.02	0.00	**0.02**
	Molokai Co-op	2513	397	397	397	397	397	397	609	0%	0.08	0.00	**0.08**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	-50%	90	0.04	0.00	**0.04**
	Blue Parrot RV Resort	2530	262	262	262	262	262	262	1,757	0%	0.04	0.00	**0.04**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-25%	115	0.03	0.00	**0.03**
	Lake Yale Treatment Assoc Inc	2535	136	140	140	140	140	140	343	3%	0.04	0.00	**0.04**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	-75%	78	0.01	0.00	**0.01**
	Brendenwood Utilities LLC	2575	130	133	133	133	133	133	175	2%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	190	0.03	0.00	**0.03**
	Haines Creek RV Village	2598	166	166	166	166	166	166	182	0%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	-100%	28	0.00	0.00	**0.00**
	Aqua Utilities of Florida, Inc.	2604	437	456	457	457	457	457	608	5%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	81	0.04	0.00	**0.04**
	Aqua Utilities of Florida, Inc.	2606	27	38	38	38	38	38	34	41%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	59	0.00	0.00	**0.00**
	Aqua Utilities of Florida, Inc.	2607	428	464	464	464	464	464	819	8%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	37	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.	2608	440	522	522	522	522	522	723	19%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	59	0.03	0.00	**0.03**
	Aqua Utilities of Florida, Inc.	2609	374	464	464	464	464	464	434	24%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	74	0.03	0.00	**0.03**
	Aqua Utilities of Florida, Inc.	2610	85	89	89	89	89	89	104	5%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	94	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc.	2611	286	301	301	301	301	301	436	5%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	74	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.	2612	102	110	110	110	110	110	348	8%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	78	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc.	2613	198	206	206	206	206	206	450	4%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	74	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.	2614	216	218	218	218	218	218	378	1%	0.03	0.00	**0.03**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	-33%	88	0.02	0.00	**0.02**
	General Utilities Corporation	2621	122	183	222	222	222	222	398	82%	0.06	0.00	**0.06**	0.07	0.00	**0.07**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	50%	396	0.10	0.00	**0.10**
	General Utilities Corporation	2622	194	194	194	194	194	194	285	0%	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0%	269	0.05	0.00	**0.05**
	General Utilities Corporation	2628	141	141	141	141	141	141	936	0%	0.04	0.00	**0.04**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-25%	203	0.03	0.00	**0.03**
	Hometown America	2659	190	190	190	190	190	190	2,518	0%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	191	0.04	0.00	**0.04**
	Wekiva Falls Resort @ Mastodon Springs	2742	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	N/A	N/A	0.11	0.00	**0.11**
	Lakeview Terrace	2771	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	N/A	N/A	0.11	0.00	**0.11**
	General Utilities Corporation	2775	253	253	253	253	253	253	524	0%	0.05	0.00	**0.05**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-40%	101	0.03	0.00	**0.03**
	General Utilities Corporation	2778	295	297	297	297	297	297	259	1%	0.08	0.00	**0.08**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	13%	289	0.10	0.00	**0.10**
	Raintree Utilities Inc.	2782	265	276	276	276	276	276	299	4%	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0%	187	0.05	0.00	**0.05**
	USDA Forest Service Seminole Ranger Di	2795	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	N/A	N/A	0.02	0.00	**0.02**
	Sarabande Country Club	2843	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	N/A	N/A	0.04	0.00	**0.04**
	Pine Island Fish Camp	2858	25	25	25	25	25	25	5	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	32	0.00	0.00	**0.00**
	Lady Lake Mobile Home Park Inc	2862	270	270	270	270	270	270	503	0%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	146	0.04	0.00	**0.04**
	Bonfire Cooperative Assoc Inc	2863	400	406	406	406	406	406	454	2%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	71	0.03	0.00	**0.03**
	Community of Christ	2865	25	25	25	25	25	25	160	0%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	216	0.01	0.00	**0.01**
	T & T Inc dba Country Squire Mobile Home Village	2867	240	298	794	794	794	794	791	231%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	300%	96	0.08	0.00	**0.08**
	Corley Island Mobile Manor	2891	200	200	200	200	200	200	638	0%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	142	0.03	0.00	**0.03**
	Church of God Youth & Retreat Center	2892	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	N/A	0.01	0.00	**0.01**
	Pine Harbour Water Utilities	2901	132	136	136	136	136	136	316	3%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	130	0.02	0.00	**0.02**
	Camp Challenge	2904	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	N/A	0.01	0.00	**0.01**
	Lakes of Lady Lake Homeowners Assocation, Inc.	2973	100	114	114	114	114	114	72	14%	0.02	0.00	**0.02**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	100%	392	0.04	0.00	**0.04**
	Aqua Utilities of Florida, Inc.	4493	490	492	492	492	492	493	520	1%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	34	0.02	0.00	**0.02**
	Cypress Creek Mobile Home Park	4512	251	251	251	251	251	251	783	0%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	115	0.03	0.00	**0.03**
	Aqua Utilities of Florida, Inc.	4545	181	189	189	189	189	189	324	4%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	73	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc.	4555	532	532	532	532	532	532	420	0%	0.03	0.00	**0.03**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	33%	67	0.04	0.00	**0.04**
	Tara Village	4565	266	266	266	266	266	266	242	0%	0.04	0.00	**0.04**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	-50%	86	0.02	0.00	**0.02**
	WBB Utilities Inc	5753	164	170	170	170	170	170	192	4%	0.06	0.00	**0.06**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	-17%	312	0.05	0.00	**0.05**
	Shangri-La by the Lake Utilities Inc	6781	407	596	631	631	631	631	150	55%	0.03	0.00	**0.03**	0.04	0.00	**0.04**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	67%	75	0.05	0.00	**0.05**
	Lake Saunders Utilities	50094	161	169	169	169	169	169	106	5%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	95	0.02	0.00	**0.02**
	Treasure Island Estates Inc	50254	89	110	110	110	110	110	189	24%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	191	0.02	0.00	**0.02**
	General Utilities Corporation	50780	134	144	144	144	144	144	92	7%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	73	0.01	0.00	**0.01**
	Raintree Utilities Inc.	98980	21	36	39	42	45	48	47	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.01	0.00	**0.01**	N/A	107	0.01	0.00	**0.01**
	Wolf Branch Meadows	110807	7	14	14	14	14	14	56	100%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	-100%	100	0.00	0.00	**0.00**
	Lake County	114536	438	631	631	631	631	631	386	44%	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0%	83	0.05	0.00	**0.05**
	Aqua Utilities of Florida, Inc.	120333	90	101	101	101	101	101	650	12%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	89	0.01	0.00	**0.01**
	Boggy Creek Gang Camp	134695	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	N/A	N/A	0.06	0.00	**0.00**
	Hilltop Manor	137282	0	0	0	0	0	0	0	100%	0.00	0.00	**0.00**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	N/A	N/A	0.06	0.00	**0.06**
	Lake (Non-CFWI) Total		**12,512**	**13,577**	**14,180**	**14,207**	**14,233**	**14,258**	**27,781**	**14%**	**1.55**	**0.00**	**1.55**	**1.94**	**0.00**	**1.94**	**2.03**	**0.00**	**2.03**	**2.03**	**0.00**	**2.03**	**2.03**	**0.00**	**2.03**	**2.04**	**0.00**	**2.04**	**32%**	**N/A**	**2.08**	**0.00**	**2.02**

Table B-6c, Continued. Small Public Supply Population Served and Water Use for 2015, Small Public Supply Population Projections 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served	Population Projections					Buildout	Percent Change	Water Use			Demand Projections (5-in-10)															Percent Change	2011-2015 Avg GPCD	Demand Projections (1-in-10)		
											2015			2020			2025			2030			2035			2040					2040		
			2015	2020	2025	2030	2035	2040		2015-2040	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	2015-2040		GW	SW	Total
Marion	Shady Road Villas	104	287	291	291	291	291	291	58	1%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	119	0.03	0.00	**0.03**
	Sunshine Utilities	2996	186	188	188	192	192	192	283	3%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	85	0.02	0.00	**0.02**
	Whispering Pines RV Park	2998	50	45	47	48	50	52	12	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	27	0.00	0.00	**0.00**
	East Marion Sanitary Systems Inc	3008	150	191	233	233	233	233	383	55%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	117	0.03	0.00	**0.03**
	Windstream Utilities Company	3010	301	312	316	316	316	316	474	5%	0.09	0.00	**0.09**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	-11%	260	0.08	0.00	**0.08**
	Sunshine Utilities	3013	362	373	373	373	373	373	1,207	3%	0.05	0.00	**0.05**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	20%	149	0.06	0.00	**0.06**
	USDA Forest Service Lake George Ranger District	3048	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	N/A	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc. (Now Ocala Oaks - 3060)	3060	362	364	386	386	386	386	886	7%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	60	0.02	0.00	**0.02**
	GMN Landfair LTD	3077	580	580	580	668	668	668	2,140	15%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	51	0.03	0.00	**0.03**
	Sunshine Utilities of Central Fl Inc.	3080	103	111	111	111	111	111	704	8%	0.03	0.00	**0.03**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	33%	374	0.04	0.00	**0.04**
	Lake Oklawaha RV Resort Inc.	3083	399	399	399	874	1,267	1,267	0	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	9	0.01	0.00	**0.01**
	Tropicana Village Homeowners Assoc Inc	3087	261	263	263	263	263	263	205	1%	0.03	0.00	**0.03**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	-33%	77	0.02	0.00	**0.02**
	Briar Patch MHC	3092	80	90	93	97	100	104	104	30%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	50	0.01	0.00	**0.01**
	Sunshine Utilities	3093	473	506	542	561	564	564	1,730	19%	0.04	0.00	**0.04**	0.05	0.00	**0.05**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	50%	108	0.06	0.00	**0.06**
	Aqua Utilities of Florida, Inc.	3095	310	313	317	317	317	317	409	2%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	81	0.03	0.00	**0.03**
	Florida Elks Youth Camp	3103	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	N/A	N/A	0.12	0.00	**0.12**
	Town of McIntosh	3127	588	623	655	655	664	664	850	13%	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	14%	120	0.08	0.00	**0.08**
	Sunshine Utilities	3131	233	255	255	255	255	255	323	9%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	99	0.03	0.00	**0.03**
	Sunshine Utilities	3132	235	235	235	235	235	235	266	0%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	137	0.03	0.00	**0.03**
	Forest Green Merchants and Homeowners Assoc Inc	4573	181	181	181	200	200	200	139	10%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	27	0.01	0.00	**0.01**
	Marion Utilities Inc.	4580	176	178	178	178	178	178	1,978	1%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	85	0.02	0.00	**0.02**
	Marion Utilities Inc.	4581	338	345	345	345	345	345	1,061	2%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	113	0.04	0.00	**0.04**
	Aqua Utilities of Florida, Inc.	4582	758	848	848	848	848	848	1,041	12%	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0%	74	0.06	0.00	**0.06**
	Sunshine Utilities	6850	406	434	434	434	434	434	1,736	7%	0.04	0.00	**0.04**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-25%	74	0.03	0.00	**0.03**
	Smith Lake Shores Village	6858	368	368	368	368	368	368	12	0%	0.04	0.00	**0.04**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	25%	132	0.05	0.00	**0.05**
	Wilderness RV Park Estates LLC	6893	378	378	378	378	914	914	370	142%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	150%	56	0.05	0.00	**0.05**
	Aqua Utilities of Florida, Inc. (Now served by Cup 3132)	7116	512	517	517	517	517	517	893	1%	0.04	0.00	**0.04**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-25%	64	0.03	0.00	**0.03**
	Albright Lake Weir Well	69040	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	N/A	0.00	0.00	**0.00**
	Silver City Oaks Inc	82743	108	167	167	185	185	185	519	71%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	126	0.02	0.00	**0.02**
	Oakwater Village	107292	0	0	0	0	0	0	18	N/A	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	113	0.00	0.00	**0.00**
	River Creek RV Resort	112657	0	0	0	0	0	0	48	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	113	0.00	0.00	**0.00**
	Marion County Track and Card Room	138262	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	N/A	N/A	0.03	0.00	**0.03**
	Ridge Meadows; Woodberry Forest; Farifax Hills Subdivision; Chappell Hills; Marion Hills	N/A	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	N/A	N/A	0.10	0.00	**0.10**
	Sun Resort	N/A	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	N/A	0.00	0.00	**0.00**
	Lemon Ave Apts	N/A	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	N/A	0.00	0.00	**0.00**
	Ashley Heights	N/A	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	N/A	N/A	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.	N/A	0	0	0	0	0	0	890	N/A	0.09	0.00	**0.09**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	-100%	113	0.00	0.00	**0.00**
	Sunshine Utilities	N/A	112	112	112	112	112	112	112	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	51	0.00	0.00	**0.00**
	Marion Utilities Inc.	N/A	3,522	3,565	3,591	3,591	3,591	3,591	3,591	2%	0.21	0.00	**0.21**	0.20	0.00	**0.20**	0.20	0.00	**0.20**	0.20	0.00	**0.20**	0.20	0.00	**0.20**	0.20	0.00	**0.20**	-5%	57	0.21	0.00	**0.21**
	Sunshine Utilities of Central Fla Inc	N/A	48	48	48	48	48	48	42	N/A	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	71	0.00	0.00	**0.00**
	Sunshine Utilities	N/A	399	426	444	459	473	494	494	24%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	64	0.03	0.00	**0.03**
	Sunshine Utilities of Central Fl Inc.	N/A	126	135	140	145	149	156	156	24%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	80	0.01	0.00	**0.01**
	Sunshine Utilities of Central Fl Inc.	N/A	189	202	210	217	224	234	234	24%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	86	0.02	0.00	**0.02**
	Marion Total		**12,581**	**13,043**	**13,245**	**13,900**	**14,871**	**14,915**	**23,368**	**19%**	**1.13**	**0.00**	**1.13**	**1.32**	**0.00**	**1.32**	**1.35**	**0.00**	**1.35**	**1.37**	**0.00**	**1.37**	**1.41**	**0.00**	**1.41**	**1.41**	**0.00**	**1.41**	**25%**	**N/A**	**1.44**	**0.00**	**1.44**
Volusia	Meadowlea Deland LLC	4385	179	179	179	179	179	179	405	0%	0.03	0.00	**0.03**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	-67%	50	0.01	0.00	**0.01**
	Presbyterian Special Services	8996	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	N/A	N/A	0.06	0.00	**0.06**
	Lakes of Pine Run Condominimum Assoc.	9165	258	258	258	258	258	258	101	0%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	85	0.02	0.00	**0.02**
	NHC-FL6 LP	9385	427	427	427	427	427	427	560	0%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	62	0.03	0.00	**0.03**
	Kove Associates	9468	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	N/A	N/A	0.04	0.00	**0.04**
	Eldorado Estates LLC	86903	263	263	263	263	263	263	246	0%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	73	0.02	0.00	**0.02**
	Blue Spring State Park	91551	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	N/A	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc.	120858	200	214	214	214	214	214	203	7%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	99	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.	120859	488	490	490	490	490	490	504	0%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	87	0.04	0.00	**0.04**
	Volusia Total		**1,815**	**1,831**	**1,831**	**1,831**	**1,831**	**1,831**	**2,019**	**1%**	**0.16**	**0.00**	**0.16**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**56%**	**N/A**	**0.25**	**0.00**	**0.25**
CSEC Total			**29,902**	**31,565**	**32,541**	**33,303**	**34,368**	**34,499**	**56,387**	**15%**	**3.03**	**0.00**	**3.03**	**3.69**	**0.00**	**3.69**	**3.83**	**0.00**	**3.83**	**3.85**	**0.00**	**3.85**	**3.89**	**0.00**	**3.89**	**3.90**	**0.00**	**3.90**	**29%**	**N/A**	**3.97**	**0.00**	**3.91**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 Estimate from BEBR: Volume 49, Bulletin 174, Published January 2016. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011 - 2015 and is calculated as (Total Water Use / Total Estimated Population). This per capita is commonly referred to as a gross per capita, as it includes all uses within a utility.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) SW quantities were obtained from permits.

Table B-6c (2-Part I). Small Public Supply Population Served and Water Use for 2015, Small Public Supply Population Projections 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served	Population Projections					Buildout	Percent Change	Water Use			Demand Projections (5-in-10)															Percent Change	2011-2015 Avg GPCD	Demand Projections (1-in-10)		
											2015			2020			2025			2030			2035			2040					2040		
			2015	2020	2025	2030	2035	2040		2015-2040	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	2015-2040		GW	SW	Total
Volusia	Meadowlea Deland LLC	4385	179	179	179	179	179	179	405	0%	0.03	0.00	**0.03**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	-67%	50	0.01	0.00	**0.01**
	Presbyterian Special Services	8996	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	N/A	N/A	0.06	0.00	**0.06**
	Lakes of Pine Run Condominimum Assoc.	9165	258	258	258	258	258	258	101	0%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	85	0.02	0.00	**0.02**
	NHC-FL6 LP	9385	427	427	427	427	427	427	560	0%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	62	0.03	0.00	**0.03**
	Kove Associates	9468	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	N/A	N/A	0.04	0.00	**0.04**
	Eldorado Estates LLC	86903	263	263	263	263	263	263	246	0%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	73	0.02	0.00	**0.02**
	Blue Spring State Park	91551	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	N/A	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc.	120858	200	214	214	214	214	214	203	7%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	99	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.	120859	488	490	490	490	490	490	504	0%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	87	0.04	0.00	**0.04**
	Volusia Total		**1,815**	**1,831**	**1,831**	**1,831**	**1,831**	**1,831**	**2,019**	**1%**	**0.16**	**0.00**	**0.16**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**56%**	**N/A**	**0.25**	**0.00**	**0.25**
Part I Total			**1,815**	**1,831**	**1,831**	**1,831**	**1,831**	**1,831**	**2,019**	**1%**	**0.16**	**0.00**	**0.16**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**0.25**	**0.00**	**0.25**	**56%**	**N/A**	**0.25**	**0.00**	**0.25**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 Estimate from BEBR: Volume 49, Bulletin 174, Published January 2016. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011 - 2015 and is calculated as (Total Water Use / Total Estimated Population). This per capita is commonly referred to as a gross per capita, as it includes all uses within a utility.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) SW quantities were obtained from permits.

Table B-6c (3-Part II). Small Public Supply Population Served and Water Use for 2015, Small Public Supply Population Projections 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served	Population Projections					Buildout	Percent Change	Water Use			Demand Projections (5-in-10)															Percent Change	2011-2015 Avg GPCD	Demand Projections (1-in-10)		
											2015			2020			2025			2030			2035			2040					2040		
			2015	2020	2025	2030	2035	2040		2015-2040	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	GW	SW	Total	2015-2040		GW	SW	Total
Lake (Non-CFWI)	General Utilities Corporation	288	104	104	104	104	104	104	113	0%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	59	0.01	0.00	**0.01**
	General Utilities Corporation	289	376	376	376	376	376	376	345	0%	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0%	191	0.07	0.00	**0.07**
	Midway Manor MHP	290	157	157	157	157	157	157	226	0%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	55	0.01	0.00	**0.01**
	Citrus Circle Water Systems Inc	292	66	68	68	68	68	68	82	3%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	97	0.01	0.00	**0.01**
	Winn Dixie Scout Reservation	2403	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	N/A	N/A	0.02	0.00	**0.02**
	Oak Springs Mobile Home Park	2416	779	862	862	862	862	862	2,002	11%	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0%	78	0.07	0.00	**0.07**
	General Utilities Corporation	2447	65	71	78	84	90	95	102	46%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	231	0.02	0.00	**0.02**
	Springs Park Area Inc	2472	321	367	367	367	367	367	392	14%	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0%	143	0.05	0.00	**0.05**
	Century Estates Utilities Inc	2473	193	213	235	253	270	286	2,182	48%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	108	0.03	0.00	**0.03**
	Fisherman's Wharf	2477	50	50	50	50	50	50	819	0%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	-100%	88	0.00	0.00	**0.00**
	Country Life LLC	2483	378	378	378	378	378	378	1,501	0%	0.04	0.00	**0.04**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	25%	141	0.05	0.00	**0.05**
	Aqua Utilities of Florida, Inc.	2488	256	256	256	256	256	256	302	0%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	70	0.02	0.00	**0.02**
	Molokai Co-op	2513	397	397	397	397	397	397	609	0%	0.08	0.00	**0.08**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	-50%	90	0.04	0.00	**0.04**
	Blue Parrot RV Resort	2530	262	262	262	262	262	262	1,757	0%	0.04	0.00	**0.04**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-25%	115	0.03	0.00	**0.03**
	Lake Yale Treatment Assoc Inc	2535	136	140	140	140	140	140	343	3%	0.04	0.00	**0.04**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	-75%	78	0.01	0.00	**0.01**
	Brendenwood Utilities LLC	2575	130	133	133	133	133	133	175	2%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	190	0.03	0.00	**0.03**
	Haines Creek RV Village	2598	166	166	166	166	166	166	182	0%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	-100%	28	0.00	0.00	**0.00**
	Aqua Utilities of Florida, Inc.	2604	437	456	457	457	457	457	608	5%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	81	0.04	0.00	**0.04**
	Aqua Utilities of Florida, Inc.	2606	27	38	38	38	38	38	34	41%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	59	0.00	0.00	**0.00**
	Aqua Utilities of Florida, Inc.	2607	428	464	464	464	464	464	819	8%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	37	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.	2608	440	522	522	522	522	522	723	19%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	59	0.03	0.00	**0.03**
	Aqua Utilities of Florida, Inc.	2609	374	464	464	464	464	464	434	24%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	74	0.03	0.00	**0.03**
	Aqua Utilities of Florida, Inc.	2610	85	89	89	89	89	89	104	5%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	94	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc.	2611	286	301	301	301	301	301	436	5%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	74	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.	2612	102	110	110	110	110	110	348	8%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	78	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc.	2613	198	206	206	206	206	206	450	4%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	74	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.	2614	216	218	218	218	218	218	378	1%	0.03	0.00	**0.03**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	-33%	88	0.02	0.00	**0.02**
	General Utilities Corporation	2621	122	183	222	222	222	222	398	82%	0.06	0.00	**0.06**	0.07	0.00	**0.07**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	50%	396	0.10	0.00	**0.10**
	General Utilities Corporation	2622	194	194	194	194	194	194	285	0%	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0%	269	0.05	0.00	**0.05**
	General Utilities Corporation	2628	141	141	141	141	141	141	936	0%	0.04	0.00	**0.04**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-25%	203	0.03	0.00	**0.03**
	Hometown America	2659	190	190	190	190	190	190	2,518	0%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	191	0.04	0.00	**0.04**
	Wekiva Falls Resort @ Mastodon Springs	2742	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	N/A	N/A	0.11	0.00	**0.11**
	Lakeview Terrace	2771	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	0.10	0.00	**0.10**	N/A	N/A	0.11	0.00	**0.11**
	General Utilities Corporation	2775	253	253	253	253	253	253	524	0%	0.05	0.00	**0.05**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-40%	101	0.03	0.00	**0.03**
	General Utilities Corporation	2778	295	297	297	297	297	297	259	1%	0.08	0.00	**0.08**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	13%	289	0.10	0.00	**0.10**
	Raintree Utilities Inc.	2782	265	276	276	276	276	276	299	4%	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0%	187	0.05	0.00	**0.05**
	USDA Forest Service Seminole Ranger Di	2795	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	N/A	N/A	0.02	0.00	**0.02**
	Sarabande Country Club	2843	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	N/A	N/A	0.04	0.00	**0.04**
	Pine Island Fish Camp	2858	25	25	25	25	25	25	5	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	32	0.00	0.00	**0.00**
	Lady Lake Mobile Home Park Inc	2862	270	270	270	270	270	270	503	0%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	146	0.04	0.00	**0.04**
	Bonfire Cooperative Assoc Inc	2863	400	406	406	406	406	406	454	2%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	71	0.03	0.00	**0.03**
	Community of Christ	2865	25	25	25	25	25	25	160	0%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	216	0.01	0.00	**0.01**
	T & T Inc dba Country Squire Mobile Home Village	2867	240	298	794	794	794	794	791	231%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	300%	96	0.08	0.00	**0.08**
	Corley Island Mobile Manor	2891	200	200	200	200	200	200	638	0%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	142	0.03	0.00	**0.03**
	Church of God Youth & Retreat Center	2892	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	N/A	0.01	0.00	**0.01**
	Pine Harbour Water Utilities	2901	132	136	136	136	136	136	316	3%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	130	0.02	0.00	**0.02**
	Camp Challenge	2904	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	N/A	0.01	0.00	**0.01**
	Lakes of Lady Lake Homeowners Assocation, Inc.	2973	100	114	114	114	114	114	72	14%	0.02	0.00	**0.02**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	100%	392	0.04	0.00	**0.04**
	Aqua Utilities of Florida, Inc.	4493	490	492	492	492	492	493	520	1%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	34	0.02	0.00	**0.02**
	Cypress Creek Mobile Home Park	4512	251	251	251	251	251	251	783	0%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	115	0.03	0.00	**0.03**
	Aqua Utilities of Florida, Inc.	4545	181	189	189	189	189	189	324	4%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	73	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc.	4555	532	532	532	532	532	532	420	0%	0.03	0.00	**0.03**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	33%	67	0.04	0.00	**0.04**
	Tara Village	4565	266	266	266	266	266	266	242	0%	0.04	0.00	**0.04**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	-50%	86	0.02	0.00	**0.02**
	WBB Utilities Inc	5753	164	170	170	170	170	170	192	4%	0.06	0.00	**0.06**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	-17%	312	0.05	0.00	**0.05**
	Shangri-La by the Lake Utilities Inc	6781	407	596	631	631	631	631	150	55%	0.03	0.00	**0.03**	0.04	0.00	**0.04**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	67%	75	0.05	0.00	**0.05**
	Lake Saunders Utilities	50094	161	169	169	169	169	169	106	5%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	95	0.02	0.00	**0.02**
	Treasure Island Estates Inc	50254	89	110	110	110	110	110	189	24%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	191	0.02	0.00	**0.02**
	General Utilities Corporation	50780	134	144	144	144	144	144	92	7%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	73	0.01	0.00	**0.01**
	Raintree Utilities Inc.	98980	21	36	39	42	45	48	47	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.01	0.00	**0.01**	N/A	107	0.01	0.00	**0.01**
	Wolf Branch Meadows	110807	7	14	14	14	14	14	56	100%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	-100%	100	0.00	0.00	**0.00**
	Lake County	114536	438	631	631	631	631	631	386	44%	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0%	83	0.05	0.00	**0.05**
	Aqua Utilities of Florida, Inc.	120333	90	101	101	101	101	101	650	12%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	89	0.01	0.00	**0.01**
	Boggy Creek Gang Camp	134695	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	N/A	N/A	0.06	0.00	**0.00**
	Hilltop Manor	137282	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	N/A	N/A	0.06	0.00	**0.06**
	Lake (Non-CFWI) Total		**12,512**	**13,577**	**14,180**	**14,207**	**14,233**	**14,258**	**27,781**	**14%**	**1.55**	**0.00**	**1.55**	**1.94**	**0.00**	**1.94**	**2.03**	**0.00**	**2.03**	**2.03**	**0.00**	**2.03**	**2.03**	**0.00**	**2.03**	**2.04**	**0.00**	**2.04**	**32%**	**N/A**	**2.08**	**0.00**	**2.02**

Table B-6c (3-Part II), Continued. Small Public Supply Population Served and Water Use for 2015, Small Public Supply Population Projections 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served 2015	Population Projections 2020	Population Projections 2025	Population Projections 2030	Population Projections 2035	Population Projections 2040	Buildout	Percent Change 2015-2040	Water Use 2015 GW	Water Use 2015 SW	Water Use 2015 Total	Demand Projections (5-in-10) 2020 GW	2020 SW	2020 Total	2025 GW	2025 SW	2025 Total	2030 GW	2030 SW	2030 Total	2035 GW	2035 SW	2035 Total	2040 GW	2040 SW	2040 Total	Percent Change 2015-2040	2011-2015 Avg GPCD	Demand Projections (1-in-10) 2040 GW	2040 SW	2040 Total
Marion	Shady Road Villas	104	287	291	291	291	291	291	58	1%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	119	0.03	0.00	**0.03**
	Sunshine Utilities	2996	186	188	188	192	192	192	283	3%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	85	0.02	0.00	**0.02**
	Whispering Pines RV Park	2998	50	45	47	48	50	52	12	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	27	0.00	0.00	**0.00**
	East Marion Sanitary Systems Inc	3008	150	191	233	233	233	233	383	55%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	117	0.03	0.00	**0.03**
	Windstream Utilities Company	3010	301	312	316	316	316	316	474	5%	0.09	0.00	**0.09**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	-11%	260	0.08	0.00	**0.08**
	Sunshine Utilities	3013	362	373	373	373	373	373	1,207	3%	0.05	0.00	**0.05**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	20%	149	0.06	0.00	**0.06**
	USDA Forest Service Lake George Ranger District	3048	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	N/A	0.01	0.00	**0.01**
	Aqua Utilities of Florida, Inc.	3060	362	364	386	386	386	386	886	7%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	60	0.02	0.00	**0.02**
	GMN Landfair LTD	3077	580	580	580	668	668	668	2,140	15%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	51	0.03	0.00	**0.03**
	Sunshine Utilities of Central Fl Inc.	3080	103	111	111	111	111	111	704	8%	0.03	0.00	**0.03**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	33%	374	0.04	0.00	**0.04**
	Lake Oklawaha RV Resort Inc.	3083	399	399	399	874	1,267	1,267	0	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	9	0.01	0.00	**0.01**
	Tropicana Village Homeowners Assoc Inc	3087	261	263	263	263	263	263	205	1%	0.03	0.00	**0.03**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	-33%	77	0.02	0.00	**0.02**
	Briar Patch MHC	3092	80	90	93	97	100	104	104	30%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	50	0.01	0.00	**0.01**
	Sunshine Utilities	3093	473	506	542	561	564	564	1,730	19%	0.04	0.00	**0.04**	0.05	0.00	**0.05**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	50%	108	0.06	0.00	**0.06**
	Aqua Utilities of Florida, Inc.	3095	310	313	317	317	317	317	409	2%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	81	0.03	0.00	**0.03**
	Florida Elks Youth Camp	3103	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	0.11	0.00	**0.11**	N/A	N/A	0.12	0.00	**0.12**
	Town of McIntosh	3127	588	623	655	655	664	664	850	13%	0.07	0.00	**0.07**	0.07	0.00	**0.07**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	0.08	0.00	**0.08**	14%	120	0.08	0.00	**0.08**
	Sunshine Utilities	3131	233	255	255	255	255	255	323	9%	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0%	99	0.03	0.00	**0.03**
	Sunshine Utilities	3132	235	235	235	235	235	235	266	0%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	137	0.03	0.00	**0.03**
	Forest Green Merchants and Homeowners Assoc Inc	4573	181	181	181	200	200	200	139	10%	0.01	0.00	**0.01**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	27	0.01	0.00	**0.01**
	Marion Utilities Inc.	4580	176	178	178	178	178	178	1,978	1%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	85	0.02	0.00	**0.02**
	Marion Utilities Inc.	4581	338	345	345	345	345	345	1,061	2%	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0%	113	0.04	0.00	**0.04**
	Aqua Utilities of Florida, Inc.	4582	758	848	848	848	848	848	1,041	12%	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0.06	0.00	**0.06**	0%	74	0.06	0.00	**0.06**
	Sunshine Utilities	6850	406	434	434	434	434	434	1,736	7%	0.04	0.00	**0.04**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-25%	74	0.03	0.00	**0.03**
	Smith Lake Shores Village	6858	368	368	368	368	368	368	12	0%	0.04	0.00	**0.04**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	25%	132	0.05	0.00	**0.05**
	Wilderness RV Park Estates LLC	6893	378	378	378	378	914	914	370	142%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	150%	56	0.05	0.00	**0.05**
	Aqua Utilities of Florida, Inc.	7116	512	517	517	517	517	517	893	1%	0.04	0.00	**0.04**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-25%	64	0.03	0.00	**0.03**
	Albright Lake Weir Well	69040	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	N/A	0.00	0.00	**0.00**
	Silver City Oaks Inc	82743	108	167	167	185	185	185	519	71%	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	126	0.02	0.00	**0.02**
	Oakwater Village	107292	0	0	0	0	0	0	18	N/A	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	113	0.00	0.00	**0.00**
	River Creek RV Resort	112657	0	0	0	0	0	0	48	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	113	0.00	0.00	**0.00**
	Marion County Track and Card Room	138262	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	N/A	N/A	0.03	0.00	**0.03**
	Ridge Meadows; Woodberry Forest; Farifax Hills Subdivision; Chappell Hills; Marion Hills	N/A	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	0.09	0.00	**0.09**	N/A	N/A	0.10	0.00	**0.10**
	Sun Resort	N/A	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	N/A	0.00	0.00	**0.00**
	Lemon Ave Apts	N/A	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	N/A	0.00	0.00	**0.00**
	Ashley Heights	N/A	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	N/A	N/A	0.02	0.00	**0.02**
	Aqua Utilities of Florida, Inc.		0	0	0	0	0	0	890	N/A	0.09	0.00	**0.09**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	-100%	113	0.00	0.00	**0.00**
	Sunshine Utilities		112	112	112	112	112	112	112	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	51	0.00	0.00	**0.00**
	Marion Utilities Inc.		3,522	3,565	3,591	3,591	3,591	3,591	3,591	2%	0.21	0.00	**0.21**	0.20	0.00	**0.20**	0.20	0.00	**0.20**	0.20	0.00	**0.20**	0.20	0.00	**0.20**	0.20	0.00	**0.20**	-5%	57	0.21	0.00	**0.21**
	Sunshine Utilities of Central Fla Inc		48	48	48	48	48	48	42	0%	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	71	0.00	0.00	**0.00**
	Sunshine Utilities		399	426	444	459	473	494	494	24%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	50%	64	0.03	0.00	**0.03**
	Sunshine Utilities of Central Fl Inc.		126	135	140	145	149	156	156	24%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	80	0.01	0.00	**0.01**
	Sunshine Utilities of Central Fl Inc.		189	202	210	217	224	234	234	24%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	86	0.02	0.00	**0.02**
	Marion Total		**12,581**	**13,043**	**13,245**	**13,900**	**14,871**	**14,915**	**23,368**	**19%**	**1.13**	**0.00**	**1.13**	**1.32**	**0.00**	**1.32**	**1.35**	**0.00**	**1.35**	**1.37**	**0.00**	**1.37**	**1.41**	**0.00**	**1.41**	**1.41**	**0.00**	**1.41**	**25%**	**N/A**	**1.44**	**0.00**	**1.44**
Part II Total			**25,093**	**26,620**	**27,425**	**28,107**	**29,104**	**29,173**	**51,149**	**16%**	**2.68**	**0.00**	**2.68**	**3.26**	**0.00**	**3.26**	**3.38**	**0.00**	**3.38**	**3.40**	**0.00**	**3.40**	**3.44**	**0.00**	**3.44**	**3.45**	**0.00**	**3.45**	**29%**	**N/A**	**3.52**	**0.00**	**3.46**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 Estimate from BEBR: Volume 49, Bulletin 174, Published January 2016. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011 - 2015 and is calculated as (Total Water Use / Total Estimated Population). This per capita is commonly referred to as a gross per capita, as it includes all uses within a utility.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) SW quantities were obtained from permits.

Table B-6c (4-Part III). Small Public Supply Population Served and Water Use for 2015, Small Public Supply Population Projections 2020-2040, 5-in-10 Year Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040 by County and Utility, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	Population Served 2015	Population Projections 2020	Population Projections 2025	Population Projections 2030	Population Projections 2035	Population Projections 2040	Buildout	Percent Change 2015-2040	Water Use 2015 GW	Water Use 2015 SW	Water Use 2015 Total	Demand Projections (5-in-10) 2020 GW	2020 SW	2020 Total	2025 GW	2025 SW	2025 Total	2030 GW	2030 SW	2030 Total	2035 GW	2035 SW	2035 Total	2040 GW	2040 SW	2040 Total	Percent Change 2015-2040	2011-2015 Avg GPCD	Demand Projections (1-in-10) 2040 GW	2040 SW	2040 Total
Brevard	Riverview Florida Associates, LLC	1738	250	250	250	250	250	250	110	0%	0.05	0.00	**0.05**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	-40%	102	0.03	0.00	**0.03**
	San Sebastian Water LLC	1742	115	115	192	192	192	192	1,242	67%	0.02	0.00	**0.02**	0.03	0.00	**0.03**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	0.05	0.00	**0.05**	150%	238	0.05	0.00	**0.05**
	Northgate Properties Inc.	1783	812	819	819	819	819	819	210	1%	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0%	26	0.02	0.00	**0.02**
	Bonnie Douglas - River Grove Mobile Home Village I & II	1804	401	401	401	401	401	401	23	0%	0.06	0.00	**0.06**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	0.04	0.00	**0.04**	-33%	102	0.04	0.00	**0.04**
	Sebastian Inlet State Park	1807	0	0	0	0	0	0	0	0%	0.00	0.00	**0.00**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	0.03	0.00	**0.03**	N/A	N/A	0.03	0.00	**0.03**
	Summit Cove Condo Assoc	1808	196	196	196	196	196	196	169	0%	0.02	0.00	**0.02**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	60	0.01	0.00	**0.01**
	Lighthouse Cove Condominimium Association	1831	193	205	215	223	229	234	262	21%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	N/A	38	0.01	0.00	**0.01**
	Brevard Total		**1,967**	**1,986**	**2,073**	**2,081**	**2,087**	**2,092**	**2,016**	**6%**	**0.18**	**0.00**	**0.18**	**0.17**	**0.00**	**0.17**	**0.19**	**0.00**	**0.19**	**0.19**	**0.00**	**0.19**	**0.19**	**0.00**	**0.19**	**0.19**	**0.00**	**0.19**	**6%**	**N/A**	**0.19**	**0.00**	**0.19**
Indian River	Manufactured Home Communities Inc.	50203	1,027	1,128	1,212	1,284	1,346	1,403	1,203	37%	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0.01	0.00	**0.01**	0%	6	0.01	0.00	**0.01**
	Indian River Total		**1,027**	**1,128**	**1,212**	**1,284**	**1,346**	**1,403**	**1,203**	**37%**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0.01**	**0.00**	**0.01**	**0%**	**N/A**	**0.01**	**0.00**	**0.01**
Part III Total			**2,994**	**3,114**	**3,285**	**3,365**	**3,433**	**3,495**	**3,219**	**17%**	**0.19**	**0.00**	**0.19**	**0.18**	**0.00**	**0.18**	**0.20**	**0.00**	**0.20**	**0.20**	**0.00**	**0.20**	**0.20**	**0.00**	**0.20**	**0.20**	**0.00**	**0.20**	**5%**	**N/A**	**0.20**	**0.00**	**0.20**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 Estimate from BEBR: Volume 49, Bulletin 174, Published January 2016. 2020-2040 Projections from BEBR: Volume 50, Bulletin 177, Published April 2017.
4.) Population projections shown here are permanent population projections only and do not include any factors such as seasonal residents, tourist population or net commuter population.
5.) Per capita used to calculate demand projections is an average from 2011 - 2015 and is calculated as (Total Water Use / Total Estimated Population). This per capita is commonly referred to as a gross per capita, as it includes all uses within a utility.
6.) 1-in-10 rainfall year demand for 2040 calculated as an additional 6 percent of 2040 average demand.
7.) SW quantities were obtained from permits.

Table B-6d. 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Smaller than 0.10 mgd in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use 2011	Water Use 2012	Water Use 2013	Water Use 2014	Water Use 2015	Population 2011	Population 2012	Population 2013	Population 2014	Population 2015	2011-2015 Avg GPCD	Notes
1738	Riverview Florida Associates, LLC	Riverview Florida Associates, LLC	Pelican Bay	Brevard	0.045	0.024	0.024	0.018	0.017	250	250	250	250	250	102	
1742	San Sebastian Water LLC	San Sebastian Water LLC	San Sebastian Woods	Brevard	0.018	0.016	0.019	0.030	0.037	61	107	107	115	115	238	
1783	Northgate Properties Inc.	Northgate Properties Inc.	Northgate Mobile Ranch	Brevard	0.020	0.019	0.030	0.019	0.017	812	816	816	812	812	26	
1804	Bonnie Douglas - River Grove Mobile Home Village I & II	Bonnie Douglas - River Grove Mobile Home Village I & II	River Grove Mobile Home Village I & II	Brevard	0.060	0.028	0.043	0.041	0.032	401	403	403	401	401	102	
1808	Summit Cove Condo Assoc	Summit Cove Condo Assoc	Summit Cove Condo	Brevard	0.022	0.007	0.007	0.008	0.015	195	196	196	196	196	60	
1831	Lighthouse Cove Condominimium Association	Lighthouse Cove Condominimium Association	Lighthouse Cove	Brevard	0.007	0.006	0.007	0.008	0.009	193	193	193	193	193	38	
		Brevard Total			**0.172**	**0.100**	**0.130**	**0.124**	**0.127**	**1,912**	**1,965**	**1,965**	**1,967**	**1,967**	**67**	
50203	Manufactured Home Communities Inc.	Manufactured Home Communities Inc.	CountrySide MHP	Indian River	0.005	0.005	0.005	0.016	0.000	1,027	1,027	1,027	1,027	1,027	6	As of 2015 - Now receive water from Indian River County Utilities.
		Indian River Total			**0.005**	**0.005**	**0.005**	**0.016**	**0.000**	**1,027**	**1,027**	**1,027**	**1,027**	**1,027**	**6**	
288	Lake Joanna Estates Assoc Inc	General Utilities Corporation	Lake Joanna Estates	Lake	0.006	0.003	0.006	0.006	0.010	104	104	111	104	104	59	
289	Harbor Oaks Homeowners Cooperative, Ir	General Utilities Corporation	Harbor Oaks	Lake	0.073	0.038	0.078	0.065	0.113	376	376	421	376	376	191	
290	Midway Manor MHP	Midway Manor MHP	Midway Manor	Lake	0.007	0.008	0.008	0.007	0.013	157	157	157	157	157	55	
292	Citrus Circle Water Systems Inc	Citrus Circle Water Systems Inc	Citrus Circle Mobile Home Pk	Lake	0.006	0.004	0.006	0.006	0.010	66	66	66	66	66	97	
2416	Oak Springs LLC	Oak Springs Mobile Home Park		Lake	0.065	0.062	0.049	0.048	0.081	779	779	779	779	779	78	
2447	Beauclair Homeowners Association	General Utilities Corporation	Lake Beauclair	Lake	0.012	0.013	0.012	0.012	0.026	65	65	65	65	65	231	
2472	Springs Park Area Inc	Springs Park Area Inc		Lake	0.048	0.043	0.039	0.039	0.060	321	321	321	321	321	143	
2473	Century Estates Utilities Inc	Century Estates Utilities Inc	Century Estates	Lake	0.020	0.022	0.020	0.019	0.023	193	193	193	193	193	108	
2477	Fisherman's Wharf	Fisherman's Wharf		Lake	0.005	0.002	0.004	0.003	0.008	50	50	50	50	50	88	
2483	Country Life LLC	Country Life LLC	Country Life Park / Diamond Point Mobile Home Park	Lake	0.036	0.049	0.040	0.051	0.071	378	378	242	378	378	141	
2488	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Grand Terrace	Lake	0.019	0.017	0.015	0.016	0.023	256	256	256	256	256	70	
2513	Molokai Co-op	Molokai Co-op		Lake	0.076	0.034	0.022	0.019	0.028	397	397	397	397	397	90	
2530	Blue Parrot RV Resort	Blue Parrot RV Resort		Lake	0.040	0.020	0.030	0.024	0.037	262	262	262	262	262	115	
2535	Lake Yale Treatment Assoc Inc	Lake Yale Treatment Assoc Inc	Lake Yale Estates/Sandpiper Mobile Home Mano	Lake	0.036	0.006	0.006	0.006	0.000	140	140	140	136	136	78	
2575	Brendenwood Utilities LLC	Brendenwood Utilities LLC	Brendenwood Water System	Lake	0.024	0.024	0.022	0.023	0.036	140	140	140	130	130	190	
2598	Haines Creek RV Village	Haines Creek RV Village		Lake	0.008	0.006	0.003	0.002	0.004	166	166	166	166	166	28	
2604	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Piney Woods / Spring Lake	Lake	0.037	0.032	0.031	0.030	0.047	436	436	436	436	437	81	
2606	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Stone Mountain	Lake	0.002	0.002	0.002	0.002	0.000	27	27	27	27	27	59	
2607	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	East Lake Harris	Lake	0.013	0.014	0.016	0.015	0.022	428	428	428	428	428	37	
2608	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Venetian Village	Lake	0.024	0.023	0.021	0.022	0.034	411	411	411	440	440	59	
2609	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Picciola Island	Lake	0.029	0.025	0.027	0.023	0.033	365	373	373	374	374	74	
2610	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Morning View	Lake	0.007	0.007	0.007	0.007	0.012	85	85	85	85	85	94	
2611	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Fern Terrace	Lake	0.023	0.022	0.024	0.018	0.023	303	303	303	286	286	74	
2612	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Palms Mobile Home Park	Lake	0.010	0.006	0.006	0.006	0.012	102	102	102	102	102	78	
2613	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Hobby Hills	Lake	0.013	0.013	0.014	0.014	0.021	181	181	256	198	198	74	
2614	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Skycrest	Lake	0.025	0.016	0.018	0.015	0.021	216	216	216	216	216	88	
2621	Astatula Estates	General Utilities Corporation	Meadows of Astatula	Lake	0.059	0.033	0.043	0.046	0.087	177	128	128	122	122	396	
2622	Brittany Estates Residents Owners Assoc Inc	General Utilities Corporation	Brittany Estates	Lake	0.053	0.027	0.054	0.046	0.081	194	194	194	194	194	269	
2628	Lakeside Village LTD	General Utilities Corporation	Lakeside Village Ltd	Lake	0.037	0.017	0.035	0.033	0.021	141	141	141	141	141	203	
2659	Hometown America	Hometown America	Haselton Village MHP	Lake	0.040	0.022	0.039	0.031	0.049	190	190	190	190	190	191	
2775	Ridgecrest Management Co. LLC	General Utilities Corporation	Ridgecrest Village	Lake	0.045	0.028	0.023	0.012	0.020	253	253	253	253	253	101	
2778	Waterwood Community Assoc. Inc.	General Utilities Corporation	Waterwood	Lake	0.080	0.078	0.075	0.071	0.114	286	286	286	295	295	289	
2782	Raintree Utilities Inc.	Raintree Utilities Inc.	Raintree Harbor	Lake	0.052	0.050	0.042	0.040	0.069	275	275	275	265	265	187	
2858	Pine Island Fish Camp	Pine Island Fish Camp		Lake	0.001	0.001	0.001	0.001	0.000	25	25	25	25	25	32	
2862	Lady Lake Mobile Home Park Inc	Lady Lake Mobile Home Park Inc	Lady Lake Mobile Home Park	Lake	0.044	0.041	0.034	0.029	0.042	253	253	253	270	270	146	
2863	Bonfire Cooperative Assoc Inc	Bonfire Cooperative Assoc Inc	Bonfire COOP Mobile Home Park	Lake	0.025	0.018	0.029	0.019	0.051	400	400	400	400	400	71	
2865	Community of Christ	Community of Christ	Deerhaven Camp	Lake	0.009	0.006	0.006	0.006	0.000	25	25	25	25	25	216	
2867	T & T Inc dba Country Squire Mobile Home Village	T & T Inc dba Country Squire Mobile Home Village	Country Squire Mobile Home Park	Lake	0.018	0.029	0.026	0.024	0.035	298	298	298	240	240	96	
2891	Corley Island Mobile Manor	Corley Island Mobile Manor		Lake	0.028	0.015	0.030	0.028	0.048	200	200	250	200	200	142	
2901	Pine Harbour Water Utilities	Pine Harbour Water Utilities		Lake	0.015	0.017	0.015	0.016	0.019	123	123	123	132	132	130	
2973	Lakes of Lady Lake Homeowners Assocation, Inc.	Lakes of Lady Lake Homeowners Assocation, Inc.	The Lakes of Lady Lake	Lake	0.021	0.039	0.041	0.038	0.057	100	100	100	100	100	392	
4493	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Imperial Terrace	Lake	0.015	0.015	0.015	0.015	0.024	490	490	490	490	490	34	
4512	Cypress Creek Mobile Home Park	Cypress Creek Mobile Home Park	Cypress Creek	Lake	0.027	0.026	0.028	0.027	0.036	251	251	251	251	251	115	
4545	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Quail Ridge	Lake	0.014	0.014	0.012	0.012	0.025	186	231	231	231	181	73	
4555	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Tavares Ridge	Lake	0.027	0.030	0.034	0.034	0.054	532	532	532	532	532	67	
4565	Tara Village	Tara Village		Lake	0.035	0.012	0.019	0.016	0.036	273	283	283	266	266	86	
5753	WBB Utilities Inc	WBB Utilities Inc	Lake Idlewild	Lake	0.056	0.056	0.039	0.044	0.061	164	164	164	164	164	312	
6781	Shangri-La by the Lake Utilities Inc	Shangri-La by the Lake Utilities Inc	Shangri-La by the Lake	Lake	0.028	0.025	0.025	0.027	0.048	407	407	407	407	407	75	
50094	Lake Utility Services, Inc.	Lake Saunders Utilities	Lake Saunders Acres	Lake	0.008	0.009	0.009	0.010	0.021	109	109	109	109	161	95	
50254	Treasure Island Estates Inc	Treasure Island Estates Inc	Treasure Cove Homeowners Association	Lake	0.010	0.015	0.009	0.017	0.034	89	89	89	89	89	191	
50780	Cove Water System Incorporated	General Utilities Corporation	Cove Water System	Lake	0.008	0.005	0.009	0.009	0.018	134	134	134	134	134	73	

Table B-6d, Continued. 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Smaller than 0.10 mgd in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use 2011	Water Use 2012	Water Use 2013	Water Use 2014	Water Use 2015	Population 2011	Population 2012	Population 2013	Population 2014	Population 2015	2011-2015 Avg GPCD	Notes
98980	Raintree Utilities Inc.	Raintree Utilities Inc.	Bentwood Subdivision	Lake	0.004	0.001	0.004	0.004	0.000	4	4	21	21	21	183	Due to Lack of Population use County-Wide Average of 107.
110807	Lake County Acreage LLC	Wolf Branch Meadows		Lake	0.007	0.007	0.007	0.007	0.156	9	0	7	7	7	6,133	Due to Lack of Population use TSR GPCD of 100.
114536	Lake County	Lake County	South Umatilla Water System	Lake	0.052	0.042	0.042	0.042	0.000	400	438	438	438	438	83	
120333	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Ravenswood CUP	Lake	0.007	0.007	0.007	0.007	0.012	90	90	90	90	90	89	
Lake (Non-CFWI) Total					**1.489**	**1.196**	**1.278**	**1.209**	**1.986**	**12,482**	**12,525**	**12,590**	**12,509**	**12,512**	**114**	
104	Shady Road Villas	Shady Road Villas		Marion	0.016	0.029	0.048	0.024	0.054	287	287	287	287	287	119	
2996	Sunshine Utilities	Sunshine Utilities	Sunlight Acres	Marion	0.019	0.008	0.015	0.017	0.020	186	186	186	186	186	85	
2998	Mr Juerg and Germaine Mueller	Whispering Pines RV Park		Marion	0.001	0.001	0.001	0.001	0.000	25	25	25	25	50	27	
3008	East Marion Sanitary Systems Inc	East Marion Sanitary Systems Inc	Lakeview Woods	Marion	0.015	0.009	0.017	0.014	0.033	150	150	150	150	150	117	
3010	Windstream Utilities Company	Windstream Utilities Company	Windstream / Carriage Hill	Marion	0.085	0.070	0.073	0.059	0.104	301	301	301	301	301	260	
3013	Sunshine Utilities	Sunshine Utilities	Fore Oaks	Marion	0.053	0.049	0.047	0.051	0.070	362	362	362	362	362	149	
3060	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	49th Street	Marion	0.023	0.021	0.021	0.021	0.000	237	237	237	362	362	60	
3077	GMN Landfair LTD	GMN Landfair LTD	Landfair	Marion	0.026	0.013	0.031	0.032	0.041	545	545	545	580	580	51	
3080	Sunshine Utilities of Central Fl Inc.	Sunshine Utilities of Central Fl Inc.	Oakhaven	Marion	0.032	0.028	0.037	0.037	0.051	96	96	96	103	103	374	
3083	Lake Oklawaha RV Resort Inc.	Lake Oklawaha RV Resort Inc.	Lake Oklawaha RV Resort	Marion	0.003	0.002	0.002	0.002	0.008	399	399	399	399	399	9	
3087	Tropicana Village Homeowners Assoc Inc	Tropicana Village Homeowners Assoc Inc	Tropicana Village	Marion	0.026	0.017	0.016	0.018	0.024	261	261	261	261	261	77	
3092	Willow Reed Inc	Briar Patch MHC		Marion	0.005	0.005	0.005	0.005	0.000	80	80	80	80	80	50	
3093	Sunshine Utilities	Sunshine Utilities	Winding Waters	Marion	0.042	0.050	0.046	0.044	0.047	407	407	407	433	473	108	
3095	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Hawks Point	Marion	0.025	0.023	0.023	0.021	0.034	310	310	310	310	310	81	
3127	Town of McIntosh	Town of McIntosh		Marion	0.074	0.065	0.059	0.055	0.101	588	588	588	588	588	120	
3131	Sunshine Utilities	Sunshine Utilities	Florida Heights	Marion	0.026	0.019	0.023	0.023	0.024	233	233	233	233	233	99	
3132	Sunshine Utilities	Sunshine Utilities	Oakhurst	Marion	0.022	0.031	0.031	0.031	0.046	235	235	235	235	235	137	
4573	Forest Green Merchants and Homeowners Assoc Inc	Forest Green Merchants and Homeowners Assoc Inc	Forest Green Subdivision	Marion	0.005	0.004	0.006	0.004	0.005	181	181	181	181	181	27	
4580	Marion Utilities Inc.	Marion Utilities Inc.	Turning Pointe	Marion	0.013	0.014	0.014	0.013	0.021	176	176	176	176	176	85	
4581	Marion Utilities Inc.	Marion Utilities Inc.	Windgate Estates	Marion	0.041	0.037	0.034	0.034	0.045	338	338	338	338	338	113	
4582	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Belleview Hills Estates	Marion	0.056	0.051	0.043	0.053	0.069	712	712	712	758	758	74	
6850	Sunshine Utilities	Sunshine Utilities	Whispering Sands	Marion	0.043	0.032	0.030	0.034	0.051	668	668	406	406	406	74	
6858	Smith Lake Shores Village	Smith Lake Shores Village		Marion	0.041	0.024	0.055	0.043	0.079	368	368	368	368	368	132	
6893	Wilderness RV Park Estates LLC	Wilderness RV Park Estates LLC	Wilderness RV Park Estates	Marion	0.023	0.020	0.019	0.015	0.029	383	383	383	378	378	56	
7116	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Belleair / Quail Ridge - Permit expired, but utility still active	Marion	0.043	0.040	0.040	0.040	0.000	512	512	512	512	512	64	
82743	Silver City Oaks Inc	Silver City Oaks Inc		Marion	0.012	0.011	0.025	0.008	0.012	108	108	108	108	108	126	
107292	Regatta Construction LLC	Oakwater Village		Marion	0.000	0.005	0.000	0.000	0.000	0	0	0	0	0	N/A	Due to Lack of Population use County-Wide Average of 113.
112657	River Creek LLC	River Creek RV Resort		Marion	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0	N/A	Due to Lack of Population use County-Wide Average of 113.
	Aqua Utilities of Florida, Inc.		Belleview Hills / Fairfax Hills / Chappell Hills / Marion Hills / West View / Woodberry Forest	Marion	0.088	0.100	0.097	0.102	0.089	0	0	0	0	0	N/A	Due to Lack of Population use County-Wide Average of 113.
	Debra Demers	Sunshine Utilities	Fox Mountain AKA Sun Resort	Marion	0.004	0.004	0.004	0.005	0.004	32	32	112	112	112	51	
	Marion Utilities Inc.	Marion Utilities Inc.	Libra Oaks, Bordering Oaks, Pine Ridge Estates, Hunters Trace, Ft King Forest / Sleepy Hollow / Dellcrest / Golden Holiday MHP / Hicliff Heights	Marion	0.210	0.209	0.181	0.182	0.210	3,489	3,489	3,489	3,489	3,522	57	
	Ocala Garden Apartments Inc.	Sunshine Utilities of Central Fla Inc	Ocala Garden Apartments	Marion	0.004	0.004	0.003	0.003	0.003	48	48	48	48	48	71	
	Sunshine Utilities	Sunshine Utilities	Ashley Heights / Floyd Clark Subdividion (PS CUP 6880 closed)	Marion	0.023	0.023	0.020	0.021	0.024	268	268	399	399	399	64	
	Sunshine Utilities of Central Fl Inc.	Sunshine Utilities of Central Fl Inc.	Eleven Oaks Subdivision	Marion	0.01	0.009	0.009	0.007	0.009	85	85	126	126	126	80	
	Sunshine Utilities of Central Fl Inc.	Sunshine Utilities of Central Fl Inc.	Country Walk Subdivision	Marion	0.017	0.017	0.013	0.014	0.017	143	143	214	214	189	86	
Marion Total					**1.126**	**1.044**	**1.088**	**1.033**	**1.324**	**12,213**	**12,213**	**12,274**	**12,508**	**12,581**	**91**	
4385	Meadowlea Deland LLC	Meadowlea Deland LLC	Meadowlea Estates	Volusia	0.028	0.016	0.028	0.028	0.000	454	454	462	438	179	50	
9165	Lakes of Pine Run Condominimum Assoc.	Lakes of Pine Run Condominimum Assoc.	Village of Pine Run Utility	Volusia	0.019	0.024	0.020	0.019	0.033	300	268	268	258	258	85	
9385	NHC-FL6 LP	NHC-FL6 LP	Encore Super Park	Volusia	0.030	0.018	0.026	0.021	0.037	427	427	427	427	427	62	
86903	Eldorado Estates LLC	Eldorado Estates LLC		Volusia	0.017	0.021	0.018	0.019	0.029	292	303	303	263	263	73	
120858	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Twin Rivers	Volusia	0.019	0.009	0.018	0.019	0.034	200	200	200	200	200	99	
120859	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Tomoka View	Volusia	0.037	0.032	0.035	0.040	0.058	450	450	450	488	488	87	
Volusia Total					**0.150**	**0.120**	**0.145**	**0.146**	**0.191**	**2,123**	**2,102**	**2,110**	**2,074**	**1,815**	**74**	
CSEC Total					**2.942**	**2.465**	**2.646**	**2.528**	**3.628**	**29,757**	**29,832**	**29,966**	**30,085**	**29,902**	**95**	

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2011-2015 water use obtained from SJRWMD metered EN50 data and DEP MOR data.
4.) 2011-2015 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Base Facility Report Data, parcel data and permittee surveys.

Table B-6d (2-Part I). 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Smaller than 0.10 mgd for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use 2011	Water Use 2012	Water Use 2013	Water Use 2014	Water Use 2015	Population 2011	Population 2012	Population 2013	Population 2014	Population 2015	2011-2015 Avg GPCD	Notes
4385	Meadowlea Deland LLC	Meadowlea Deland LLC	Meadowlea Estates	Volusia	0.028	0.016	0.028	0.028	0.000	454	454	462	438	179	50	
9165	Lakes of Pine Run Condominimum Assoc.	Lakes of Pine Run Condominimum Assoc.	Village of Pine Run Utility	Volusia	0.019	0.024	0.020	0.019	0.033	300	268	268	258	258	85	
9385	NHC-FL6 LP	NHC-FL6 LP	Encore Super Park	Volusia	0.030	0.018	0.026	0.021	0.037	427	427	427	427	427	62	
86903	Eldorado Estates LLC	Eldorado Estates LLC		Volusia	0.017	0.021	0.018	0.019	0.029	292	303	303	263	263	73	
120858	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Twin Rivers	Volusia	0.019	0.009	0.018	0.019	0.034	200	200	200	200	200	99	
120859	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Tomoka View	Volusia	0.037	0.032	0.035	0.040	0.058	450	450	450	488	488	87	
Volusia Total					**0.150**	**0.120**	**0.145**	**0.146**	**0.191**	**2,123**	**2,102**	**2,110**	**2,074**	**1,815**	**74**	
Part I Total					**2.942**	**2.465**	**2.646**	**2.528**	**3.628**	**29,757**	**29,832**	**29,966**	**30,085**	**29,902**	**95**	

Notes:

1.) All water use is shown in million gallons per day.

2.) Rounding errors account for nominal discrepancies.

3.) 2011-2015 water use obtained from SJRWMD metered EN50 data and DEP MOR data.

4.) 2011-2015 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Base Facility Report Data, parcel data and permittee surveys.

Table B-6d (3-Part II). 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Smaller than 0.10 mgd for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use 2011	Water Use 2012	Water Use 2013	Water Use 2014	Water Use 2015	Population 2011	Population 2012	Population 2013	Population 2014	Population 2015	2011-2015 Avg GPCD	Notes
288	Lake Joanna Estates Assoc Inc	General Utilities Corporation	Lake Joanna Estates	Lake	0.006	0.003	0.006	0.006	0.010	104	104	111	104	104	59	
289	Harbor Oaks Homeowners Cooperative, In	General Utilities Corporation	Harbor Oaks	Lake	0.073	0.038	0.078	0.065	0.113	376	376	421	376	376	191	
290	Midway Manor MHP	Midway Manor MHP	Midway Manor	Lake	0.007	0.008	0.008	0.007	0.013	157	157	157	157	157	55	
292	Citrus Circle Water Systems Inc	Citrus Circle Water Systems Inc	Citrus Circle Mobile Home Pk	Lake	0.006	0.004	0.006	0.006	0.010	66	66	66	66	66	97	
2416	Oak Springs LLC	Oak Springs Mobile Home Park		Lake	0.065	0.062	0.049	0.048	0.081	779	779	779	779	779	78	
2447	Beauclair Homeowners Association	General Utilities Corporation	Lake Beauclair	Lake	0.012	0.013	0.012	0.012	0.026	65	65	65	65	65	231	
2472	Springs Park Area Inc	Springs Park Area Inc		Lake	0.048	0.043	0.039	0.039	0.060	321	321	321	321	321	143	
2473	Century Estates Utilities Inc	Century Estates Utilities Inc	Century Estates	Lake	0.020	0.022	0.020	0.019	0.023	193	193	193	193	193	108	
2477	Fisherman's Wharf	Fisherman's Wharf		Lake	0.005	0.002	0.004	0.003	0.008	50	50	50	50	50	88	
2483	Country Life LLC	Country Life LLC	Country Life Park / Diamond Point Mobile Home Park	Lake	0.036	0.049	0.040	0.051	0.071	378	378	242	378	378	141	
2488	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Grand Terrace	Lake	0.019	0.017	0.015	0.016	0.023	256	256	256	256	256	70	
2513	Molokai Co-op	Molokai Co-op		Lake	0.076	0.034	0.022	0.019	0.028	397	397	397	397	397	90	
2530	Blue Parrot RV Resort	Blue Parrot RV Resort		Lake	0.040	0.020	0.030	0.024	0.037	262	262	262	262	262	115	
2535	Lake Yale Treatment Assoc Inc	Lake Yale Treatment Assoc Inc	Lake Yale Estates/Sandpiper Mobile Home Mano	Lake	0.036	0.006	0.006	0.006	0.000	140	140	140	136	136	78	
2575	Brendenwood Utilities LLC	Brendenwood Utilities LLC	Brendenwood Water System	Lake	0.024	0.024	0.022	0.023	0.036	140	140	140	130	130	190	
2598	Haines Creek RV Village	Haines Creek RV Village		Lake	0.008	0.006	0.003	0.002	0.004	166	166	166	166	166	28	
2604	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Piney Woods / Spring Lake	Lake	0.037	0.032	0.031	0.030	0.047	436	436	436	436	437	81	
2606	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Stone Mountain	Lake	0.002	0.002	0.002	0.002	0.000	27	27	27	27	27	59	
2607	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	East Lake Harris	Lake	0.013	0.014	0.016	0.015	0.022	428	428	428	428	428	37	
2608	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Venetian Village	Lake	0.024	0.023	0.021	0.022	0.034	411	411	411	440	440	59	
2609	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Picciola Island	Lake	0.029	0.025	0.027	0.023	0.033	365	373	373	374	374	74	
2610	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Morning View	Lake	0.007	0.007	0.007	0.007	0.012	85	85	85	85	85	94	
2611	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Fern Terrace	Lake	0.023	0.022	0.024	0.018	0.023	303	303	303	286	286	74	
2612	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Palms Mobile Home Park	Lake	0.010	0.006	0.006	0.006	0.012	102	102	102	102	102	78	
2613	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Hobby Hills	Lake	0.013	0.013	0.014	0.014	0.021	181	181	256	198	198	74	
2614	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Skycrest	Lake	0.025	0.016	0.018	0.015	0.021	216	216	216	216	216	88	
2621	Astatula Estates	General Utilities Corporation	Meadows of Astatula	Lake	0.059	0.033	0.043	0.046	0.087	177	128	128	122	122	396	
2622	Brittany Estates Residents Owners Assoc Inc	General Utilities Corporation	Brittany Estates	Lake	0.053	0.027	0.054	0.046	0.081	194	194	194	194	194	269	
2628	Lakeside Village LTD	General Utilities Corporation	Lakeside Village Ltd	Lake	0.037	0.017	0.035	0.033	0.021	141	141	141	141	141	203	
2659	Hometown America	Hometown America	Haselton Village MHP	Lake	0.040	0.022	0.039	0.031	0.049	190	190	190	190	190	191	
2775	Ridgecrest Management Co. LLC	General Utilities Corporation	Ridgecrest Village	Lake	0.045	0.028	0.023	0.012	0.020	253	253	253	253	253	101	
2778	Waterwood Community Assoc. Inc.	General Utilities Corporation	Waterwood	Lake	0.080	0.078	0.075	0.071	0.114	286	286	286	295	295	289	
2782	Raintree Utilities Inc.	Raintree Utilities Inc.	Raintree Harbor	Lake	0.052	0.050	0.042	0.040	0.069	275	275	275	265	265	187	
2858	Pine Island Fish Camp	Pine Island Fish Camp		Lake	0.001	0.001	0.001	0.001	0.000	25	25	25	25	25	32	
2862	Lady Lake Mobile Home Park Inc	Lady Lake Mobile Home Park Inc	Lady Lake Mobile Home Park	Lake	0.044	0.041	0.034	0.029	0.042	253	253	253	270	270	146	
2863	Bonfire Cooperative Assoc Inc	Bonfire Cooperative Assoc Inc	Bonfire COOP Mobile Home Park	Lake	0.025	0.018	0.029	0.019	0.051	400	400	400	400	400	71	
2865	Community of Christ	Community of Christ	Deerhaven Camp	Lake	0.009	0.006	0.006	0.006	0.000	25	25	25	25	25	216	
2867	T & T Inc dba Country Squire Mobile Home Village	T & T Inc dba Country Squire Mobile Home Village	Country Squire Mobile Home Park	Lake	0.018	0.029	0.026	0.024	0.035	298	298	298	240	240	96	
2891	Corley Island Mobile Manor	Corley Island Mobile Manor		Lake	0.028	0.015	0.030	0.028	0.048	200	200	250	200	200	142	
2901	Pine Harbour Water Utilities	Pine Harbour Water Utilities		Lake	0.015	0.017	0.015	0.016	0.019	123	123	123	132	132	130	
2973	Lakes of Lady Lake Homeowners Assocation, Inc.	Lakes of Lady Lake Homeowners Assocation, Inc.	The Lakes of Lady Lake	Lake	0.021	0.039	0.041	0.038	0.057	100	100	100	100	100	392	
4493	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Imperial Terrace	Lake	0.015	0.015	0.015	0.015	0.024	490	490	490	490	490	34	
4512	Cypress Creek Mobile Home Park	Cypress Creek Mobile Home Park	Cypress Creek	Lake	0.027	0.026	0.028	0.027	0.036	251	251	251	251	251	115	
4545	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Quail Ridge	Lake	0.014	0.014	0.012	0.012	0.025	186	231	231	231	181	73	
4555	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Tavares Ridge	Lake	0.027	0.030	0.034	0.034	0.054	532	532	532	532	532	67	
4565	Tara Village	Tara Village		Lake	0.035	0.012	0.019	0.016	0.036	273	283	283	266	266	86	
5753	WBB Utilities Inc	WBB Utilities Inc	Lake Idlewild	Lake	0.056	0.056	0.039	0.044	0.061	164	164	164	164	164	312	
6781	Shangri-La by the Lake Utilities Inc	Shangri-La by the Lake Utilities Inc	Shangri-La by the Lake	Lake	0.028	0.025	0.025	0.027	0.048	407	407	407	407	407	75	
50094	Lake Utility Services, Inc.	Lake Saunders Utilities	Lake Saunders Acres	Lake	0.008	0.009	0.009	0.010	0.021	109	109	109	109	161	95	
50254	Treasure Island Estates Inc	Treasure Island Estates Inc	Treasure Cove Homeowners Association	Lake	0.010	0.015	0.009	0.017	0.034	89	89	89	89	89	191	
50780	Cove Water System Incorporated	General Utilities Corporation	Cove Water System	Lake	0.008	0.005	0.009	0.009	0.018	134	134	134	134	134	73	
98980	Raintree Utilities Inc.	Raintree Utilities Inc.	Bentwood Subdivision	Lake	0.004	0.001	0.004	0.004	0.000	4	4	21	21	21	183	Due to Lack of Population use County-Wide Average of 107.
110807	Lake County Acreage LLC	Wolf Branch Meadows		Lake	0.007	0.007	0.007	0.007	0.156	9	0	7	7	7	6,133	
114536	Lake County	Lake County	South Umatilla Water System	Lake	0.052	0.042	0.042	0.042	0.000	400	438	438	438	438	83	
120333	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Ravenswood CUP	Lake	0.007	0.007	0.007	0.007	0.012	90	90	90	90	90	89	
	Lake (Non-CFWI) Total				**1.489**	**1.196**	**1.278**	**1.209**	**1.986**	**12,482**	**12,525**	**12,590**	**12,509**	**12,512**	**114**	

Table B-6d (3-Part II), Continued. 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Smaller than 0.10 mgd for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use 2011	Water Use 2012	Water Use 2013	Water Use 2014	Water Use 2015	Population 2011	Population 2012	Population 2013	Population 2014	Population 2015	2011-2015 Avg GPCD	Notes
104	Shady Road Villas	Shady Road Villas		Marion	0.016	0.029	0.048	0.024	0.054	287	287	287	287	287	119	
2996	Sunshine Utilities	Sunshine Utilities	Sunlight Acres	Marion	0.019	0.008	0.015	0.017	0.020	186	186	186	186	186	85	
2998	Mr Juerg and Germaine Mueller	Whispering Pines RV Park		Marion	0.001	0.001	0.001	0.001	0.000	25	25	25	25	50	27	
3008	East Marion Sanitary Systems Inc	East Marion Sanitary Systems Inc	Lakeview Woods	Marion	0.015	0.009	0.017	0.014	0.033	150	150	150	150	150	117	
3010	Windstream Utilities Company	Windstream Utilities Company	Windstream / Carriage Hill	Marion	0.085	0.070	0.073	0.059	0.104	301	301	301	301	301	260	
3013	Sunshine Utilities	Sunshine Utilities	Fore Oaks	Marion	0.053	0.049	0.047	0.051	0.070	362	362	362	362	362	149	
3060	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	49th Street (Now served by Ocala Oaks - CUP 3043)	Marion	0.023	0.021	0.021	0.021	0.000	237	237	237	362	362	60	
3077	GMN Landfair LTD	GMN Landfair LTD	Landfair	Marion	0.026	0.013	0.031	0.032	0.041	545	545	545	580	580	51	
3080	Sunshine Utilities of Central Fl Inc.	Sunshine Utilities of Central Fl Inc.	Oakhaven	Marion	0.032	0.028	0.037	0.037	0.051	96	96	96	103	103	374	
3083	Lake Oklawaha RV Resort Inc.	Lake Oklawaha RV Resort Inc.	Lake Oklawaha RV Resort	Marion	0.003	0.002	0.002	0.002	0.008	399	399	399	399	399	9	
3087	Tropicana Village Homeowners Assoc Inc	Tropicana Village Homeowners Assoc Inc	Tropicana Village	Marion	0.026	0.017	0.016	0.018	0.024	261	261	261	261	261	77	
3092	Willow Reed Inc	Briar Patch MHC		Marion	0.005	0.005	0.005	0.005	0.000	80	80	80	80	80	50	
3093	Sunshine Utilities	Sunshine Utilities	Winding Waters	Marion	0.042	0.050	0.046	0.044	0.047	407	407	407	433	473	108	
3095	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Hawks Point	Marion	0.025	0.023	0.023	0.021	0.034	310	310	310	310	310	81	
3127	Town of McIntosh	Town of McIntosh		Marion	0.074	0.065	0.059	0.055	0.101	588	588	588	588	588	120	
3131	Sunshine Utilities	Sunshine Utilities	Florida Heights	Marion	0.026	0.019	0.023	0.023	0.024	233	233	233	233	233	99	
3132	Sunshine Utilities	Sunshine Utilities	Oakhurst	Marion	0.022	0.031	0.031	0.031	0.046	235	235	235	235	235	137	
4573	Forest Green Merchants and Homeowners Assoc Inc	Forest Green Merchants and Homeowners Assoc Inc	Forest Green Subdivision	Marion	0.005	0.004	0.006	0.004	0.005	181	181	181	181	181	27	
4580	Marion Utilities Inc.	Marion Utilities Inc.	Turning Pointe	Marion	0.013	0.014	0.014	0.013	0.021	176	176	176	176	176	85	
4581	Marion Utilities Inc.	Marion Utilities Inc.	Windgate Estates	Marion	0.041	0.037	0.034	0.034	0.045	338	338	338	338	338	113	
4582	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Belleview Hills Estates	Marion	0.056	0.051	0.043	0.053	0.069	712	712	712	758	758	74	
6850	Sunshine Utilities	Sunshine Utilities	Whispering Sands	Marion	0.043	0.032	0.030	0.034	0.051	668	668	406	406	406	74	
6858	Smith Lake Shores Village	Smith Lake Shores Village		Marion	0.041	0.024	0.055	0.043	0.079	368	368	368	368	368	132	
6893	Wilderness RV Park Estates LLC	Wilderness RV Park Estates LLC	Wilderness RV Park Estates	Marion	0.023	0.020	0.019	0.015	0.029	383	383	383	378	378	56	
7116	Aqua Utilities of Florida, Inc.	Aqua Utilities of Florida, Inc.	Belleair / Quail Ridge - Permit expired, but utility still active (now served by CUP 3132)	Marion	0.043	0.040	0.040	0.040	0.000	512	512	512	512	512	64	
82743	Silver City Oaks Inc	Silver City Oaks Inc		Marion	0.012	0.011	0.025	0.008	0.012	108	108	108	108	108	126	
107292	Regatta Construction LLC	Oakwater Village		Marion	0.000	0.005	0.000	0.000	0.000	0	0	0	0	0	N/A	Due to Lack of Population use County-Wide Average of 113.
112657	River Creek LLC	River Creek RV Resort		Marion	0.000	0.000	0.000	0.000	0.000	0	0	0	0	0	N/A	Due to Lack of Population use County-Wide Average of 113.
	Aqua Utilities of Florida, Inc.		Belleview Hills / Fairfax Hills / Chappell Hills / Marion Hills / West View / Woodberry Forest	Marion	0.088	0.100	0.097	0.102	0.089	0	0	0	0	0	N/A	Due to Lack of Population use County-Wide Average of 113.
	Debra Demers	Sunshine Utilities	Fox Mountain AKA Sun Resort	Marion	0.004	0.004	0.00359	0.004908	0.003866	32	32	112	112	112	51	
	Marion Utilities Inc.	Marion Utilities Inc.	Libra Oaks, Bordering Oaks, Pine Ridge Estates, Hunters Trace, Ft King Forest / Sleepy Hollow / Dellcrest / Golden Holiday MHP / Hicliff Heights	Marion	0.210	0.209	0.181	0.182	0.210	3,489	3,489	3,489	3,489	3,522	57	
	Ocala Garden Apartments Inc.	Sunshine Utilities of Central Fla Inc	Ocala Garden Apartments	Marion	0.004	0.004	0.003	0.003	0.003	48	48	48	48	48	71	
	Sunshine Utilities	Sunshine Utilities	Ashley Heights / Floyd Clark Subdividion (PS CUP 6880 closed)	Marion	0.023	0.023	0.020	0.021	0.024	268	268	399	399	399	64	
	Sunshine Utilities of Central Fl Inc.	Sunshine Utilities of Central Fl Inc.	Eleven Oaks Subdivision	Marion	0.010	0.009	0.009	0.007	0.009	85	85	126	126	126	80	
	Sunshine Utilities of Central Fl Inc.	Sunshine Utilities of Central Fl Inc.	Country Walk Subdivision	Marion	0.017	0.017	0.013	0.014	0.017	143	143	214	214	189	86	
		Marion Total			**1.126**	**1.044**	**1.088**	**1.033**	**1.324**	**12,213**	**12,213**	**12,274**	**12,508**	**12,581**	**91**	
		Part II Total			**2.615**	**2.240**	**2.366**	**2.242**	**3.310**	**24,695**	**24,738**	**24,864**	**25,017**	**25,093**	**103**	

Notes:

1.) All water use is shown in million gallons per day.

2.) Rounding errors account for nominal discrepancies.

3.) 2011-2015 water use obtained from SJRWMD metered EN50 data and DEP MOR data.

4.) 2011-2015 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Base Facility Report Data, parcel data and permittee surveys.

Table B-6d (4-Part III). 2011-2015 Water Use, Population Served and Five-Year Gross Per Capita Averages for Public Supply Permitted Smaller than 0.10 mgd for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Cup Number	Owner	Utility	Alternate Name / Comments	County	Water Use 2011	Water Use 2012	Water Use 2013	Water Use 2014	Water Use 2015	Population 2011	Population 2012	Population 2013	Population 2014	Population 2015	2011-2015 Avg GPCD	Notes
1738	Riverview Florida Associates, LLC	Riverview Florida Associates, LLC	Pelican Bay	Brevard	0.045	0.024	0.024	0.018	0.017	250	250	250	250	250	102	
1742	San Sebastian Water LLC	San Sebastian Water LLC	San Sebastian Woods	Brevard	0.018	0.016	0.019	0.030	0.037	61	107	107	115	115	238	
1783	Northgate Properties Inc.	Northgate Properties Inc.	Northgate Mobile Ranch	Brevard	0.020	0.019	0.030	0.019	0.017	812	816	816	812	812	26	
1804	Bonnie Douglas - River Grove Mobile Home Village I & II	Bonnie Douglas - River Grove Mobile Home Village I & II	River Grove Mobile Home Village I & II	Brevard	0.060	0.028	0.043	0.041	0.032	401	403	403	401	401	102	
1808	Summit Cove Condo Assoc	Summit Cove Condo Assoc	Summit Cove Condo	Brevard	0.022	0.007	0.007	0.008	0.015	195	196	196	196	196	60	
1831	Lighthouse Cove Condominimium Association	Lighthouse Cove Condominimium Association	Lighthouse Cove	Brevard	0.007	0.006	0.007	0.008	0.009	193	193	193	193	193	38	
Brevard Total					**0.172**	**0.100**	**0.130**	**0.124**	**0.127**	**1,912**	**1,965**	**1,965**	**1,967**	**1,967**	**67**	
50203	Manufactured Home Communities Inc.	Manufactured Home Communities Inc.	CountrySide MHP	Indian River	0.005	0.005	0.005	0.016	0.000	1,027	1,027	1,027	1,027	1,027	6	
Indian River Total					**0.005**	**0.005**	**0.005**	**0.016**	**0.000**	**1,027**	**1,027**	**1,027**	**1,027**	**1,027**	**6**	
Part III Total					**0.177**	**0.105**	**0.135**	**0.140**	**0.127**	**2,939**	**2,992**	**2,992**	**2,994**	**2,994**	**46**	

Notes:

1.) All water use is shown in million gallons per day.

2.) Rounding errors account for nominal discrepancies.

3.) 2011-2015 water use obtained from SJRWMD metered EN50 data and DEP MOR data.

4.) 2011-2015 population obtained from Technical Staff Reports, BEBR estimates of population, DEP MOR and Base Facility Report Data, parcel data and permittee surveys.

Table B-7. Agricultural Irrigation Self-supply Water Use, Miscellaneous Agricultural Water Use and Acreage for 2015, 5-in-10 Year Water Demand Projections for 2020-2040, Acreage Projections for 2020-2040, 1-in-10 Year Water Demand Projections for 2040 by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent	Acreage	Acreage Projections					Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change							Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total
Brevard	18.53	0.74	**19.27**	21.01	0.84	**21.85**	21.23	0.85	**22.08**	20.46	0.82	**21.28**	19.97	0.80	**20.77**	19.47	0.78	**20.25**	5%	17,661	20,864	20,417	19,577	18,834	18,156	3%	28.68	1.15	**29.83**
Indian River	37.71	25.51	**63.22**	30.29	20.49	**50.78**	30.15	20.39	**50.54**	30.16	20.41	**50.57**	30.18	20.41	**50.59**	30.19	20.42	**50.61**	-20%	58,518	46,597	45,662	44,846	43,988	43,244	-26%	46.59	31.52	**78.11**
Lake (Non-CFWI)	9.74	1.16	**10.90**	12.32	1.47	**13.79**	9.12	1.09	**10.21**	8.77	1.04	**9.81**	8.31	0.99	**9.30**	7.96	0.95	**8.91**	-18%	8,990	7,889	7,381	6,941	6,504	6,110	-32%	10.92	1.30	**12.22**
Marion	7.38	0.44	**7.82**	5.49	0.33	**5.82**	9.76	0.58	**10.34**	11.77	0.70	**12.47**	13.34	0.80	**14.14**	15.46	0.92	**16.38**	109%	7,537	7,845	9,688	11,079	12,318	14,063	87%	21.76	1.30	**23.06**
Okeechobee	2.71	0.12	**2.83**	6.43	0.28	**6.71**	5.64	0.25	**5.89**	5.53	0.25	**5.78**	5.38	0.24	**5.62**	5.00	0.22	**5.22**	84%	1,897	6,222	5,064	4,817	4,603	4,446	134%	7.27	0.32	**7.59**
Volusia	15.44	2.21	**17.65**	17.64	2.53	**20.17**	17.85	2.55	**20.40**	18.20	2.60	**20.80**	18.53	2.65	**21.18**	18.84	2.70	**21.54**	22%	10,370	10,019	10,366	10,775	11,123	11,473	11%	22.47	3.22	**25.69**
CSEC Total	**91.51**	**30.18**	**121.69**	**93.18**	**25.94**	**119.12**	**93.75**	**25.71**	**119.46**	**94.89**	**25.82**	**120.71**	**95.71**	**25.89**	**121.60**	**96.92**	**25.99**	**122.91**	**1%**	**104,973**	**99,436**	**98,578**	**98,035**	**97,370**	**97,492**	**-7%**	**137.69**	**38.81**	**176.50**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 estimated irrigated acres and water use derived from FSAID IV AG layer, deliverable dated July 2017 from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative. 2015 values will not match published Annual Water Use Survey nor USGS data. 2015 estimates of water use for SJRWMD were updated from FSAID III values to reflect reported water use from permittees; water use for areas known to irrigate that did not have a permit was estimated via AFSIRS.
4.) 2020-2040 acreage projections and 2020-2040 average and 1-in-10 water demand projections derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.
5.) SJRWMD 2015 groundwater / surface water split was estimated using the SJRWMD EN50 data and percent split of total permitted allocations for each county.
6.) 2020-2040 groundwater / surface water split estimated using 2015 ratios.

Table B-7 (2-Part I). Agricultural Irrigation Self-supply Water Use, Miscellaneous Agricultural Water Use and Acreage for 2015, 5-in-10 Year Water Demand Projections for 2020-2040, Acreage Projections for 2020-2040, 1-in-10 Year Water Demand Projections for 2040 by County, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent	Acreage	Acreage Projections					Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change							Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total
Volusia	15.44	2.21	**17.65**	17.64	2.53	**20.17**	17.85	2.55	**20.40**	18.20	2.60	**20.80**	18.53	2.65	**21.18**	18.84	2.70	**21.54**	22%	10,370	10,019	10,366	10,775	11,123	11,473	11%	22.47	3.22	**25.69**
Part I Total	**15.44**	**2.21**	**17.65**	**17.64**	**2.53**	**20.17**	**17.85**	**2.55**	**20.40**	**18.20**	**2.60**	**20.80**	**18.53**	**2.65**	**21.18**	**18.84**	**2.70**	**21.54**	**22%**	**10,370**	**10,019**	**10,366**	**10,775**	**11,123**	**11,473**	**11%**	**22.47**	**3.22**	**25.69**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 estimated irrigated acres and water use derived from FSAID IV AG layer, deliverable dated July 2017 from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative. 2015 values will not match published Annual Water Use Survey nor USGS data. 2015 estimates of water use for SJRWMD were updated from FSAID III values to reflect reported water use from permittees; water use for areas known to irrigate that did not have a permit was estimated via AFSIRS.
4.) 2020-2040 acreage projections and 2020-2040 average and 1-in-10 water demand projections derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.
5.) SJRWMD 2015 groundwater / surface water split was estimated using the SJRWMD EN50 data and percent split of total permitted allocations for each county.
6.) 2020-2040 groundwater / surface water split estimated using 2015 ratios.

Table B-7 (3-Part II). Agricultural Irrigation Self-supply Water Use, Miscellaneous Agricultural Water Use and Acreage for 2015, 5-in-10 Year Water Demand Projections for 2020-2040, Acreage Projections for 2020-2040, 1-in-10 Year Water Demand Projections for 2040 by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent	Acreage	Acreage Projections					Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change							Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total
Lake (Non-CFWI)	9.74	1.16	**10.90**	12.32	1.47	**13.79**	9.12	1.09	**10.21**	8.77	1.04	**9.81**	8.31	0.99	**9.30**	7.96	0.95	**8.91**	-18%	8,990	7,889	7,381	6,941	6,504	6,110	-32%	10.92	1.30	**12.22**
Marion	7.38	0.44	**7.82**	5.49	0.33	**5.82**	9.76	0.58	**10.34**	11.77	0.70	**12.47**	13.34	0.80	**14.14**	15.46	0.92	**16.38**	109%	7,537	7,845	9,688	11,079	12,318	14,063	87%	21.76	1.30	**23.06**
Part II Total	**17.12**	**1.60**	**18.72**	**17.81**	**1.80**	**19.61**	**18.88**	**1.67**	**20.55**	**20.54**	**1.74**	**22.28**	**21.65**	**1.79**	**23.44**	**23.42**	**1.87**	**25.29**	**35%**	**16,527**	**15,734**	**17,069**	**18,020**	**18,822**	**20,173**	**22%**	**32.68**	**2.60**	**35.28**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 estimated irrigated acres and water use derived from FSAID IV AG layer, deliverable dated July 2017 from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative. 2015 values will not match published Annual Water Use Survey nor USGS data. 2015 estimates of water use for SJRWMD were updated from FSAID III values to reflect reported water use from permittees; water use for areas known to irrigate that did not have a permit was estimated via AFSIRS.
4.) 2020-2040 acreage projections and 2020-2040 average and 1-in-10 water demand projections derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.
5.) SJRWMD 2015 groundwater / surface water split was estimated using the SJRWMD EN50 data and percent split of total permitted allocations for each county.
6.) 2020-2040 groundwater / surface water split estimated using 2015 ratios.

Table B-7 (4-Part III). Agricultural Irrigation Self-supply Water Use, Miscellaneous Agricultural Water Use and Acreage for 2015, 5-in-10 Year Water Demand Projections for 2020-2040, Acreage Projections for 2020-2040, 1-in-10 Year Water Demand Projections for 2040 by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent	Acreage	Acreage Projections					Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change							Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total
Brevard	18.53	0.74	**19.27**	21.01	0.84	**21.85**	21.23	0.85	**22.08**	20.46	0.82	**21.28**	19.97	0.80	**20.77**	19.47	0.78	**20.25**	5%	17,661	20,864	20,417	19,577	18,834	18,156	3%	28.68	1.15	**29.83**
Indian River	37.71	25.51	**63.22**	30.29	20.49	**50.78**	30.15	20.39	**50.54**	30.16	20.41	**50.57**	30.18	20.41	**50.59**	30.19	20.42	**50.61**	-20%	58,518	46,597	45,662	44,846	43,988	43,244	-26%	46.59	31.52	**78.11**
Okeechobee	2.71	0.12	**2.83**	6.43	0.28	**6.71**	5.64	0.25	**5.89**	5.53	0.25	**5.78**	5.38	0.24	**5.62**	5.00	0.22	**5.22**	84%	1,897	6,222	5,064	4,817	4,603	4,446	134%	7.27	0.32	**7.59**
Part III Total	**58.95**	**26.37**	**85.32**	**57.73**	**21.61**	**79.34**	**57.02**	**21.49**	**78.51**	**56.15**	**21.48**	**77.63**	**55.53**	**21.45**	**76.98**	**54.66**	**21.42**	**76.08**	**-11%**	**78,076**	**73,683**	**71,143**	**69,240**	**67,425**	**65,846**	**-16%**	**82.54**	**32.99**	**115.53**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 estimated irrigated acres and water use derived from FSAID IV AG layer, deliverable dated July 2017 from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative. 2015 values will not match published Annual Water Use Survey nor USGS data. 2015 estimates of water use for SJRWMD were updated from FSAID III values to reflect reported water use from permittees; water use for areas known to irrigate that did not have a permit was estimated via AFSIRS.
4.) 2020-2040 acreage projections and 2020-2040 average and 1-in-10 water demand projections derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.
5.) SJRWMD 2015 groundwater / surface water split was estimated using the SJRWMD EN50 data and percent split of total permitted allocations for each county.
6.) 2020-2040 groundwater / surface water split estimated using 2015 ratios.

Table B-7a. Agricultural Irrigation Self-supply Water Use (Including Miscellaneous Water Use) and Acreage for 2015, 5-in-10 Year Water Demand Projections and Acreage Projections for 2020-2040, 1-in-10 Year Water Demand Projections for 2040, by Crop Category by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Crop Category	2015 Estimated Agriculture		2020 Projected Agriculture		2025 Projected Agriculture		2030 Projected Agriculture		2035 Projected Agriculture		2040 Projected Agriculture		Percent Change 2015-2040		2040 (1-in-10) Demand
		Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acreage	MGD	
Brevard	Citrus	3,226	3.40	2,640	2.82	2,556	2.75	2,528	2.77	2,528	2.83	2,517	2.86	-22%	-16%	4.52
	Field Crops	4,742	4.52	4,742	4.53	4,528	4.36	4,411	4.24	4,200	4.03	3,872	3.71	-18%	-18%	5.49
	Fruit (Non-citrus)	16	0.03	16	0.03	16	0.03	16	0.03	16	0.03	16	0.03	0%	0%	0.05
	Greenhouse/Nursery	405	1.02	405	0.99	405	0.98	405	0.97	405	0.96	389	0.92	-4%	-10%	1.05
	Hay	8,315	6.42	8,315	6.63	8,251	7.06	8,150	7.16	7,618	6.66	7,356	6.40	-12%	0%	10.50
	Potatoes	110	0.12	110	0.12	110	0.13	110	0.13	110	0.14	49	0.04	-55%	-67%	0.06
	Sod	2,185	2.44	2,185	2.41	2,185	2.41	2,185	2.42	2,185	2.43	2,185	2.43	0%	0%	3.19
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	2,451	3.66	2,451	3.73	2,366	3.77	1,772	2.97	1,772	3.10	1,772	3.27	-28%	-11%	4.38
	Miscellaneous	0	0.00	0	0.59	0	0.59	0	0.59	0	0.59	0	0.59	N/A	N/A	0.59
	Total	**21,450**	**21.61**	**20,864**	**21.85**	**20,417**	**22.08**	**19,577**	**21.28**	**18,834**	**20.77**	**18,156**	**20.25**	**-15%**	**-6%**	**29.83**
Indian River	Citrus	38,675	40.82	38,012	40.30	37,228	39.88	36,464	39.76	35,649	39.72	34,952	39.66	-10%	-3%	62.66
	Field Crops	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	129	0.26	129	0.26	129	0.26	129	0.27	129	0.28	129	0.28	0%	8%	0.41
	Greenhouse/Nursery	889	2.14	838	1.95	768	1.78	716	1.65	699	1.60	688	1.56	-23%	-27%	1.78
	Hay	4,784	3.75	4,767	3.86	4,686	4.07	4,686	4.18	4,686	4.16	4,650	4.10	-3%	9%	6.73
	Potatoes	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sod	1,013	1.07	1,013	1.06	1,013	1.06	1,013	1.06	999	1.06	999	1.06	-1%	-1%	1.39
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	1,838	2.83	1,838	2.89	1,838	3.03	1,838	3.19	1,826	3.31	1,826	3.49	-1%	23%	4.68
	Miscellaneous	0	0.00	0	0.46	0	0.46	0	0.46	0	0.46	0	0.46	N/A	N/A	0.46
	Total	**47,328**	**50.87**	**46,597**	**50.78**	**45,662**	**50.54**	**44,846**	**50.57**	**43,988**	**50.59**	**43,244**	**50.61**	**-9%**	**-1%**	**78.11**
Lake (Non-CFWI)	Citrus	5,062	5.41	4,749	8.10	4,380	4.76	4,009	4.44	3,686	4.16	3,337	3.84	-34%	-29%	6.07
	Field Crops	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	201	0.38	202	0.38	176	0.33	155	0.30	155	0.31	155	0.33	-23%	-13%	0.46
	Greenhouse/Nursery	1,486	3.94	1,443	3.72	1,381	3.53	1,375	3.49	1,275	3.23	1,230	3.11	-17%	-21%	3.54
	Hay	393	0.25	393	0.23	373	0.23	373	0.24	359	0.24	359	0.24	-9%	-4%	0.39
	Potatoes	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sod	832	0.67	785	0.63	785	0.63	743	0.59	743	0.59	743	0.59	-11%	-12%	0.77
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	318	0.48	317	0.48	286	0.48	286	0.50	286	0.52	286	0.55	-10%	15%	0.74
	Miscellaneous	0	0.00	0	0.25	0	0.25	0	0.25	0	0.25	0	0.25	N/A	N/A	0.25
	Total	**8,292**	**11.13**	**7,889**	**13.79**	**7,381**	**10.21**	**6,941**	**9.81**	**6,504**	**9.30**	**6,110**	**8.91**	**-26%**	**-20%**	**12.22**
Marion	Citrus	1,267	1.21	1,267	1.22	1,267	1.23	1,267	1.25	1,267	1.28	1,267	1.31	0%	8%	2.07
	Field Crops	2,016	1.37	2,016	1.38	2,434	1.73	2,434	1.73	2,434	1.73	2,434	1.72	21%	26%	2.55
	Fruit (Non-citrus)	410	0.77	478	0.91	495	0.95	885	1.79	1,014	2.07	1,081	2.24	164%	191%	3.22
	Greenhouse/Nursery	410	0.99	410	0.95	410	0.94	410	0.93	410	0.93	410	0.92	0%	-7%	1.05
	Hay	1,897	1.12	2,494	1.52	3,067	2.01	3,067	2.05	3,067	2.04	3,067	2.03	62%	81%	3.33
	Potatoes	0	0.00	30	0.04	451	0.58	687	0.89	818	1.06	1,136	1.47	N/A	N/A	2.25
	Sod	258	0.23	258	0.23	264	0.23	305	0.27	334	0.29	432	0.37	67%	61%	0.48
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	112	0.13	892	1.13	1,300	1.64	2,024	2.53	2,974	3.71	4,236	5.29	3682%	3969%	7.08
	Miscellaneous	0	0.00	0	1.03	0	1.03	0	1.03	0	1.03	0	1.03	N/A	N/A	1.03
	Total	**6,370**	**5.82**	**7,845**	**8.41**	**9,688**	**10.34**	**11,079**	**12.47**	**12,318**	**14.14**	**14,063**	**16.38**	**121%**	**181%**	**23.06**

Table B-7a, Continued. Agricultural Irrigation Self-supply Water Use (Including Miscellaneous Water Use) and Acreage for 2015, 5-in-10 Year Water Demand Projections and Acreage Projections for 2020-2040, 1-in-10 Year Water Demand Projections for 2040, by Crop Category by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Crop Category	2015 Estimated Agriculture		2020 Projected Agriculture		2025 Projected Agriculture		2030 Projected Agriculture		2035 Projected Agriculture		2040 Projected Agriculture		Percent Change 2015-2040		2040 (1-in-10) Demand
		Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acreage	MGD	
Okeechobee	Citrus	1,672	1.80	1,672	1.81	1,672	1.82	1,672	1.86	1,672	1.90	1,672	1.61	0%	-11%	2.54
	Field Crops	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Greenhouse/Nursery	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Hay	4,099	3.12	3,447	2.82	2,379	2.07	2,132	1.89	2,005	1.77	1,848	1.62	-55%	-48%	2.65
	Potatoes	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sod	811	0.89	763	0.83	673	0.73	673	0.73	586	0.63	586	0.63	-28%	-29%	0.83
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	340	0.52	340	0.53	340	0.55	340	0.58	340	0.60	340	0.64	0%	23%	0.85
	Miscellaneous	0	0.00	0	0.72	0	0.72	0	0.72	0	0.72	0	0.72	N/A	N/A	0.72
	Total	**6,922**	**6.33**	**6,222**	**6.71**	**5,064**	**5.89**	**4,817**	**5.78**	**4,603**	**5.62**	**4,446**	**5.22**	**-36%**	**-18%**	**7.59**
Volusia	Citrus	584	0.59	584	0.59	584	0.60	584	0.61	584	0.63	584	0.63	0%	7%	1.00
	Field Crops	0	0.00	27	0.02	37	0.03	37	0.03	37	0.03	37	0.03	N/A	N/A	0.04
	Fruit (Non-citrus)	36	0.06	79	0.15	79	0.15	96	0.19	119	0.24	152	0.31	322%	417%	0.44
	Greenhouse/Nursery	7,186	17.18	7,186	16.57	7,186	16.38	7,192	16.25	7,192	16.14	7,192	16.04	0%	-7%	18.28
	Hay	419	0.30	530	0.39	627	0.49	627	0.50	627	0.49	627	0.49	50%	63%	0.81
	Potatoes	0	0.00	33	0.04	49	0.06	80	0.10	156	0.20	156	0.20	N/A	N/A	0.31
	Sod	1,406	1.33	1,406	1.31	1,406	1.31	1,427	1.33	1,427	1.34	1,439	1.35	2%	2%	1.77
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	39	0.06	174	0.23	398	0.51	732	0.92	981	1.24	1,286	1.62	3197%	2600%	2.17
	Miscellaneous	0	0.00	0	0.87	0	0.87	0	0.87	0	0.87	0	0.87	N/A	N/A	0.87
	Total	**9,670**	**19.52**	**10,019**	**20.17**	**10,366**	**20.40**	**10,775**	**20.80**	**11,123**	**21.18**	**11,473**	**21.54**	**19%**	**10%**	**25.69**
CSEC Total	Citrus	50,486	53.23	48,924	54.84	47,687	51.04	46,524	50.69	45,386	50.52	44,329	49.91	-12%	-6%	78.86
	Field Crops	6,758	5.89	6,785	5.93	6,999	6.12	6,882	6.00	6,671	5.79	6,343	5.46	-6%	-7%	8.08
	Fruit (Non-citrus)	792	1.50	904	1.73	895	1.72	1,281	2.58	1,433	2.93	1,533	3.19	94%	113%	4.58
	Greenhouse/Nursery	10,376	25.27	10,282	24.18	10,150	23.61	10,098	23.29	9,981	22.86	9,909	22.55	-5%	-11%	25.70
	Hay	19,907	14.96	19,946	15.45	19,383	15.93	19,035	16.02	18,362	15.36	17,907	14.88	-10%	-1%	24.41
	Potatoes	110	0.12	173	0.20	610	0.77	877	1.12	1,084	1.40	1,341	1.71	1119%	1325%	2.62
	Sod	6,505	6.63	6,410	6.47	6,326	6.37	6,346	6.40	6,274	6.34	6,384	6.43	-2%	-3%	8.43
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	5,098	7.68	6,012	8.99	6,528	9.98	6,992	10.69	8,179	12.48	9,746	14.86	91%	93%	19.90
	Miscellaneous	0	0.00	0	3.92	0	3.92	0	3.92	0	3.92	0	3.92	N/A	N/A	3.92
	Total	**100,032**	**115.28**	**99,436**	**121.71**	**98,578**	**119.46**	**98,035**	**120.71**	**97,370**	**121.60**	**97,492**	**17.26**	**-3%**	**-85%**	**176.50**

Notes:

1.) All water use is shown in million gallons per day.

2.) Rounding errors account for nominal discrepancies.

3.) 2015 estimated irrigated acres and water use derived from FSAID IV AG layer, deliverable dated July 2017 from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative. 2015 values will not match published Annual Water Use Survey nor USGS data. 2015 estimates of water use for SJRWMD were updated from FSAID III values to reflect reported water use from permittees; water use for areas known to irrigate that did not have a permit was estimated via AFSIRS.

4.) 2020-2040 acreage projections and 2020-2040 average and 1-in-10 water demand projections derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.

Table B-7a (2-Part I). Agricultural Irrigation Self-supply Water Use (Including Miscellaneous Water Use) and Acreage for 2015, 5-in-10 Year Water Demand Projections and Acreage Projections for 2020-2040, 1-in-10 Year Water Demand Projections for 2040, by Crop Category by County, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Crop Category	2015 Estimated Agriculture		2020 Projected Agriculture		2025 Projected Agriculture		2030 Projected Agriculture		2035 Projected Agriculture		2040 Projected Agriculture		Percent Change 2015-2040		2040 (1-in-10) Demand
		Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acreage	MGD	
Volusia	Citrus	584	0.59	584	0.59	584	0.60	584	0.61	584	0.63	584	0.63	0%	7%	1.00
	Field Crops	0	0.00	27	0.02	37	0.03	37	0.03	37	0.03	37	0.03	N/A	N/A	0.04
	Fruit (Non-citrus)	36	0.06	79	0.15	79	0.15	96	0.19	119	0.24	152	0.31	322%	417%	0.44
	Greenhouse/Nursery	7,186	17.18	7,186	16.57	7,186	16.38	7,192	16.25	7,192	16.14	7,192	16.04	0%	-7%	18.28
	Hay	419	0.30	530	0.39	627	0.49	627	0.50	627	0.49	627	0.49	50%	63%	0.81
	Potatoes	0	0.00	33	0.04	49	0.06	80	0.10	156	0.20	156	0.20	N/A	N/A	0.31
	Sod	1,406	1.33	1,406	1.31	1,406	1.31	1,427	1.33	1,427	1.34	1,439	1.35	2%	2%	1.77
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	39	0.06	174	0.23	398	0.51	732	0.92	981	1.24	1,286	1.62	3197%	2600%	2.17
	Miscellaneous	0	0.00	0	0.87	0	0.87	0	0.87	0	0.87	0	0.87	N/A	N/A	0.87
	Total	**9,670**	**19.52**	**10,019**	**20.17**	**10,366**	**20.40**	**10,775**	**20.80**	**11,123**	**21.18**	**11,473**	**21.54**	**19%**	**10%**	**25.69**
Part I Total	Citrus	584	0.59	584	0.59	584	0.60	584	0.61	584	0.63	584	0.63	0%	7%	1.00
	Field Crops	0	0.00	27	0.02	37	0.03	37	0.03	37	0.03	37	0.03	N/A	N/A	0.04
	Fruit (Non-citrus)	36	0.06	79	0.15	79	0.15	96	0.19	119	0.24	152	0.31	322%	417%	0.44
	Greenhouse/Nursery	7,186	17.18	7,186	16.57	7,186	16.38	7,192	16.25	7,192	16.14	7,192	16.04	0%	-7%	18.28
	Hay	419	0.30	530	0.39	627	0.49	627	0.50	627	0.49	627	0.49	50%	63%	0.81
	Potatoes	0	0.00	33	0.04	49	0.06	80	0.10	156	0.20	156	0.20	N/A	N/A	0.31
	Sod	1,406	1.33	1,406	1.31	1,406	1.31	1,427	1.33	1,427	1.34	1,439	1.35	2%	2%	1.77
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	39	0.06	174	0.23	398	0.51	732	0.92	981	1.24	1,286	1.62	3197%	2600%	2.17
	Miscellaneous	0	0.00	0	0.87	0	0.87	0	0.87	0	0.87	0	0.87	N/A	N/A	0.87
	Total	**9,670**	**19.52**	**10,019**	**20.17**	**10,366**	**20.40**	**10,775**	**20.80**	**11,123**	**21.18**	**11,473**	**21.54**	**19%**	**10%**	**25.69**

Notes:

1.) All water use is shown in million gallons per day.

2.) Rounding errors account for nominal discrepancies.

3.) 2015 estimated irrigated acres and water use derived from FSAID IV AG layer, deliverable dated July 2017 from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative. 2015 values will not match published Annual Water Use Survey nor USGS data. 2015 estimates of water use for SJRWMD were updated from FSAID III values to reflect reported water use from permittees; water use for areas known to irrigate that did not have a permit was estimated via AFSIRS.

4.) 2020-2040 acreage projections and 2020-2040 average and 1-in-10 water demand projections derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.

Table B-7a (3-Part II). Agricultural Irrigation Self-supply Water Use (Including Miscellaneous Water Use) and Acreage for 2015, 5-in-10 Year Water Demand Projections and Acreage Projections for 2020-2040, 1-in-10 Year Water Demand Projections for 2040, by Crop Category by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Crop Category	2015 Estimated Agriculture		2020 Projected Agriculture		2025 Projected Agriculture		2030 Projected Agriculture		2035 Projected Agriculture		2040 Projected Agriculture		Percent Change 2015-2040		2040 (1-in-10) Demand
		Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acreage	MGD	
Lake (Non-CFWI)	Citrus	5,062	5.41	4,749	8.10	4,380	4.76	4,009	4.44	3,686	4.16	3,337	3.84	-34%	-29%	6.07
	Field Crops	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	201	0.38	202	0.38	176	0.33	155	0.30	155	0.31	155	0.33	-23%	-13%	0.46
	Greenhouse/Nursery	1,486	3.94	1,443	3.72	1,381	3.53	1,375	3.49	1,275	3.23	1,230	3.11	-17%	-21%	3.54
	Hay	393	0.25	393	0.23	373	0.23	373	0.24	359	0.24	359	0.24	-9%	-4%	0.39
	Potatoes	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sod	832	0.67	785	0.63	785	0.63	743	0.59	743	0.59	743	0.59	-11%	-12%	0.77
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	318	0.48	317	0.48	286	0.48	286	0.50	286	0.52	286	0.55	-10%	15%	0.74
	Miscellaneous	0	0.00	0	0.25	0	0.25	0	0.25	0	0.25	0	0.25	N/A	N/A	0.25
	Total	**8,292**	**11.13**	**7,889**	**13.79**	**7,381**	**10.21**	**6,941**	**9.81**	**6,504**	**9.30**	**6,110**	**8.91**	**-26%**	**-20%**	**12.22**
Marion	Citrus	1,267	1.21	1,267	1.22	1,267	1.23	1,267	1.25	1,267	1.28	1,267	1.31	0%	8%	2.07
	Field Crops	2,016	1.37	2,016	1.38	2,434	1.73	2,434	1.73	2,434	1.73	2,434	1.72	21%	26%	2.55
	Fruit (Non-citrus)	410	0.77	478	0.91	495	0.95	885	1.79	1,014	2.07	1,081	2.24	164%	191%	3.22
	Greenhouse/Nursery	410	0.99	410	0.95	410	0.94	410	0.93	410	0.93	410	0.92	0%	-7%	1.05
	Hay	1,897	1.12	2,494	1.52	3,067	2.01	3,067	2.05	3,067	2.04	3,067	2.03	62%	81%	3.33
	Potatoes	0	0.00	30	0.04	451	0.58	687	0.89	818	1.06	1,136	1.47	N/A	N/A	2.25
	Sod	258	0.23	258	0.23	264	0.23	305	0.27	334	0.29	432	0.37	67%	61%	0.48
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	112	0.13	892	1.13	1,300	1.64	2,024	2.53	2,974	3.71	4,236	5.29	3682%	3969%	7.08
	Miscellaneous	0	0.00	0	1.03	0	1.03	0	1.03	0	1.03	0	1.03	N/A	N/A	1.03
	Total	**6,370**	**5.82**	**7,845**	**8.41**	**9,688**	**10.34**	**11,079**	**12.47**	**12,318**	**14.14**	**14,063**	**16.38**	**121%**	**181%**	**23.06**
Part II Total	Citrus	6,329	6.62	6,016	9.32	5,647	5.99	5,276	5.69	4,953	5.44	4,604	5.15	-27%	-22%	8.14
	Field Crops	2,016	1.37	2,016	1.38	2,434	1.73	2,434	1.73	2,434	1.73	2,434	1.72	21%	26%	2.55
	Fruit (Non-citrus)	611	1.15	680	1.29	671	1.28	1,040	2.09	1,169	2.38	1,236	2.57	102%	123%	3.68
	Greenhouse/Nursery	1,896	4.93	1,853	4.67	1,791	4.47	1,785	4.42	1,685	4.16	1,640	4.03	-14%	-18%	4.59
	Hay	2,290	1.37	2,887	1.75	3,440	2.24	3,440	2.29	3,426	2.28	3,426	2.27	50%	66%	3.72
	Potatoes	0	0.00	30	0.04	451	0.58	687	0.89	818	1.06	1,136	1.47	n	n	2.25
	Sod	1,090	0.90	1,043	0.86	1,049	0.86	1,048	0.86	1,077	0.88	1,175	0.96	8%	7%	1.25
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	n	n	0.00
	Vegetables (Fresh Market)	430	0.61	1,209	1.61	1,586	2.12	2,310	3.03	3,260	4.23	4,522	5.84	952%	857%	7.82
	Miscellaneous	0	0.00	0	1.28	0	1.28	0	1.28	0	1.28	0	1.28	N/A	N/A	1.28
	Total	**14,662**	**16.95**	**15,734**	**22.20**	**17,069**	**20.55**	**18,020**	**22.28**	**18,822**	**23.44**	**20,173**	**25.29**	**38%**	**49%**	**35.28**

Notes:

1.) All water use is shown in million gallons per day.

2.) Rounding errors account for nominal discrepancies.

3.) 2015 estimated irrigated acres and water use derived from FSAID IV AG layer, deliverable dated July 2017 from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative. 2015 values will not match published Annual Water Use Survey nor USGS data. 2015 estimates of water use for SJRWMD were updated from FSAID III values to reflect reported water use from permittees; water use for areas known to irrigate that did not have a permit was estimated via AFSIRS.

4.) 2020-2040 acreage projections and 2020-2040 average and 1-in-10 water demand projections derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.

Table B-7a (4-Part III). Agricultural Irrigation Self-supply Water Use (Including Miscellaneous Water Use) and Acreage for 2015, 5-in-10 Year Water Demand Projections and Acreage Projections for 2020-2040, 1-in-10 Year Water Demand Projections for 2040, by Crop Category by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Crop Category	2015 Estimated Agriculture		2020 Projected Agriculture		2025 Projected Agriculture		2030 Projected Agriculture		2035 Projected Agriculture		2040 Projected Agriculture		Percent Change 2015-2040		2040 (1-in-10) Demand
		Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acres	MGD	Acreage	MGD	
Brevard	Citrus	3,226	3.40	2,640	2.82	2,556	2.75	2,528	2.77	2,528	2.83	2,517	2.86	-22%	-16%	4.52
	Field Crops	4,742	4.52	4,742	4.53	4,528	4.36	4,411	4.24	4,200	4.03	3,872	3.71	-18%	-18%	5.49
	Fruit (Non-citrus)	16	0.03	16	0.03	16	0.03	16	0.03	16	0.03	16	0.03	0%	0%	0.05
	Greenhouse/Nursery	405	1.02	405	0.99	405	0.98	405	0.97	405	0.96	389	0.92	-4%	-10%	1.05
	Hay	8,315	6.42	8,315	6.63	8,251	7.06	8,150	7.16	7,618	6.66	7,356	6.40	-12%	0%	10.50
	Potatoes	110	0.12	110	0.12	110	0.13	110	0.13	110	0.14	49	0.04	-55%	-67%	0.06
	Sod	2,185	2.44	2,185	2.41	2,185	2.41	2,185	2.42	2,185	2.43	2,185	2.43	0%	0%	3.19
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	2,451	3.66	2,451	3.73	2,366	3.77	1,772	2.97	1,772	3.10	1,772	3.27	-28%	-11%	4.38
	Miscellaneous	0	0.00	0	0.59	0	0.59	0	0.59	0	0.59	0	0.59	N/A	N/A	0.59
	Total	**21,450**	**21.61**	**20,864**	**21.85**	**20,417**	**22.08**	**19,577**	**21.28**	**18,834**	**20.77**	**18,156**	**20.25**	**-15%**	**-6%**	**29.83**
Indian River	Citrus	38,675	40.82	38,012	40.30	37,228	39.88	36,464	39.76	35,649	39.72	34,952	39.66	-10%	-3%	62.66
	Field Crops	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	129	0.26	129	0.26	129	0.26	129	0.27	129	0.28	129	0.28	0%	8%	0.41
	Greenhouse/Nursery	889	2.14	838	1.95	768	1.78	716	1.65	699	1.60	688	1.56	-23%	-27%	1.78
	Hay	4,784	3.75	4,767	3.86	4,686	4.07	4,686	4.18	4,686	4.16	4,650	4.10	-3%	9%	6.73
	Potatoes	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sod	1,013	1.07	1,013	1.06	1,013	1.06	1,013	1.06	999	1.06	999	1.06	-1%	-1%	1.39
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	1,838	2.83	1,838	2.89	1,838	3.03	1,838	3.19	1,826	3.31	1,826	3.49	-1%	23%	4.68
	Miscellaneous	0	0.00	0	0.46	0	0.46	0	0.46	0	0.46	0	0.46	N/A	N/A	0.46
	Total	**47,328**	**50.87**	**46,597**	**50.78**	**45,662**	**50.54**	**44,846**	**50.57**	**43,988**	**50.59**	**43,244**	**50.61**	**-9%**	**-1%**	**78.11**
Okeechobee	Citrus	1,672	1.80	1,672	1.81	1,672	1.82	1,672	1.86	1,672	1.90	1,672	1.61	0%	-11%	2.54
	Field Crops	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Fruit (Non-citrus)	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Greenhouse/Nursery	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Hay	4,099	3.12	3,447	2.82	2,379	2.07	2,132	1.89	2,005	1.77	1,848	1.62	-55%	-48%	2.65
	Potatoes	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Sod	811	0.89	763	0.83	673	0.73	673	0.73	586	0.63	586	0.63	-28%	-29%	0.83
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	340	0.52	340	0.53	340	0.55	340	0.58	340	0.60	340	0.64	0%	23%	0.85
	Miscellaneous	0	0.00	0	0.72	0	0.72	0	0.72	0	0.72	0	0.72	N/A	N/A	0.72
	Total	**6,922**	**6.33**	**6,222**	**6.71**	**5,064**	**5.89**	**4,817**	**5.78**	**4,603**	**5.62**	**4,446**	**5.22**	**-36%**	**-18%**	**7.59**
Part III Total	Citrus	43,573	46.02	42,324	44.93	41,456	44.45	40,664	44.39	39,849	44.45	39,141	44.13	-10%	-4%	69.72
	Field Crops	4,742	4.52	4,742	4.53	4,528	4.36	4,411	4.24	4,200	4.03	3,872	3.71	-18%	-18%	5.49
	Fruit (Non-citrus)	145	0.29	145	0.29	145	0.29	145	0.30	145	0.31	145	0.31	0%	7%	0.46
	Greenhouse/Nursery	1,294	3.16	1,243	2.94	1,173	2.76	1,121	2.62	1,104	2.56	1,077	2.48	-17%	-22%	2.83
	Hay	17,198	13.29	16,529	13.31	15,316	13.20	14,968	13.23	14,309	12.59	13,854	12.12	-19%	-9%	19.88
	Potatoes	110	0.12	110	0.12	110	0.13	110	0.13	110	0.14	49	0.04	-55%	-67%	0.06
	Sod	4,009	4.40	3,961	4.30	3,871	4.20	3,871	4.21	3,770	4.12	3,770	4.12	-6%	-6%	5.41
	Sugarcane	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	N/A	N/A	0.00
	Vegetables (Fresh Market)	4,629	7.01	4,629	7.15	4,544	7.35	3,950	6.74	3,938	7.01	3,938	7.40	-15%	6%	9.91
	Miscellaneous	0	0.00	0	1.77	0	1.77	0	1.77	0	1.77	0	1.77	N/A	N/A	1.77
	Total	**75,700**	**78.81**	**73,683**	**79.34**	**71,143**	**78.51**	**69,240**	**77.63**	**67,425**	**76.98**	**65,846**	**76.08**	**-13%**	**-3%**	**115.53**

Notes:

1.) All water use is shown in million gallons per day.

2.) Rounding errors account for nominal discrepancies.

3.) 2015 estimated irrigated acres and water use derived from FSAID IV AG layer, deliverable dated July 2017 from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative. 2015 values will not match published Annual Water Use Survey nor USGS data. 2015 estimates of water use for SJRWMD were updated from FSAID III values to reflect reported water use from permittees; water use for areas known to irrigate that did not have a permit was estimated via AFSIRS.

4.) 2020-2040 acreage projections and 2020-2040 average and 1-in-10 water demand projections derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.

Table B-7b. Miscellaneous Agricultural Self-supply Water Use for 2015, 5-in-10 Year Demand Projections for 2020-2040 and 1-in-10 Year Demand Projections for 2040 by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	2015 Water Use				2020 - 2040 Water Demand Projections			
	Dairy	Livestock	Aquaculture	Total	Dairy	Livestock	Aquaculture	Total
Brevard	0.03	0.30	0.26	**0.59**	0.03	0.30	0.26	**0.59**
Indian River	0.00	0.25	0.21	**0.46**	0.00	0.25	0.21	**0.46**
Lake (Non-CFWI)	0.00	0.20	0.05	**0.25**	0.00	0.20	0.05	**0.25**
Marion	0.00	0.97	0.06	**1.03**	0.00	0.97	0.06	**1.03**
Okeechobee	0.00	0.61	0.11	**0.72**	0.00	0.61	0.11	**0.72**
Volusia	0.20	0.16	0.51	**0.87**	0.20	0.16	0.51	**0.87**
CSEC Total	**0.23**	**2.49**	**1.20**	**3.92**	**0.23**	**2.49**	**1.20**	**3.92**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 SJRWMD water use obtained from SJRWMD EN50 reports. 2015 values will not match published Annual Water Use Survey nor USGS data.
4.) 2020-2040 projected water demand derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.
5.) FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative assumes no increase for 1-in-10 year drought conditions.

Table B-7b (2-Part I). Miscellaneous Agricultural Self-supply Water Use for 2015, 5-in-10 Year Demand Projections for 2020-2040 and 1-in-10 Year Demand Projections for 2040 by County, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	2015 Water Use				2020 - 2040 Water Demand Projections			
	Dairy	Livestock	Aquaculture	Total	Dairy	Livestock	Aquaculture	Total
Volusia	0.20	0.16	0.51	**0.87**	0.20	0.16	0.51	**0.87**
Part I Total	**0.20**	**0.16**	**0.51**	**0.87**	**0.20**	**0.16**	**0.51**	**0.87**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 SJRWMD water use obtained from SJRWMD EN50 reports. 2015 values will not match published Annual Water Use Survey nor USGS data.
4.) 2020-2040 projected water demand derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.
5.) FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative assumes no increase for 1-in-10 year drought conditions.

Table B-7b (3-Part II). Miscellaneous Agricultural Self-supply Water Use for 2015, 5-in-10 Year Demand Projections for 2020-2040 and 1-in-10 Year Demand Projections for 2040 by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	2015 Water Use				2020 - 2040 Water Demand Projections			
	Dairy	Livestock	Aquaculture	Total	Dairy	Livestock	Aquaculture	Total
Lake (Non-CFWI)	0.00	0.20	0.05	**0.25**	0.00	0.20	0.05	**0.25**
Marion	0.00	0.97	0.06	**1.03**	0.00	0.97	0.06	**1.03**
Part II Total	**0.00**	**1.17**	**0.11**	**1.28**	**0.00**	**1.17**	**0.11**	**1.28**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 SJRWMD water use obtained from SJRWMD EN50 reports. 2015 values will not match published Annual Water Use Survey nor USGS data.
4.) 2020-2040 projected water demand derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.
5.) FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative assumes no increase for 1-in-10 year drought conditions.

Table B-7b (4-Part III). Miscellaneous Agricultural Self-supply Water Use for 2015, 5-in-10 Year Demand Projections for 2020-2040 and 1-in-10 Year Demand Projections for 2040 by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	2015 Water Use				2020 - 2040 Water Demand Projections			
	Dairy	Livestock	Aquaculture	Total	Dairy	Livestock	Aquaculture	Total
Brevard	0.03	0.30	0.26	**0.59**	**0.03**	**0.30**	**0.26**	**0.59**
Indian River	0.00	0.25	0.21	**0.46**	**0.00**	**0.25**	**0.21**	**0.46**
Okeechobee	0.00	0.61	0.11	**0.72**	**0.00**	**0.61**	**0.11**	**0.72**
Part III Total	**0.03**	**1.16**	**0.58**	**1.77**	**0.03**	**1.16**	**0.58**	**1.77**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 SJRWMD water use obtained from SJRWMD EN50 reports. 2015 values will not match published Annual Water Use Survey nor USGS data.
4.) 2020-2040 projected water demand derived from FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative.
5.) FSAID IV AG layer, from The Balmoral Group as Florida Department of Agriculture and Consumer Services representative assumes no increase for 1-in-10 year drought conditions.

Table B-8. Landscape/Recreational/Aesthetic Self-supply Water Use and Acreage for 2015 and 5-in-10 Year Demand Projections for 2020-2040, Acreage Projections for 2020-2040, 1-in-10 Year Demand Projections for 2040 by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change	Irrigated Acreage	Irrigated Acreage Projections					Percent Change	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040											2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total
Brevard	1.21	4.77	5.98	1.27	5.02	6.29	1.32	5.24	6.56	1.36	5.41	6.77	1.39	5.53	6.92	1.42	5.64	7.06	18%	4,891	5,145	5,365	5,537	5,660	5,774	18%	2.20	8.74	10.94
Indian River	1.58	16.44	18.02	1.81	18.84	20.65	1.91	19.88	21.79	1.99	20.68	22.67	2.06	21.36	23.42	2.12	21.99	24.11	34%	11,078	11,951	12,726	13,377	13,943	14,465	31%	2.54	26.39	28.93
Lake (Non-CFWI)	2.43	4.40	6.83	2.85	5.15	8.00	3.09	5.57	8.66	3.25	5.87	9.12	3.46	6.26	9.72	3.67	6.65	10.32	51%	4,858	5,669	6,138	6,465	6,892	7,319	51%	4.26	7.71	11.97
Marion	1.32	2.64	3.96	1.41	2.81	4.22	1.45	2.90	4.35	1.49	2.97	4.46	1.53	3.04	4.57	1.58	3.13	4.71	19%	1,726	1,813	1,883	1,940	1,992	2,075	20%	1.87	3.69	5.56
Okeechobee	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0	0	0	0	0	0	N/A	0.00	0.00	0.00
Volusia	1.24	4.98	6.22	1.40	5.60	7.00	1.45	5.80	7.25	1.50	6.00	7.50	1.55	6.18	7.73	1.60	6.39	7.99	28%	6,868	7,232	7,542	7,796	8,016	8,215	20%	2.13	8.50	10.63
CSEC Total	**7.78**	**33.23**	**41.01**	**8.74**	**37.42**	**46.16**	**9.22**	**39.39**	**48.61**	**9.59**	**40.93**	**50.52**	**9.99**	**42.37**	**52.36**	**10.39**	**43.80**	**54.19**	**32%**	**29,421**	**31,810**	**33,654**	**35,115**	**36,503**	**37,848**	**29%**	**13.00**	**55.03**	**68.03**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 water use and irrigated acreage obtained from SJRWMD Estimated Water Use Survey, golf course land coverage, EN-50 and USGS data.
4.) 2020-2040 projected surface water demand was interpolated based on 2015 percentages.
5.) 2020-2040 acreage projections estimated using 2015 acreage and water use ratio.
6.) 2040 1-in-10 rainfall year demands estimated using % above average from highest water year from 2007-2015.

Table B-8 (2-Part I). Landscape/Recreational/Aesthetic Self-supply Water Use and Acreage for 2015 and 5-in-10 Year Demand Projections for 2020-2040, Acreage Projections for 2020-2040, 1-in-10 Year Demand Projections for 2040 by County, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change	Irrigated Acreage	Irrigated Acreage Projections					Percent Change	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040											2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total
Volusia	1.24	4.98	6.22	1.40	5.60	7.00	1.45	5.80	7.25	1.50	6.00	7.50	1.55	6.18	7.73	1.60	6.39	7.99	28%	6,868	7,232	7,542	7,796	8,016	8,215	20%	2.13	8.50	10.63
Part I Total	**1.24**	**4.98**	**6.22**	**1.40**	**5.60**	**7.00**	**1.45**	**5.80**	**7.25**	**1.50**	**6.00**	**7.50**	**1.55**	**6.18**	**7.73**	**1.60**	**6.39**	**7.99**	**28%**	**6,868**	**7,232**	**7,542**	**7,796**	**8,016**	**8,215**	**20%**	**2.13**	**8.50**	**10.63**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 water use and irrigated acreage obtained from SJRWMD Estimated Water Use Survey, golf course land coverage, EN-50 and USGS data.
4.) 2020-2040 projected surface water demand was interpolated based on 2015 percentages.
5.) 2020-2040 acreage projections estimated using 2015 acreage and water use ratio.
6.) 2040 1-in-10 rainfall year demands estimated using % above average from highest water year from 2007-2015.

Table B-8 (3-Part II). Landscape/Recreational/Aesthetic Self-supply Water Use and Acreage for 2015 and 5-in-10 Year Demand Projections for 2020-2040, Acreage Projections for 2020-2040, 1-in-10 Year Demand Projections for 2040 by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change	Irrigated Acreage	Irrigated Acreage Projections					Percent Change	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040											2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total
Lake (Non-CFWI)	2.43	4.40	6.83	2.85	5.15	8.00	3.09	5.57	8.66	3.25	5.87	9.12	3.46	6.26	9.72	3.67	6.65	10.32	51%	4,858	5,669	6,138	6,465	6,892	7,319	51%	4.26	7.71	11.97
Marion	1.32	2.64	3.96	1.41	2.81	4.22	1.45	2.90	4.35	1.49	2.97	4.46	1.53	3.04	4.57	1.58	3.13	4.71	19%	1,726	1,813	1,883	1,940	1,992	2,075	20%	1.87	3.69	5.56
Part II Total	**3.75**	**7.04**	**10.79**	**4.26**	**7.96**	**12.22**	**4.54**	**8.47**	**13.01**	**4.74**	**8.84**	**13.58**	**4.99**	**9.30**	**14.29**	**5.25**	**9.78**	**15.03**	**39%**	**6,584**	**7,482**	**8,021**	**8,405**	**8,884**	**9,394**	**43%**	**6.13**	**11.40**	**17.53**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 water use and irrigated acreage obtained from SJRWMD Estimated Water Use Survey, golf course land coverage, EN-50 and USGS data.
4.) 2020-2040 projected surface water demand was interpolated based on 2015 percentages.
5.) 2020-2040 acreage projections estimated using 2015 acreage and water use ratio.
6.) 2040 1-in-10 rainfall year demands estimated using % above average from highest water year from 2007-2015.

Table B-8 (4-Part III). Landscape/Recreational/Aesthetic Self-supply Water Use and Acreage for 2015 and 5-in-10 Year Demand Projections for 2020-2040, Acreage Projections for 2020-2040, 1-in-10 Year Demand Projections for 2040 by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change	Irrigated Acreage	Irrigated Acreage Projections					Percent Change	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040											2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	2015	2020	2025	2030	2035	2040	2015-2040	Ground	Surface	Total
Brevard	1.21	4.77	5.98	1.27	5.02	6.29	1.32	5.24	6.56	1.36	5.41	6.77	1.39	5.53	6.92	1.42	5.64	7.06	18%	4,891	5,145	5,365	5,537	5,660	5,774	18%	2.20	8.74	10.94
Indian River	1.58	16.44	18.02	1.81	18.84	20.65	1.91	19.88	21.79	1.99	20.68	22.67	2.06	21.36	23.42	2.12	21.99	24.11	34%	11,078	11,951	12,726	13,377	13,943	14,465	31%	2.54	26.39	28.93
Okeechobee	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0	0	0	0	0	0	N/A	0.00	0.00	0.00
Part III Total	**2.79**	**21.21**	**24.00**	**3.08**	**23.86**	**26.94**	**3.23**	**25.12**	**28.35**	**3.35**	**26.09**	**29.44**	**3.45**	**26.89**	**30.34**	**3.54**	**27.63**	**31.17**	**30%**	**15,969**	**17,096**	**18,091**	**18,914**	**19,603**	**20,239**	**27%**	**4.74**	**35.13**	**39.87**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 water use and irrigated acreage obtained from SJRWMD Estimated Water Use Survey, golf course land coverage, EN-50 and USGS data.
4.) 2020-2040 projected surface water demand was interpolated based on 2015 percentages.
5.) 2020-2040 acreage projections estimated using 2015 acreage and water use ratio.
6.) 2040 1-in-10 rainfall year demands estimated using % above average from highest water year from 2007-2015.

Table B-8a. 2007-2015 Water Use, Total County Population and Five-Year Gross Per Capita Averages for Landscape/Recreational/Aesthetic Self-supply and Landscape/Recreational/Aesthetic Self-supply Water Demand Increases, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Total County Water Use									2007-2015 Average	High Year	% Above Average	County Population Within SJRWMD									2011-2015 Average GPCD	County Population Projections Within SJRWMD					Increase in County Population Within SJRWMD					Change in Recreational Self-supply Water Demand				
	2007	2008	2009	2010	2011	2012	2013	2014	2015				2007	2008	2009	2010	2011	2012	2013	2014	2015		2020	2025	2030	2035	2040	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2020	2025	2030	2035	2040
Brevard	8.38	7.28	7.20	10.09	5.91	5.20	3.35	5.30	5.98	6.52	10.09	55%	552,109	556,213	555,657	543,376	545,184	545,625	548,424	552,427	561,714	9	595,700	625,500	649,200	666,300	681,700	33,986	29,800	23,700	17,100	15,400	0.31	0.27	0.21	0.15	0.14
Indian River	15.27	14.16	15.00	15.45	15.04	12.29	12.45	17.18	18.02	14.98	18.02	20%	139,757	141,667	141,475	138,028	138,694	139,446	139,586	140,955	143,326	107	167,860	178,525	186,770	193,777	200,211	24,534	10,665	8,245	7,007	6,434	2.63	1.14	0.88	0.75	0.69
Lake (Non-CFWI)	7.55	5.95	5.64	5.49	6.99	7.67	7.23	6.23	6.83	6.62	7.67	16%	181,612	182,803	185,094	188,301	189,070	189,965	192,273	196,342	200,252	36	232,816	251,082	263,963	280,562	297,252	32,564	18,266	12,881	16,599	16,690	1.17	0.66	0.46	0.60	0.60
Marion	3.43	2.93	3.06	3.24	3.55	3.48	2.92	3.80	3.96	3.37	3.96	18%	202,392	205,129	205,765	206,299	206,578	207,352	208,609	210,133	212,468	17	227,836	235,366	241,560	247,879	256,286	15,368	7,530	6,194	6,319	8,407	0.26	0.13	0.11	0.11	0.14
Okeechobee	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0%	1,386	1,420	1,409	1,420	1,415	1,413	1,412	1,414	1,422	0	1,453	1,464	1,476	1,591	1,700	31	11	12	115	109	0.00	0.00	0.00	0.00	0.00
Volusia	2.98	6.10	3.41	4.56	5.99	4.72	3.64	6.50	6.22	4.90	6.50	33%	508,014	510,750	507,105	494,593	495,400	497,145	498,978	503,851	510,494	11	581,407	604,227	626,627	647,389	670,854	70,913	22,820	22,400	20,762	23,465	0.78	0.25	0.25	0.23	0.26
CSEC Total	**37.61**	**36.42**	**34.31**	**38.83**	**37.48**	**33.36**	**29.59**	**39.01**	**41.01**	**36.40**	**41.01**	**13%**	**1,585,270**	**1,597,982**	**1,596,505**	**1,572,017**	**1,576,341**	**1,580,946**	**1,589,282**	**1,605,122**	**1,629,676**	**23**	**1,807,072**	**1,896,164**	**1,969,596**	**2,037,498**	**2,108,003**	**177,396**	**89,092**	**73,432**	**67,902**	**70,505**	**5.15**	**2.45**	**1.91**	**1.84**	**1.83**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use obtained from SJRWMD Estimated Water Use Survey, EN-50 and USGS data.
4.) 2007-2015 total county population obtained from BEBR Revised Annual Population Estimates, Special Population Reports 7, May 2011 and percentage within SJRWMD applied.
5.) 2020-2040 county population projections obtained from Table 1.

Table B-8a (2-Part I). 2007-2015 Water Use, Total County Population and Five-Year Gross Per Capita Averages for Landscape/Recreational/Aesthetic Self-supply and Landscape/Recreational/Aesthetic Self-supply Water Demand Increases, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Total County Water Use									2007-2015 Average	High Year	% Above Average	County Population Within SJRWMD									2011-2015 Average GPCD	County Population Projections Within SJRWMD					Increase in County Population Within SJRWMD					Change in Recreational Self-supply Water Demand				
	2007	2008	2009	2010	2011	2012	2013	2014	2015				2007	2008	2009	2010	2011	2012	2013	2014	2015		2020	2025	2030	2035	2040	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2020	2025	2030	2035	2040
Volusia	2.98	6.10	3.41	4.56	5.99	4.72	3.64	6.50	6.22	4.90	6.50	33%	508,014	510,750	507,105	494,593	495,400	497,145	498,978	503,851	510,494	11	581,407	604,227	626,627	647,389	670,854	70,913	22,820	22,400	20,762	23,465	0.78	0.25	0.25	0.23	0.26
Part I Total	**2.98**	**6.10**	**3.41**	**4.56**	**5.99**	**4.72**	**3.64**	**6.50**	**6.22**	**6.50**	**4.90**	**-25%**	**508,014**	**510,750**	**507,105**	**494,593**	**495,400**	**497,145**	**498,978**	**503,851**	**510,494**	**11**	**581,407**	**604,227**	**626,627**	**647,389**	**670,854**	**70,913**	**22,820**	**22,400**	**20,762**	**23,465**	**0.78**	**0.25**	**0.25**	**0.23**	**0.26**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use obtained from SJRWMD Estimated Water Use Survey, EN-50 and USGS data.
4.) 2007-2015 total county population obtained from BEBR Revised Annual Population Estimates, Special Population Reports 7, May 2011 and percentage within SJRWMD applied.
5.) 2020-2040 county population projections obtained from Table 1.

Table B-8a (3-Part II). 2007-2015 Water Use, Total County Population and Five-Year Gross Per Capita Averages for Landscape/Recreational/Aesthetic Self-supply and Landscape/Recreational/Aesthetic Self-supply Water Demand Increases, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Total County Water Use									2007-2015 Average	High Year	% Above Average	County Population Within SJRWMD									2011-2015 Average GPCD	County Population Projections Within SJRWMD					Increase in County Population Within SJRWMD					Change in Recreational Self-supply Water Demand				
	2007	2008	2009	2010	2011	2012	2013	2014	2015				2007	2008	2009	2010	2011	2012	2013	2014	2015		2020	2025	2030	2035	2040	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2020	2025	2030	2035	2040
Lake (Non-CFWI)	7.55	5.95	5.64	5.49	6.99	7.67	7.23	6.23	6.83	6.62	7.67	16%	181,612	182,803	185,094	188,301	189,070	189,965	192,273	196,342	200,252	36	232,816	251,082	263,963	280,562	297,252	32,564	18,266	12,881	16,599	16,690	1.17	0.66	0.46	0.60	0.60
Marion	3.43	2.93	3.06	3.24	3.55	3.48	2.92	3.80	3.96	3.37	3.96	18%	202,392	205,129	205,765	206,299	206,578	207,352	208,609	210,133	212,468	17	227,836	235,366	241,560	247,879	256,286	15,368	7,530	6,194	6,319	8,407	0.26	0.13	0.11	0.11	0.14
Part II Total	**10.98**	**8.88**	**8.70**	**8.73**	**10.54**	**11.15**	**10.15**	**10.03**	**10.79**	**9.99**	**11.15**	**12%**	**384,004**	**387,932**	**390,859**	**394,600**	**395,648**	**397,317**	**400,882**	**406,475**	**412,720**	**26**	**460,652**	**486,448**	**505,523**	**528,441**	**553,538**	**47,932**	**25,796**	**19,075**	**22,918**	**25,097**	**1.43**	**0.79**	**0.57**	**0.71**	**0.74**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use obtained from SJRWMD Estimated Water Use Survey, EN-50 and USGS data.
4.) 2007-2015 total county population obtained from BEBR Revised Annual Population Estimates, Special Population Reports 7, May 2011 and percentage within SJRWMD applied.
5.) 2020-2040 county population projections obtained from Table 1.

Table B-8a (4-Part III). 2007-2015 Water Use, Total County Population and Five-Year Gross Per Capita Averages for Landscape/Recreational/Aesthetic Self-supply and Landscape/Recreational/Aesthetic Self-supply Water Demand Increases, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Total County Water Use									2007-2015 Average	High Year	% Above Average	County Population Within SJRWMD									2011-2015 Average GPCD	County Population Projections Within SJRWMD					Increase in County Population Within SJRWMD					Change in Recreational Self-supply Water Demand				
	2007	2008	2009	2010	2011	2012	2013	2014	2015				2007	2008	2009	2010	2011	2012	2013	2014	2015		2020	2025	2030	2035	2040	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2020	2025	2030	2035	2040
Brevard	8.38	7.28	7.20	10.09	5.91	5.20	3.35	5.30	5.98	6.52	10.09	55%	552,109	556,213	555,657	543,376	545,184	545,625	548,424	552,427	561,714	9	595,700	625,500	649,200	666,300	681,700	33,986	29,800	23,700	17,100	15,400	0.31	0.27	0.21	0.15	0.14
Indian River	15.27	14.16	15.00	15.45	15.04	12.29	12.45	17.18	18.02	14.98	18.02	20%	139,757	141,667	141,475	138,028	138,694	139,446	139,586	140,955	143,326	107	167,860	178,525	186,770	193,777	200,211	24,534	10,665	8,245	7,007	6,434	2.63	1.14	0.88	0.75	0.69
Okeechobee	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0%	1,386	1,420	1,409	1,420	1,415	1,413	1,412	1,414	1,422	0	1,453	1,464	1,476	1,591	1,700	31	11	12	115	109	0.00	0.00	0.00	0.00	0.00
Part III Total	**23.65**	**21.44**	**22.20**	**25.54**	**20.95**	**17.49**	**15.80**	**22.48**	**24.00**	**25.54**	**25.54**	**0%**	**693,252**	**699,300**	**698,541**	**682,824**	**685,293**	**686,484**	**689,422**	**694,796**	**706,462**	**29**	**765,013**	**805,489**	**837,446**	**861,668**	**883,611**	**58,551**	**40,476**	**31,957**	**24,222**	**21,943**	**2.94**	**1.41**	**1.09**	**0.90**	**0.83**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use obtained from SJRWMD Estimated Water Use Survey, EN-50 and USGS data.
4.) 2007-2015 total county population obtained from BEBR Revised Annual Population Estimates, Special Population Reports 7, May 2011 and percentage within SJRWMD applied.
5.) 2020-2040 county population projections obtained from Table 1.

Table B-9. Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Use for 2015, 5-in-10 Year Demand Projections for 2020-2040, by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040
	2015			2020			2025			2030			2035			2040			
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	
Brevard	6.30	0.35	**6.65**	6.62	0.37	**6.99**	6.90	0.39	**7.29**	7.13	0.40	**7.53**	7.29	0.41	**7.70**	7.43	0.42	**7.85**	18%
Indian River	0.00	0.15	**0.15**	0.00	0.22	**0.22**	0.00	0.25	**0.25**	0.00	0.27	**0.27**	0.00	0.29	**0.29**	0.00	0.31	**0.31**	107%
Lake (Non-CFWI)	0.90	0.15	**1.05**	1.12	0.19	**1.31**	1.25	0.21	**1.46**	1.34	0.22	**1.56**	1.45	0.24	**1.69**	1.56	0.26	**1.82**	73%
Marion	2.43	0.28	**2.71**	2.53	0.29	**2.82**	2.57	0.30	**2.87**	2.61	0.30	**2.91**	2.65	0.30	**2.95**	2.70	0.31	**3.01**	11%
Okeechobee	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A
Volusia	3.24	0.00	**3.24**	3.52	0.00	**3.52**	3.61	0.00	**3.61**	3.70	0.00	**3.70**	3.78	0.00	**3.78**	3.87	0.00	**3.87**	19%
CSEC Total	**12.87**	**0.93**	**13.80**	**13.79**	**1.07**	**14.86**	**14.33**	**1.15**	**15.48**	**14.78**	**1.19**	**15.97**	**15.17**	**1.24**	**16.41**	**15.56**	**1.30**	**16.86**	**22%**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 water use obtained from SJRWMD Estimated Water Use Surveys, EN-50 and USGS data.
4.) 2020-2040 projected surface water demand was interpolated based on 2015 percentages.

Table B-9 (2-Part I). Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Use for 2015, 5-in-10 Year Demand Projections for 2020-2040, by County, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040
	2015			2020			2025			2030			2035			2040			
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	
Volusia	3.24	0.00	**3.24**	3.52	0.00	**3.52**	3.61	0.00	**3.61**	3.70	0.00	**3.70**	3.78	0.00	**3.78**	3.87	0.00	**3.87**	19%
Part I Total	**3.24**	**0.00**	**3.24**	**3.52**	**0.00**	**3.52**	**3.61**	**0.00**	**3.61**	**3.70**	**0.00**	**3.70**	**3.78**	**0.00**	**3.78**	**3.87**	**0.00**	**3.87**	**19%**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 water use obtained from SJRWMD Estimated Water Use Surveys, EN-50 and USGS data.
4.) 2020-2040 projected surface water demand was interpolated based on 2015 percentages.

Table B-9 (3-Part II). Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Use for 2015, 5-in-10 Year Demand Projections for 2020-2040, by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040
	2015			2020			2025			2030			2035			2040			
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	
Lake (Non-CFWI)	0.90	0.15	**1.05**	1.12	0.19	**1.31**	1.25	0.21	**1.46**	1.34	0.22	**1.56**	1.45	0.24	**1.69**	1.56	0.26	**1.82**	73%
Marion	2.43	0.28	**2.71**	2.53	0.29	**2.82**	2.57	0.30	**2.87**	2.61	0.30	**2.91**	2.65	0.30	**2.95**	2.70	0.31	**3.01**	11%
Part II Total	**3.33**	**0.43**	**3.76**	**3.65**	**0.48**	**4.13**	**3.82**	**0.51**	**4.33**	**3.95**	**0.52**	**4.47**	**4.10**	**0.54**	**4.64**	**4.26**	**0.57**	**4.83**	**28%**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 water use obtained from SJRWMD Estimated Water Use Surveys, EN-50 and USGS data.
4.) 2020-2040 projected surface water demand was interpolated based on 2015 percentages.

Table B-9 (4-Part III). Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Use for 2015, 5-in-10 Year Demand Projections for 2020-2040, by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040
	2015			2020			2025			2030			2035			2040			
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	
Brevard	6.30	0.35	**6.65**	6.62	0.37	**6.99**	6.90	0.39	**7.29**	7.13	0.40	**7.53**	7.29	0.41	**7.70**	7.43	0.42	**7.85**	18%
Indian River	0.00	0.15	**0.15**	0.00	0.22	**0.22**	0.00	0.25	**0.25**	0.00	0.27	**0.27**	0.00	0.29	**0.29**	0.00	0.31	**0.31**	107%
Okeechobee	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A
Part III Total	**6.30**	**0.50**	**6.80**	**6.62**	**0.59**	**7.21**	**6.90**	**0.64**	**7.54**	**7.13**	**0.67**	**7.80**	**7.29**	**0.70**	**7.99**	**7.43**	**0.73**	**8.16**	**20%**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 water use obtained from SJRWMD Estimated Water Use Surveys, EN-50 and USGS data.
4.) 2020-2040 projected surface water demand was interpolated based on 2015 percentages.

Table B-9a. 2007-2015 Water Use, Total County Population and Five-Year Gross Per Capita Averages for Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Demand Increases, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Total County Water Use									County Population Within SJRWMD									2011-2015 Average GPCD	County Population Projections Within SJRWMD					Increase in County Population Within SJRWMD					Change in Commercial / Industrial / Institutional & Mining / Dewatering Self-supply Water Demand				
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2007	2008	2009	2010	2011	2012	2013	2014	2015		2020	2025	2030	2035	2040	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2020	2025	2030	2035	2040
Brevard	7.26	3.58	4.78	4.66	5.44	5.78	5.87	2.82	6.65	552,109	556,213	555,657	543,376	545,184	545,625	548,424	552,427	561,714	10	595,700	625,500	649,200	666,300	681,700	33,986	29,800	23,700	17,100	15,400	0.34	0.30	0.24	0.17	0.15
Indian River	0.06	0.45	2.14	0.16	0.11	0.13	0.11	1.62	0.15	139,757	141,667	141,475	138,028	138,694	139,446	139,586	140,955	143,326	3	167,860	178,525	186,770	193,777	200,211	24,534	10,665	8,245	7,007	6,434	0.07	0.03	0.02	0.02	0.02
Lake (Non-CFWI)	3.36	2.89	5.56	4.04	1.76	1.72	1.88	1.61	1.05	181,612	182,803	185,094	188,301	189,070	189,965	192,273	196,342	200,252	8	232,816	251,082	263,963	280,562	297,252	32,564	18,266	12,881	16,599	16,690	0.26	0.15	0.10	0.13	0.13
Marion	1.12	6.60	4.07	2.80	1.06	1.64	1.08	0.83	2.71	202,392	205,129	205,765	206,299	206,578	207,352	208,609	210,133	212,468	7	227,836	235,366	241,560	247,879	256,286	15,368	7,530	6,194	6,319	8,407	0.11	0.05	0.04	0.04	0.06
Okeechobee	0.07	0.07	0.08	0.00	0.03	0.03	0.03	0.00	0.00	1,386	1,420	1,409	1,420	1,415	1,413	1,412	1,414	1,422	13	1,453	1,464	1,476	1,591	1,700	31	11	12	115	109	0.00	0.00	0.00	0.00	0.00
Volusia	1.69	1.72	1.84	1.72	1.37	0.74	2.26	2.35	3.24	508,014	510,750	507,105	494,593	495,400	497,145	498,978	503,851	510,494	4	581,407	604,227	626,627	647,389	670,854	70,913	22,820	22,400	20,762	23,465	0.28	0.09	0.09	0.08	0.09
CSEC Total	**13.56**	**15.31**	**18.47**	**13.38**	**9.77**	**10.04**	**11.23**	**9.23**	**13.80**	**1,585,270**	**1,597,982**	**1,596,505**	**1,572,017**	**1,576,341**	**1,580,946**	**1,589,282**	**1,605,122**	**1,629,676**	**7**	**1,807,072**	**1,896,164**	**1,969,596**	**2,037,498**	**2,108,003**	**177,396**	**89,092**	**73,432**	**67,902**	**70,505**	**1.06**	**0.62**	**0.49**	**0.44**	**0.45**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use obtained from SJRWMD Estimated Water Use Survey, EN-50 and USGS data.
4.) 2007-2010 total county population obtained from BEBR Revised Annual Population Estimates, Special Population Reports 7, May 2011 and percentage within SJRWMD applied.
5.) 2011-2015 total county population obtained from respective published BEBR Annual Population Estimates and percentage within SJRWMD applied.
6.) 2020 to 2040 county population projections were obtained from Table 1.

Table B-9a (2-Part I). 2007-2015 Water Use, Total County Population and Five-Year Gross Per Capita Averages for Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Demand Increases, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Total County Water Use									County Population Within SJRWMD									2011-2015 Average GPCD	County Population Projections Within SJRWMD					Increase in County Population Within SJRWMD					Change in Commercial / Industrial / Institutional & Mining / Dewatering Self-supply Water Demand				
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2007	2008	2009	2010	2011	2012	2013	2014	2015		2020	2025	2030	2035	2040	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2020	2025	2030	2035	2040
Volusia	1.69	1.72	1.84	1.72	1.37	0.74	2.26	2.35	3.24	508,014	510,750	507,105	494,593	495,400	497,145	498,978	503,851	510,494	4	581,407	604,227	626,627	647,389	670,854	70,913	22,820	22,400	20,762	23,465	0.28	0.09	0.09	0.08	0.09
Part I Total	**1.69**	**1.72**	**1.84**	**1.72**	**1.37**	**0.74**	**2.26**	**2.35**	**3.24**	**508,014**	**510,750**	**507,105**	**494,593**	**495,400**	**497,145**	**498,978**	**503,851**	**510,494**	**3**	**581,407**	**604,227**	**626,627**	**647,389**	**670,854**	**70,913**	**22,820**	**22,400**	**20,762**	**23,465**	**0.28**	**0.09**	**0.09**	**0.08**	**0.09**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use obtained from SJRWMD Estimated Water Use Survey, EN-50 and USGS data.
4.) 2007-2010 total county population obtained from BEBR Revised Annual Population Estimates, Special Population Reports 7, May 2011 and percentage within SJRWMD applied.
5.) 2011-2015 total county population obtained from respective published BEBR Annual Population Estimates and percentage within SJRWMD applied.
6.) 2020 to 2040 county population projections were obtained from Table 1.

Table B-9a (3-Part II). 2007-2015 Water Use, Total County Population and Five-Year Gross Per Capita Averages for Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Demand Increases, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Total County Water Use									County Population Within SJRWMD									2011-2015 Average GPCD	County Population Projections Within SJRWMD					Increase in County Population Within SJRWMD					Change in Commercial / Industrial / Institutional & Mining / Dewatering Self-supply Water Demand				
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2007	2008	2009	2010	2011	2012	2013	2014	2015		2020	2025	2030	2035	2040	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2020	2025	2030	2035	2040
Lake (Non-CFWI)	3.36	2.89	5.56	4.04	1.76	1.72	1.88	1.61	1.05	181,612	182,803	185,094	188,301	189,070	189,965	192,273	196,342	200,252	8	232,816	251,082	263,963	280,562	297,252	32,564	18,266	12,881	16,599	16,690	0.26	0.15	0.10	0.13	0.13
Marion	1.12	6.60	4.07	2.80	1.06	1.64	1.08	0.83	2.71	202,392	205,129	205,765	206,299	206,578	207,352	208,609	210,133	212,468	7	227,836	235,366	241,560	247,879	256,286	15,368	7,530	6,194	6,319	8,407	0.11	0.05	0.04	0.04	0.06
Part II Total	**4.48**	**9.49**	**9.63**	**6.84**	**2.82**	**3.36**	**2.96**	**2.44**	**3.76**	**384,004**	**387,932**	**390,859**	**394,600**	**395,648**	**397,317**	**400,882**	**406,475**	**412,720**	**17**	**460,652**	**486,448**	**505,523**	**528,441**	**553,538**	**47,932**	**25,796**	**19,075**	**22,918**	**25,097**	**0.37**	**0.20**	**0.14**	**0.17**	**0.19**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use obtained from SJRWMD Estimated Water Use Survey, EN-50 and USGS data.
4.) 2007-2010 total county population obtained from BEBR Revised Annual Population Estimates, Special Population Reports 7, May 2011 and percentage within SJRWMD applied.
5.) 2011-2015 total county population obtained from respective published BEBR Annual Population Estimates and percentage within SJRWMD applied.
6.) 2020 to 2040 county population projections were obtained from Table 1.

Table B-9a (4-Part III). 2007-2015 Water Use, Total County Population and Five-Year Gross Per Capita Averages for Commercial/Industrial/Institutional and Mining/Dewatering Self-supply Water Demand Increases, for Brevard, Indian RIver and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Total County Water Use									County Population Within SJRWMD									2011-2015 Average GPCD	County Population Projections Within SJRWMD					Increase in County Population Within SJRWMD					Change in Commercial / Industrial / Institutional & Mining / Dewatering Self-supply Water Demand				
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2007	2008	2009	2010	2011	2012	2013	2014	2015		2020	2025	2030	2035	2040	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040	2020	2025	2030	2035	2040
Brevard	7.26	3.58	4.78	4.66	5.44	5.78	5.87	2.82	6.65	552,109	556,213	555,657	543,376	545,184	545,625	548,424	552,427	561,714	10	595,700	625,500	649,200	666,300	681,700	33,986	29,800	23,700	17,100	15,400	0.34	0.30	0.24	0.17	0.15
Indian River	0.06	0.45	2.14	0.16	0.11	0.13	0.11	1.62	0.15	139,757	141,667	141,475	138,028	138,694	139,446	139,586	140,955	143,326	3	167,860	178,525	186,770	193,777	200,211	24,534	10,665	8,245	7,007	6,434	0.07	0.03	0.02	0.02	0.02
Okeechobee	0.07	0.07	0.08	0.00	0.03	0.03	0.03	0.00	0.00	1,386	1,420	1,409	1,420	1,415	1,413	1,412	1,414	1,422	13	1,453	1,464	1,476	1,591	1,700	31	11	12	115	109	0.00	0.00	0.00	0.00	0.00
Part III Total	**7.39**	**4.10**	**7.00**	**4.82**	**5.58**	**5.94**	**6.01**	**4.44**	**6.80**	**693,252**	**699,300**	**698,541**	**682,824**	**685,293**	**686,484**	**689,422**	**694,796**	**706,462**	**8**	**765,013**	**805,489**	**837,446**	**861,668**	**883,611**	**58,551**	**40,476**	**31,957**	**24,222**	**21,943**	**0.41**	**0.33**	**0.26**	**0.19**	**0.17**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use obtained from SJRWMD Estimated Water Use Survey, EN-50 and USGS data.
4.) 2007-2010 total county population obtained from BEBR Revised Annual Population Estimates, Special Population Reports 7, May 2011 and percentage within SJRWMD applied.
5.) 2011-2015 total county population obtained from respective published BEBR Annual Population Estimates and percentage within SJRWMD applied.
6.) 2020 to 2040 county population projections were obtained from Table 1.

Table B-10. Thermoelectric Power Generation Self-supply Water use for 2015 and 5-in-10 Year Demand Projections for 2020-2040, by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	Non-consumptive Saline and Fresh Surface Water Use Cooling					
	2015			2020			2025			2030			2035			2040									
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		2015	2020	2025	2030	2035	2040
Brevard	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	0.00	0.00	0.00	0.00	0.00	0.00
Indian River	0.00	0.04	**0.04**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	950%	2.15	3.13	3.13	3.13	3.13	3.13
Lake (Non-CFWI)	0.23	0.00	**0.23**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	39%	0.00	0.00	0.00	0.00	0.00	0.00
Marion	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	0.00	0.00	0.00	0.00	0.00	0.00
Okeechobee	0.00	0.00	**0.00**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	N/A	0.00	0.00	0.00	0.00	0.00	0.00
Volusia	0.28	1.71	**1.99**	0.28	2.02	**2.30**	0.30	2.12	**2.42**	0.32	2.26	**2.58**	0.34	2.41	**2.75**	0.34	2.44	**2.78**	40%	83.79	98.75	104.10	110.81	117.95	119.43
CSEC Total	**0.52**	**1.75**	**2.27**	**10.06**	**2.08**	**12.14**	**10.08**	**2.18**	**12.26**	**10.10**	**2.32**	**12.42**	**10.12**	**2.47**	**12.59**	**10.12**	**2.50**	**12.62**	**456%**	**85.94**	**101.88**	**107.23**	**113.94**	**121.08**	**122.56**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-10 (2-Part I). Thermoelectric Power Generation Self-supply Water use for 2015 and 5-in-10 Year Demand Projections for 2020-2040, by County, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	Non-consumptive Saline and Fresh Surface Water Use Cooling					
	2015			2020			2025			2030			2035			2040									
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		2015	2020	2025	2030	2035	2040
Volusia	0.28	1.71	**1.99**	0.28	2.02	**2.30**	0.30	2.12	**2.42**	0.32	2.26	**2.58**	0.34	2.41	**2.75**	0.34	2.44	**2.78**	40%	83.79	98.75	104.10	110.81	117.95	119.43
Part I Total	**0.28**	**1.71**	**1.99**	**0.28**	**2.02**	**2.30**	**0.30**	**2.12**	**2.42**	**0.32**	**2.26**	**2.58**	**0.34**	**2.41**	**2.75**	**0.34**	**2.44**	**2.78**	**40%**	**83.79**	**98.75**	**104.10**	**110.81**	**117.95**	**119.43**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-10 (3-Part II). Thermoelectric Power Generation Self-supply Water use for 2015 and 5-in-10 Year Demand Projections for 2020-2040, by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	Non-consumptive Saline and Fresh Surface Water Use Cooling					
	2015			2020			2025			2030			2035			2040									
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		2015	2020	2025	2030	2035	2040
Lake (Non-CFWI)	0.23	0.00	**0.23**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	39%	0.00	0.00	0.00	0.00	0.00	0.00
Marion	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	0.00	0.00	0.00	0.00	0.00	0.00
Part II Total	**0.23**	**0.00**	**0.23**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**39%**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-10 (4-Part III). Thermoelectric Power Generation Self-supply Water use for 2015 and 5-in-10 Year Demand Projections for 2020-2040, by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Water Use			Demand Projections (5-in-10)															Percent Change 2015-2040	Non-consumptive Saline and Fresh Surface Water Use Cooling					
	2015			2020			2025			2030			2035			2040									
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		2015	2020	2025	2030	2035	2040
Brevard	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	0.00	0.00	0.00	0.00	0.00	0.00
Indian River	0.00	0.04	**0.04**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	950%	2.15	3.13	3.13	3.13	3.13	3.13
Okeechobee	0.00	0.00	**0.00**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	N/A	0.00	0.00	0.00	0.00	0.00	0.00
Part III Total	**0.01**	**0.04**	**0.05**	**9.46**	**0.06**	**9.52**	**9.46**	**0.06**	**9.52**	**9.46**	**0.06**	**9.52**	**9.46**	**0.06**	**9.52**	**9.46**	**0.06**	**9.52**	**18940%**	**2.15**	**3.13**	**3.13**	**3.13**	**3.13**	**3.13**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-10a. Thermoelectric Power Generation Self-supply water use for 2015 and 5-in-10 Year Demand Projections for 2020-2040, by County and Facility, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Water Use (Consumptive)			Demand Projections (Consumptive) (5-in-10)															Percent Change 2015-2040	Non-consumptive Saline and Fresh Surface Water Use for Thermoelectric Cooling					
		2015			2020			2025			2030			2035			2040									
		Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		2015	2020	2025	2030	2035	2040
Brevard	Orlando Utilities Commission - Indian River Plant (1711)	0.01	0.00	0.01	0.02	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.02	100%	0.00	0.00	0.00	0.00	0.00	0.00
	Florida Power & Light - Cape Canaveral Plant (10652)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Oleander Power Project (63563)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.00**	**0.01**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**100%**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Indian River	INEOS New Planet BioEnergy (10710)	0.00	0.00	0.00	0.36	0.00	0.36	0.36	0.00	0.36	0.36	0.00	0.36	0.36	0.00	0.36	0.36	0.00	0.36	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Vero Beach Municipal Power Plant (10735)	0.00	0.04	0.04	0.00	0.06	0.06	0.00	0.06	0.06	0.00	0.06	0.06	0.00	0.06	0.06	0.00	0.06	0.06	50%	2.15	3.13	3.13	3.13	3.13	3.13
	Total	**0.00**	**0.04**	**0.04**	**0.36**	**0.06**	**0.42**	**0.36**	**0.06**	**0.42**	**0.36**	**0.06**	**0.42**	**0.36**	**0.06**	**0.42**	**0.36**	**0.06**	**0.42**	**950%**	**2.15**	**3.13**	**3.13**	**3.13**	**3.13**	**3.13**
Lake (Non-CFWI)	Covanta Lake - Lake County Resource Recovery (2834)	0.23	0.00	0.23	0.32	0.00	0.32	0.32	0.00	0.32	0.32	0.00	0.32	0.32	0.00	0.32	0.32	0.00	0.32	39%	0.00	0.00	0.00	0.00	0.00	0.00
	Quantum Lake Power - Lake Cogen (93176)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.23**	**0.00**	**0.23**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**39%**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Okeechobee	FPL - Okeechobee Clean Energy Plant	0.00	0.00	0.00	9.08	0.00	9.08	9.08	0.00	9.08	9.08	0.00	9.08	9.08	0.00	9.08	9.08	0.00	9.08	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**9.08**	**0.00**	**9.08**	**9.08**	**0.00**	**9.08**	**9.08**	**0.00**	**9.08**	**9.08**	**0.00**	**9.08**	**9.08**	**0.00**	**9.08**	**N/A**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Volusia	Florida Power & Light - Sanford (9202)	0.24	1.71	1.95	0.24	2.02	2.26	0.26	2.12	2.38	0.27	2.26	2.53	0.29	2.41	2.70	0.29	2.44	2.73	40%	83.79	98.75	104.10	110.81	117.95	119.43
	Duke Energy Florida - Debary (9482)	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0.05	0.00	0.05	0.05	0.00	0.05	0.05	0.00	0.05	25%	0.00	0.00	0.00	0.00	0.00	0.00
	Duke Energy Florida Inc. - G.E. Turner (9161)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.28**	**1.71**	**1.99**	**0.28**	**2.02**	**2.30**	**0.30**	**2.12**	**2.42**	**0.32**	**2.26**	**2.58**	**0.34**	**2.41**	**2.75**	**0.34**	**2.44**	**2.78**	**40%**	**83.79**	**98.75**	**104.10**	**110.81**	**117.95**	**119.43**
CSEC Total		**0.52**	**1.75**	**2.27**	**10.06**	**2.08**	**12.14**	**10.08**	**2.18**	**12.26**	**10.10**	**2.32**	**12.42**	**10.12**	**2.47**	**12.59**	**10.12**	**2.50**	**12.62**	**456%**	**85.94**	**101.88**	**107.23**	**113.94**	**121.08**	**122.56**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.
4.) Projections are not included for Oleander Power Project, CUP 63563. Facility receives water from the City of Cocoa; as such, the demands are associated with the City of Cocoa.
5.) Consumptive surface water is assumed to be 2 percent of total surface water to account for losses.

Table B-10a (2-Part I). Thermoelectric Power Generation Self-supply water use for 2015 and 5-in-10 Year Demand Projections for 2020-2040, by County and Facility, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Water Use (Consumptive)			Demand Projections (Consumptive) (5-in-10)															Percent Change 2015-2040	Non-consumptive Saline and Fresh Surface Water Use for Thermoelectric Cooling					
		2015			2020			2025			2030			2035			2040									
		Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		2015	2020	2025	2030	2035	2040
Volusia	Florida Power & Light - Sanford (9202)	0.24	1.71	1.95	0.24	2.02	2.26	0.26	2.12	2.38	0.27	2.26	2.53	0.29	2.41	2.70	0.29	2.44	2.73	40%	83.79	98.75	104.10	110.81	117.95	119.43
	Duke Energy Florida - Debary (9482)	0.04	0.00	0.04	0.04	0.00	0.04	0.04	0.00	0.04	0.05	0.00	0.05	0.05	0.00	0.05	0.05	0.00	0.05	25%	0.00	0.00	0.00	0.00	0.00	0.00
	Duke Energy Florida Inc. - G.E. Turner (9161)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.28**	**1.71**	**1.99**	**0.28**	**2.02**	**2.30**	**0.30**	**2.12**	**2.42**	**0.32**	**2.26**	**2.58**	**0.34**	**2.41**	**2.75**	**0.34**	**2.44**	**2.78**	**40%**	**83.79**	**98.75**	**104.10**	**110.81**	**117.95**	**119.43**
Part I Total		**0.28**	**1.71**	**1.99**	**0.28**	**2.02**	**2.30**	**0.30**	**2.12**	**2.42**	**0.32**	**2.26**	**2.58**	**0.34**	**2.41**	**2.75**	**0.34**	**2.44**	**2.78**	**40%**	**83.79**	**98.75**	**104.10**	**110.81**	**117.95**	**119.43**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Water use and demand projections shown are for consumptive uses.
4.) 2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.

Table B-10a (3-Part II). Thermoelectric Power Generation Self-supply water use for 2015 and 5-in-10 Year Demand Projections for 2020-2040, by County and Facility, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Water Use (Consumptive)			Demand Projections (Consumptive) (5-in-10)															Percent Change 2015-2040	Non-consumptive Saline and Fresh Surface Water Use for Thermoelectric Cooling					
		2015			2020			2025			2030			2035			2040									
		Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		2015	2020	2025	2030	2035	2040
Lake (Non-CFWI)	Covanta Lake - Lake County Resource Recovery (2834)	0.23	0.00	0.23	0.32	0.00	0.32	0.32	0.00	0.32	0.32	0.00	0.32	0.32	0.00	0.32	0.32	0.00	0.32	39%	0.00	0.00	0.00	0.00	0.00	0.00
	Quantum Lake Power - Lake Cogen (93176)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.23**	**0.00**	**0.23**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**39%**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Part II Total		**0.23**	**0.00**	**0.23**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**0.32**	**0.00**	**0.32**	**39%**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Water use and demand projections shown are for consumptive uses.
4.) 2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.

Table B-10a (4-Part III). Thermoelectric Power Generation Self-supply water use for 2015 and 5-in-10 Year Demand Projections for 2020-2040, by County and Facility, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Water Use (Consumptive)			Demand Projections (Consumptive) (5-in-10)															Percent Change 2015-2040	Non-consumptive Saline and Fresh Surface Water Use for Thermoelectric Cooling					
		2015			2020			2025			2030			2035			2040									
		Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total		2015	2020	2025	2030	2035	2040
Brevard	Orlando Utilities Commission - Indian River Plant (1711)	0.01	0.00	0.01	0.02	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.02	0.02	0.00	0.02	100%	0.00	0.00	0.00	0.00	0.00	0.00
	Florida Power & Light - Cape Canaveral Plant (10652)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Oleander Power Project (63563)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.01**	**0.00**	**0.01**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**0.02**	**0.00**	**0.02**	**100%**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Indian River	INEOS New Planet BioEnergy (10710)	0.00	0.00	0.00	0.36	0.00	0.36	0.36	0.00	0.36	0.36	0.00	0.36	0.36	0.00	0.36	0.36	0.00	0.36	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Vero Beach Municipal Power Plant (10735)	0.00	0.04	0.04	0.00	0.06	0.06	0.00	0.06	0.06	0.00	0.06	0.06	0.00	0.06	0.06	0.00	0.06	0.06	50%	2.15	3.13	3.13	3.13	3.13	3.13
	Total	**0.00**	**0.04**	**0.04**	**0.36**	**0.06**	**0.42**	**0.36**	**0.06**	**0.42**	**0.36**	**0.06**	**0.42**	**0.36**	**0.06**	**0.42**	**0.36**	**0.06**	**0.42**	**950%**	**2.15**	**3.13**	**3.13**	**3.13**	**3.13**	**3.13**
Okeechobee	FPL - Okeechobee Clean Energy Plant	0.00	0.00	0.00	9.08	0.00	9.08	9.08	0.00	9.08	9.08	0.00	9.08	9.08	0.00	9.08	9.08	0.00	9.08	N/A	0.00	0.00	0.00	0.00	0.00	0.00
	Total	**0.00**	**0.00**	**0.00**	**9.08**	**0.00**	**9.08**	**9.08**	**0.00**	**9.08**	**9.08**	**0.00**	**9.08**	**9.08**	**0.00**	**9.08**	**9.08**	**0.00**	**9.08**	**N/A**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Part III Total		**0.01**	**0.04**	**0.05**	**9.46**	**0.06**	**9.52**	**9.46**	**0.06**	**9.52**	**9.46**	**0.06**	**9.52**	**9.46**	**0.06**	**9.52**	**9.46**	**0.06**	**9.52**	**18940%**	**2.15**	**3.13**	**3.13**	**3.13**	**3.13**	**3.13**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Water use and demand projections shown are for consumptive uses.
4.) 2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.
5.) Projections are not included for Oleander Power Project, CUP 63563. Facility receives water from the City of Cocoa; as such, the demands are associated with the City of Cocoa.

Table B-10b. 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Groundwater Water Use									Non-consumptive Saline and Fresh Surface Water Use									Notes
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Brevard	Orlando Utilities Commission - Indian River Plant (1711)	0.128	0.061	0.116	0.047	0.018	0.015	0.015	0.016	0.013	189.400	148.600	193.800	57.601	0.000	0.000	0.000	0.000	0.000	
	Florida Power & Light - Cape Canaveral Plant (10652)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.564	200.487	62.413	81.407	0.000	0.000	0.000	0.000	0.000	Uses reclaimed water
	Oleander Power Project (63563)	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Gets water from Cocoa
	Total	**0.128**	**0.061**	**0.116**	**0.047**	**0.020**	**0.015**	**0.015**	**0.016**	**0.013**	**213.964**	**349.087**	**256.213**	**139.008**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
Indian River	INEOS New Planet BioEnergy (10710)	0.002	0.001	0.000	0.000	0.000	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Vero Beach Municipal Power Plant (10735)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	23.821	16.205	12.96	9.243	2.395	3.765	1.953	5.658	2.192	FPL scheduled to take over system in 2015.
	Total	**0.002**	**0.001**	**0.000**	**0.000**	**0.000**	**0.005**	**0.001**	**0.000**	**0.000**	**23.821**	**16.205**	**12.960**	**9.243**	**2.395**	**3.765**	**1.953**	**5.658**	**2.192**	
Lake (Non-CFWI)	Covanta Lake - Lake County Resource Recovery (2834)	0.274	0.262	0.258	0.279	0.281	0.258	0.220	0.202	0.225	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Quantum Lake Power - Lake Cogen (93176)	0.351	0.374	0.377	0.479	0.381	0.417	0.488	0.107	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Permit rescinded 06/02/2017
	Total	**0.625**	**0.636**	**0.635**	**0.758**	**0.662**	**0.675**	**0.708**	**0.309**	**0.227**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
Okeechobee	FPL - Okeechobee Clean Energy Plant	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Total	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
Volusia	Florida Power & Light - Sanford (9202)	0.251	0.246	0.251	0.253	0.237	0.204	0.204	0.238	0.241	82.067	116.678	51.332	114.207	115.964	95.381	85.312	93.370	85.499	
	Duke Energy Florida - Debary (9482)	0.051	0.05	0.051	0.079	0.071	0.025	0.023	0.028	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Duke Energy Florida Inc. - G.E. Turner (9161)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Old permit 9161, letter dated 7/30/04 indicates facility will not be operational in the future.
	Total	**0.302**	**0.296**	**0.302**	**0.332**	**0.308**	**0.229**	**0.227**	**0.266**	**0.283**	**82.067**	**116.678**	**51.332**	**114.207**	**115.964**	**95.381**	**85.312**	**93.370**	**85.499**	
CSEC Total		**1.057**	**0.994**	**1.053**	**1.137**	**0.990**	**0.924**	**0.951**	**0.591**	**0.523**	**319.852**	**481.970**	**320.505**	**262.458**	**118.359**	**99.146**	**87.265**	**99.028**	**87.691**	

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.

4.) OUC 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.
5.) OUC 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.
6.) Projections are not included for Oleander Power Project, CUP 63563. Facility receives water from the City of Cocoa; as such, the demands are associated with the City of Cocoa.

7.) FPL 2007-2015 total historic and 2016-2025 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.

8.) FPL 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.
9.) Ten-Year Site Plan not available for Vero Beach Municipal. Total megawatts and historic use used to estimate future water demand.
10.) Covanta Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, waste to energy facility.
11.) Quantum Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, co-generation facility.

12.) Duke 2007-2015 total historic and 2016-2025 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

13.) Duke 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

Table B-10b (2-Part I). 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Groundwater Water Use									Non-consumptive Saline and Fresh Surface Water Use									Notes
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Volusia	Florida Power & Light - Sanford (9202)	0.251	0.246	0.251	0.253	0.237	0.204	0.204	0.238	0.241	82.067	116.678	51.332	114.207	115.964	95.381	85.312	93.370	85.499	
	Duke Energy Florida - Debary (9482)	0.051	0.050	0.051	0.079	0.071	0.025	0.023	0.028	0.042	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Duke Energy Florida Inc. - G.E. Turner (9161)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Old permit 9161, letter dated 7/30/04 indicates facility will not be operational in the future.
	Total	**0.302**	**0.296**	**0.302**	**0.332**	**0.308**	**0.229**	**0.227**	**0.266**	**0.283**	**82.067**	**116.678**	**51.332**	**114.207**	**115.964**	**95.381**	**85.312**	**93.370**	**85.499**	
Part I Total		**0.302**	**0.296**	**0.302**	**0.332**	**0.308**	**0.229**	**0.227**	**0.266**	**0.283**	**82.067**	**116.678**	**51.332**	**114.207**	**115.964**	**95.381**	**85.312**	**93.370**	**85.499**	

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.

4.) FPL 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.

5.) FPL 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in figure I.A.1.

6.) Duke 2007-2015 total historic and 2016-2025 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

7.) Duke 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

Table B-10b (3-Part II). 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Groundwater Water Use									Non-consumptive Saline and Fresh Surface Water Use									Notes
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Lake (Non-CFWI)	Covanta Lake - Lake County Resource Recovery (2834)	0.274	0.262	0.258	0.279	0.281	0.258	0.220	0.202	0.225	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Quantum Lake Power - Lake Cogen (93176)	0.351	0.374	0.377	0.479	0.381	0.417	0.488	0.107	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Total	**0.625**	**0.636**	**0.635**	**0.758**	**0.662**	**0.675**	**0.708**	**0.309**	**0.227**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
Part II Total		**0.625**	**0.636**	**0.635**	**0.758**	**0.662**	**0.675**	**0.708**	**0.309**	**0.227**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.
4.) Covanta Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, waste to energy facility.
5.) Quantum Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, co-generation facility.

Table B-10b, Continued. 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Historic Megawatts									2011-2015	2011-2015	Projected Megawatts				
		2007	2008	2009	2010	2011	2012	2013	2014	2015	Gallons	Gallons (Non-	2020	2025	2030	2035	2040
Brevard	Orlando Utilities Commission - Indian River Plant (1711)	198.8	193.3	196.9	205.0	217.0	218.6	223.7	237.5	242.4	0.00007	0.00000	246.8	242.7	272.1	305.1	342.0
	Florida Power & Light - Cape Canaveral Plant (10652)	1,052.3	1,009.1	1,071.0	1,066.4	1,035.9	1,027.3	1,033.8	1,098.9	1,100.1	0.00000	0.00000	1,189.7	1,254.2	1,335.0	1,421.0	1,438.9
	Oleander Power Project (63563)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	**1,251.1**	**1,202.4**	**1,267.9**	**1,271.4**	**1,252.9**	**1,245.9**	**1,257.5**	**1,336.4**	**1,342.5**	**N/A**	**N/A**	**1,436.5**	**1,496.9**	**1,607.1**	**1,726.1**	**1,780.9**
Indian River	INEOS New Planet BioEnergy (10710)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Vero Beach Municipal Power Plant (10735)	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	0.00000	0.06940	46.0	46.0	46.0	46.0	46.0
	Total	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**N/A**	**N/A**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**
Lake (Non-CFWI)	Covanta Lake - Lake County Resource Recovery (2834)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Quantum Lake Power - Lake Cogen (93176)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**N/A**	**N/A**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Okeechobee	FPL - Okeechobee Clean Energy Plant	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1750.0	1750.0	1750.0	1750.0	1750.0
	Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**N/A**	**N/A**	**1750.0**	**1750.0**	**1750.0**	**1750.0**	**1750.0**
Volusia	Florida Power & Light - Sanford (9202)	1,748.1	1,676.3	1,779.0	1,771.5	1,720.8	1,706.5	1,717.3	1,825.5	1,827.4	0.00013	0.05405	1,864.3	1,965.3	2,092.0	2,226.8	2,254.8
	Duke Energy Florida - Debary (9482)	752.61	833.85	919.58	1041.67	862.83	739.45	692.90	720.13	810.00	0.00005	0.00000	870.53	886.62	944.70	1003.50	1065.96
	Duke Energy Florida Inc. - G.E. Turner	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	**2,500.7**	**2,510.2**	**2,698.6**	**2,813.2**	**2,583.6**	**2,446.0**	**2,410.2**	**2,545.6**	**2,637.4**	**N/A**	**N/A**	**2,734.8**	**2,851.9**	**3,036.7**	**3,230.3**	**3,320.8**
CSEC Total		**3,797.8**	**3,758.6**	**4,012.5**	**4,130.6**	**3,882.5**	**3,737.9**	**3,713.7**	**3,928.0**	**4,025.9**	**N/A**	**N/A**	**5,967.3**	**6,144.8**	**6,439.8**	**6,752.4**	**6,897.7**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.

4.) OUC 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.
5.) OUC 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.
6.) Projections are not included for Oleander Power Project, CUP 63563. Facility receives water from the City of Cocoa; as such, the demands are associated with the City of Cocoa.

7.) FPL 2007-2015 total historic and 2016-2025 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.

8.) FPL 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.
9.) Ten-Year Site Plan not available for Vero Beach Municipal. Total megawatts and historic use used to estimate future water demand.
10.) Covanta Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, waste to energy facility.
11.) Quantum Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, co-generation facility.

12.) Duke 2007-2015 total historic and 2016-2025 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

13.) Duke 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

Table B-10b, Continued (2-Part I). 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Historic Megawatts									2011-2015	2011-2015	Projected Megawatts				
		2007	2008	2009	2010	2011	2012	2013	2014	2015	Gallons	Gallons (Non-	2020	2025	2030	2035	2040
Volusia	Florida Power & Light - Sanford (9202)	1,748.1	1,676.3	1,779.0	1,771.5	1,720.8	1,706.5	1,717.3	1,825.5	1,827.4	0.00013	0.05405	1,864.3	1,965.3	2,092.0	2,226.8	2,254.8
	Duke Energy Florida - Debary (9482)	752.6	833.9	919.6	1,041.7	862.8	739.5	692.9	720.1	810.0	0.00005	0.00000	870.5	886.6	944.7	1,003.5	1,066.0
	Duke Energy Florida Inc. - G.E. Turner	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	**2,500.7**	**2,510.2**	**2,698.6**	**2,813.2**	**2,583.6**	**2,446.0**	**2,410.2**	**2,545.6**	**2,637.4**	**N/A**	**N/A**	**2,734.8**	**2,851.9**	**3,036.7**	**3,230.3**	**3,320.8**
Part I Total		**2,500.7**	**2,510.2**	**2,698.6**	**2,813.2**	**2,583.6**	**2,446.0**	**2,410.2**	**2,545.6**	**2,637.4**	**N/A**	**N/A**	**2,734.8**	**2,851.9**	**3,036.7**	**3,230.3**	**3,320.8**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.

4.) FPL 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.

5.) FPL 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants est

6.) Duke 2007-2015 total historic and 2016-2025 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

7.) Duke 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

Table B-10b, Continued (3-Part II). 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Historic Megawatts									2011-2015	2011-2015	Projected Megawatts				
		2007	2008	2009	2010	2011	2012	2013	2014	2015	Gallons	Gallons (Non-	2020	2025	2030	2035	2040
Lake (Non-CFWI)	Covanta Lake - Lake County Resource Recovery	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Quantum Lake Power - Lake Cogen (93176)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**N/A**	**N/A**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Part II Total		**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**N/A**	**N/A**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.
4.) Covanta Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, waste to energy facility.
5.) Quantum Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, co-generation facility.

Table B-10b, Continued. 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, in the Central Springs East/Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Projected Groundwater Demand					Projected Non-consumptive Saline and Fresh Surface Water				
		2020	2025	2030	2035	2040	2020	2025	2030	2035	2040
Brevard	Orlando Utilities Commission - Indian River Plant (1711)	0.017	0.017	0.019	0.021	0.024	0.000	0.000	0.000	0.000	0.000
	Florida Power & Light - Cape Canaveral Plant (10652)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Oleander Power Project (63563)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total	**0.017**	**0.017**	**0.019**	**0.021**	**0.024**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Indian River	INEOS New Planet BioEnergy (10710)	0.360	0.360	0.360	0.360	0.360	0.000	0.000	0.000	0.000	0.000
	Vero Beach Municipal Power Plant (10735)	0.000	0.000	0.000	0.000	0.000	3.192	3.192	3.192	3.192	3.192
	Total	**0.360**	**0.360**	**0.360**	**0.360**	**0.360**	**3.192**	**3.192**	**3.192**	**3.192**	**3.192**
Lake (Non-CFWI)	Covanta Lake - Lake County Resource Recovery (2834)	0.321	0.321	0.321	0.321	0.321	0.000	0.000	0.000	0.000	0.000
	Quantum Lake Power - Lake Cogen (93176)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total	**0.321**	**0.321**	**0.321**	**0.321**	**0.321**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Okeechobee	FPL - Okeechobee Clean Energy Plant	9.075	9.075	9.075	9.075	9.075	0.000	0.000	0.000	0.000	0.000
	Total	**9.075**	**9.075**	**9.075**	**9.075**	**9.075**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Volusia	Florida Power & Light - Sanford (9202)	0.242	0.255	0.272	0.289	0.293	100.765	106.224	113.073	120.359	121.872
	Duke Energy Florida - Debary (9482)	0.044	0.044	0.047	0.050	0.053	0.000	0.000	0.000	0.000	0.000
	Duke Energy Florida Inc. - G.E. Turner	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total	**0.286**	**0.299**	**0.319**	**0.339**	**0.346**	**100.765**	**106.224**	**113.073**	**120.359**	**121.872**
CSEC Total		**10.059**	**10.072**	**10.094**	**10.116**	**10.126**	**103.957**	**109.416**	**116.265**	**123.551**	**125.064**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.
4.) OUC 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.
5.) OUC 2026-2040 projected total megawatts and water demand estimated from historic
6.) Projections are not included for Oleander Power Project, CUP 63563. Facility receives water from the City of Cocoa; as such, the demands are associated with the City of Cocoa.
7.) FPL 2007-2015 total historic and 2016-2025 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.
8.) FPL 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.
9.) Ten-Year Site Plan not available for Vero Beach Municipal. Total megawatts and historic use used to estimate future water demand.
10.) Covanta Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, waste to energy facility.
11.) Quantum Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, co-generation facility.
12.) Duke 2007-2015 total historic and 2016-2025 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.
13.) Duke 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

Table B-10b, Continued (2-Part I). 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Projected Groundwater Demand					Projected Non-consumptive Saline and Fresh Surface Water				
		2020	2025	2030	2035	2040	2020	2025	2030	2035	2040
Volusia	Florida Power & Light - Sanford (9202)	0.242	0.255	0.272	0.289	0.293	100.765	106.224	113.073	120.359	121.872
	Duke Energy Florida - Debary (9482)	0.044	0.044	0.047	0.050	0.053	0.000	0.000	0.000	0.000	0.000
	Duke Energy Florida Inc. - G.E. Turner	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total	**0.286**	**0.299**	**0.319**	**0.339**	**0.346**	**100.765**	**106.224**	**113.073**	**120.359**	**121.872**
Part I Total		**0.286**	**0.299**	**0.319**	**0.339**	**0.346**	**100.765**	**106.224**	**113.073**	**120.359**	**121.872**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.
4.) FPL 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.
5.) FPL 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in figure I.A.1.
6.) Duke 2007-2015 total historic and 2016-2025 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.
7.) Duke 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Schedule 1.

Table B-10b, Continued (3-Part II). 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Projected Groundwater Demand					Projected Non-consumptive Saline and Fresh Surface Water				
		2020	2025	2030	2035	2040	2020	2025	2030	2035	2040
Lake (Non-CFWI)	Covanta Lake - Lake County Resource Recovery	0.321	0.321	0.321	0.321	0.321	0.000	0.000	0.000	0.000	0.000
	Quantum Lake Power - Lake Cogen (93176)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total	**0.321**	**0.321**	**0.321**	**0.321**	**0.321**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Part II Total		**0.321**	**0.321**	**0.321**	**0.321**	**0.321**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.
4.) Covanta Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, waste to energy facility.
5.) Quantum Lake demand projections taken from Technical Staff Report, no Ten-Year Site Plan, co-generation facility.

Table B-10b (4-Part III). 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Groundwater Water Use									Non-consumptive Saline and Fresh Surface Water Use									Notes
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2007	2008	2009	2010	2011	2012	2013	2014	2015	
Brevard	Orlando Utilities Commission - Indian River Plant (1711)	0.128	0.061	0.116	0.047	0.018	0.015	0.015	0.016	0.013	189.400	148.600	193.800	57.601	0.000	0.000	0.000	0.000	0.000	
	Florida Power & Light - Cape Canaveral Plant (10652)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	24.564	200.487	62.413	81.407	0.000	0.000	0.000	0.000	0.000	
	Oleander Power Project (63563)	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Gets water from Cocoa
	Total	**0.128**	**0.061**	**0.116**	**0.047**	**0.020**	**0.015**	**0.015**	**0.016**	**0.013**	**213.964**	**349.087**	**256.213**	**139.008**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
Indian River	INEOS New Planet BioEnergy (10710)	0.002	0.001	0.000	0.000	0.000	0.005	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Vero Beach Municipal Power Plant (10735)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	23.821	16.205	12.96	9.243	2.395	3.765	1.953	5.658	2.192	FPL scheduled to take over system in 2015.
	Total	**0.002**	**0.001**	**0.000**	**0.000**	**0.000**	**0.005**	**0.001**	**0.000**	**0.000**	**23.821**	**16.205**	**12.96**	**9.243**	**2.395**	**3.765**	**1.953**	**5.658**	**2.192**	
Okeechobee	FPL - Okeechobee Clean Energy Plant	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
	Total	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	
Part III Total		**0.130**	**0.062**	**0.116**	**0.047**	**0.02**	**0.02**	**0.016**	**0.016**	**0.013**	**237.785**	**365.292**	**269.173**	**148.251**	**2.395**	**3.765**	**1.953**	**5.658**	**2.192**	

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.
4.) OUC 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.

5.) OUC 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.
6.) FPL 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.

7.) FPL 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in figure I.A.1.
8.) Projections are not included for Oleander Power Project, CUP 63563. Facility receives water from the City of Cocoa; as such, the demands are associated with the City of Cocoa.
9.) Ten-Year Site Plan not available for Vero Beach Municipal. Total megawatts and historic use used to estimate future water demand.

Table B-10b, Continued (4-Part III). 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Historic Megawatts									2011-2015	2011-2015	Projected Megawatts				
		2007	2008	2009	2010	2011	2012	2013	2014	2015	Gallons	Gallons (Non-	2020	2025	2030	2035	2040
Brevard	Orlando Utilities Commission - Indian River Plant (1711)	198.8	193.3	196.9	205.0	217.0	218.6	223.7	237.5	242.4	0.00007	0.00000	246.8	242.7	272.1	305.1	342
	Florida Power & Light - Cape Canaveral Plant (10652)	1,052.3	1,009.1	1,071.0	1,066.4	1,035.9	1,027.3	1,033.8	1,098.9	1,100.1	0.00000	0.00000	1,189.7	1,254.2	1,335.0	1,421.0	1,438.9
	Oleander Power Project (63563)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	**1,251.1**	**1,202.4**	**1,267.9**	**1,271.4**	**1,252.9**	**1,245.9**	**1,257.5**	**1,336.4**	**1,342.5**	**N/A**	**N/A**	**1,436.5**	**1,496.9**	**1,607.1**	**1,726.1**	**1,780.9**
Indian River	INEOS New Planet BioEnergy (10710)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Vero Beach Municipal Power Plant (10735)	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	46.0	0.00000	0.0694	46.0	46.0	46.0	46.0	46.0
	Total	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**	**N/A**	**N/A**	**46.0**	**46.0**	**46.0**	**46.0**	**46.0**
Okeechobee	FPL - Okeechobee Clean Energy Plant	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1750.0	1750.0	1750.0	1750.0	1750.0
	Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**N/A**	**N/A**	**1750.0**	**1750.0**	**1750.0**	**1750.0**	**1750.0**
Part III Total		**1,297.1**	**1,248.4**	**1,313.9**	**1,317.4**	**1,298.9**	**1,291.9**	**1,303.5**	**1,382.4**	**1,388.5**	**N/A**	**N/A**	**3,232.5**	**3,292.9**	**3,403.1**	**3,522.1**	**3,576.9**

Notes:

1.) All water use is shown in million gallons per day.

2.) Rounding errors account for nominal discrepancies.

3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.

4.) OUC 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.

5.) OUC 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.

6.) FPL 2007-2015 total historic and 2015-2024 future total capacity megawatts obtained from Schedule 3.1 in 2016 Ten-Year Site Plan. Megawatt distribution to individual plants estimated using plant specific capacity in Figure I.A.1.

7.) FPL 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in figure I.A.1.

8.) Projections are not included for Oleander Power Project, CUP 63563. Facility receives water from the City of Cocoa; as such, the demands are associated with the City of Cocoa.

9.) Ten-Year Site Plan not available for Vero Beach Municipal. Total megawatts and historic use used to estimate future water demand.

Table B-10b, Continued (4-Part III). 2007-2015 Water Use and Megawatts, Five-Year Gross Per Mega Watt Averages and 2020-2040 Demand Projections for Thermoelectric Power Generation Self-supply Water Demand Increases, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Facility	Projected Groundwater Demand					Projected Non-consumptive Saline and Fresh Surface Water				
		2020	2025	2030	2035	2040	2020	2025	2030	2035	2040
Brevard	Orlando Utilities Commission - Indian River Plant (1711)	0.017	0.017	0.019	0.021	0.024	0.000	0.000	0.000	0.000	0.000
	Florida Power & Light - Cape Canaveral Plant (10652)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Oleander Power Project (63563)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	Total	**0.017**	**0.017**	**0.019**	**0.021**	**0.024**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Indian River	INEOS New Planet BioEnergy (10710)	0.360	0.360	0.360	0.360	0.360	0.000	0.000	0.000	0.000	0.000
	Vero Beach Municipal Power Plant (10735)	0.000	0.000	0.000	0.000	0.000	3.192	3.192	3.192	3.192	3.192
	Total	**0.360**	**0.360**	**0.360**	**0.360**	**0.360**	**3.192**	**3.192**	**3.192**	**3.192**	**3.192**
Okeechobee	FPL - Okeechobee Clean Energy Plant	9.075	9.075	9.075	9.075	9.075	0.000	0.000	0.000	0.000	0.000
	Total	**9.075**	**9.075**	**9.075**	**9.075**	**9.075**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
Part III Total		**9.452**	**9.452**	**9.454**	**9.456**	**9.459**	**3.192**	**3.192**	**3.192**	**3.192**	**3.192**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) 2007-2015 water use was obtained from SJRWMD EN-50 data, SJRWMD Survey data and USGS data.
4.) OUC 2007-2015 total historic and 2015-2024 future total capacity megawatts obtainec
5.) OUC 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in Table 2-1.
6.) FPL 2007-2015 tota
7.) FPL 2026-2040 projected total megawatts and water demand estimated from historic and future customer growth rates determined via Ten-Year Site Plan Schedule 2.3. Megawatt distribution to individual plants estimated using plant specific capacity in figure I.A.1.
8.) Projections are not included for Oleander Power Project, CUP 63563. Facility receives water from the City of Cocoa; as such, the demands are associated with the City of Cocoa.
9.) Ten-Year Site Plan not available for Vero Beach Municipal. Total megawatts and historic use used to estimate future water demand.

Table B-11. Public Supply and Domestic Self-supply and Small Public Supply 2015 Water Use and 2020-2040 Demand Projections, by County, in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	2015 Water Use			2020 Demand Projections (5-in-10)			2025 Demand Projections (5-in-10)			2030 Demand Projections (5-in-10)			2035 Demand Projections (5-in-10)			2040 Demand Projections (5-in-10)			Percent Change 2015-2040			2040 Demand Projections (1-in-10)		
	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total
Brevard	32.00	2.97	34.97	37.51	2.97	40.48	39.00	3.13	42.13	39.95	3.25	43.20	41.07	3.33	44.40	42.11	3.40	45.51	32%	14%	30%	44.63	3.60	48.23
Indian River	16.94	0.21	17.15	18.10	0.21	18.31	19.14	0.23	19.37	19.93	0.24	20.17	20.54	0.25	20.79	21.02	0.26	21.28	24%	24%	24%	22.29	0.28	22.57
Lake (Non-CFWI)	27.91	7.38	35.29	30.73	6.61	37.34	32.92	7.13	40.05	34.62	7.41	42.03	36.86	7.68	44.54	39.10	8.01	47.11	40%	9%	33%	41.43	8.49	49.92
Marion	18.35	9.25	27.60	20.45	10.12	30.57	20.96	10.57	31.53	21.28	10.93	32.21	21.62	11.30	32.92	22.00	11.78	33.78	20%	27%	22%	23.32	12.49	35.81
Okeechobee	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.14	0.14	0.00	0.15	0.15	N/A	15%	15%	0.00	0.16	0.16
Volusia	52.45	6.81	59.26	58.52	5.84	64.36	60.50	6.10	66.60	62.44	6.31	68.75	64.47	6.50	70.97	66.79	6.67	73.46	27%	-2%	24%	70.79	7.07	77.86
CSEC Total	**147.65**	**26.75**	**174.40**	**165.31**	**25.88**	**191.19**	**172.52**	**27.29**	**199.81**	**178.22**	**28.27**	**206.49**	**184.56**	**29.20**	**213.76**	**191.02**	**30.27**	**221.29**	**29%**	**13%**	**27%**	**202.46**	**32.09**	**234.55**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the population served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply population estimated by SJRWMD often includes some domestic self-supply population.

Table B-11 (2-Part I). Public Supply and Domestic Self-supply and Small Public Supply 2015 Water Use and 2020-2040 Demand Projections, by County, for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	2015 Water Use			2020 Demand Projections (5-in-10)			2025 Demand Projections (5-in-10)			2030 Demand Projections (5-in-10)			2035 Demand Projections (5-in-10)			2040 Demand Projections (5-in-10)			Percent Change 2015-2040			2040 Demand Projections (1-in-10)		
	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total
Volusia	52.45	6.81	59.26	58.52	5.84	64.36	60.50	6.10	66.60	62.44	6.31	68.75	64.47	6.50	70.97	66.79	6.67	73.46	27%	-2%	24%	70.79	7.07	77.86
Part I Total	**52.45**	**6.81**	**59.26**	**58.52**	**5.84**	**64.36**	**60.50**	**6.10**	**66.60**	**62.44**	**6.31**	**68.75**	**64.47**	**6.50**	**70.97**	**66.79**	**6.67**	**73.46**	**27%**	**-2%**	**24%**	**70.79**	**7.07**	**77.86**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the population served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply population estimated by SJRWMD often includes some domestic self-supply population.

Table B-11 (3-Part II). Public Supply and Domestic Self-supply and Small Public Supply 2015 Water Use and 2020-2040 Demand Projections, by County, for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	2015 Water Use			2020 Demand Projections (5-in-10)			2025 Demand Projections (5-in-10)			2030 Demand Projections (5-in-10)			2035 Demand Projections (5-in-10)			2040 Demand Projections (5-in-10)			Percent Change 2015-2040			2040 Demand Projections (1-in-10)		
	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total
Lake (Non-CFWI)	27.91	7.38	35.29	30.73	6.61	37.34	32.92	7.13	40.05	34.62	7.41	42.03	36.86	7.68	44.54	39.10	8.01	47.11	40%	9%	33%	41.43	8.49	49.92
Marion	18.35	9.25	27.60	20.45	10.12	30.57	20.96	10.57	31.53	21.28	10.93	32.21	21.62	11.30	32.92	22.00	11.78	33.78	20%	27%	22%	23.32	12.49	35.81
Part II Total	**46.26**	**16.63**	**62.89**	**51.18**	**16.73**	**67.91**	**53.88**	**17.70**	**71.58**	**55.90**	**18.34**	**74.24**	**58.48**	**18.98**	**77.46**	**61.10**	**19.79**	**80.89**	**32%**	**19%**	**29%**	**64.75**	**20.98**	**85.73**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the population served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply population estimated by SJRWMD often includes some domestic self-supply population.

Table B-11 (4-Part III). Public Supply and Domestic Self-supply and Small Public Supply 2015 Water Use and 2020-2040 Demand Projections, by County, for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	2015 Water Use			2020 Demand Projections (5-in-10)			2025 Demand Projections (5-in-10)			2030 Demand Projections (5-in-10)			2035 Demand Projections (5-in-10)			2040 Demand Projections (5-in-10)			Percent Change 2015-2040			2040 Demand Projections (1-in-10)		
	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total	Public Supply	Domestic Self-Supply and Small Public Supply	Total
Brevard	32.00	2.97	34.97	37.51	2.97	40.48	39.00	3.13	42.13	39.95	3.25	43.20	41.07	3.33	44.40	42.11	3.40	45.51	32%	14%	30%	44.63	3.60	48.23
Indian River	16.94	0.21	17.15	18.10	0.21	18.31	19.14	0.23	19.37	19.93	0.24	20.17	20.54	0.25	20.79	21.02	0.26	21.28	24%	24%	24%	22.29	0.28	22.57
Okeechobee	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.13	0.00	0.14	0.14	0.00	0.15	0.15	0%	15%	15%	0.00	0.16	0.16
Part III Total	**48.94**	**3.31**	**52.25**	**55.61**	**3.31**	**58.92**	**58.14**	**3.49**	**61.63**	**59.88**	**3.62**	**63.50**	**61.61**	**3.72**	**65.33**	**63.13**	**3.81**	**66.94**	**29%**	**15%**	**28%**	**66.92**	**4.04**	**70.96**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Public water supply utility service areas often include residences that derive their water supply from privately owned (domestic self-supply) wells. Typically, these domestic self-supply water uses existed prior to their locations becoming part of public water supply service areas. For public water supply service areas, SJRWMD does not have sufficient information to separate the population served by public supply systems from those served by domestic self-supply wells. Therefore, public water supply population estimated by SJRWMD often includes some domestic self-supply population.
4.) Brevard County in this region excludes the City of Cocoa.

Table B-12 (1-Brevard County). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use for Brevard County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Public Supply	17.70	14.30	**32.00**	21.45	15.82	**37.51**	22.55	15.89	**39.00**	23.15	15.93	**39.95**	23.80	15.93	**41.07**	24.52	15.93	**42.11**	32%	28.70	15.93	**44.63**
Domestic Self-supply and Small Public Supply Systems	2.97	0.00	**2.97**	2.97	0.00	**2.97**	3.13	0.00	**3.13**	3.25	0.00	**3.25**	3.33	0.00	**3.33**	3.40	0.00	**3.40**	14%	3.60	0.00	**3.60**
Agricultural Irrigation Self-supply	18.53	0.74	**19.27**	21.01	0.84	**21.85**	21.23	0.85	**22.08**	20.46	0.82	**21.28**	19.97	0.80	**20.77**	19.47	0.78	**20.25**	5%	28.68	1.15	**29.83**
Landscape/Recreational/Aesthetic Self-supply	1.21	4.77	**5.98**	1.27	5.02	**6.29**	1.32	5.24	**6.56**	1.36	5.41	**6.77**	1.39	5.53	**6.92**	1.42	5.64	**7.06**	18%	2.20	8.74	**10.94**
Commercial / Industrial / Institutional Self-supply	6.30	0.35	**6.65**	6.62	0.37	**6.99**	6.90	0.39	**7.29**	7.13	0.40	**7.53**	7.29	0.41	**7.70**	7.43	0.42	**7.85**	18%	7.43	0.42	**7.85**
Thermoelectric Power Generation Self-supply	0.01	0.00	**0.01**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	0.02	0.00	**0.02**	100%	0.02	0.00	**0.02**
Brevard County Total	**46.72**	**20.16**	**66.88**	**53.34**	**22.05**	**75.63**	**55.15**	**22.37**	**78.08**	**55.37**	**22.56**	**78.80**	**55.80**	**22.67**	**79.81**	**56.26**	**22.77**	**80.69**	**21%**	**70.63**	**26.24**	**96.87**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.
3.) Public supply excludes the City of Cocoa.

Table B-12 (2-Indian River County). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use for Indian River County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Public Supply	16.94	0.00	**16.94**	18.10	0.00	**18.10**	19.14	0.00	**19.14**	19.93	0.00	**19.93**	20.54	0.00	**20.54**	21.02	0.00	**21.02**	24%	22.29	0.00	**22.29**
Domestic Self-supply and Small Public Supply Systems	0.21	0.00	**0.21**	0.21	0.00	**0.21**	0.23	0.00	**0.23**	0.24	0.00	**0.24**	0.25	0.00	**0.25**	0.26	0.00	**0.26**	24%	0.28	0.00	**0.28**
Agricultural Irrigation Self-supply	37.71	25.51	**63.22**	30.29	20.49	**50.78**	30.15	20.39	**50.54**	30.16	20.41	**50.57**	30.18	20.41	**50.59**	30.19	20.42	**50.61**	-20%	46.59	31.52	**78.11**
Landscape/Recreational/Aesthetic Self-supply	1.58	16.44	**18.02**	1.81	18.84	**20.65**	1.91	19.88	**21.79**	1.99	20.68	**22.67**	2.06	21.36	**23.42**	2.12	21.99	**24.11**	34%	2.54	26.39	**28.93**
Commercial / Industrial / Institutional Self-supply	0.00	0.15	**0.15**	0.00	0.22	**0.22**	0.00	0.25	**0.25**	0.00	0.27	**0.27**	0.00	0.29	**0.29**	0.00	0.31	**0.31**	107%	0.00	0.31	**0.31**
Thermoelectric Power Generation Self-supply	0.00	0.04	**0.04**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	0.36	0.06	**0.42**	950%	0.36	0.06	**0.42**
Indian River County	**56.44**	**42.14**	**98.58**	**50.77**	**39.61**	**90.38**	**51.79**	**40.58**	**92.37**	**52.68**	**41.42**	**94.10**	**53.39**	**42.12**	**95.51**	**53.95**	**42.78**	**96.73**	**-2%**	**72.06**	**58.28**	**130.34**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-12 (3-Lake County (Non-CFWI)). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use for Lake (Non-CFWI) County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Public Supply	27.32	0.59	**27.91**	28.60	2.13	**30.73**	30.79	2.13	**32.92**	32.49	2.13	**34.62**	34.73	2.13	**36.86**	36.97	2.13	**39.10**	40%	39.30	2.13	**41.43**
Domestic Self-supply and Small Public Supply Systems	7.38	0.00	**7.38**	6.61	0.00	**6.61**	7.13	0.00	**7.13**	7.41	0.00	**7.41**	7.68	0.00	**7.68**	8.01	0.00	**8.01**	9%	8.49	0.00	**8.49**
Agricultural Irrigation Self-supply	9.74	1.16	**10.90**	12.32	1.47	**13.79**	9.12	1.09	**10.21**	8.77	1.04	**9.81**	8.31	0.99	**9.30**	7.96	0.95	**8.91**	-18%	10.92	1.30	**12.22**
Landscape/Recreational/Aesthetic Self-supply	2.43	4.40	**6.83**	2.85	5.15	**8.00**	3.09	5.57	**8.66**	3.25	5.87	**9.12**	3.46	6.26	**9.72**	3.67	6.65	**10.32**	51%	4.26	7.71	**11.97**
Commercial / Industrial / Institutional Self-supply	0.90	0.15	**1.05**	1.12	0.19	**1.31**	1.25	0.21	**1.46**	1.34	0.22	**1.56**	1.45	0.24	**1.69**	1.56	0.26	**1.82**	73%	1.56	0.26	**1.82**
Thermoelectric Power Generation Self-supply	0.23	0.00	**0.23**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	0.32	0.00	**0.32**	39%	0.32	0.00	**0.32**
Lake Non-CFWI Total	**48.00**	**6.30**	**54.30**	**51.82**	**8.94**	**60.76**	**51.70**	**9.00**	**60.70**	**53.58**	**9.26**	**62.84**	**55.95**	**9.62**	**65.57**	**58.49**	**9.99**	**68.48**	**26%**	**64.85**	**11.40**	**76.25**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-12 (4-Marion County). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use for Marion County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Public Supply	18.35	0.00	**18.35**	20.45	0.00	**20.45**	20.96	0.00	**20.96**	21.28	0.00	**21.28**	21.62	0.00	**21.62**	22.00	0.00	**22.00**	20%	23.32	0.00	**23.32**
Domestic Self-supply and Small Public Supply Systems	9.25	0.00	**9.25**	10.12	0.00	**10.12**	10.57	0.00	**10.57**	10.93	0.00	**10.93**	11.30	0.00	**11.30**	11.78	0.00	**11.78**	27%	12.49	0.00	**12.49**
Agricultural Irrigation Self-supply	7.38	0.44	**7.82**	5.49	0.33	**5.82**	9.76	0.58	**10.34**	11.77	0.70	**12.47**	13.34	0.80	**14.14**	15.46	0.92	**16.38**	109%	21.76	1.30	**23.06**
Landscape/Recreational/Aesthetic Self-supply	1.32	2.64	**3.96**	1.41	2.81	**4.22**	1.45	2.90	**4.35**	1.49	2.97	**4.46**	1.53	3.04	**4.57**	1.58	3.13	**4.71**	19%	1.87	3.69	**5.56**
Commercial / Industrial / Institutional Self-supply	2.43	0.28	**2.71**	2.53	0.29	**2.82**	2.57	0.30	**2.87**	2.61	0.30	**2.91**	2.65	0.30	**2.95**	2.70	0.31	**3.01**	11%	2.70	0.31	**3.01**
Thermoelectric Power Generation Self-supply	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	0.00	0.00	**0.00**
Marion County Total	**38.73**	**3.36**	**42.09**	**40.00**	**3.43**	**43.43**	**45.31**	**3.78**	**49.09**	**48.08**	**3.97**	**52.05**	**50.44**	**4.14**	**54.58**	**53.52**	**4.36**	**57.88**	**38%**	**62.14**	**5.30**	**67.44**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-12 (5-Okeechobee County). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use for Okeechobee County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Public Supply	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	0.00	0.00	**0.00**
Domestic Self-supply and Small Public Supply Systems	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.13	0.00	**0.13**	0.14	0.00	**0.14**	0.15	0.00	**0.15**	15%	0.16	0.00	**0.16**
Agricultural Irrigation Self-supply	2.71	0.12	**2.83**	6.43	0.28	**6.71**	5.64	0.25	**5.89**	5.53	0.25	**5.78**	5.38	0.24	**5.62**	5.00	0.22	**5.22**	84%	7.27	0.32	**7.59**
Landscape/Recreational/Aesthetic Self-supply	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	0.00	0.00	**0.00**
Commercial / Industrial / Institutional Self-supply	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	0.00	0.00	**0.00**	N/A	0.00	0.00	**0.00**
Thermoelectric Power Generation Self-supply	0.00	0.00	**0.00**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	9.08	0.00	**9.08**	N/A	9.08	0.00	**9.08**
Okeechobee County Total	**2.84**	**0.12**	**2.96**	**15.64**	**0.28**	**15.92**	**14.85**	**0.25**	**15.10**	**14.74**	**0.25**	**14.99**	**14.60**	**0.24**	**14.84**	**14.23**	**0.22**	**14.45**	**388%**	**16.51**	**0.32**	**16.83**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-12 (6-Volusia County). Water Use for 2015 and 5-in-10 Year Total Water Demand Projections for 2020-2040 and 1-in-10 Year Water Demand Projections for 2040, by Category of Use for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

Category	Water Use			Demand Projections (5-in-10)															Percent	Demand Projections (1-in-10)		
	2015			2020			2025			2030			2035			2040			Change	2040		
	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	Ground	Surface	Total	2015-2040	Ground	Surface	Total
Public Supply	52.45	0.00	**52.45**	58.52	0.00	**58.52**	60.50	0.00	**60.50**	62.44	0.00	**62.44**	64.47	0.00	**64.47**	66.79	0.00	**66.79**	27%	70.79	0.00	**70.79**
Domestic Self-supply and Small Public Supply Systems	6.81	0.00	**6.81**	5.84	0.00	**5.84**	6.10	0.00	**6.10**	6.31	0.00	**6.31**	6.50	0.00	**6.50**	6.67	0.00	**6.67**	-2%	7.07	0.00	**7.07**
Agricultural Irrigation Self-supply	15.44	2.21	**17.65**	17.64	2.53	**20.17**	17.85	2.55	**20.40**	18.20	2.60	**20.80**	18.53	2.65	**21.18**	18.84	2.70	**21.54**	22%	22.47	3.22	**25.69**
Landscape/Recreational/Aesthetic Self-supply	1.24	4.98	**6.22**	1.40	5.60	**7.00**	1.45	5.80	**7.25**	1.50	6.00	**7.50**	1.55	6.18	**7.73**	1.60	6.39	**7.99**	28%	2.13	8.50	**10.63**
Commercial / Industrial / Institutional Self-supply	3.24	0.00	**3.24**	3.52	0.00	**3.52**	3.61	0.00	**3.61**	3.70	0.00	**3.70**	3.78	0.00	**3.78**	3.87	0.00	**3.87**	19%	3.87	0.00	**3.87**
Thermoelectric Power Generation Self-supply	0.28	1.71	**1.99**	0.28	2.02	**2.30**	0.30	2.12	**2.42**	0.32	2.26	**2.58**	0.34	2.41	**2.75**	0.34	2.44	**2.78**	40%	0.34	2.44	**2.78**
Volusia County Total	**79.46**	**8.90**	**88.36**	**87.20**	**10.15**	**97.35**	**89.81**	**10.47**	**100.28**	**92.47**	**10.86**	**103.33**	**95.17**	**11.24**	**106.41**	**98.11**	**11.53**	**109.64**	**24%**	**106.67**	**14.16**	**120.83**

Notes:
1.) All water use is shown in million gallons per day.
2.) Rounding errors account for nominal discrepancies.

Table B-13. 2040 Reclaimed Water Projections Using 75 Percent Beneficial Utilization in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Waste Water Treatment Facility Name	Reuse System Name	WAFR ID	PAA	2015 Treatment	Associated CUP	2015 Total Facility Treatment Flow	2015 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2015 Population	2040 Population	2040 Additional Population Hooked up to Sewer System	2040 New Waste Water Flow	2040 Potential New Additional Reclaimed Water for Reuse	2040 Total Potential Additional Reclaimed Water for Reuse	2040 Total Facility Treatment Flow
Brevard	Palm Bay	Palm Bay	FLA103357	Yes	High	202	0.54	0.54	0.00	114,587	171,342	53,917				
Brevard	Palm Bay	Palm Bay # 2	FLA648744	No	Basic	202	1.64	0.00	1.23	N/A	N/A	N/A	4.53	3.40	4.63	6.71
Brevard	BCUD - North Brevard Regional WWTF	BCUD - North Brevard Regional	FLA010263	Yes	High	233	0.25	0.20	0.04	7,893	9,709	1,725	0.14	0.11	0.15	0.39
Brevard	BCUD - Barefoot Bay WRF	BCUD - Barefoot Bay	FL0042293	Yes	High	236	0.53	0.47	0.05	9,603	13,520	3,721	0.31	0.23	0.28	0.84
Brevard	Titusville North - Osprey & Titusville South & North - Blue Heron	Titusville Reuse System & The Great Outdoors Golf / RV Resort	FL0103268 & FL0103349	Yes	High	10647	5.22	3.69	1.15	49,938	80,852	29,368	2.47	1.85	3.00	7.69
Brevard	BCUD - South Beaches WWTF	BCUD - South Beaches	FL0040622	Yes	High	50301	6.45	1.38	3.80	N/A	N/A	N/A				
Brevard	Melbourne - David B. Lee WWTF	Melbourne - North & South Service Area	FLA010323	Yes	High & Basic	50301	7.22	2.18	3.78	162,434	189,083	25,317				
Brevard	Melbourne - Grant Street WWTF	Melbourne - North & South Service Area	FL0041122	Yes	High & Basic	50301	0.00	0.00	0.00	N/A	N/A	N/A	2.13	1.59	9.18	15.80
Brevard	Ray Bullard WRF	Ray Bullard WRF (West Melbourne)	FLA010332	Yes	High	89992	1.56	0.77	0.59	19,118	20,194	1,022	0.09	0.06	0.66	1.65
Brevard County Total							**23.41**	**9.23**	**10.64**	**363,573**	**484,700**	**115,071**	**9.67**	**7.25**	**17.88**	**33.08**
Indian River	IRCUD - Blue Cypress	IRCUD - West Regional	FLA010439	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A				
Indian River	IRCUD - Central (Gifford) WWTF	IRCUD - West Regional	FLA010431	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A				
Indian River	IRCUD - South Regional WWTF	IRCUD - West Regional	FLA010435	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A				
Indian River	IRCUD - Sea Oaks Condos WWTF	IRCUD - Sea Oaks Condos WWTF	FLA104299	No	Basic	10524	0.00	0.00	0.00	N/A	N/A	N/A				
Indian River	IRCUD - West Regional WWTF	IRCUD - West Regional	FL0041637	Yes	High	10524	4.81	3.05	1.32	97,048	141,998	42,703	3.59	2.69	4.01	8.40
Indian River	Vero Beach WWTF	City of Vero Beach	FL0021661	Yes	High	10705	3.83	3.03	0.60	37,308	39,211	1,808	0.15	0.11	0.71	3.98
Indian River County Total							**8.64**	**6.08**	**1.92**	**134,356**	**181,209**	**44,510**	**3.74**	**2.80**	**4.72**	**12.38**
Lake(Non-CFWI)	Leesburg - Canal Street	City of Leesburg	FL0105066	No	Basic	94	2.40	0.60	1.35	34,159	62,073	26,518				
Lake(Non-CFWI)	Leesburg - Turnpike	City of Leesburg	FLA105147	No	Basic	94	0.00	0.00	0.00	N/A	N/A	N/A	2.23	1.67	3.02	4.63
Lake(Non-CFWI)	Water Oak Utilities	Water Oak Estates	FLA010529	No	Basic	282	0.06	0.00	0.05	1,539	1,548	9	0.00	0.00	0.05	0.06
Lake(Non-CFWI)	Oak Springs MHP	Oak Springs MHP	FLA010629	No	Basic	2416	0.03	0.03	0.00	779	862	79	0.01	0.00	0.00	0.04
Lake(Non-CFWI)	Eustis WWTF	City of Eustis	FLA010507	Yes	High	2634	1.32	0.86	0.35	24,450	37,829	12,710				
Lake(Non-CFWI)	Eustis Eastern	City of Eustis	FLA295965	Yes	High	2634	0.00	0.00	0.00	N/A	N/A	N/A	1.07	0.80	1.15	2.39
Lake(Non-CFWI)	Umatilla WWTF	Umatilla	FLA010505	No	Basic	2646	0.18	0.05	0.10	3,894	8,234	4,123	0.35	0.26	0.36	0.53
Lake(Non-CFWI)	Pennbrooke WWTF	Pennbrooke WWTF	FLA010570	Yes	High	2717	0.11	0.11	0.00	2,488	2,496	8	0.00	0.00	0.00	0.11
Lake(Non-CFWI)	Leesburg - Plantation	City of Leesburg	FLA010551	No	Basic	2718	0.00	0.00	0.00	5,061	5,063	2	0.00	0.00	0.00	0.00
Lake(Non-CFWI)	Woodlea Road WRF	Tavares / Woodlea Road	FLA010509	No	Basic	2765	1.33	1.33	0.00	18,326	25,349	6,672	0.56	0.42	0.42	1.89
Lake(Non-CFWI)	Mid-Florida Lakes	Mid-Florida Lakes	FLA010657	No	Basic	2888	0.10	0.00	0.08	1,709	1,709	0	0.00	0.00	0.08	0.10
Lake(Non-CFWI)	Lady Lake WWTF	Lady Lake WWTF	FLA399761	Yes	High & Basic	50049	0.25	0.25	0.00	5,688	10,746	4,805	0.40	0.30	0.30	0.65
Lake(Non-CFWI)	Mount Dora #1 WWTF	City of Mount Dora	FLA010508	Yes	High	50147	1.83	1.67	0.12	23,718	35,371	11,070				
Lake(Non-CFWI)	Mount Dora #2 - James Snell	City of Mount Dora	FLA268542	Yes	High	50147	0.00	0.00	0.00	N/A	N/A	N/A	0.93	0.70	0.82	2.76
Lake(Non-CFWI)	St. Johns River Utility WWTF	St. Johns River Utility (Astor Park)	FLA187496	No	Basic	50178	0.12	0.12	0.00	3,873	4,315	420	0.04	0.03	0.03	0.16
Lake(Non-CFWI)	The Villages - Villages WWTF	The Villages - Villages WWTF	FLA010555	Yes	High	50279	0.96	0.96	0.00	17,588	17,588	0	0.00	0.00	0.00	0.96
Lake County (Non-CFWI) Total							**8.69**	**5.98**	**2.03**	**143,272**	**213,183**	**66,415**	**5.58**	**4.18**	**6.22**	**14.27**
Marion	Belleview	Belleview	FLA010678	Yes	High	3137	0.38	0.34	0.03	8,433	10,316	1,789	0.15	0.11	0.14	0.53
Marion	Marion Co. - Silver Springs Shores	Marion Co. - Silver Springs Shores	FLA296651	No	Basic	4578	1.15	0.04	0.83	N/A	N/A	N/A				
Marion	Marion Co. - Silver Springs Regional WWTF	Marion Co. - Silver Springs Regional WWTP	FLA010786	Yes	High	4578	0.04	0.04	0.00	N/A	N/A	N/A				
Marion	Marion Co. - Spruce Creek South WWTF	Marion Co. - Spruce Creek South	FLA010769	No	Basic	4578	0.00	0.00	0.00	40,371	49,947	9,097				
Marion	Marion Co. - Stonecrest WWTF	Marion Co. - Stonecrest PUD	FLA010741	No	Basic	4578	0.18	0.18	0.00	N/A	N/A	N/A	0.76	0.57	1.41	2.13
Marion	Ocala WWTP #1	Ocala WWTP #1	FLA010677	Yes	High	50324	0.69	0.69	0.00	61,877	66,806	4,683				
Marion	Ocala WWTP #2	Ocala WWTP #2	FLA010680	Yes	High & Basic	50324	2.33	0.23	1.58	N/A	N/A	N/A				
Marion	Ocala WWTP #3	Ocala WWTP #3	FLA190268	Yes	High	50324	2.07	2.07	0.00	N/A	N/A	N/A	0.39	0.30	1.87	5.48
Marion	Marion Correctional Institution	Lowell (Marion) Correctional Institution	FLA010789	No	Basic	N/A	0.50	0.50	0.00	N/A	N/A	N/A	0.00	0.00	0.00	0.50
Marion	Rolling Greens	Rolling Greens	FLA010757	No	Basic	3021	0.09	0.00	0.07	2,318	2,323	5	0.00	0.00	0.07	0.09
Marion County Total							**7.43**	**4.09**	**2.51**	**112,999**	**129,392**	**15,573**	**1.31**	**0.98**	**3.49**	**8.74**
Volusia	Holly Hill WWTF	Holly Hill	FL0027677	Yes	High	8528	1.57	0.31	0.95	13,437	13,949	486	0.04	0.03	0.98	1.61
Volusia	Port Orange	City of Port Orange	FL0020559	Yes	High & Basic	8595	5.70	4.72	0.74	66,913	70,784	3,677	0.31	0.23	0.97	6.01
Volusia	Deltona Lakes	Deltona Lakes	FLA111724	Yes	High	8658	0.76	0.76	0.00	75,322	98,739	22,246	1.87	1.40	1.40	2.63
Volusia	New Smyrna Beach WWTF	City of New Smyrna Beach	FL0172090	Yes	High	8747	3.76	3.76	0.00	55,304	78,560	22,093	1.86	1.39	1.39	5.62
Volusia	Daytona - Bethune Point WWTF	Daytona Reuse Implementation Project (DRIP)	FL0025984	Yes	High	8834	0.00	0.00	0.00	74,068	92,559	17,566				
Volusia	Daytona - Westside Regional WWTF	Daytona Reuse Implementation Project (DRIP)	FLA111392	Yes	High	8834	11.10	2.73	6.28	N/A	N/A	N/A	1.48	1.11	7.38	12.58
Volusia	N. Peninsula Util. - Seabridge	N. Peninsula Util. - Seabridge	FLA011188	No	Basic	8932	0.05	0.00	0.04	N/A	N/A	N/A				
Volusia	Ormond Beach WWTF	Ormond Beach	FL0020532	Yes	High	8932	4.95	3.35	1.20	50,665	61,230	10,037	0.84	0.63	1.87	5.84
Volusia	Edgewater WWTF	City of Edgewater	FL0021431	Yes	High	9157	1.62	1.00	0.47	23,575	28,422	4,605	0.39	0.29	0.76	2.01
Volusia	Deland Regional WWTF (Wiley M Nash)	Deland Regional (Wiley M Nash)	FL0020303	Yes	High	50116	3.15	3.15	0.00	48,428	60,657	11,618	0.98	0.73	0.73	4.13
Volusia	VCUD - Halifax Plantation WWTF	VCUD - Halifax Plantation WWTF	FLA011131	Yes	High	50157, 50659, 86278	0.14	0.00	0.11	N/A	N/A	N/A				
Volusia	VCUD - Deltona North WWTF	VCUD - Deltona North	FLA011121	Yes	High	50157, 50659, 86278	0.41	0.41	0.00	N/A	N/A	N/A				
Volusia	VCUD - Four Townes	VCUD - Four Townes	FLA011118	Yes	High	50157, 50659, 86278	0.18	0.00	0.14	N/A	N/A	N/A				
Volusia	VCUD - Southeast Regional	VCUD - Southeast Regional	FLA017413	Yes	High	50157, 50659, 86278	0.18	0.18	0.00	38,231	46,127	7,501				
Volusia	VCUD - Southwest Regional WWTF	VCUD - Southwest Regional	FLA011128	Yes	High	50157, 50659, 86278	1.37	1.37	0.00	N/A	N/A	N/A	0.63	0.47	0.71	2.91
Volusia	Tymber Creek	Tymber Creek	FLA011193	Yes	High	N/A	0.06	0.06	0.00	N/A	N/A	N/A	0.00	0.00	0.00	0.06
Volusia County Total							**35.00**	**21.80**	**9.90**	**445,943**	**551,027**	**99,830**	**8.39**	**6.29**	**16.19**	**43.39**
CSEC Total							**83.17**	**47.18**	**26.99**	**1,200,143**	**1,559,511**	**341,400**	**28.68**	**21.51**	**48.50**	**111.85**

Notes:

1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
2.) Rounding anomalies account for nominal discrepancies.
3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.
4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
5.) Potential existing additional reclaimed water for reuse calculated as 75 percent of the 2015 total facility treatment flow minus the 2015 total beneficial reuse. This assumes that facilities without current public access reuse will upgrade treatment systems over time.
6.) Additional population hooked up to the sewer system calculated as 95 percent of the additional population growth within a service area from 2015 to 2040.
7.) New waste water flow calculated as additional population hooked up to the sewer system times 84 gpcd (69.3 gpcd for residential flow, AWWA indoor standard and 14.7 gpcd for commercial flow, National Engineering Handbook per employee).
8.) Potential new additional reclaimed water for reuse calculated as 75 percent of the new waste water flow.
9.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
10.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.
11.) Projections are grouped by population expected to growth within a public supply service area. Therefore, the projections by wastewater facility (WWTF) may not be specific to the WWTF, but as the region as a whole.
12.) Projections are not included for those service areas that do not currently have waste water treatment facilities.
13.) Brevard County in the CSEC excludes the City of Cocoa, which is included in the CFWI RWSP.

Table B-13 (2-Part I). 2040 Reclaimed Water Projections Using 75 Percent Beneficial Utilization for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Waste Water Treatment Facility Name	Reuse System Name	WAFR ID	PAA	2015 Treatment	Associated CUP	2015 Total Facility Treatment Flow	2015 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2015 Population	2040 Population	2040 Additional Population Hooked up to Sewer System	2040 New Waste Water Flow	2040 Potential New Additional Reclaimed Water for Reuse	2040 Total Potential Additional Reclaimed Water for Reuse	2040 Total Facility Treatment Flow
Volusia	Holly Hill WWTF	Holly Hill	FL0027677	Yes	High	8528	1.57	0.31	0.95	13,437	13,949	486	0.04	0.03	**0.98**	1.61
Volusia	Port Orange	City of Port Orange	FL0020559	Yes	High & Basic	8595	5.70	4.72	0.74	66,913	70,784	3,677	0.31	0.23	**0.97**	6.01
Volusia	Deltona Lakes	Deltona Lakes	FLA111724	Yes	High	8658	0.76	0.76	0.00	75,322	98,739	22,246	1.87	1.40	**1.40**	2.63
Volusia	New Smyrna Beach WWTF	City of New Smyrna Beach	FL0172090	Yes	High	8747	3.76	3.76	0.00	55,304	78,560	22,093	1.86	1.39	**1.39**	5.62
Volusia	Daytona - Bethune Point WWTF	Daytona Reuse Implementation Project (DRIP)	FL0025984	Yes	High	8834	0.00	0.00	0.00	74,068	92,559	17,566				
Volusia	Daytona - Westside Regional WWTF	Daytona Reuse Implementation Project (DRIP)	FLA111392	Yes	High	8834	11.10	2.73	6.28	N/A	N/A	N/A	1.48	1.11	**7.38**	12.58
Volusia	N. Peninsula Util. - Seabridge	N. Peninsula Util. - Seabridge	FLA011188	No	Basic	8932	0.05	0.00	0.04	N/A	N/A	N/A				
Volusia	Ormond Beach WWTF	Ormond Beach	FL0020532	Yes	High	8932	4.95	3.35	1.20	50,665	61,230	10,037	0.84	0.63	**1.87**	5.84
Volusia	Edgewater WWTF	City of Edgewater	FL0021431	Yes	High	9157	1.62	1.00	0.47	23,575	28,422	4,605	0.39	0.29	**0.76**	2.01
Volusia	Deland Regional WWTF (Wiley M Nash)	Deland Regional (Wiley M Nash)	FL0020303	Yes	High	50116	3.15	3.15	0.00	48,428	60,657	11,618	0.98	0.73	**0.73**	4.13
Volusia	VCUD - Halifax Plantation WWTF	VCUD - Halifax Plantation WWTF	FLA011131	Yes	High	50157, 50659, 86278	0.14	0.00	0.11	N/A	N/A	N/A				
Volusia	VCUD - Deltona North WWTF	VCUD - Deltona North	FLA011121	Yes	High	50157, 50659, 86278	0.41	0.41	0.00	N/A	N/A	N/A				
Volusia	VCUD - Four Townes	VCUD - Four Townes	FLA011118	Yes	High	50157, 50659, 86278	0.18	0.00	0.14	N/A	N/A	N/A				
Volusia	VCUD - Southeast Regional	VCUD - Southeast Regional	FLA017413	Yes	High	50157, 50659, 86278	0.18	0.18	0.00	38,231	46,127	7,501				
Volusia	VCUD - Southwest Regional WWTF	VCUD - Southwest Regional	FLA011128	Yes	High	50157, 50659, 86278	1.37	1.37	0.00	N/A	N/A	N/A	0.63	0.47	**0.71**	2.91
Volusia	Tymber Creek	Tymber Creek	FLA011193	Yes	High	N/A	0.06	0.06	0.00	N/A	N/A	N/A	0.00	0.00	**0.00**	0.06
Part I Total							**35.00**	**21.80**	**9.90**	**445,943**	**551,027**	**99,830**	**8.39**	**6.29**	**16.19**	**43.39**

Notes:
1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
2.) Rounding anomalies account for nominal discrepancies.
3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.
4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
5.) Potential existing additional reclaimed water for reuse calculated as 75 percent of the 2015 total facility treatment flow minus the 2015 total beneficial reuse. This assumes that facilities without current public access reuse will upgrade treatment systems over time.
6.) Additional population hooked up to the sewer system calculated as 95 percent of the additional population growth within a service area from 2015 to 2040.
7.) New waste water flow calculated as additional population hooked up to the sewer system times 84 gpcd (69.3 gpcd for residential flow, AWWA indoor standard and 14.7 gpcd for commercial flow, National Engineering Handbook per employee).
8.) Potential new additional reclaimed water for reuse calculated as 75 percent of the new waste water flow.
9.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
10.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.
11.) Projections are grouped by population expected to growth within a public supply service area. Therefore, the projections by wastewater facility (WWTF) may not be specific to the WWTF, but as the region as a whole.
12.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

Table B-13 (3-Part II). 2040 Reclaimed Water Projections Using 75 Percent Beneficial Utilization for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Waste Water Treatment Facility Name	Reuse System Name	WAFR ID	PAA	2015 Treatment	Associated CUP	2015 Total Facility Treatment Flow	2015 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2015 Population	2040 Population	2040 Additional Population Hooked up to Sewer System	2040 New Waste Water Flow	2040 Potential New Additional Reclaimed Water for Reuse	2040 Total Potential Additional Reclaimed Water for Reuse	2040 Total Facility Treatment Flow
Lake(Non-CFWI)	Leesburg - Canal Street	City of Leesburg	FL0105066	No	Basic	94	2.40	0.60	1.35	34,159	62,073	26,518				
Lake(Non-CFWI)	Leesburg - Turnpike	City of Leesburg	FLA105147	No	Basic	94	0.00	0.00	0.00	N/A	N/A	N/A	2.23	1.67	**3.02**	4.63
Lake(Non-CFWI)	Water Oak Utilities	Water Oak Estates	FLA010529	No	Basic	282	0.06	0.00	0.05	1,539	1,548	9	0.00	0.00	**0.05**	0.06
Lake(Non-CFWI)	Oak Springs MHP	Oak Springs MHP	FLA010629	No	Basic	2416	0.03	0.03	0.00	779	862	79	0.01	0.00	**0.00**	0.04
Lake(Non-CFWI)	Eustis WWTF	City of Eustis	FLA010507	Yes	High	2634	1.32	0.86	0.35	24,450	37,829	12,710				
Lake(Non-CFWI)	Eustis Eastern	City of Eustis	FLA295965	Yes	High	2634	0.00	0.00	0.00	N/A	N/A	N/A	1.07	0.80	**1.15**	2.39
Lake(Non-CFWI)	Umatilla WWTF	Umatilla	FLA010505	No	Basic	2646	0.18	0.05	0.10	3,894	8,234	4,123	0.35	0.26	**0.36**	0.53
Lake(Non-CFWI)	Pennbrooke WWTF	Pennbrooke WWTF	FLA010570	Yes	High	2717	0.11	0.11	0.00	2,488	2,496	8	0.00	0.00	**0.00**	0.11
Lake(Non-CFWI)	Leesburg - Plantation	City of Leesburg	FLA010551	No	Basic	2718	0.00	0.00	0.00	5,061	5,063	2	0.00	0.00	**0.00**	0.00
Lake(Non-CFWI)	Woodlea Road WRF	Tavares / Woodlea Road	FLA010509	No	Basic	2765	1.33	1.33	0.00	18,326	25,349	6,672	0.56	0.42	**0.42**	1.89
Lake(Non-CFWI)	Mid-Florida Lakes	Mid-Florida Lakes	FLA010657	No	Basic	2888	0.10	0.00	0.08	1,709	1,709	0	0.00	0.00	**0.08**	0.10
Lake(Non-CFWI)	Lady Lake WWTF	Lady Lake WWTF	FLA399761	Yes	High & Basic	50049	0.25	0.25	0.00	5,688	10,746	4,805	0.40	0.30	**0.30**	0.65
Lake(Non-CFWI)	Mount Dora #1 WWTF	City of Mount Dora	FLA010508	Yes	High	50147	1.83	1.67	0.12	23,718	35,371	11,070				
Lake(Non-CFWI)	Mount Dora #2 - James Snell	City of Mount Dora	FLA268542	Yes	High	50147	0.00	0.00	0.00	N/A	N/A	N/A	0.93	0.70	**0.82**	2.76
Lake(Non-CFWI)	St. Johns River Utility WWTF	St. Johns River Utility (Astor Park)	FLA187496	No	Basic	50178	0.12	0.12	0.00	3,873	4,315	420	0.04	0.03	**0.03**	0.16
Lake(Non-CFWI)	The Villages - Villages WWTF	The Villages - Villages WWTF	FLA010555	Yes	High	50279	0.96	0.96	0.00	17,588	17,588	0	0.00	0.00	**0.00**	0.96
Lake County (Non-CFWI) Total							**8.69**	**5.98**	**2.03**	**143,272**	**213,183**	**66,415**	**5.58**	**4.18**	**6.22**	**14.27**
Marion	Belleview	Belleview	FLA010678	Yes	High	3137	0.38	0.34	0.03	8,433	10,316	1,789	0.15	0.11	**0.14**	0.53
Marion	Marion Co. - Silver Springs Shores	Marion Co. - Silver Springs Shores	FLA296651	No	Basic	4578	1.15	0.04	0.83	N/A	N/A	N/A				
Marion	Marion Co. - Silver Springs Regional WWTF	Marion Co. - Silver Springs Regional WWTP	FLA010786	Yes	High	4578	0.04	0.04	0.00	N/A	N/A	N/A				
Marion	Marion Co. - Spruce Creek South WWTF	Marion Co. - Spruce Creek South	FLA010769	No	Basic	4578	0.00	0.00	0.00	40,371	49,947	9,097				
Marion	Marion Co. - Stonecrest WWTF	Marion Co. - Stonecrest PUD	FLA010741	No	Basic	4578	0.18	0.18	0.00	N/A	N/A	N/A	0.76	0.57	**1.41**	2.13
Marion	Ocala WWTP #1	Ocala WWTP #1	FLA010677	Yes	High	50324	0.69	0.69	0.00	61,877	66,806	4,683				
Marion	Ocala WWTP #2	Ocala WWTP #2	FLA010680	Yes	High & Basic	50324	2.33	0.23	1.58	N/A	N/A	N/A				
Marion	Ocala WWTP #3	Ocala WWTP #3	FLA190268	Yes	High	50324	2.07	2.07	0.00	N/A	N/A	N/A	0.39	0.30	**1.87**	5.48
Marion	Marion Correctional Institution	Lowell (Marion) Correctional Institution	FLA010789	No	Basic	N/A	0.50	0.50	0.00	N/A	N/A	N/A	0.00	0.00	**0.00**	0.50
Marion	Rolling Greens	Rolling Greens	FLA010757	No	Basic	3021	0.09	0.00	0.07	2,318	2,323	5	0.00	0.00	**0.07**	0.09
Marion County Total							**7.43**	**4.09**	**2.51**	**112,999**	**129,392**	**15,573**	**1.31**	**0.98**	**3.49**	**8.74**
Part II Total							**16.12**	**10.07**	**4.54**	**256,271**	**342,575**	**81,989**	**6.89**	**5.17**	**9.70**	**23.01**

Notes:
1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
2.) Rounding anomalies account for nominal discrepancies.
3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.
4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
5.) Potential existing additional reclaimed water for reuse calculated as 75 percent of the 2015 total facility treatment flow minus the 2015 total beneficial reuse. This assumes that facilities without current public access reuse will upgrade treatment systems over time.
6.) Additional population hooked up to the sewer system calculated as 95 percent of the additional population growth within a service area from 2015 to 2040.
7.) New waste water flow calculated as additional population hooked up to the sewer system times 84 gpcd (69.3 gpcd for residential flow, AWWA indoor standard and 14.7 gpcd for commercial flow, National Engineering Handbook per employee).
8.) Potential new additional reclaimed water for reuse calculated as 75 percent of the new waste water flow.
9.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
10.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.
11.) Projections are grouped by population expected to growth within a public supply service area. Therefore, the projections by wastewater facility (WWTF) may not be specific to the WWTF, but as the region as a whole.
12.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

Table B-13 (4-Part III). 2040 Reclaimed Water Projections Using 75 Percent Beneficial Utilization for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Waste Water Treatment Facility Name	Reuse System Name	WAFR ID	PAA	2015 Treatment	Associated CUP	2015 Total Facility Treatment Flow	2015 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2015 Population	2040 Population	2040 Additional Population Hooked up to Sewer System	2040 New Waste Water Flow	2040 Potential New Additional Reclaimed Water for Reuse	2040 Total Potential Additional Reclaimed Water for Reuse	2040 Total Facility Treatment Flow
Brevard	Palm Bay	Palm Bay	FLA103357	Yes	High	202	0.54	0.54	0.00	114,587	171,342	53,917	4.53	3.40	**4.63**	6.71
Brevard	Palm Bay	Palm Bay # 2	FLA648744	No	Basic	202	1.64	0.00	1.23	N/A	N/A	N/A	0.00	0.00	**0.00**	0.00
Brevard	BCUD - North Brevard Regional WWTF	BCUD - North Brevard Regional	FLA010263	Yes	High	233	0.25	0.20	0.04	7,893	9,709	1,725	0.14	0.11	**0.15**	0.39
Brevard	BCUD - Barefoot Bay WRF	BCUD - Barefoot Bay	FL0042293	Yes	High	236	0.53	0.47	0.05	9,603	13,520	3,721	0.31	0.23	**0.28**	0.84
Brevard	Titusville North - Osprey & Titusville South & North - Blue Heron	Titusville Reuse System & The Great Outdoors Golf / RV Resort	FL0103268 & FL0103349	Yes	High	10647	5.22	3.69	1.15	49,938	80,852	29,368	2.47	1.85	**3.00**	7.69
Brevard	BCUD - South Beaches WWTF	BCUD - South Beaches	FL0040622	Yes	High	50301	6.45	1.38	3.80	N/A	N/A	N/A				
Brevard	Melbourne - David B. Lee WWTF	Melbourne - North & South Service Area	FLA010323	Yes	High & Basic	50301	7.22	2.18	3.78	162,434	189,083	25,317				
Brevard	Melbourne - Grant Street WWTF	Melbourne - North & South Service Area	FL0041122	Yes	High & Basic	50301	0.00	0.00	0.00	N/A	N/A	N/A	2.13	1.59	**9.18**	15.80
Brevard	Ray Bullard WRF	Ray Bullard WRF (West Melbourne)	FLA010332	Yes	High	89992	1.56	0.77	0.59	19,118	20,194	1,022	0.09	0.06	**0.66**	1.65
Brevard County Total							**23.41**	**9.23**	**10.64**	**363,573**	**484,700**	**115,071**	**9.67**	**7.25**	**17.88**	**33.08**
Indian River	IRCUD - Blue Cypress	IRCUD - West Regional	FLA010439	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A				
Indian River	IRCUD - Central (Gifford) WWTF	IRCUD - West Regional	FLA010431	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A				
Indian River	IRCUD - South Regional WWTF	IRCUD - West Regional	FLA010435	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A				
Indian River	IRCUD - Sea Oaks Condos WWTF	IRCUD - Sea Oaks Condos WWTF	FLA104299	No	Basic	10524	0.00	0.00	0.00	N/A	N/A	N/A				
Indian River	IRCUD - West Regional WWTF	IRCUD - West Regional	FL0041637	Yes	High	10524	4.81	3.05	1.32	97,048	141,998	42,703	3.59	2.69	**4.01**	8.40
Indian River	Vero Beach WWTF	City of Vero Beach	FL0021661	Yes	High	10705	3.83	3.03	0.60	37,308	39,211	1,808	0.15	0.11	**0.71**	3.98
Indian River County Total							**8.64**	**6.08**	**1.92**	**134,356**	**181,209**	**44,510**	**3.74**	**2.80**	**4.72**	**12.38**
Part III Total							**32.05**	**15.31**	**12.56**	**497,929**	**665,909**	**159,581**	**13.40**	**10.05**	**22.61**	**45.45**

Notes:

1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.

2.) Rounding anomalies account for nominal discrepancies.

3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.

4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.

5.) Potential existing additional reclaimed water for reuse calculated as 75 percent of the 2015 total facility treatment flow minus the 2015 total beneficial reuse. This assumes that facilities without current public access reuse will upgrade treatment systems over time.

6.) Additional population hooked up to the sewer system calculated as 95 percent of the additional population growth within a service area from 2015 to 2040.

7.) New waste water flow calculated as additional population hooked up to the sewer system times 84 gpcd (69.3 gpcd for residential flow, AWWA indoor standard and 14.7 gpcd for commercial flow, National Engineering Handbook per employee).

8.) Potential new additional reclaimed water for reuse calculated as 75 percent of the new waste water flow.

9.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.

10.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.

11.) Projections are grouped by population expected to growth within a public supply service area. Therefore, the projections by wastewater facility (WWTF) may not be specific to the WWTF, but as the region as a whole.

12.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

13.) Brevard County in this Part III excludes the City of Cocoa, which is included in the CFWI RWSP.

Table B-14. 2040 Reclaimed Water Projections Using 2015 Percent Beneficial Utilization for the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Waste Water Treatment Facility Name	Reuse System Name	WAFR ID	PAA	2015 Treatment	Associated CUP	2015 Total Facility Treatment Flow	2015 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2015 Population	2040 Population	2040 Additional Population Hooked up to Sewer System	2040 New Waste Water Flow	2040 Potential New Additional Reclaimed Water for Reuse	2040 Total Potential Additional Reclaimed Water for Reuse	2040 Total Facility Treatment Flow	2015 Percent Utilization
Brevard	Palm Bay	Palm Bay	FLA103357	Yes	High	202	0.54	0.54	0.00	114,587	171,342	53,917					
Brevard	Palm Bay	Palm Bay # 2	FLA648744	No	Basic	202	1.64	0.00	0.41	N/A	N/A	N/A	4.53	1.12	**1.53**	6.71	25%
Brevard	BCUD - North Brevard Regional WWTF	BCUD - North Brevard Regional	FLA010263	Yes	High	233	0.25	0.20	0.04	7,893	9,709	1,725	0.14	0.12	**0.16**	0.39	80%
Brevard	BCUD - Barefoot Bay WRF	BCUD - Barefoot Bay	FL0042293	Yes	High	236	0.53	0.47	0.05	9,603	13,520	3,721	0.31	0.28	**0.33**	0.84	89%
Brevard	Titusville North - Osprey & Titusville South & North - Blue Heron	Titusville Reuse System & The Great Outdoors Golf / RV Resort	FL0103268 & FL0103349	Yes	High	10647	5.22	3.69	1.08	49,938	80,852	29,368	2.47	1.74	**2.83**	7.69	71%
Brevard	BCUD - South Beaches WWTF	BCUD - South Beaches	FL0040622	Yes	High	50301	6.45	1.38	1.32	N/A	N/A	N/A					
Brevard	Melbourne - David B. Lee WWTF	Melbourne - North & South Service Area	FLA010323	Yes	High & Basic	50301	7.22	2.18	1.31	162,434	189,083	25,317					
Brevard	Melbourne - Grant Street WWTF	Melbourne - North & South Service Area	FL0041122	Yes	High & Basic	50301	0.00	0.00	0.00	N/A	N/A	N/A	2.13	0.55	**3.19**	15.80	26%
Brevard	Ray Bullard WRF	Ray Bullard WRF (West Melbourne)	FLA010332	Yes	High	89992	1.56	0.77	0.39	19,118	20,194	1,022	0.09	0.04	**0.43**	1.65	49%
	Brevard County Total						**23.41**	**9.23**	**4.60**	**363,573**	**484,700**	**115,071**	**9.67**	**3.86**	**8.46**	**33.08**	**39%**
Indian River	IRCUD - Blue Cypress	IRCUD - West Regional	FLA010439	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A					
Indian River	IRCUD - Central (Gifford) WWTF	IRCUD - West Regional	FLA010431	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A					
Indian River	IRCUD - South Regional WWTF	IRCUD - West Regional	FLA010435	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A					
Indian River	IRCUD - Sea Oaks Condos WWTF	IRCUD - Sea Oaks Condos WWTF	FLA104299	No	Basic	10524	0.00	0.00	0.00	N/A	N/A	N/A					
Indian River	IRCUD - West Regional WWTF	IRCUD - West Regional	FL0041637	Yes	High	10524	4.81	3.05	1.12	97,048	141,998	42,703	3.59	2.27	**3.39**	8.40	63%
Indian River	Vero Beach WWTF	City of Vero Beach	FL0021661	Yes	High	10705	3.83	3.03	0.63	37,308	39,211	1,808	0.15	0.12	**0.75**	3.98	79%
	Indian River County Total						**8.64**	**6.08**	**1.75**	**134,356**	**181,209**	**44,510**	**3.74**	**2.39**	**4.14**	**12.38**	**70%**
Lake(Non-CFWI)	Leesburg - Canal Street	City of Leesburg	FL0105066	No	Basic	94	2.40	0.60	0.45	34,159	62,073	26,518					
Lake(Non-CFWI)	Leesburg - Turnpike	City of Leesburg	FLA105147	No	Basic	94	0.00	0.00	0.00	N/A	N/A	N/A	2.23	0.56	**1.01**	4.63	25%
Lake(Non-CFWI)	Water Oak Utilities	Water Oak Estates	FLA010529	No	Basic	282	0.06	0.00	0.00	1,539	1,548	9	0.00	0.00	**0.00**	0.06	0%
Lake(Non-CFWI)	Oak Springs MHP	Oak Springs MHP	FLA010629	No	Basic	2416	0.03	0.03	0.00	779	862	79	0.01	0.01	**0.01**	0.04	100%
Lake(Non-CFWI)	Eustis WWTF	City of Eustis	FLA010507	Yes	High	2634	1.32	0.86	0.30	24,450	37,829	12,710					
Lake(Non-CFWI)	Eustis Eastern	City of Eustis	FLA295965	Yes	High	2634	0.00	0.00	0.00	N/A	N/A	N/A	1.07	0.70	**1.00**	2.39	65%
Lake(Non-CFWI)	Umatilla WWTF	Umatilla	FLA010505	No	Basic	2646	0.18	0.05	0.04	3,894	8,234	4,123	0.35	0.10	**0.13**	0.53	28%
Lake(Non-CFWI)	Pennbrooke WWTF	Pennbrooke WWTF	FLA010570	Yes	High	2717	0.11	0.11	0.00	2,488	2,496	8	0.00	0.00	**0.00**	0.11	100%
Lake(Non-CFWI)	Leesburg - Plantation	City of Leesburg	FLA010551	No	Basic	2718	0.00	0.00	0.00	5,061	5,063	2	0.00	0.00	**0.00**	0.00	0%
Lake(Non-CFWI)	Woodlea Road WRF	Tavares / Woodlea Road	FLA010509	No	Basic	2765	1.33	1.33	0.00	18,326	25,349	6,672	0.56	0.56	**0.56**	1.89	100%
Lake(Non-CFWI)	Mid-Florida Lakes	Mid-Florida Lakes	FLA010657	No	Basic	2888	0.10	0.00	0.00	1,709	1,709	0	0.00	0.00	**0.00**	0.10	0%
Lake(Non-CFWI)	Lady Lake WWTF	Lady Lake WWTF	FLA399761	Yes	High & Basic	50049	0.25	0.25	0.00	5,688	10,746	4,805	0.40	0.40	**0.40**	0.65	100%
Lake(Non-CFWI)	Mount Dora #1 WWTF	City of Mount Dora	FLA010508	Yes	High	50147	1.83	1.67	0.15	23,718	35,371	11,070					
Lake(Non-CFWI)	Mount Dora #2 - James Snell	City of Mount Dora	FLA268542	Yes	High	50147	0.00	0.00	0.00	N/A	N/A	N/A	0.93	0.85	**0.99**	2.76	91%
Lake(Non-CFWI)	St. Johns River Utility WWTF	St. Johns River Utility (Astor Park)	FLA187496	No	Basic	50178	0.12	0.12	0.00	3,873	4,315	420	0.04	0.04	**0.04**	0.16	100%
Lake(Non-CFWI)	The Villages - Villages WWTF	The Villages - Villages WWTF	FLA010555	Yes	High	50279	0.96	0.96	0.00	17,588	17,588	0	0.00	0.00	**0.00**	0.96	100%
	Lake County (Non-CFWI) Total						**8.69**	**5.98**	**0.93**	**143,272**	**213,183**	**66,415**	**5.58**	**3.20**	**4.14**	**14.27**	**69%**
Marion	Belleview	Belleview	FLA010678	Yes	High	3137	0.38	0.34	0.04	8,433	10,316	1,789	0.15	0.13	**0.17**	0.53	89%
Marion	Marion Co. - Silver Springs Shores	Marion Co. - Silver Springs Shores	FLA296651	No	Basic	4578	1.15	0.04	0.21	N/A	N/A	N/A					
Marion	Marion Co. - Silver Springs Regional WWTF	Marion Co. - Silver Springs Regional WWTP	FLA010786	Yes	High	4578	0.04	0.04	0.00	N/A	N/A	N/A					
Marion	Marion Co. - Spruce Creek South WWTF	Marion Co. - Spruce Creek South	FLA010769	No	Basic	4578	0.00	0.00	0.00	40,371	49,947	9,097					
Marion	Marion Co. - Stonecrest WWTF	Marion Co. - Stonecrest PUD	FLA010741	No	Basic	4578	0.18	0.18	0.00	N/A	N/A	N/A	0.76	0.15	**0.36**	2.13	19%
Marion	Ocala WWTP #1	Ocala WWTP #1	FLA010677	Yes	High	50324	0.69	0.69	0.00	61,877	66,806	4,683					
Marion	Ocala WWTP #2	Ocala WWTP #2	FLA010680	Yes	High & Basic	50324	2.33	0.23	1.23	N/A	N/A	N/A					
Marion	Ocala WWTP #3	Ocala WWTP #3	FLA190268	Yes	High	50324	2.07	2.07	0.00	N/A	N/A	N/A	0.39	0.23	**1.46**	5.48	59%
Marion	Marion Correctional Institution	Lowell (Marion) Correctional Institution	FLA010789	No	Basic	N/A	0.50	0.50	0.00	N/A	N/A	N/A	0.00	0.00	**0.00**	0.50	100%
Marion	Rolling Greens	Rolling Greens	FLA010757	No	Basic	3021	0.09	0.00	0.00	2,318	2,323	5	0.00	0.00	**0.00**	0.09	0%
	Marion County Total						**7.43**	**4.09**	**1.48**	**112,999**	**129,392**	**15,573**	**1.31**	**0.51**	**1.99**	**8.74**	**55%**
Volusia	Holly Hill WWTF	Holly Hill	FL0027677	Yes	High	8528	1.57	0.31	0.25	13,437	13,949	486	0.04	0.01	**0.26**	1.61	20%
Volusia	Port Orange	City of Port Orange	FL0020559	Yes	High & Basic	8595	5.70	4.72	0.81	66,913	70,784	3,677	0.31	0.26	**1.07**	6.01	83%
Volusia	Deltona Lakes	Deltona Lakes	FLA111724	Yes	High	8658	0.76	0.76	0.00	75,322	98,739	22,246	1.87	1.87	**1.87**	2.63	100%
Volusia	New Smyrna Beach WWTF	City of New Smyrna Beach	FL0172090	Yes	High	8747	3.76	3.76	0.00	55,304	78,560	22,093	1.86	1.86	**1.86**	5.62	100%
Volusia	Daytona - Bethune Point WWTF	Daytona Reuse Implementation Project (DRIP)	FL0025984	Yes	High	8834	0.00	0.00	0.00	74,068	92,559	17,566					
Volusia	Daytona - Westside Regional WWTF	Daytona Reuse Implementation Project (DRIP)	FLA111392	Yes	High	8834	11.10	2.73	2.06	N/A	N/A	N/A	1.48	0.36	**2.42**	12.58	25%
Volusia	N. Peninsula Util. - Seabridge	N. Peninsula Util. - Seabridge	FLA011188	No	Basic	8932	0.05	0.00	0.03	N/A	N/A	N/A					
Volusia	Ormond Beach WWTF	Ormond Beach	FL0020532	Yes	High	8932	4.95	3.35	1.07	50,665	61,230	10,037	0.84	0.56	**1.67**	5.84	67%
Volusia	Edgewater WWTF	City of Edgewater	FL0021431	Yes	High	9157	1.62	1.00	0.38	23,575	28,422	4,605	0.39	0.24	**0.62**	2.01	62%
Volusia	Deland Regional WWTF (Wiley M Nash)	Deland Regional (Wiley M Nash)	FL0020303	Yes	High	50116	3.15	3.15	0.00	48,428	60,657	11,618	0.98	0.98	**0.98**	4.13	100%
Volusia	VCUD - Halifax Plantation WWTF	VCUD - Halifax Plantation WWTF	FLA011131	Yes	High	50157, 50659, 86278	0.14	0.00	0.12	N/A	N/A	N/A					
Volusia	VCUD - Deltona North WWTF	VCUD - Deltona North	FLA011121	Yes	High	50157, 50659, 86278	0.41	0.41	0.00	N/A	N/A	N/A					
Volusia	VCUD - Four Townes	VCUD - Four Townes	FLA011118	Yes	High	50157, 50659, 86278	0.18	0.00	0.15	N/A	N/A	N/A					
Volusia	VCUD - Southeast Regional	VCUD - Southeast Regional	FLA017413	Yes	High	50157, 50659, 86278	0.18	0.18	0.00	38,231	46,127	7,501					
Volusia	VCUD - Southwest Regional WWTF	VCUD - Southwest Regional	FLA011128	Yes	High	50157, 50659, 86278	1.37	1.37	0.00	N/A	N/A	N/A	0.63	0.54	**0.82**	2.91	86%
Volusia	Tymber Creek	Tymber Creek	FLA011193	Yes	High	N/A	0.06	0.06	0.00	N/A	N/A	N/A	0.00	0.00	**0.00**	0.06	100%
	Volusia County Total						**35.00**	**21.80**	**4.88**	**445,943**	**551,027**	**99,830**	**8.39**	**6.67**	**11.55**	**43.39**	**62%**
	CSEC Total						**83.17**	**47.18**	**13.65**	**1,200,143**	**1,559,511**	**341,400**	**28.68**	**16.64**	**30.28**	**111.85**	**57%**

Notes:

1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
2.) Rounding anomalies account for nominal discrepancies.
3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.
4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
5.) Potential existing additional reclaimed water for reuse calculated using the 2015 percent beneficial utilization of the 2015 total facility treatment flow minus the 2015 total beneficial reuse.
6.) Additional population hooked up to the sewer system calculated as 95 percent of the additional population growth within a service area from 2015 to 2040.
7.) New waste water flow calculated as additional population hooked up to the sewer system times 84 gpcd (69.3 gpcd for residential flow, AWWA indoor standard and 14.7 gpcd for commercial flow, National Engineering Handbook per employee).
8.) Potential new additional reclaimed water for reuse calculated using the 2015 percent beneficial utilization of the new waste water flow.
9.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
10.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.
11.) Projections are grouped by population expected to growth within a public supply service area. Therefore, the projections by wastewater facility (WWTF) may not be specific to the WWTF, but as the region as a whole.
12.) Projections are not included for those service areas that do not currently have waste water treatment facilities.
13.) Brevard County in the CSEC excludes the City of Cocoa, which is included in the CFWI RWSP.

Table B-14 (2-Part I). 2040 Reclaimed Water Projections Using 2015 Percent Beneficial Utilization for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Waste Water Treatment Facility Name	Reuse System Name	WAFR ID	PAA	2015 Treatment	Associated CUP	2015 Total Facility Treatment Flow	2015 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2015 Population	2040 Population	2040 Additional Population Hooked up to Sewer System	2040 New Waste Water Flow	2040 Potential New Additional Reclaimed Water for Reuse	2040 Total Potential Additional Reclaimed Water for Reuse	2040 Total Facility Treatment Flow	2015 Percent Utilization
Volusia	Holly Hill WWTF	Holly Hill	FL0027677	Yes	High	8528	1.57	0.31	0.25	13,437	13,949	486	0.04	0.01	0.26	1.61	20%
Volusia	Port Orange	City of Port Orange	FL0020559	Yes	High & Basic	8595	5.70	4.72	0.81	66,913	70,784	3,677	0.31	0.26	1.07	6.01	83%
Volusia	Deltona Lakes	Deltona Lakes	FLA111724	Yes	High	8658	0.76	0.76	0.00	75,322	98,739	22,246	1.87	1.87	1.87	2.63	100%
Volusia	New Smyrna Beach WWTF	City of New Smyrna Beach	FL0172090	Yes	High	8747	3.76	3.76	0.00	55,304	78,560	22,093	1.86	1.86	1.86	5.62	100%
Volusia	Daytona - Bethune Point WWTF	Daytona Reuse Implementation Project (DRIP)	FL0025984	Yes	High	8834	0.00	0.00	0.00	74,068	92,559	17,566					
Volusia	Daytona - Westside Regional WWTF	Daytona Reuse Implementation Project (DRIP)	FLA111392	Yes	High	8834	11.10	2.73	2.06	N/A	N/A	N/A	1.48	0.36	2.42	12.58	25%
Volusia	N. Peninsula Util. - Seabridge	N. Peninsula Util. - Seabridge	FLA011188	No	Basic	8932	0.05	0.00	0.03	N/A	N/A	N/A					
Volusia	Ormond Beach WWTF	Ormond Beach	FL0020532	Yes	High	8932	4.95	3.35	1.07	50,665	61,230	10,037	0.84	0.56	1.67	5.84	67%
Volusia	Edgewater WWTF	City of Edgewater	FL0021431	Yes	High	9157	1.62	1.00	0.38	23,575	28,422	4,605	0.39	0.24	0.62	2.01	62%
Volusia	Deland Regional WWTF (Wiley M Nash)	Deland Regional (Wiley M Nash)	FL0020303	Yes	High	50116	3.15	3.15	0.00	48,428	60,657	11,618	0.98	0.98	0.98	4.13	100%
Volusia	VCUD - Halifax Plantation WWTF	VCUD - Halifax Plantation WWTF	FLA011131	Yes	High	50157, 50659, 86278	0.14	0.00	0.12	N/A	N/A	N/A					
Volusia	VCUD - Deltona North WWTF	VCUD - Deltona North	FLA011121	Yes	High	50157, 50659, 86278	0.41	0.41	0.00	N/A	N/A	N/A					
Volusia	VCUD - Four Townes	VCUD - Four Townes	FLA011118	Yes	High	50157, 50659, 86278	0.18	0.00	0.15	N/A	N/A	N/A					
Volusia	VCUD - Southeast Regional	VCUD - Southeast Regional	FLA017413	Yes	High	50157, 50659, 86278	0.18	0.18	0.00	38,231	46,127	7,501					
Volusia	VCUD - Southwest Regional WWTF	VCUD - Southwest Regional	FLA011128	Yes	High	50157, 50659, 86278	1.37	1.37	0.00	N/A	N/A	N/A	0.63	0.54	0.82	2.91	86%
Volusia	Tymber Creek	Tymber Creek	FLA011193	Yes	High	N/A	0.06	0.06	0.00	N/A	N/A	N/A	0.00	0.00	0.00	0.06	100%
Part I Total							35.00	21.80	4.88	445,943	551,027	99,830	8.39	6.67	11.55	43.39	62%

Notes:
1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
2.) Rounding anomalies account for nominal discrepancies.
3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.
4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
5.) Potential existing additional reclaimed water for reuse calculated using the 2015 percent beneficial utilization of the 2015 total facility treatment flow minus the 2015 total beneficial reuse.
6.) Additional population hooked up to the sewer system calculated as 95 percent of the additional population growth within a service area from 2015 to 2040.
7.) New waste water flow calculated as additional population hooked up to the sewer system times 84 gpcd (69.3 gpcd for residential flow, AWWA indoor standard and 14.7 gpcd for commercial flow, National Engineering Handbook per employee).
8.) Potential new additional reclaimed water for reuse calculated using the 2015 percent beneficial utilization of the new waste water flow.
9.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
10.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.
11.) Projections are grouped by population expected to growth within a public supply service area. Therefore, the projections by wastewater facility (WWTF) may not be specific to the WWTF, but as the region as a whole.
12.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

Table B-14 (3-Part II). 2040 Reclaimed Water Projections Using 2015 Percent Beneficial Utilization for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Waste Water Treatment Facility Name	Reuse System Name	WAFR ID	PAA	2015 Treatment	Associated CUP	2015 Total Facility Treatment Flow	2015 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2015 Population	2040 Population	2040 Additional Population Hooked up to Sewer System	2040 New Waste Water Flow	2040 Potential New Additional Reclaimed Water for Reuse	2040 Total Potential Additional Reclaimed Water for Reuse	2040 Total Facility Treatment Flow	2015 Percent Utilization
Lake(Non-CFWI)	Leesburg - Canal Street	City of Leesburg	FL0105066	No	Basic	94	2.40	0.60	0.45	34,159	62,073	26,518					
Lake(Non-CFWI)	Leesburg - Turnpike	City of Leesburg	FLA105147	No	Basic	94	0.00	0.00	0.00	N/A	N/A	N/A	2.23	0.56	1.01	4.63	25%
Lake(Non-CFWI)	Water Oak Utilities	Water Oak Estates	FLA010529	No	Basic	282	0.06	0.00	0.00	1,539	1,548	9	0.00	0.00	0.00	0.06	0%
Lake(Non-CFWI)	Oak Springs MHP	Oak Springs MHP	FLA010629	No	Basic	2416	0.03	0.03	0.00	779	862	79	0.01	0.01	0.01	0.04	100%
Lake(Non-CFWI)	Eustis WWTF	City of Eustis	FLA010507	Yes	High	2634	1.32	0.86	0.30	24,450	37,829	12,710					
Lake(Non-CFWI)	Eustis Eastern	City of Eustis	FLA295965	Yes	High	2634	0.00	0.00	0.00	N/A	N/A	N/A	1.07	0.70	1.00	2.39	65%
Lake(Non-CFWI)	Umatilla WWTF	Umatilla	FLA010505	No	Basic	2646	0.18	0.05	0.04	3,894	8,234	4,123	0.35	0.10	0.13	0.53	28%
Lake(Non-CFWI)	Pennbrooke WWTF	Pennbrooke WWTF	FLA010570	Yes	High	2717	0.11	0.11	0.00	2,488	2,496	8	0.00	0.00	0.00	0.11	100%
Lake(Non-CFWI)	Leesburg - Plantation	City of Leesburg	FLA010551	No	Basic	2718	0.00	0.00	0.00	5,061	5,063	2	0.00	0.00	0.00	0.00	0%
Lake(Non-CFWI)	Woodlea Road WRF	Tavares / Woodlea Road	FLA010509	No	Basic	2765	1.33	1.33	0.00	18,326	25,349	6,672	0.56	0.56	0.56	1.89	100%
Lake(Non-CFWI)	Mid-Florida Lakes	Mid-Florida Lakes	FLA010657	No	Basic	2888	0.10	0.00	0.00	1,709	1,709	0	0.00	0.00	0.00	0.10	0%
Lake(Non-CFWI)	Lady Lake WWTF	Lady Lake WWTF	FLA399761	Yes	High & Basic	50049	0.25	0.25	0.00	5,688	10,746	4,805	0.40	0.40	0.40	0.65	100%
Lake(Non-CFWI)	Mount Dora #1 WWTF	City of Mount Dora	FLA010508	Yes	High	50147	1.83	1.67	0.15	23,718	35,371	11,070					
Lake(Non-CFWI)	Mount Dora #2 - James Snell	City of Mount Dora	FLA268542	Yes	High	50147	0.00	0.00	0.00	N/A	N/A	N/A	0.93	0.85	0.99	2.76	91%
Lake(Non-CFWI)	St. Johns River Utility WWTF	St. Johns River Utility (Astor Park)	FLA187496	No	Basic	50178	0.12	0.12	0.00	3,873	4,315	420	0.04	0.04	0.04	0.16	100%
Lake(Non-CFWI)	The Villages - Villages WWTF	The Villages - Villages WWTF	FLA010555	Yes	High	50279	0.96	0.96	0.00	17,588	17,588	0	0.00	0.00	0.00	0.96	100%
Lake County (Non-CFWI) Total							8.69	5.98	0.93	143,272	213,183	66,415	5.58	3.20	4.14	14.27	69%
Marion	Belleview	Belleview	FLA010678	Yes	High	3137	0.38	0.34	0.04	8,433	10,316	1,789	0.15	0.13	0.17	0.53	89%
Marion	Marion Co. - Silver Springs Shores	Marion Co. - Silver Springs Shores	FLA296651	No	Basic	4578	1.15	0.04	0.21	N/A	N/A	N/A					
Marion	Marion Co. - Silver Springs Regional WWTF	Marion Co. - Silver Springs Regional WWTP	FLA010786	Yes	High	4578	0.04	0.04	0.00	N/A	N/A	N/A					
Marion	Marion Co. - Spruce Creek South WWTF	Marion Co. - Spruce Creek South	FLA010769	No	Basic	4578	0.00	0.00	0.00	40,371	49,947	9,097					
Marion	Marion Co. - Stonecrest WWTF	Marion Co. - Stonecrest PUD	FLA010741	No	Basic	4578	0.18	0.18	0.00	N/A	N/A	N/A	0.76	0.15	0.36	2.13	19%
Marion	Ocala WWTP #1	Ocala WWTP #1	FLA010677	Yes	High	50324	0.69	0.69	0.00	61,877	66,806	4,683					
Marion	Ocala WWTP #2	Ocala WWTP #2	FLA010680	Yes	High & Basic	50324	2.33	0.23	1.23	N/A	N/A	N/A					
Marion	Ocala WWTP #3	Ocala WWTP #3	FLA190268	Yes	High	50324	2.07	2.07	0.00	N/A	N/A	N/A	0.39	0.23	1.46	5.48	59%
Marion	Marion Correctional Institution	Lowell (Marion) Correctional Institution	FLA010789	No	Basic	N/A	0.50	0.50	0.00	N/A	N/A	N/A	0.00	0.00	0.00	0.50	100%
Marion	Rolling Greens	Rolling Greens	FLA010757	No	Basic	3021	0.09	0.00	0.00	2,318	2,323	5	0.00	0.00	0.00	0.09	0%
Marion County Total							7.43	4.09	1.48	112,999	129,392	15,573	1.31	0.51	1.99	8.74	55%
Part II Total							16.12	10.07	2.41	256,271	342,575	81,989	6.89	3.71	6.13	23.01	62%

Notes:
1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
2.) Rounding anomalies account for nominal discrepancies.
3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.
4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
5.) Potential existing additional reclaimed water for reuse calculated using the 2015 percent beneficial utilization of the 2015 total facility treatment flow minus the 2015 total beneficial reuse.
6.) Additional population hooked up to the sewer system calculated as 95 percent of the additional population growth within a service area from 2015 to 2040.
7.) New waste water flow calculated as additional population hooked up to the sewer system times 84 gpcd (69.3 gpcd for residential flow, AWWA indoor standard and 14.7 gpcd for commercial flow, National Engineering Handbook per employee).
8.) Potential new additional reclaimed water for reuse calculated using the 2015 percent beneficial utilization of the new waste water flow.
9.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
10.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.
11.) Projections are grouped by population expected to growth within a public supply service area. Therefore, the projections by wastewater facility (WWTF) may not be specific to the WWTF, but as the region as a whole.
12.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

Table B-14 (4-Part III). 2040 Reclaimed Water Projections Using 2015 Percent Beneficial Utilization for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Waste Water Treatment Facility Name	Reuse System Name	WAFR ID	PAA	2015 Treatment	Associated CUP	2015 Total Facility Treatment Flow	2015 Total Beneficial Reuse	Potential Existing Additional Reclaimed Water for Reuse	2015 Population	2040 Population	2040 Additional Population Hooked up to Sewer System	2040 New Waste Water Flow	2040 Potential New Additional Reclaimed Water for Reuse	2040 Total Potential Additional Reclaimed Water for Reuse	2040 Total Facility Treatment Flow	2015 Percent Utilization
Brevard	Palm Bay	Palm Bay	FLA103357	Yes	High	202	0.54	0.54	0.00	114,587	171,342	53,917	4.53	1.12	**1.53**	6.71	25%
Brevard	Palm Bay	Palm Bay # 2	FLA648744	No	Basic	202	1.64	0.00	0.41	N/A	N/A	N/A	0.00	0.00	**0.00**	0.00	
Brevard	BCUD - North Brevard Regional WWTF	BCUD - North Brevard Regional	FLA010263	Yes	High	233	0.25	0.20	0.04	7,893	9,709	1,725	0.14	0.12	**0.16**	0.39	80%
Brevard	BCUD - Barefoot Bay WRF	BCUD - Barefoot Bay	FL0042293	Yes	High	236	0.53	0.47	0.05	9,603	13,520	3,721	0.31	0.28	**0.33**	0.84	89%
Brevard	Titusville North - Osprey & Titusville South & North - Blue Heron	Titusville Reuse System & The Great Outdoors Golf / RV Resort	FL0103268 & FL0103349	Yes	High	10647	5.22	3.69	1.08	49,938	80,852	29,368	2.47	1.74	**2.83**	7.69	71%
Brevard	BCUD - South Beaches WWTF	BCUD - South Beaches	FL0040622	Yes	High	50301	6.45	1.38	1.32	N/A	N/A	N/A					
Brevard	Melbourne - David B. Lee WWTF	Melbourne - North & South Service Area	FLA010323	Yes	High & Basic	50301	7.22	2.18	1.31	162,434	189,083	25,317					
Brevard	Melbourne - Grant Street WWTF	Melbourne - North & South Service Area	FL0041122	Yes	High & Basic	50301	0.00	0.00	0.00	N/A	N/A	N/A	2.13	0.55	**3.19**	15.80	26%
Brevard	Ray Bullard WRF	Ray Bullard WRF (West Melbourne)	FLA010332	Yes	High	89992	1.56	0.77	0.39	19,118	20,194	1,022	0.09	0.04	**0.43**	1.65	49%
Brevard County Total							**23.41**	**9.23**	**4.60**	**363,573**	**484,700**	**115,071**	**9.67**	**3.86**	**8.46**	**33.08**	**39%**
Indian River	IRCUD - Blue Cypress	IRCUD - West Regional	FLA010439	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A					
Indian River	IRCUD - Central (Gifford) WWTF	IRCUD - West Regional	FLA010431	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A					
Indian River	IRCUD - South Regional WWTF	IRCUD - West Regional	FLA010435	Yes	High	10524	0.00	0.00	0.00	N/A	N/A	N/A					
Indian River	IRCUD - Sea Oaks Condos WWTF	IRCUD - Sea Oaks Condos WWTF	FLA104299	No	Basic	10524	0.00	0.00	0.00	N/A	N/A	N/A					
Indian River	IRCUD - West Regional WWTF	IRCUD - West Regional	FL0041637	Yes	High	10524	4.81	3.05	1.12	97,048	141,998	42,703	3.59	2.27	**3.39**	8.40	63%
Indian River	Vero Beach WWTF	City of Vero Beach	FL0021661	Yes	High	10705	3.83	3.03	0.63	37,308	39,211	1,808	0.15	0.12	**0.75**	3.98	79%
Indian River County Total							**8.64**	**6.08**	**1.75**	**134,356**	**181,209**	**44,510**	**3.74**	**2.39**	**4.14**	**12.38**	**70%**
Part III Total							**32.05**	**15.31**	**6.35**	**497,929**	**665,909**	**159,581**	**13.40**	**6.25**	**12.60**	**45.45**	**48%**

Notes:

1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.

2.) Rounding anomalies account for nominal discrepancies.

3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.

4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.

5.) Potential existing additional reclaimed water for reuse calculated using the 2015 percent beneficial utilization of the 2015 total facility treatment flow minus the 2015 total beneficial reuse.

6.) Additional population hooked up to the sewer system calculated as 95 percent of the additional population growth within a service area from 2015 to 2040.

7.) New waste water flow calculated as additional population hooked up to the sewer system times 84 gpcd (69.3 gpcd for residential flow, AWWA indoor standard and 14.7 gpcd for commercial flow, National Engineering Handbook per employee).

8.) Potential new additional reclaimed water for reuse calculated using the 2015 percent beneficial utilization of the new waste water flow.

9.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.

10.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.

11.) Projections are grouped by population expected to growth within a public supply service area. Therefore, the projections by wastewater facility (WWTF) may not be specific to the WWTF, but as the region as a whole.

12.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

13.) Brevard County in Part III excludes the City of Cocoa, which is included in the CFWI RWSP.

Table B-15. 2040 Reclaimed Water Projections for the Central Springs/East Coast Regional Water Supply Plan in the St. Johns River Water Management District.

	Estimates Using WWTF 2015 Percent Beneficial Utilization Rate							Estimates Using FDEP Beneficial Utilization Rate of 75 Percent						
County	**2015 Total Facility Treatment Flow**	**2015 Total Beneficial Reuse**	**Potential Existing Additional Reclaimed Water for Reuse**	**2040 New Waste Water Flow**	**2040 Potential New Additional Reclaimed Water for Reuse**	**2040 Total Potential Additional Reclaimed Water for Reuse**	**2040 Total Facility Treatment Flow**	**2015 Total Facility Treatment Flow**	**2015 Total Beneficial Reuse**	**Potential Existing Additional Reclaimed Water for Reuse**	**2040 New Waste Water Flow**	**2040 Potential New Additional Reclaimed Water for Reuse**	**2040 Total Potential Additional Reclaimed Water for Reuse**	**2040 Total Facility Treatment Flow**
Brevard (Non-CFWI)	23.41	9.23	4.60	9.67	3.86	8.46	33.08	23.41	9.23	10.64	9.67	7.25	17.88	33.08
Indian River	8.64	6.08	1.75	3.74	2.39	4.14	12.38	8.64	6.08	1.92	3.74	2.80	4.72	12.38
Lake (Non-CFWI)	8.69	5.98	0.93	5.58	3.20	4.14	14.27	8.69	5.98	2.03	5.58	4.18	6.22	14.27
Marion	7.43	4.09	1.48	1.31	0.51	1.99	8.74	7.43	4.09	2.51	1.31	0.98	3.49	8.74
Okeechobee	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Volusia	35.00	21.80	4.88	8.39	6.67	11.55	43.39	35.00	21.80	9.90	8.39	6.29	16.19	43.39
CSEC Total	**83.17**	**47.18**	**13.65**	**28.68**	**16.64**	**30.28**	**111.85**	**83.17**	**47.18**	**26.99**	**28.68**	**21.51**	**48.50**	**111.85**

Notes:
1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
2.) Rounding anomalies account for nominal discrepancies.
3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.
4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
5.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
6.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.
7.) Projections are not included for those service areas that do not currently have waste water treatment facilities.
8.) Brevard County in the CSEC excludes the City of Cocoa, which is included in the CFWI RWSP.

Table B-15 (2-Part I). 2040 Reclaimed Water Projections for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

	Estimates Using WWTF 2015 Percent Beneficial Utilization Rate							Estimates Using FDEP Beneficial Utilization Rate of 75 Percent						
County	**2015 Total Facility Treatment Flow**	**2015 Total Beneficial Reuse**	**Potential Existing Additional Reclaimed Water for Reuse**	**2040 New Waste Water Flow**	**2040 Potential New Additional Reclaimed Water for Reuse**	**2040 Total Potential Additional Reclaimed Water for Reuse**	**2040 Total Facility Treatment Flow**	**2015 Total Facility Treatment Flow**	**2015 Total Beneficial Reuse**	**Potential Existing Additional Reclaimed Water for Reuse**	**2040 New Waste Water Flow**	**2040 Potential New Additional Reclaimed Water for Reuse**	**2040 Total Potential Additional Reclaimed Water for Reuse**	**2040 Total Facility Treatment Flow**
Volusia	35.00	21.80	4.88	8.39	6.67	11.55	43.39	35.00	21.80	9.90	8.39	6.29	16.19	43.39
Part I Total	**35.00**	**21.80**	**4.88**	**8.39**	**6.67**	**11.55**	**43.39**	**35.00**	**21.80**	**9.90**	**8.39**	**6.29**	**16.19**	**43.39**

Notes:
1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
2.) Rounding anomalies account for nominal discrepancies.
3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.
4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
5.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
6.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.
7.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

Table B-15 (3-Part II). 2040 Reclaimed Water Projections for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

	Estimates Using WWTF 2015 Percent Beneficial Utilization Rate							Estimates Using FDEP Beneficial Utilization Rate of 75 Percent						
County	**2015 Total Facility Treatment Flow**	**2015 Total Beneficial Reuse**	**Potential Existing Additional Reclaimed Water for Reuse**	**2040 New Waste Water Flow**	**2040 Potential New Additional Reclaimed Water for Reuse**	**2040 Total Potential Additional Reclaimed Water for Reuse**	**2040 Total Facility Treatment Flow**	**2015 Total Facility Treatment Flow**	**2015 Total Beneficial Reuse**	**Potential Existing Additional Reclaimed Water for Reuse**	**2040 New Waste Water Flow**	**2040 Potential New Additional Reclaimed Water for Reuse**	**2040 Total Potential Additional Reclaimed Water for Reuse**	**2040 Total Facility Treatment Flow**
Lake (Non-CFWI)	8.69	5.98	0.93	5.58	3.20	4.14	14.27	8.69	5.98	2.03	5.58	4.18	6.22	14.27
Marion	7.43	4.09	1.48	1.31	0.51	1.99	8.74	7.43	4.09	2.51	1.31	0.98	3.49	8.74
Part II Total	**16.12**	**10.07**	**2.41**	**6.89**	**3.71**	**6.13**	**23.01**	**16.12**	**10.07**	**4.54**	**6.89**	**5.17**	**9.70**	**23.01**

Notes:
1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.
2.) Rounding anomalies account for nominal discrepancies.
3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.
4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.
5.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.
6.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.
7.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

Table B-15 (4-Part III). 2040 Reclaimed Water Projections for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Estimates Using WWTF 2015 Percent Beneficial Utilization Rate							Estimates Using FDEP Beneficial Utilization Rate of 75 Percent						
	2015 Total Facility Treatment Flow	**2015 Total Beneficial Reuse**	**Potential Existing Additional Reclaimed Water for Reuse**	**2040 New Waste Water Flow**	**2040 Potential New Additional Reclaimed Water for Reuse**	**2040 Total Potential Additional Reclaimed Water for Reuse**	**2040 Total Facility Treatment Flow**	**2015 Total Facility Treatment Flow**	**2015 Total Beneficial Reuse**	**Potential Existing Additional Reclaimed Water for Reuse**	**2040 New Waste Water Flow**	**2040 Potential New Additional Reclaimed Water for Reuse**	**2040 Total Potential Additional Reclaimed Water for Reuse**	**2040 Total Facility Treatment Flow**
Brevard (Non-CFWI)	23.41	9.23	4.60	9.67	3.86	8.46	33.08	23.41	9.23	10.64	9.67	7.25	17.88	33.08
Indian River	8.64	6.08	1.75	3.74	2.39	4.14	12.38	8.64	6.08	1.92	3.74	2.80	4.72	12.38
Okeechobee	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Part 3 Total	**32.05**	**15.31**	**6.35**	**13.40**	**6.25**	**12.60**	**45.45**	**32.05**	**15.31**	**12.56**	**13.40**	**10.05**	**22.61**	**45.45**

Notes:

1.) All estimates of reclaimed water and reuse flow are shown in million gallons per day.

2.) Rounding anomalies account for nominal discrepancies.

3.) 2015 Total facility treatment flow obtained from DEP 2015 Annual Reuse Inventory.

4.) Beneficial reuse for SJRWMD consists of uses in which reclaimed water takes the place of a pre-existing or potential use of higher quality water for which reclaimed water is suitable and as such does not match DEP's broader definition of reuse.

5.) Total potential additional reclaimed water for reuse calcualted as potential existing additional reclaimed water for reuse plus potential new additional reclaimed water for reuse.

6.) 2040 Total facility treatment flow calculated as 2015 total facility treatment flow plus 2040 new waste water flow.

7.) Projections are not included for those service areas that do not currently have waste water treatment facilities.

8.) Brevard County in Part III excludes the City of Cocoa, which is included in the CFWI RWSP.

Table B-16 (Part I). Average Gross Per Capita Scenario for Potential Public Supply Conservation for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	2040 Population Projection	2040 Water Demand Projection	2011-2015 Average Gross Per Capita	2011-2015 Average Gross Per Capita for Part I	New 2040 Water Demand if Existing Average Gross Per Capita Greater than 118 GPCD	Potential Reduction in 2040 Water Demand	Potential Reduction in 2040 Water Demand (Percent)
Volusia	City of Lake Helen	382	4,095	0.35	86	118	0.35	0.00	0.0%
	Town of Pierson	4244	3,704	0.17	47	118	0.17	0.00	0.0%
	Lake Beresford Water Assoc. Inc.	4391	2,113	0.19	89	118	0.19	0.00	0.0%
	City of Holly Hill	8528	13,949	1.19	85	118	1.19	0.00	0.0%
	City of Port Orange	8595	70,784	6.37	90	118	6.37	0.00	0.0%
	City of Deltona	8658	98,739	10.07	102	118	10.07	0.00	0.0%
	Utilities Commission of New Smyrna Beach	8747	78,560	6.76	86	118	6.76	0.00	0.0%
	City of Daytona Beach	8834	92,559	15.74	170	118	10.92	-4.82	-30.6%
	City of Ormond Beach	8932	61,230	7.83	128	118	7.23	-0.60	-7.7%
	City of Edgewater	9157	28,422	2.42	85	118	2.42	0.00	0.0%
	City of Orange City	9373	13,925	2.32	167	118	1.64	-0.68	-29.3%
	City of DeLand	50116	60,657	6.61	109	118	6.61	0.00	0.0%
	Volusia County Utilities	50157, 50659, 86278	46,127	5.07	110	118	5.07	0.00	0.0%
	D & E Water Resources , LLC / Heart Island	112981	0	0.00	128	118	0.00	0.00	0.0%
	Farmton Services LLC	127579	18,575	1.70	92	118	1.70	0.00	0.0%
	Volusia County Total		**593,439**	**66.79**	**N/A**	**N/A**	**60.69**	**-6.10**	**-9.1%**
Part I Total			**593,439**	**66.79**	**N/A**	**N/A**	**60.69**	**-6.10**	**-9.1%**
		Part I 2011-2015 Average Gross Per Capita			**118**				

Notes:
1.) Projected 2040 water demand and potential reduction is shown in million gallons per day.

Table B-16 (2-Part II). Average Gross Per Capita Scenario for Potential Public Supply Conservation in Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	Permit Number	2040 Population Projection	2040 Water Demand Projection	2011-2015 Average Gross Per Capita	2011-2015 Average Gross Per Capita for Part II	New 2040 Water Demand if Existing Average Gross Per Capita Greater than 166 GPCD	Potential Reduction in 2040 Water Demand	Potential Reduction in 2040 Water Demand (Percent)
Lake (Non-CFWI)	City of Leesburg	94	62,073	11.30	182	166	10.30	-1.00	-8.8%
	Harbor Hills Utilities Ltd.	279	1,326	0.73	552	166	0.22	-0.51	-69.9%
	Water Oak Utilities	282	1,548	0.29	185	166	0.26	-0.03	-10.3%
	Sunlake Estates	2454	637	0.27	422	166	0.11	-0.16	-59.3%
	City of Fruitland Park	2482	8,304	1.04	125	166	1.04	0.00	0.0%
	Town of Howey-in-the-Hills	2596	2,439	0.43	175	166	0.40	-0.03	-7.0%
	Aqua Utilities of Florida, Inc. / Carlton Village	2605	1,015	0.08	76	166	0.08	0.00	0.0%
	Aqua Utilities of Florida, Inc. / Lake Utilities - Valencia Terrace	2632	335	0.04	130	166	0.04	0.00	0.0%
	City of Eustis	2634, 84879, 85195	37,829	5.14	136	166	5.14	0.00	0.0%
	Aqua Utilities of Florida, Inc. / Silver Lakes - Western Shores	2644	4,066	0.45	110	166	0.45	0.00	0.0%
	City of Umatilla	2646	8,234	0.91	110	166	0.91	0.00	0.0%
	Mission Inn Golf & Tennis Resort / Las Colinas	2662	465	0.58	1,238	166	0.08	-0.50	-86.2%
	Aqua Source Inc. / Kings Cove	2701	514	0.04	81	166	0.04	0.00	0.0%
	Pennbrooke Utilities	2717	2,496	0.44	175	166	0.41	-0.03	-6.8%
	Plantation at Leesburg	2718	5,063	1.22	241	166	0.84	-0.38	-31.1%
	City of Tavares	2765	25,349	3.57	141	166	3.57	0.00	0.0%
	Lake Griffin Isles	2810	238	0.07	313	166	0.04	-0.03	-42.9%
	Hawthorne at Leesburg	2860	1,809	0.40	219	166	0.30	-0.10	-25.0%
	Mid Florida Lakes	2888	1,709	0.29	172	166	0.28	-0.01	-3.4%
	Town of Lady Lake	50049	10,746	1.34	125	166	1.34	0.00	0.0%
	City of Mount Dora	50147	35,371	5.13	145	166	5.13	0.00	0.0%
	Wedgewood Homeowners Assoc. Inc.	50152	768	0.14	176	166	0.13	-0.01	-7.1%
	St. Johns River Utility inc.	50178	4,315	0.31	72	166	0.31	0.00	0.0%
	Village Center Service Area	50279	17,588	4.40	250	166	2.92	-1.48	-33.6%
	Park at Wolf Branch Oaks	50334	285	0.11	380	166	0.05	-0.06	-54.5%
	Aqua Utilities of Florida, Inc. / Fairways at Mt. Plymouth	62724	712	0.11	154	166	0.11	0.00	0.0%
	Leesburg Associates Limited Partnership / Holiday Travel Resort	107839	1,013	0.12	115	166	0.12	0.00	0.0%
	Black Bear Reserve / Formerly Upson Downs	128295	820	0.15	181	166	0.14	-0.01	-6.7%
	Lake County (Non-CFWI) Total		**237,067**	**39.10**	**N/A**	**N/A**	**34.76**	**-4.34**	**-11.1%**
Marion	Sunshine Utilities / South Marion Regional System	2993	1,620	0.24	148	166	0.24	0.00	0.0%
	Tradewinds Utilities Inc	2995	1,362	0.10	76	166	0.10	0.00	0.0%
	Ocala East Villas	3016	577	0.10	169	166	0.10	0.00	0.0%
	Sunshine Utilities / Ocala Heights	3019	826	0.08	91	166	0.08	0.00	0.0%
	Rolling Greens Communities	3021	2,323	0.35	149	166	0.35	0.00	0.0%
	Aqua Utilities of Florida, Inc. / Ocala Oaks	3043	1,662	0.19	112	166	0.19	0.00	0.0%
	Oak Bend Mobile Home Park	3061	550	0.05	84	166	0.05	0.00	0.0%
	Marion Utilities, Inc. / Fore Acres	3094	1,169	0.11	91	166	0.11	0.00	0.0%
	Marion Utilities, Inc. / Green Fields - Indian Pines	3101	1,098	0.13	118	166	0.13	0.00	0.0%
	Sunshine Utilities / Sun Ray Estates	3130	1,253	0.15	123	166	0.15	0.00	0.0%
	City of Belleview	3137	10,316	1.00	97	166	1.00	0.00	0.0%
	Marion County Utilities - Consolidated Permit	4578	49,947	7.62	153	166	7.62	0.00	0.0%
	Grand Lake RV & Golf Resort	7017	182	0.06	323	166	0.03	-0.03	-50.0%
	City of Ocala	50324	66,806	11.82	177	166	11.09	-0.73	-6.2%
	Marion County Total		**139,691**	**22.00**	**N/A**	**N/A**	**21.24**	**-0.76**	**-3.5%**
Part II Total			**376,758**	**61.10**	**N/A**	**N/A**	**56.00**	**-5.10**	**-8.3%**
		Part II 2011-2015 Average Gross Per Capita			**166**				

Notes:
1.) Projected 2040 water demand and potential reduction is shown in million gallons per day.

Table B-16 (3-Part III). Average Gross Per Capita Scenario for Potential Public Supply Conservation in Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Utility	CUP Number	2040 Population Projection	2040 Water Demand Projection	2011-2015 Average Gross Per Capita	2011-2015 Average Gross Per Capita for Part III	New 2040 Water Demand if Existing Average Gross Per Capita Greater than 96 GPCD	Potential Reduction in 2040 Water Demand	Potential Reduction in 2040 Water Demand (Percent)
Brevard	Palm Bay Utilities	202	171,342	10.28	60	96	10.28	0.00	0.0%
	Brevard County Utility Services / North Brevard	233	9,709	0.87	90	96	0.87	0.00	0.0%
	Brevard County Utility Services / Barefoot Bay	236	13,520	0.64	47	96	0.64	0.00	0.0%
	South Brevard County Utilities	1606	1,666	0.18	109	96	0.16	-0.02	-11.1%
	Service Management Systems Inc	1719	893	0.46	518	96	0.09	-0.37	-80.4%
	South Shores Utility Assoc	1749	1,071	0.07	66	96	0.07	0.00	0.0%
	City of Titusville	10647, 99052	80,852	6.23	77	96	6.23	0.00	0.0%
	City of Melbourne	50301	189,083	21.74	115	96	18.15	-3.59	-16.5%
	City of West Melbourne	89992	20,194	1.64	81	96	1.64	0.00	0.0%
	Brevard County Total		**488,330**	**42.11**	**N/A**	**N/A**	**38.13**	**-3.98**	**-9.5%**
Indian River	City of Fellsmere	2377	11,477	0.75	65	96	0.75	0.00	0.0%
	Indian River County Utilities	10524	141,998	13.92	98	96	13.63	-0.29	-2.1%
	City of Vero Beach	10705	39,211	6.35	162	96	3.76	-2.59	-40.8%
	Total		**192,686**	**21.02**	**N/A**	**N/A**	**18.14**	**-2.88**	**-13.7%**
Indian River County Total			**681,016**	**63.13**	**N/A**	**N/A**	**56.27**	**-6.86**	**-10.9%**
		Part III 2011-2015 Average Gross Per Capita			**96**				

Notes:
1.) Projected 2040 water demand and potential reduction is shown in million gallons per day.
2.) City of Cocoa is excluded from CSEC as it is falls within the CFWI RWSP.

Table B-17. Range of Potential Water Conservation for the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Category	Projected 2040 Water Demand	High Range		Low Range	
			Percent Conservation	Projected 2040 Water Conservation	Percent Conservation	Projected 2040 Water Conservation
Brevard	Public Supply	42.11	9.5%	3.98	4.1%	1.73
	Domestic Self-supply and Small Public Supply Systems	3.40	9.5%	0.32	4.1%	0.14
	Agricultural Irrigation Self-supply	20.25	13.6%	2.68	13.6%	2.68
	Landscape/Recreational/Aesthetic Self-supply	7.06	2.8%	0.20	2.8%	0.20
	Commercial / Industrial / Institutional Self-supply	7.85	1.2%	0.09	1.2%	0.09
	Thermoelectric Power Generation Self-supply	0.02	1.2%	0.00	1.2%	0.00
	Total	**80.69**	**9.0%**	**7.27**	**6.0%**	**4.84**
Indian River	Public Supply	21.02	13.7%	2.88	4.1%	0.86
	Domestic Self-supply and Small Public Supply Systems	0.26	13.7%	0.04	4.1%	0.01
	Agricultural Irrigation Self-supply	50.61	13.0%	6.52	13.0%	6.52
	Landscape/Recreational/Aesthetic Self-supply	24.11	2.8%	0.68	2.8%	0.68
	Commercial / Industrial / Institutional Self-supply	0.31	1.2%	0.00	1.2%	0.00
	Thermoelectric Power Generation Self-supply	0.42	1.2%	0.01	1.2%	0.01
	Total	**96.73**	**10.5%**	**10.13**	**8.4%**	**8.08**
Lake (Non-CFWI)	Public Supply	39.10	11.1%	4.34	4.1%	1.60
	Domestic Self-supply and Small Public Supply Systems	8.01	11.1%	0.89	4.1%	0.33
	Agricultural Irrigation Self-supply	8.91	13.2%	1.18	13.2%	1.18
	Landscape/Recreational/Aesthetic Self-supply	10.32	2.8%	0.29	2.8%	0.29
	Commercial / Industrial / Institutional Self-supply	1.82	1.2%	0.02	1.2%	0.02
	Thermoelectric Power Generation Self-supply	0.32	1.2%	0.00	1.2%	0.00
	Total	**68.48**	**9.8%**	**6.72**	**5.0%**	**3.42**
Marion	Public Supply	22.00	3.5%	0.76	4.1%	0.90
	Domestic Self-supply and Small Public Supply Systems	11.78	3.5%	0.41	4.1%	0.48
	Agricultural Irrigation Self-supply	16.38	13.0%	2.13	13.0%	2.13
	Landscape/Recreational/Aesthetic Self-supply	4.71	2.8%	0.13	2.8%	0.13
	Commercial / Industrial / Institutional Self-supply	3.01	1.2%	0.04	1.2%	0.04
	Thermoelectric Power Generation Self-supply	0.00	1.2%	0.00	1.2%	0.00
	Total	**57.88**	**6.0%**	**3.47**	**6.4%**	**3.68**
Okeechobee	Public Supply	0.00	4.1%	0.00	4.1%	0.00
	Domestic Self-supply and Small Public Supply Systems	0.15	4.1%	0.01	4.1%	0.01
	Agricultural Irrigation Self-supply	5.22	13.6%	0.71	13.6%	0.71
	Landscape/Recreational/Aesthetic Self-supply	0.00	2.8%	0.00	2.8%	0.00
	Commercial / Industrial / Institutional Self-supply	0.00	1.2%	0.00	1.2%	0.00
	Thermoelectric Power Generation Self-supply	9.08	1.2%	0.11	1.2%	0.11
	Total	**14.45**	**5.7%**	**0.83**	**5.7%**	**0.83**
Volusia	Public Supply	66.79	9.1%	6.10	4.1%	2.74
	Domestic Self-supply and Small Public Supply Systems	6.67	9.1%	0.61	4.1%	0.27
	Agricultural Irrigation Self-supply	21.54	13.5%	2.79	13.5%	2.79
	Landscape/Recreational/Aesthetic Self-supply	7.99	2.8%	0.22	2.8%	0.22
	Commercial / Industrial / Institutional Self-supply	3.87	1.2%	0.05	1.2%	0.05
	Thermoelectric Power Generation Self-supply	2.78	1.2%	0.03	1.2%	0.03
	Total	**109.64**	**8.9%**	**9.80**	**5.6%**	**6.10**
CSEC Total	**Public Supply**	**191.02**	**9.5%**	**18.06**	**4.1%**	**7.83**
	Domestic Self-supply and Small Public Supply Systems	**30.27**	**7.5%**	**2.28**	**4.1%**	**1.24**
	Agricultural Irrigation Self-supply	**122.91**	**13.0%**	**16.01**	**13.0%**	**16.01**
	Landscape/Recreational/Aesthetic Self-supply	**54.19**	**2.8%**	**1.52**	**2.8%**	**1.52**
	Commercial / Industrial / Institutional Self-supply	**16.86**	**1.2%**	**0.20**	**1.2%**	**0.20**
	Thermoelectric Power Generation Self-supply	**12.62**	**1.2%**	**0.15**	**1.2%**	**0.15**
	Total	**427.87**	**8.9%**	**38.22**	**6.3%**	**26.95**

Notes:
1.) Low Range - Percent of potential conservation for domestic self-supply and public supply is based on the average of the Conserve Florida EZ Guide results for public supply residential indoor and outdoor uses.
2.) Low and High Range - Percent of potential conservation for commercial/industrial/institutional self-supply and for power generation Self-supply are based on Conserve Florida EZ Guide results for public supply
3.) Low and High Range - Percent of potential conservation for landscape/recreation/aesthetic self-supply is based on Conserve Florida EZ Guide results for public supply outdoor water use.
4.) Low and High Range - Agriculture is based from the Florida Department of Agriculture and Consumer Services Florida Statewide Agricultural Irrigation Demand IV Balmoral deliverable.
5.) High Range - Public supply is based on savings achieved if each Part 2011-2015 average gross per capita rate was met by respective utilities.
6.) Projected 2040 water demand and 2040 water conservation potential is shown in million gallons per day.
7.) City of Cocoa is excluded from CSEC as it is falls within the CFWI RWSP.

Table B-17 (2-Part I). Range of Potential Water Conservation for Volusia County in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Category	Projected 2040 Water Demand	High Range		Low Range	
			Percent Conservation	Projected 2040 Water Conservation	Percent Conservation	Projected 2040 Water Conservation
Volusia	Public Supply	66.79	9.1%	6.10	4.1%	2.74
	Domestic Self-supply and Small Public Supply Systems	6.67	9.1%	0.61	4.1%	0.27
	Agricultural Irrigation Self-supply	21.54	13.5%	2.79	13.5%	2.79
	Landscape/Recreational/Aesthetic Self-supply	7.99	2.8%	0.22	2.8%	0.22
	Commercial / Industrial / Institutional Self-supply	3.87	1.2%	0.05	1.2%	0.05
	Thermoelectric Power Generation Self-supply	2.78	1.2%	0.03	1.2%	0.03
	Part I (Volusia County) Total	**109.64**	**8.9%**	**9.80**	**5.6%**	**6.10**

Notes:

1.) Low Range - Percent of potential conservation for domestic self-supply and public supply is based on the average of the Conserve Florida EZ Guide results for public supply residential indoor and outdoor uses.

2.) Low and High Range - Percent of potential conservation for commercial/industrial/institutional self-supply and for power generation Self-supply are based on Conserve Florida EZ Guide results for public supply

3.) Low and High Range - Percent of potential conservation for landscape/recreation/aesthetic self-supply is based on Conserve Florida EZ Guide results for public supply outdoor water use.

4.) Low and High Range - Agriculture is based from the Florida Department of Agriculture and Consumer Services Florida Statewide Agricultural Irrigation Demand IV Balmoral deliverable.

5.) High Range - Public supply is based on savings achieved if Part I 2011-2015 average gross per capita rate was met by respective utilities.

6.) Projected 2040 water demand and 2040 water conservation potential is shown in million gallons per day.

Table B-17 (3-Part II). Range of Potential Water Conservation for Marion and North Lake Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Category	Projected 2040 Water Demand	High Range		Low Range	
			Percent Conservation	Projected 2040 Water Conservation	Percent Conservation	Projected 2040 Water Conservation
Lake (Non-CFWI)	Public Supply	39.10	11.1%	4.34	4.1%	1.60
	Domestic Self-supply and Small Public Supply Systems	8.01	11.1%	0.89	4.1%	0.33
	Agricultural Irrigation Self-supply	8.91	13.2%	1.18	13.2%	1.18
	Landscape/Recreational/Aesthetic Self-supply	10.32	2.8%	0.29	2.8%	0.29
	Commercial / Industrial / Institutional Self-supply	1.82	1.2%	0.02	1.2%	0.02
	Thermoelectric Power Generation Self-supply	0.32	1.2%	0.00	1.2%	0.00
	Total	**68.48**	**9.8%**	**6.72**	**5.0%**	**3.42**
Marion	Public Supply	22.00	3.5%	0.76	4.1%	0.90
	Domestic Self-supply and Small Public Supply Systems	11.78	3.5%	0.41	4.1%	0.48
	Agricultural Irrigation Self-supply	16.38	13.0%	2.13	13.0%	2.13
	Landscape/Recreational/Aesthetic Self-supply	4.71	2.8%	0.13	2.8%	0.13
	Commercial / Industrial / Institutional Self-supply	3.01	1.2%	0.04	1.2%	0.04
	Thermoelectric Power Generation Self-supply	0.00	1.2%	0.00	1.2%	0.00
	Total	**57.88**	**6.0%**	**3.47**	**6.4%**	**3.68**
Total Part II	**Public Supply**	**61.10**	**8.3%**	**5.10**	**4.1%**	**2.50**
	Domestic Self-supply and Small Public Supply Systems	**19.79**	**6.6%**	**1.30**	**4.1%**	**0.81**
	Agricultural Irrigation Self-supply	**25.29**	**13.1%**	**3.31**	**13.1%**	**3.31**
	Landscape/Recreational/Aesthetic Self-supply	**15.03**	**2.8%**	**0.42**	**2.8%**	**0.42**
	Commercial / Industrial / Institutional Self-supply	**4.83**	**1.2%**	**0.06**	**1.2%**	**0.06**
	Thermoelectric Power Generation Self-supply	**0.32**	**0.0%**	**0.00**	**0.0%**	**0.00**
	Total	**126.36**	**8.1%**	**10.19**	**5.6%**	**7.10**

Notes:

1.) Low Range - Percent of potential conservation for domestic self-supply and public supply is based on the average of the Conserve Florida EZ Guide results for public supply residential indoor and outdoor uses.

2.) Low and High Range - Percent of potential conservation for commercial/industrial/institutional self-supply and for power generation Self-supply are based on Conserve Florida EZ Guide results for public supply

3.) Low and High Range - Percent of potential conservation for landscape/recreation/aesthetic self-supply is based on Conserve Florida EZ Guide results for public supply outdoor water use.

4.) Low and High Range - Agriculture is based from the Florida Department of Agriculture and Consumer Services Florida Statewide Agricultural Irrigation Demand IV Balmoral deliverable.

5.) High Range - Public supply is based on savings achieved if Part II 2011-2015 average gross per capita rate was met by respective utilities.

6.) Projected 2040 water demand and 2040 water conservation potential is shown in million gallons per day.

Table B-17 (4-Part III). Range of Water Potential Conservation for Brevard, Indian River and Okeechobee Counties in the Central Springs/East Coast Regional Water Supply Planning Area of the St. Johns River Water Management District.

County	Category	Projected 2040 Water Demand	High Range		Low Range	
			Percent Conservation	Projected 2040 Water Conservation	Percent Conservation	Projected 2040 Water Conservation
Brevard	Public Supply	42.11	9.5%	3.98	4.1%	1.73
	Domestic Self-supply and Small Public Supply Systems	3.40	9.5%	0.32	4.1%	0.14
	Agricultural Irrigation Self-supply	20.25	13.6%	2.68	13.6%	2.68
	Landscape/Recreational/Aesthetic Self-supply	7.06	2.8%	0.20	2.8%	0.20
	Commercial / Industrial / Institutional Self-supply	7.85	1.2%	0.09	1.2%	0.09
	Thermoelectric Power Generation Self-supply	0.02	1.2%	0.00	1.2%	0.00
	Total	**80.69**	**9.0%**	**7.27**	**6.0%**	**4.84**
Indian River	Public Supply	21.02	13.7%	2.88	4.1%	0.86
	Domestic Self-supply and Small Public Supply Systems	0.26	13.7%	0.04	4.1%	0.01
	Agricultural Irrigation Self-supply	50.61	13.0%	6.52	13.0%	6.52
	Landscape/Recreational/Aesthetic Self-supply	24.11	2.8%	0.68	2.8%	0.68
	Commercial / Industrial / Institutional Self-supply	0.31	1.2%	0.00	1.2%	0.00
	Thermoelectric Power Generation Self-supply	0.42	1.2%	0.01	1.2%	0.01
	Total	**96.73**	**10.5%**	**10.13**	**8.4%**	**8.08**
Okeechobee	Public Supply	0.00	4.1%	0.00	4.1%	0.00
	Domestic Self-supply and Small Public Supply Systems	0.15	4.1%	0.01	4.1%	0.01
	Agricultural Irrigation Self-supply	5.22	13.6%	0.71	13.6%	0.71
	Landscape/Recreational/Aesthetic Self-supply	0.00	2.8%	0.00	2.8%	0.00
	Commercial / Industrial / Institutional Self-supply	0.00	1.2%	0.00	1.2%	0.00
	Thermoelectric Power Generation Self-supply	9.08	1.2%	0.11	1.2%	0.11
	Total	**14.45**	**5.7%**	**0.83**	**5.7%**	**0.83**
Total Part III	**Public Supply**	**63.13**	**10.9%**	**6.86**	**4.1%**	**2.59**
	Domestic Self-supply and Small Public Supply Systems	**3.81**	**9.7%**	**0.37**	**4.2%**	**0.16**
	Agricultural Irrigation Self-supply	**76.08**	**13.0%**	**9.91**	**13.0%**	**9.91**
	Landscape/Recreational/Aesthetic Self-supply	**31.17**	**2.8%**	**0.88**	**2.8%**	**0.88**
	Commercial / Industrial / Institutional Self-supply	**8.16**	**1.1%**	**0.09**	**1.1%**	**0.09**
	Thermoelectric Power Generation Self-supply	**9.52**	**1.3%**	**0.12**	**1.3%**	**0.12**
	Total	**191.87**	**9.5%**	**18.23**	**7.2%**	**13.75**

Notes:

1.) Low Range - Percent of potential conservation for domestic self-supply and public supply is based on the average of the Conserve Florida EZ Guide results for public supply residential indoor and outdoor uses.

2.) Low and High Range - Percent of potential conservation for commercial/industrial/institutional self-supply and for power generation Self-supply are based on Conserve Florida EZ Guide results for public supply

3.) Low and High Range - Percent of potential conservation for landscape/recreation/aesthetic self-supply is based on Conserve Florida EZ Guide results for public supply outdoor water use.

4.) Low and High Range - Agriculture is based from the Florida Department of Agriculture and Consumer Services Florida Statewide Agricultural Irrigation Demand IV Balmoral deliverable.

5.) High Range - Public supply is based on savings achieved if Part III 2011-2015 average gross per capita rate was met by respective utilities.

6.) Projected 2040 water demand and 2040 water conservation potential is shown in million gallons per day.

7.) City of Cocoa is excluded from CSEC as it is falls within the CFWI RWSP.

APPENDIX C

SIMULATED CHANGE IN THE POTENTIOMETRIC SURFACE WITHIN THE CENTRAL SPRINGS/EAST COAST GROUNDWATER FLOW MODEL DOMAINS

APPENDIX C

SIMULATED CHANGE IN THE POTENTIOMETRIC SURFACE WITHIN THE CENTRAL SPRINGS/EAST COAST GROUNDWATER FLOW MODEL DOMAINS

Introduction

Changes in the 2015 (or 2014 for Brevard, Indian River, and Okeechobee counties) potentiometric surface of the Upper Floridan aquifer (UFA) resulting from projected 2040 groundwater withdrawals were simulated using the three groundwater flow models that cover the geographical extent of the Central Springs/East Coast (CSEC) Regional Water Supply Plan (RWSP) area; the 2015 Volusia Model (Volusia model)(Williams 2006), the Northern District Model Version 5 (NDMv5)(HGL et al. 2016), and the East-Central Florida Transient Expanded Model Version 1.0 (ECFTX)(CFWI 2020). Figures depicting the simulated change in UFA levels for the modeled scenarios are provided below along with a brief description of any unique circumstances applicable to each sub-region of the CSEC RWSP area. For all figures, a decrease (drawdown) of the simulated potentiometric surface is indicated by the pink to yellow colors while an increase (rebound) in the simulated potentiometric surface is indicated by the green and blue colors.

Volusia County

Due to complexities associated with simulating the effects of the Tiger Bay Weir with the Volusia model, this project was not included in the modeling scenarios. Instead, the benefit was extracted directly from a local-scale model developed by DHI (2015) to evaluate the effects of the proposed weir, which is discussed in Appendix A of the CSEC RWSP.

- Figure C-1: Changes in the UFA potentiometric surface between 2015 water withdrawals and 2040 projected water demands within the Volusia model domain
- Figure C-2: Same as the scenario represented in Figure C-1 but with water supply and water resource development projects included in the simulation

Marion and North Lake[1] Counties

At the time of plan development, 2040 projected water demand was not available from the Southwest Florida Water Management District (SWFWMD) or the South Florida Water

[1] Within the CSEC RWSP, North Lake County is defined as that portion of Lake County that is not included in the Central Florida Water Initiative.

Management District (SFWMD). Therefore, the following simulations utilized 2040 projected water use for SJRWMD and Suwanee River Water Management District, while SWFWMD and SFWMD withdrawals represented 2035 projections. Drawdown calculations utilized UFA potentiometric surface levels from layer four of the NDMv5.

- Figure C-3: Changes in the UFA potentiometric surface between 2015 estimated water withdrawals and 2040 projected water demands (with SWFWMD and SFWMD held at 2035 projected demand) within the NDMv5 domain
- Figure C-4: Same as the scenario represented in Figure C-3 but with water supply and water resource development projects included in the simulation

Brevard, Indian River, and Okeechobee Counties

For the ECFTX scenario comparison, the 2014 reference condition was used as the baseline to measure drawdown at 2040. As noted in Appendix A of the CSEC RWSP, a modeling scenario with projects was not performed for the Brevard, Indian River, and Okeechobee sub-region since the projected increase in water demand can be met through the implementation of water conservation measures (low estimate) and through the provision of additional available reclaimed water (low estimate). Drawdown calculations utilized UFA potentiometric surface levels from layer three of the ECFTX.

- Figure C-5: Changes in the UFA potentiometric surface between the 2014 reference condition and 2040 projected water demand within the ECFTX domain

References

Central Florida Water Initiative (CFWI). 2020. *Model Documentation Report East-Central Florida Transient Expanded (ECFTX) Model*. Available from: https://cfwiwater.com/pdfs/ECFTX_Model_Final_Report_Feb_2020.pdf

HydroGeoLogic, Inc. (HGL) and Dynamic Solutions, LLC. 2016*. Northern District Groundwater Flow Model Version 5.0*. Prepared for SJRWMD and SWFWMD.

Williams, S.A. 2016. *Simulation of the Effects of Groundwater Withdrawals from the Floridan Aquifer System in Volusia County and Vicinity*. SJRWMD Technical Publication SJ2006-4. Palatka, FL.

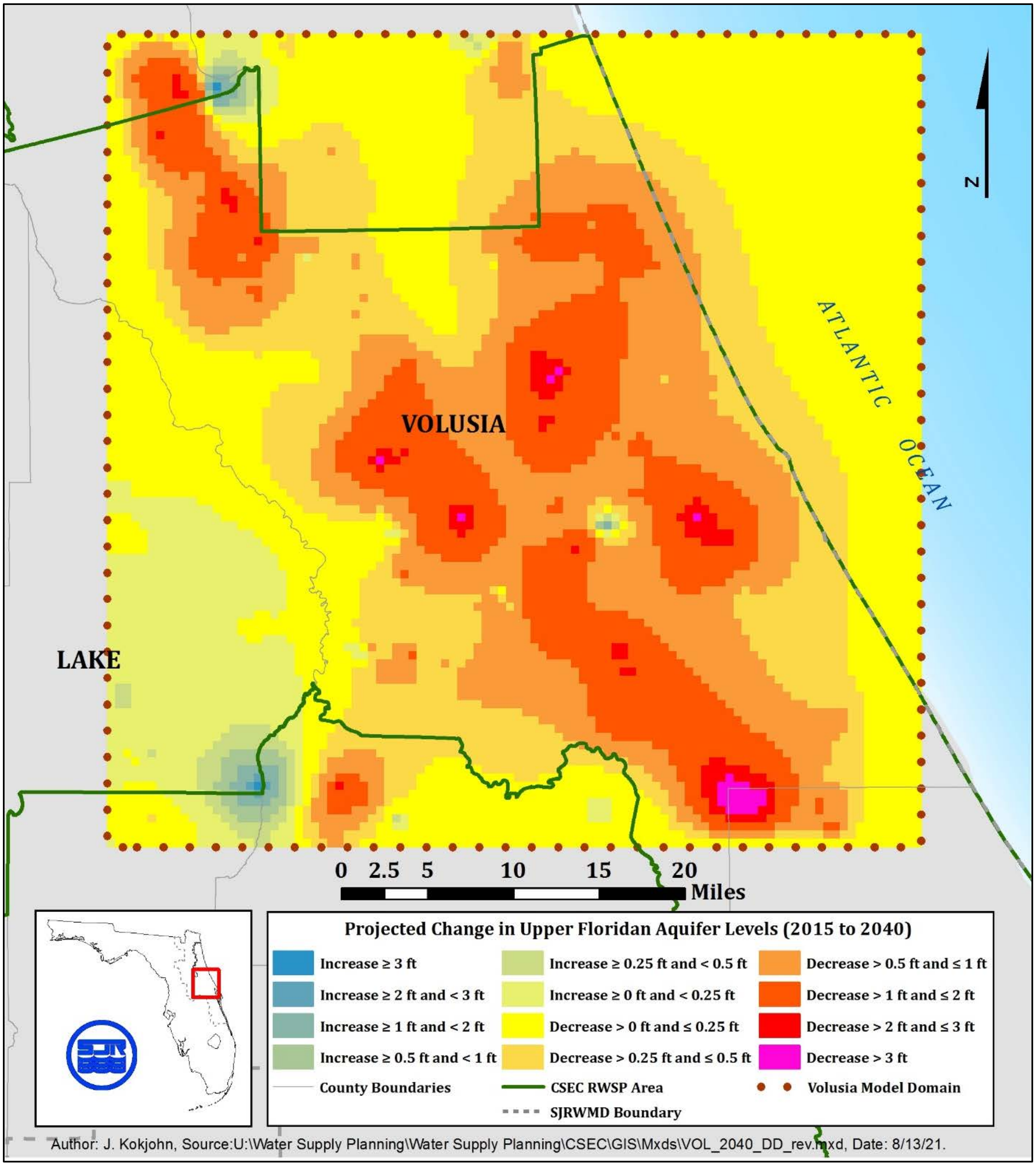


Figure C-1: Predicted Change in Upper Floridan Aquifer Levels from 2015 to 2040 within the Volusia Model Domain

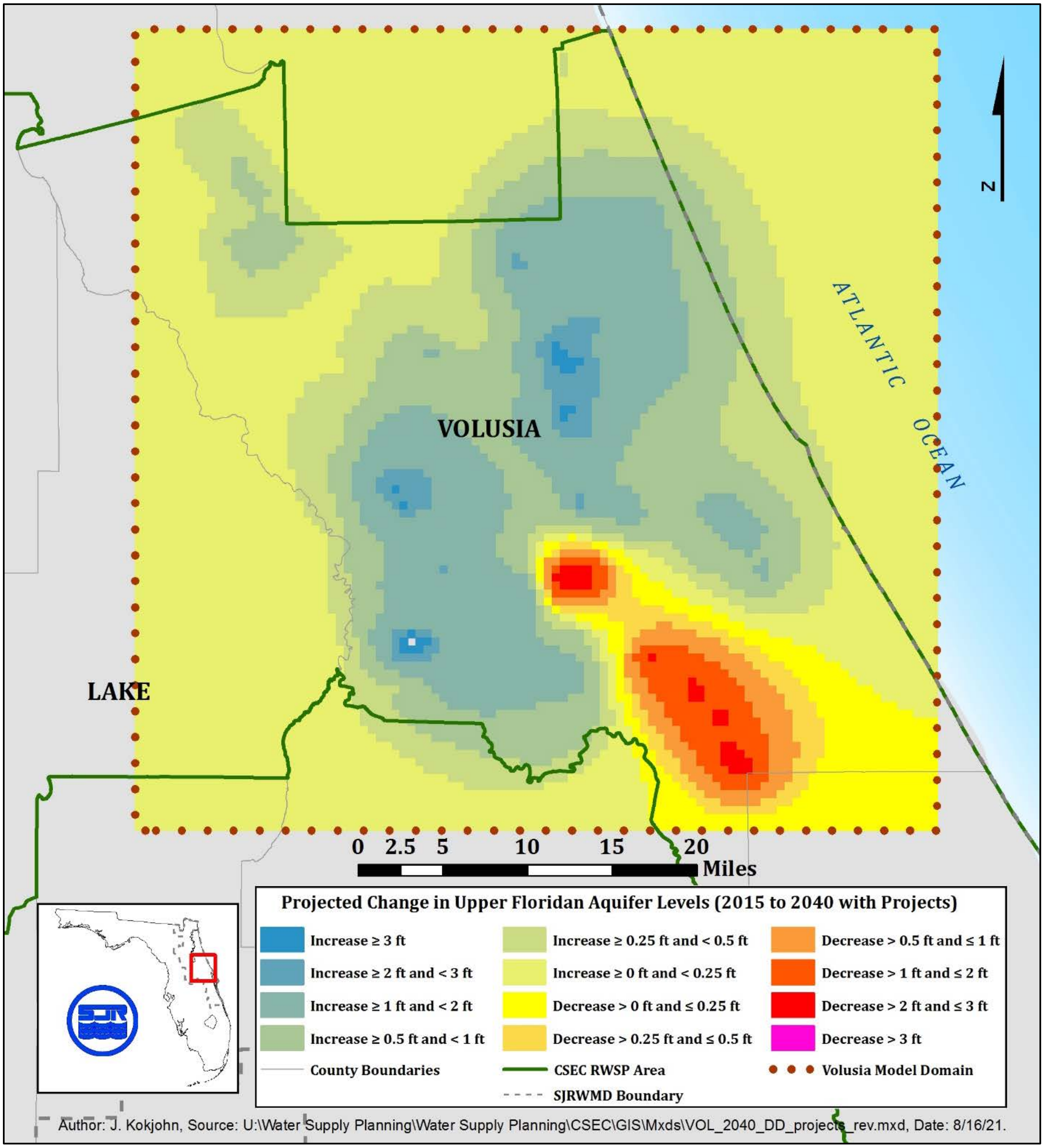


Figure C-2: Predicted Change in Upper Floridan Aquifer Levels from 2015 to 2040 with Water Supply and Water Resource Development Projects Included within the Volusia Model Domain

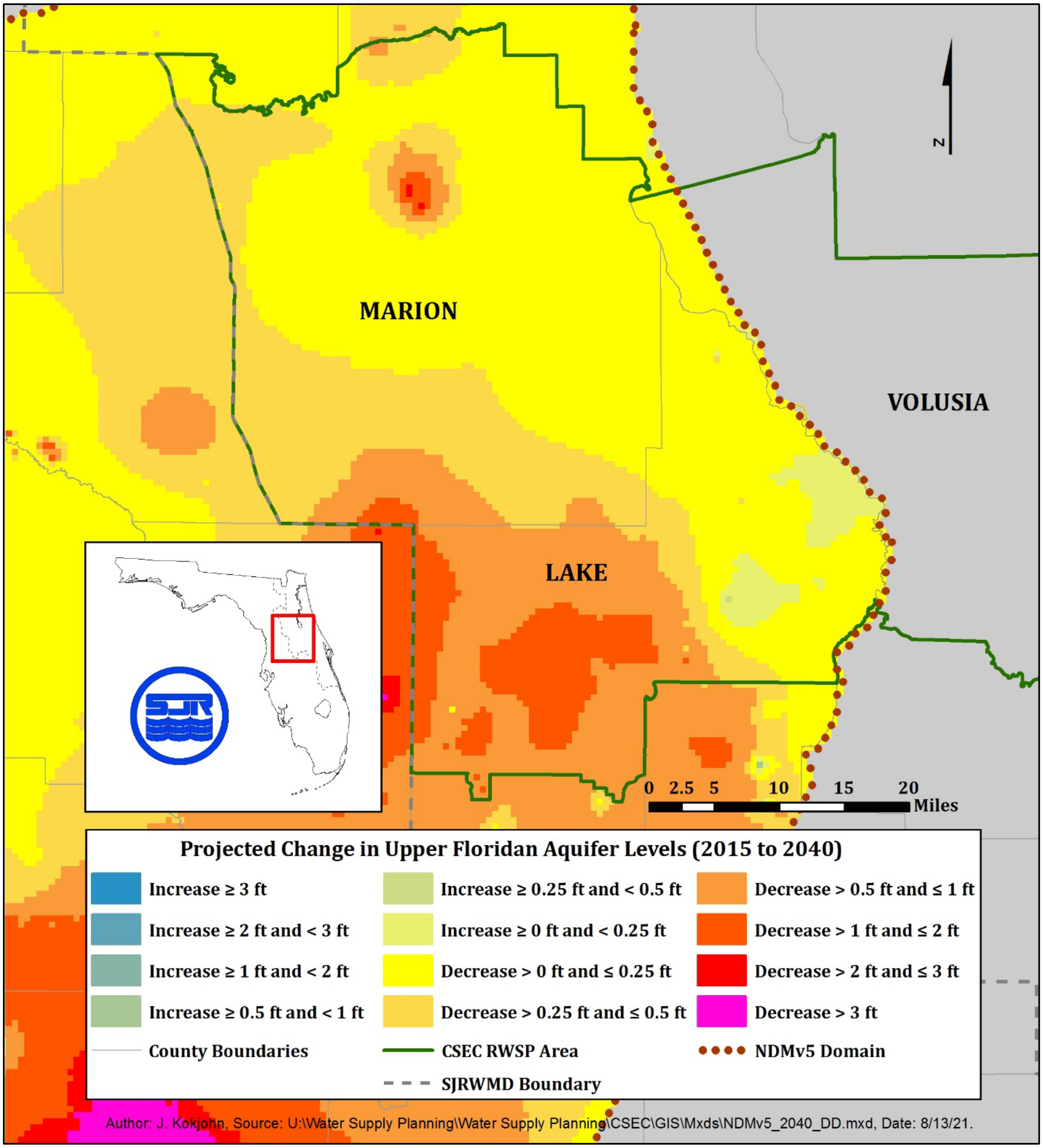


Figure C-3: Predicted Change in Upper Floridan Aquifer Levels from 2015 to 2040 in Marion and North Lake Counties within the NDMv5 Domain

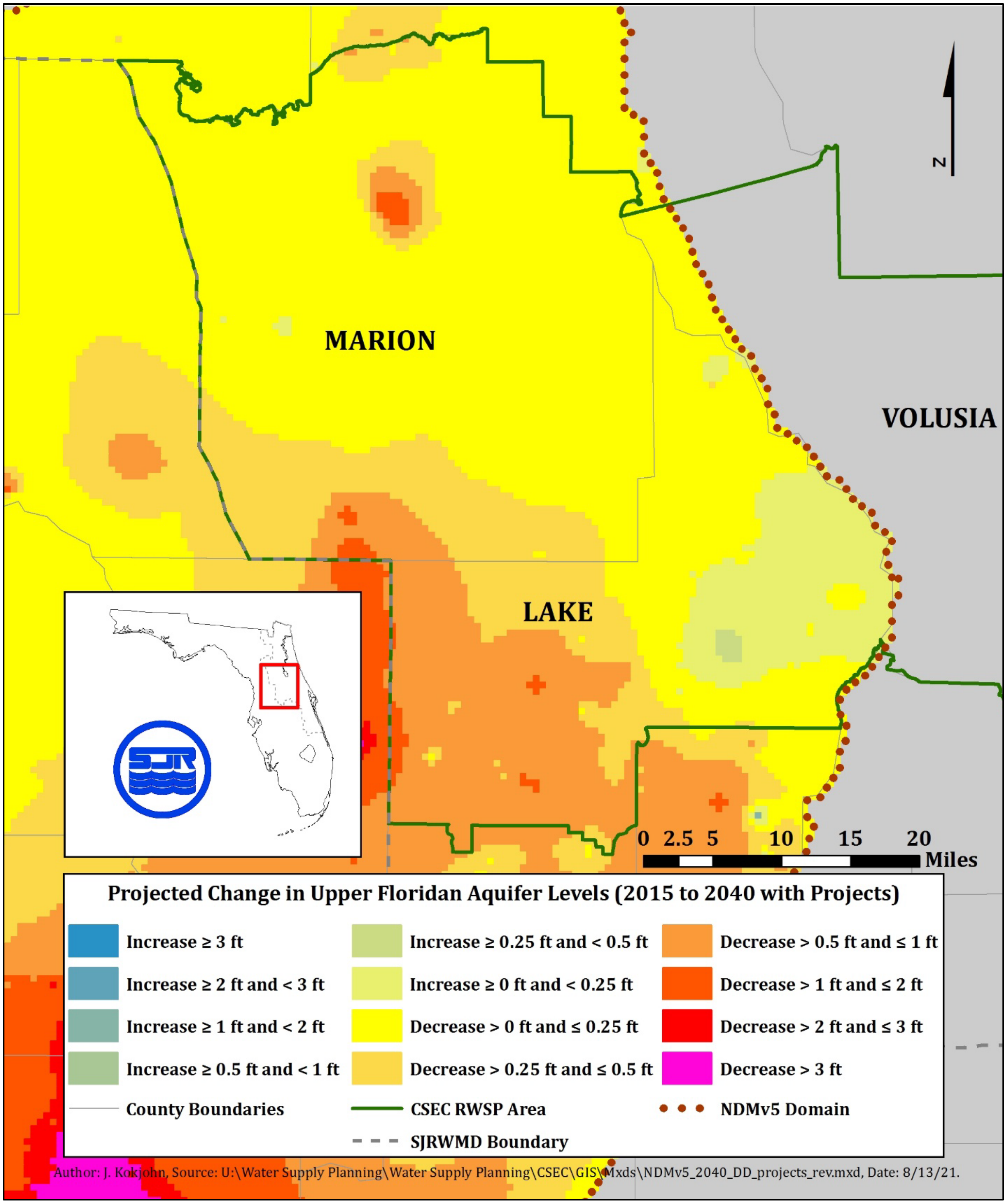


Figure C-4: Predicted Change in Upper Floridan Aquifer Levels from 2015 to 2040 with Water Supply and Water Resource Development Projects Included for Marion and North Lake Counties within the NDMv5 Domain

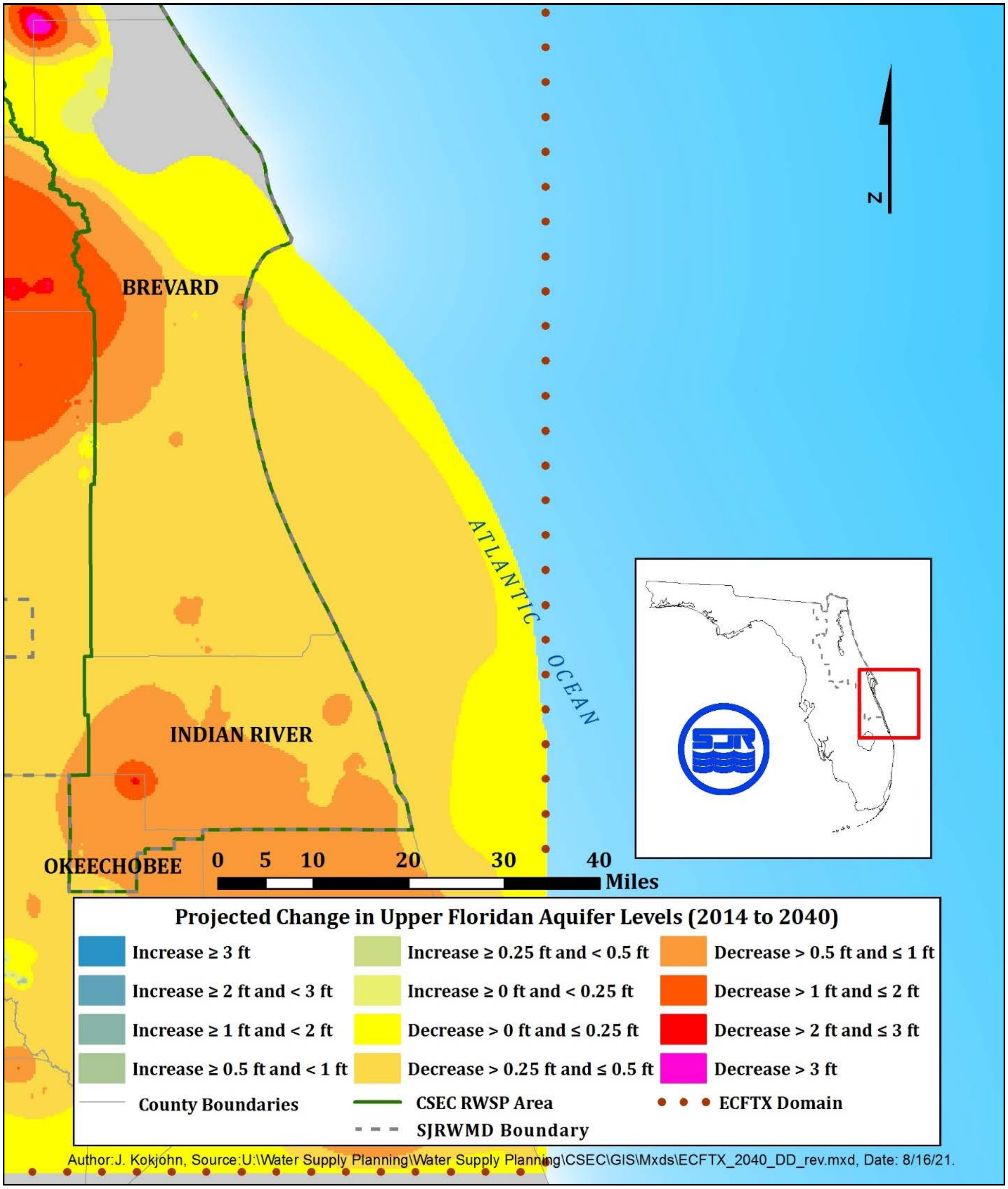


Figure C-5: Predicted Change in Upper Floridan Aquifer Levels from 2014 to 2040 in Brevard, Indian River and Okeechobee Counties within the ECFTX Groundwater Model Domain

APPENDIX D

EVALUATION OF THE POTENTIAL FOR GROUNDWATER QUALITY DEGRADATION DUE TO SALTWATER INTRUSION

Appendix D

Evaluation of the Potential for Groundwater Quality Degradation Due to Saltwater Intrusion

Introduction

The purpose of this evaluation was to identify wells within the Central Springs/East Coast (CSEC) Regional Water Supply Plan (RWSP) area where degradation of groundwater quality due to saltwater intrusion has occurred or is projected to occur. The CSEC RWSP area encompasses all or part of six counties under the jurisdiction of the St. Johns River Water Management District (SJRWMD); Volusia, Marion, North Lake[1], Brevard, Indian River, and Okeechobee. Groundwater quality degradation due to saltwater intrusion is a consideration for the CSEC RWSP since degrading water quality can affect productivity of existing infrastructure and dictate back plugging, well inactivation and replacement, withdrawal point relocation, and conversion to alternative water supplies, all of which result in increased costs. Although groundwater quality degradation poses a challenge for all affected water users, the issue is particularly acute for smaller utilities and water users that may have fewer options for infrastructure modifications.

Since statistically significant trends in chloride concentration can be an indicator of groundwater degradation due to saltwater intrusion, the focus of this evaluation was on chloride time series data. Chloride concentration is a useful chemical indicator because it is one of the principal chemical constituents in seawater and is unaffected by ion exchange (unlike sodium, the other principal component). Trends in time series chloride concentration data were quantified and interpreted based upon the results of nonparametric statistical tests described in the following section. In order to understand the meaning of these trends, consideration of the actual chloride concentration in relation to the Florida Department of Environmental Protection Secondary Drinking Water Standard (SDWS) of 250 milligrams per liter (mg/L) for chloride was also evaluated.

This analysis explored chloride concentrations in two categories of Upper Floridan aquifer (UFA) and Surficial Aquifer System (SAS) wells located within the CSEC RWSP area; district observation well network (DOWN) monitoring wells and permitted wells (public supply and agricultural) that support consumptive use permit (CUP) groundwater quality monitoring requirements. One purpose of the DOWN monitoring well network is to obtain a picture of regional groundwater quality throughout SJRWMD and identify areas where groundwater quality is changing, in some cases, due to saltwater intrusion. Other DOWN

[1] North Lake County is defined throughout the CSEC RWSP as that portion of Lake County that is not located in the Central Florida Water Initiative planning region.

wells may monitor water quality changes near specific water bodies of concern, such as first- and second-magnitude springs. Several considerations are involved in siting or selecting wells for inclusion in a monitoring network such as the open hole interval, adequate overall spatial coverage, and well location as it relates to pumping centers or water bodies of concern. Water quality data from monitoring wells is preferred for detecting changes in ambient groundwater quality since these wells are dedicated for monitoring (i.e., they are not pumped to supply water).

The second type of wells included in the water quality analysis are permitted wells, both public supply and agricultural. Most monitored public supply and agricultural wells are production wells associated with a single entity, although some entities also have dedicated monitoring wells. Monitoring of production wells informs water quality changes at a smaller scale; either by well or well cluster. In many cases, groundwater quality changes in production wells indicate saltwater intrusion from the upconing of relict seawater from below the freshwater, which can result from the pumping of individual or multiple wells. Where upconing occurs, groundwater withdrawals can often be managed to minimize or reduce upconing. Since production well water quality can be impacted by pumping, these wells are often not the best indicators of lateral saltwater intrusion. However, water quality degradation in production wells from upconing can be significant and can necessitate well modifications, well abandonment, enhanced wellfield management plans, and development of alternative water supplies.

Water quality degradation in both monitoring wells and production wells is important in planning for future water supplies, therefore, water quality data from both well types was included in the CSEC water quality analysis. Groundwater samples from analyzed wells were submitted for laboratory chemical analyses of selected or, in some instances, all major ions (calcium, magnesium, potassium, sodium, bicarbonate, chloride, and sulfate). Sampling frequencies varied from monthly and quarterly to biannual and annual schedules. At some wells, groundwater quality has been monitored for several decades over the period of record.

Methods

Chloride water quality data was compiled for DOWN wells and monitored public supply and agricultural wells located within the CSEC RWSP area. Permitted wells with ten or more data points and DOWN wells with data covering each of the past 10 years were selected for statistical trend analysis. The requirements for the two well types differed slightly as a result of the DOWN well analysis being completed in accordance with established procedures for the SJRWMD Status and Trends Network.

For time series data, it is useful to determine if a monotonic (consistently increasing or decreasing) trend exists within the data. Therefore, trends in chloride concentration were quantified using the Mann-Kendall trend test and related Theil-Sen trend line and slope (aka Sen slope). These nonparametric statistical tests do not depend on assumptions of normality and are robust methods that are resistant to outliers, missing data, and non-detects. Test statistics generated using these methods include the Mann-Kendall correlation coefficient (τ) and the median slope of the trend (the Sen slope) in mg/L/yr. Trends were considered statistically significant for median slopes with a p value less than or equal to 0.05[2].

To categorize the potential for saltwater intrusion or continued saltwater intrusion in wells with a statistically significant trend in chloride concentration, a rate was assigned as follows:

$\geq$ +3.0 mg/L/yr — high rate

< +3.0 mg/L/yr, $\geq$ +1.0 mg/L/yr — medium rate

< +1.0 mg/L/yr, > 0 mg/L/yr — low rate

< 0 mg/L/yr — decreasing rate

For the permitted wells with significant trends at the high and medium rates, a linear equation was developed using the Theil-Sen trend line coefficients. This equation was used to estimate the year at which the chloride concentration is projected to exceed the 250 mg/L SDWS assuming anthropogenic and meteorological stressors influencing hydrologic conditions remain relatively unchanged. For the DOWN wells with significant trends, a linear equation was not developed since only the statistical results were available. For these wells, the median slope was applied to the median chloride concentration and projected out to 2040. Chloride concentrations were not projected forward for wells with trends at the low and decreasing rates since chloride concentrations were generally low, and the estimated rates of change were very small or decreasing (becoming more fresh).

Results

Time series chemical data for 389 wells was evaluated for trends in chloride concentration (Table D-1; Figure D-1)). Three hundred of these wells — representing 14 public supply utilities and 6 agricultural operations — are monitored for groundwater quality as a conditional requirement of a CUP. Of the 300 permitted wells, 199 were constructed in the UFA and 101 in the SAS. Eighty-nine DOWN wells were analyzed, all of which were constructed in the UFA. The SAS DOWN wells lacked sufficient data for analysis. Results are summarized by well type for each sub-region of the CSEC RWSP area.

[2] A p value is a predetermined statistical threshold that indicates the probability of obtaining the same test result randomly. When p values are small (e.g., less than or equal to 0.05 or 5%), there is evidence that the test result is not random (and one can reject the null hypothesis that there is no trend).

Table D-1: Summary of Analyzed Wells within the CSEC RWSP Area

Area	Upper Floridan Aquifer DOWN Wells	Surficial Aquifer Public Supply Wells	Upper Floridan Aquifer Public Supply Wells	Upper Floridan Aquifer Agricultural Wells
Volusia County	35	0	144	2
Total	**35**	**0**	**144**	**2**
Marion County	17	0	0	0
North Lake County	15	0	0	0
Total	**32**	**0**	**0**	**0**
Brevard County	15	97	19	9
Indian River County	7	4	16	9
Okeechobee County	0	0	0	0
Total	**22**	**101**	**35**	**18**
CSEC RWSP Total	**89**	**101**	**179**	**20**

Figures D-2 through D-9, located after the references, show the spatial distribution of the analysis results by sub-region, well type (public supply, agricultural, and DOWN), aquifer (for Brevard and Indian River counties), and by chloride concentration rate of change (high, medium, low, decreasing, not significant). Tables D-10 through D-19, provided at the end of this document, show the statistical results for all the analyzed wells by well type and by chloride concentration rate of change.

Volusia County

DOWN Wells

Three DOWN wells showed increasing chloride concentrations at rates ≥ 3 milligrams per liter per year (mg/L/yr)(high rate of change), and one DOWN well showed increasing chloride concentrations at rates within the range ≥ 1 and < 3 mg/L/yr (medium rate of change)(Table D-2). Three of the four wells with high and medium rates of chloride change currently exceed the chloride SDWS and are generally located near the St. Johns River (Figure D-2). Eight DOWN wells showed an increasing chloride concentration rate less than 1 mg/L/yr (low rate of change). Finally, of the four DOWN wells that showed a statistically significant decreasing rate of change, two have chloride concentrations that currently exceed the SDWS. All the DOWN wells analyzed in Volusia County were constructed in the UFA.

Table D-2: Analyzed UFA DOWN Wells with Statistically Significant Trends in Chloride Concentration in Volusia County

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (3 wells)	3	---
Medium Rate of Change (1 wells)	0	0
Low Rate of Change (8 wells)	0	NA
Decreasing Rate of Change (4 wells)	2	NA

Note: mg/L = milligrams per liter

Public Supply Wells

Fourteen public supply wells showed increasing chloride concentrations at rates ≥ 3 milligrams per liter per year (mg/L/yr)(high rate of change), and three public supply wells showed increasing chloride concentrations at rates within the range ≥ 1 and < 3 mg/L/yr (medium rate of change)(Table D-3). These 17 wells with high and medium rates of chloride change were generally located near the St. Johns River and the Atlantic coastline (Figure D-3). None of these 17 wells currently exceed the chloride SDWS; however, 10 wells are projected to exceed the SDWS by 2040. Twenty-one public supply wells showed an increasing chloride concentration rate less than 1 mg/L/yr (low rate of change). Finally, of the 70 public supply wells that showed a statistically significant decreasing rate of change, only one has a chloride concentration that currently exceeds the SDWS. All the public supply wells analyzed in Volusia County were constructed in the UFA.

Table D-3: Analyzed UFA Public Supply Wells with Statistically Significant Trends in Chloride Concentration in Volusia County

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (14 wells)	0	10
Medium Rate of Change (3 wells)	0	0
Low Rate of Change (21 wells)	0	NA
Decreasing Rate of Change (70 wells)	1	NA

Note: mg/L = milligrams per liter

Agricultural Wells

Both agricultural wells analyzed in Volusia County showed a statistically significant increasing chloride concentration trend; one at a rate ≥ 3 milligrams per liter per year (mg/L/yr)(high rate of change) and the other at a rate < 1 mg/L/yr (low rate of change)(Table D-4). The well displaying a high rate of change currently exceeds the chloride SDWS. Both of these wells are Upper Floridan aquifer monitor wells associated with a single agricultural permit in southern Volusia County (Figure D-4).

Table D-4: Analyzed UFA Agricultural Wells with Statistically Significant Trends in Chloride Concentration in Volusia County

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (1 well)	1	---
Medium Rate of Change (0 wells)	---	---
Low Rate of Change (1 well)	0	NA
Decreasing Rate of Change (0 wells)	---	NA

Note: mg/L = milligrams per liter

Marion and North Lake Counties

DOWN Wells

Saltwater intrusion is unlikely in the central areas of the state and, therefore, CUPs in Marion and North Lake counties typically do not require chloride monitoring. All 32 analyzed wells in Marion and North Lake counties were DOWN wells constructed in the UFA. None of these wells showed a statistically significant high (≥ 3 mg/L/yr) or medium (between the range ≥ 1 and < 3 mg/L/yr) rate of chloride change (Table D-5). Seven wells showed a statistically significant low rate of change (< 1 mg/L/yr), while one well showed a decreasing rate of change (Figure D-5). Although not shown on Figure D-5 since neither showed a statistically significant rate of change in chloride concentration, two DOWN wells in North Lake County currently exceed the chloride SDWS.

Table D-5: Analyzed UFA DOWN Wells with Statistically Significant Trends in Chloride Concentration in Marion and North Lake Counties

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (0 wells)	---	---
Medium Rate of Change (0 wells)	---	---
Low Rate of Change (7 wells)	0	NA
Decreasing Rate of Change (1 well)	0	NA

Note: mg/L = milligrams per liter

Brevard, Indian River, and Okeechobee Counties

DOWN Wells

Of the 22 UFA DOWN wells evaluated in Brevard and Indian River counties, six showed increasing chloride concentrations at rates ≥ 3 mg/L/yr (high rate of change), and one showed increasing chloride concentrations at a rate within the range ≥ 1 and < 3 mg/L/yr (medium rate of change)(Table D-6). Each of these wells currently exceeds the chloride SDWS and is generally located along the Indian River Lagoon or the Atlantic coastline (Figure D-6). One DOWN well showed an increasing chloride concentration rate less than 1 mg/L/yr (low rate of change). Finally, the one DOWN well that showed a statistically significant decreasing rate of change has a current chloride concentration that exceeds the SDWS. There were no DOWN wells monitored for chloride in the limited portion of Okeechobee County that is under the jurisdiction of SJRWMD.

Although there was insufficient data to perform a statistical analysis on the SAS DOWN wells in this area, it is worth noting that six of the 18 actively monitored SAS DOWN wells in Brevard and Indian River counties currently exceed the chloride SDWS and one well shows a maximum concentration just below the SDWS.

Table D-6: Analyzed UFA DOWN Wells with Statistically Significant Trends in Chloride Concentration in Brevard and Indian River Counties

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (6 wells)	6	---
Medium Rate of Change (1 well)	1	---
Low Rate of Change (1 well)	0	NA
Decreasing Rate of Change (1 well)	1	NA

Note: mg/L = milligrams per liter

Public Supply Wells (Upper Floridan Aquifer)

Of the 35 UFA public supply wells evaluated in Brevard and Indian River counties, 15 showed increasing chloride concentrations at rates ≥ 3 mg/L/yr (high rate of change) (Table D-7). Each of these 15 wells currently exceeds the chloride SDWS and is generally located along the Indian River Lagoon or Atlantic coastline (Figure D-7). None of the UFA public supply wells showed increasing chloride concentrations at a rate within the range ≥ 1 and < 3 mg/L/yr (medium rate of change) or less than 1 mg/L/yr (low rate of change). Finally, of the five public supply wells that showed a statistically significant decreasing rate of change, one currently exceeds the chloride SWDS. There were no UFA public supply wells monitored for chloride in Okeechobee County.

Table D-7: Analyzed UFA Public Supply Wells with Statistically Significant Trends in Chloride Concentration in Brevard and Indian River Counties

Chloride Trend Category	Number of Wells Currently Exceeding 250 mg/L	Number of Additional Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (15 UFA wells)	15	---
Medium Rate of Change (0 UFA wells)	---	---
Low Rate of Change (0 UFA wells)	---	NA
Decreasing Rate of Change (5 UFA wells)	1	NA

Note: mg/L = milligrams per liter

Public Supply Wells (Surficial Aquifer System)

SJRWMD evaluated 101 SAS public supply wells in Brevard and Indian River counties. Twenty-two wells showed an increasing chloride rate change of ≥ 3 mg/L/yr (high rate of change) and nine wells showed an increasing chloride rate within the range ≥ 1 and < 3 mg/L/yr (medium rate of change)(Table D-8). Of the 31 wells showing a high or medium rate of change, eight currently exceed the chloride SDWS and 13 additional wells are projected to exceed the SDWS by 2040. All 31 wells are located just west of the Indian River Lagoon with the majority occurring in Brevard County (Figure D-8). None of the SAS wells showed increasing chloride concentrations within the low rate of change (< 1mg/L/yr). Finally, of the 34 SAS wells that showed a statistically significant decreasing rate of change, four currently exceed the chloride SDWS. There were no SAS public supply wells monitored for chloride in Okeechobee County.

Table D-8: Analyzed SAS Public Supply Wells with Statistically Significant Trends in Chloride Concentration in Brevard and Indian River Counties

Chloride Trend Category	Number of SAS Wells Currently Exceeding 250 mg/L	Number of Additional SAS Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (22 SAS wells)	8	12
Medium Rate of Change (9 SAS wells)	0	1
Low Rate of Change (0 SAS wells)	---	NA
Decreasing Rate of Change (34 SAS wells)	4	NA

Note: mg/L = milligrams per liter

Agricultural Wells

None of the 18 agricultural wells evaluated in Brevard and Indian River counties showed an increasing rate of chloride concentration, however, two wells did show a statistically significant decreasing rate of chloride change (Table D-9). These two wells currently exceed the SDWS and are both associated with the same CUP in central Indian River County (Figure D-9). All of the analyzed wells in Brevard and Indian River counties were constructed into the UFA. There were no agricultural wells monitored for chloride in Okeechobee County.

Table D-9: Analyzed UFA Agricultural Wells with Statistically Significant Trends in Chloride Concentration in Brevard and Indian River Counties

Chloride Trend Category	Number of UFA Wells Currently Exceeding 250 mg/L	Number of Additional UFA Wells Projected to Exceed 250 mg/L by 2040
High Rate of Change (0 wells)	---	---
Medium Rate of Change (0 wells)	---	---
Low Rate of Change (0 wells)	---	NA
Decreasing Rate of Change (2 wells)	2	NA

Note: mg/L = milligrams per liter

Conclusions

Of the 75 wells identified as having increasing chloride trends greater than 1 mg/L/yr, 76 percent are currently not meeting the chloride SDWS or are projected to not meet it by 2040. The conclusion of this analysis is that groundwater quality may constrain the availability of groundwater sources in certain geographic regions within the CSEC RWSP area, specifically near the St. Johns River in Volusia County and in coastal areas of Volusia, Brevard, and Indian River counties. Detailed conclusions for each sub-region of the CSEC RWSP are provided below.

Volusia County

Eleven percent of the analyzed DOWN wells in Volusia County displayed increasing chloride concentrations at the high or medium rate of change. The three wells with a high rate of change were located near the St. Johns River within the St. Johns River valley (Figure D-2). This area is characterized as a groundwater discharge zone where hydraulic conditions allow relict sea water from the Lower Floridan to mix with fresh-water from the UFA through upward leakage or direct flow through fractures or faults (Boniol 2002). Here, the UFA freshwater lens can be thin, and the open hole interval of monitoring wells may extend beneath this lens within a zone of lower quality water. It is possible that saltwater intrusion via upconing is occurring in a small group of analyzed DOWN wells, specifically those located close to pumping centers. However, the upconing appears to be localized as other monitoring wells in the area did not show increasing chloride concentration trends.

Twelve percent of the analyzed public supply wells in Volusia County showed high or medium rates of increasing chlorides. Approximately half are located in the St. Johns River valley with the remaining located in eastern Volusia County (Figure D-3). The DOWN well analysis did not show signs of lateral saltwater intrusion, therefore it is possible that the public supply wells are experiencing water quality changes as a result of upconing. Current, or potentially enhanced, wellfield management strategies implemented by the affected utilities may decrease or reverse these increasing chloride trends.

Both of the analyzed agricultural wells in Volusia County are Upper Floridan aquifer monitor wells associated with a proposed agricultural operation in the southern part of the county. The deeper of the two wells showed a high rate of increasing chlorides. Although the agricultural facility is not yet in operation, it is possible that upconing from other withdrawals in the area are influencing this well. Despite having sufficient samples for statistical analysis, the water quality data for the agricultural monitor well spans only four years. A nearby public supply monitor well with a six-year period of record shows a similar trend during the same four-year period, however, no apparent trend exists when including data for the two previous years. SJRWMD will re-evaluate the chloride trends in the agricultural monitor wells during the next CSEC RWSP update when the period of record extends an additional five years.

Results of the water quality analysis show that saltwater intrusion in Volusia County appears to be localized due to upconing in response to withdrawals of groundwater from a single well and/or combined withdrawals from a wellfield. When viewed in total, the conclusion of this analysis is that groundwater quality may constrain the availability of fresh groundwater in a limited area within Volusia County, specifically along the coast and near the St. Johns River.

It should be noted that the major public supply utilities in coastal Volusia County have developed additional wellfields further inland. New wellfields were necessary to meet increased water demand of growing populations while avoiding wetland impacts and water quality degradation in the thin freshwater lens of the UFA near the coast. The continued shift of UFA withdrawals to the west may be of concern in the future as utilities in western Volusia County shift withdrawals east to mitigate impacts to water bodies with adopted minimum flows and minimum levels. Additional alternative water supplies may be necessary in the future as utilities continue to shift withdrawals toward central Volusia County to reduce water resource impacts.

Marion and North Lake Counties

The results of the water quality analysis confirm that saltwater intrusion is not a significant issue in Marion and North Lake counties. There are areas of the UFA near the St. Johns River with high chloride concentrations relating to naturally occurring upwelling of water from the Lower Floridan aquifer; however, this hydrogeologic zone typically can be avoided by drilling into the shallower zones of the UFA.

Brevard, Indian River, and Okeechobee Counties

Thirty-two percent of the analyzed DOWN wells in Brevard and Indian River counties displayed increasing chloride concentrations at the high or medium rate of change. Two of these wells are located on the Atlantic coast, four just west of the Indian River Lagoon, and one in central Indian River County. These DOWN wells, along with 77 percent of all analyzed DOWN wells in Brevard and Indian River counties, currently exceed the SDWS for chlorides as the UFA is mostly brackish (>250 mg/L chlorides) in the region. Water quality changes in two of the seven DOWN wells with high and medium rates of chloride change may be indicative of lateral saltwater intrusion as both are located on coastal barrier islands. Water quality changes in the remaining five DOWN wells with high and medium rates of chloride increase may be the result of upconing from the influence of nearby wells.

Approximately 43 percent of analyzed UFA public supply wells in Brevard and Indian River counties showed a high or medium rate of increasing chloride concentration, all of which currently exceed the SDWS. Most of these wells are located in clusters, with some showing increasing trends while others in the cluster did not. Therefore, it is possible that water quality changes in these wells are from upconing resulting from individual or cumulative groundwater withdrawals. Public supply utilities that currently utilize reverse osmosis for treatment of brackish UFA water, generally, would not be impacted by increasing chloride concentrations. However, in this region, agricultural users rely, in part, on the UFA for irrigation. Increasing chloride concentrations within agricultural irrigation wells can potentially exceed the tolerance of historically grown crops, requiring significant investment by farmers to convert to crops that can survive higher concentrations.

The agricultural community has expressed concerns regarding anecdotal increases in chloride concentrations within their UFA wells. However, none of the 18 analyzed agricultural wells in Brevard and Indian River counties showed increasing chloride trends. Agricultural water quality data was limited to wells from four farming operations in Brevard County and one in Indian River County. Two of the agricultural wells in Indian River County showed a decreasing chloride trend, possibly due to implementation of water conservation measures and expansion of alternative water supplies by the permittee.

Thirty-one percent of public supply SAS production wells showed increasing rates of chloride concentration in the high and medium category with 21 currently exceeding, or projected by 2040 to exceed, the chloride SDWS. Eighty-seven percent of these wells belong to one utility in Brevard County. Water quality degradation in the SAS tends to be an issue for communities near the Atlantic coast. Utilities that have historically relied on the SAS have needed to replace SAS withdrawals with an alternate source, often of a lower quality, to halt impacts. Although surficial aquifer withdrawals have generally decreased over the years, additional water quality impacts are projected based on current withdrawals. It is estimated that approximately 70 percent of the 2040 projected domestic self-supply (DSS) demand in Brevard and Indian River counties will come from the SAS (CFWI 2020). Increasing chloride concentrations beyond the SDWS could present a financial hardship to DSS users if additional treatment is needed to render the water potable. Adherence to surficial aquifer wellfield management plans by utilities can help to lessen the chloride trend increases in some cases, as evidenced by the 34 SAS production wells that showed a decreasing trend. However, where there is a significant cluster of wells with current and projected impacts, additional strategies may be required, including increasing use of alternative water supplies.

Results of the water quality analysis show that UFA saltwater intrusion in Brevard and Indian River counties may result mostly from upconing in response to groundwater withdrawals from a single well and/or combined withdrawals. However, water quality changes in two DOWN UFA wells on barrier islands may be the result of lateral saltwater intrusion. In addition, the water quality analysis shows current and projected impacts to the surficial aquifer indicative of a potentially strained and limited fresh water supply. When viewed together, the conclusion is that groundwater quality may constrain the availability of groundwater sources in Brevard and Indian River counties.

References

Boniol, D. 2002. *Evaluation of Upper Floridan Aquifer Water Quality to Design a Monitoring Network in the St. Johns River Water Management District*. SJRWMD Technical Publication SJ2002-1.

Central Florida Water Initiative (CFWI). 2020. *2020 Central Florida Water Initiative (CFWI) Regional Water Supply Plan (RWSP): Volume I*. Available from: http://cfwiwater.com/

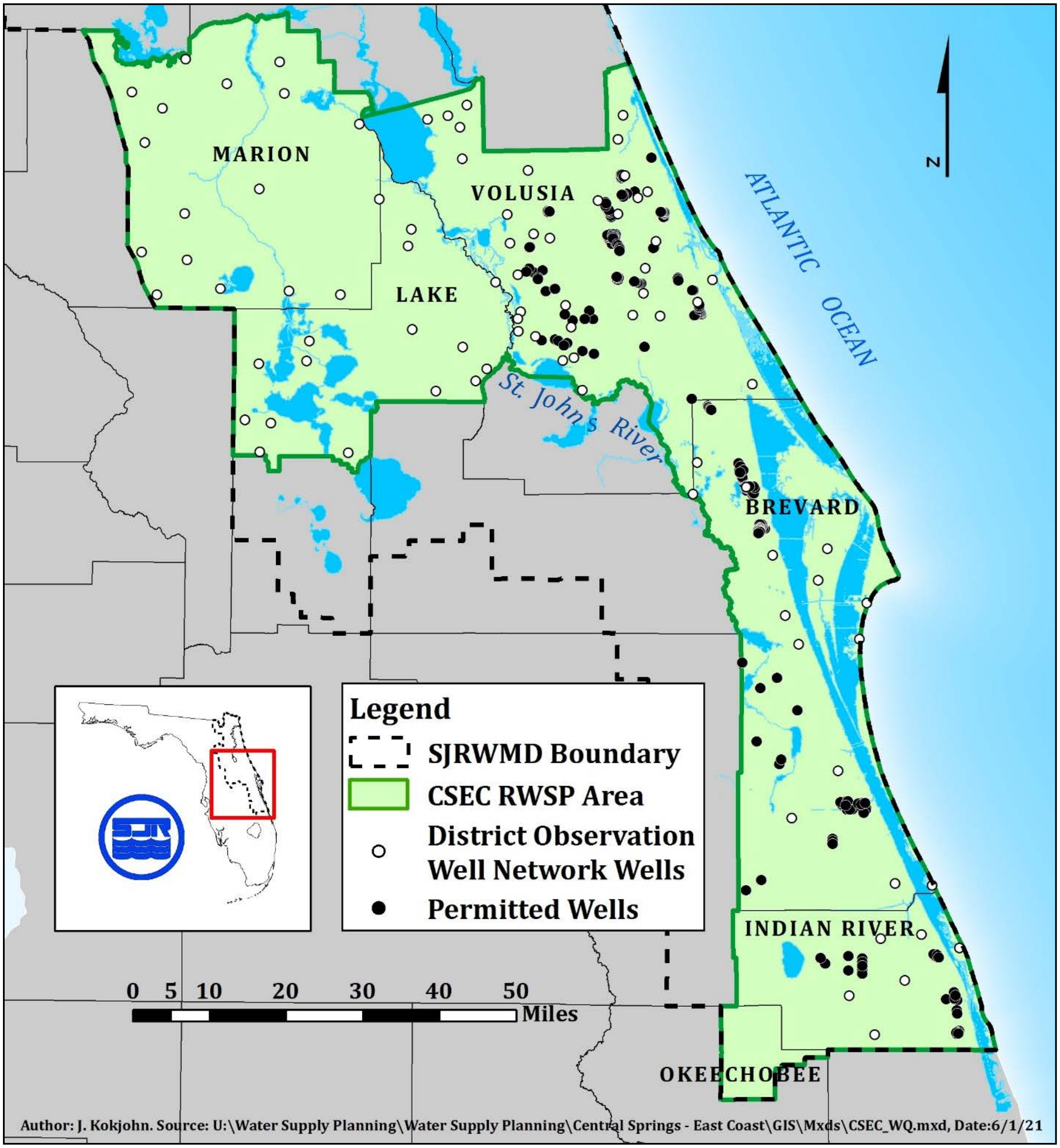


Figure D-1: Location of DOWN and Permitted Wells Analyzed for the CSEC RWSP Groundwater Quality Analysis

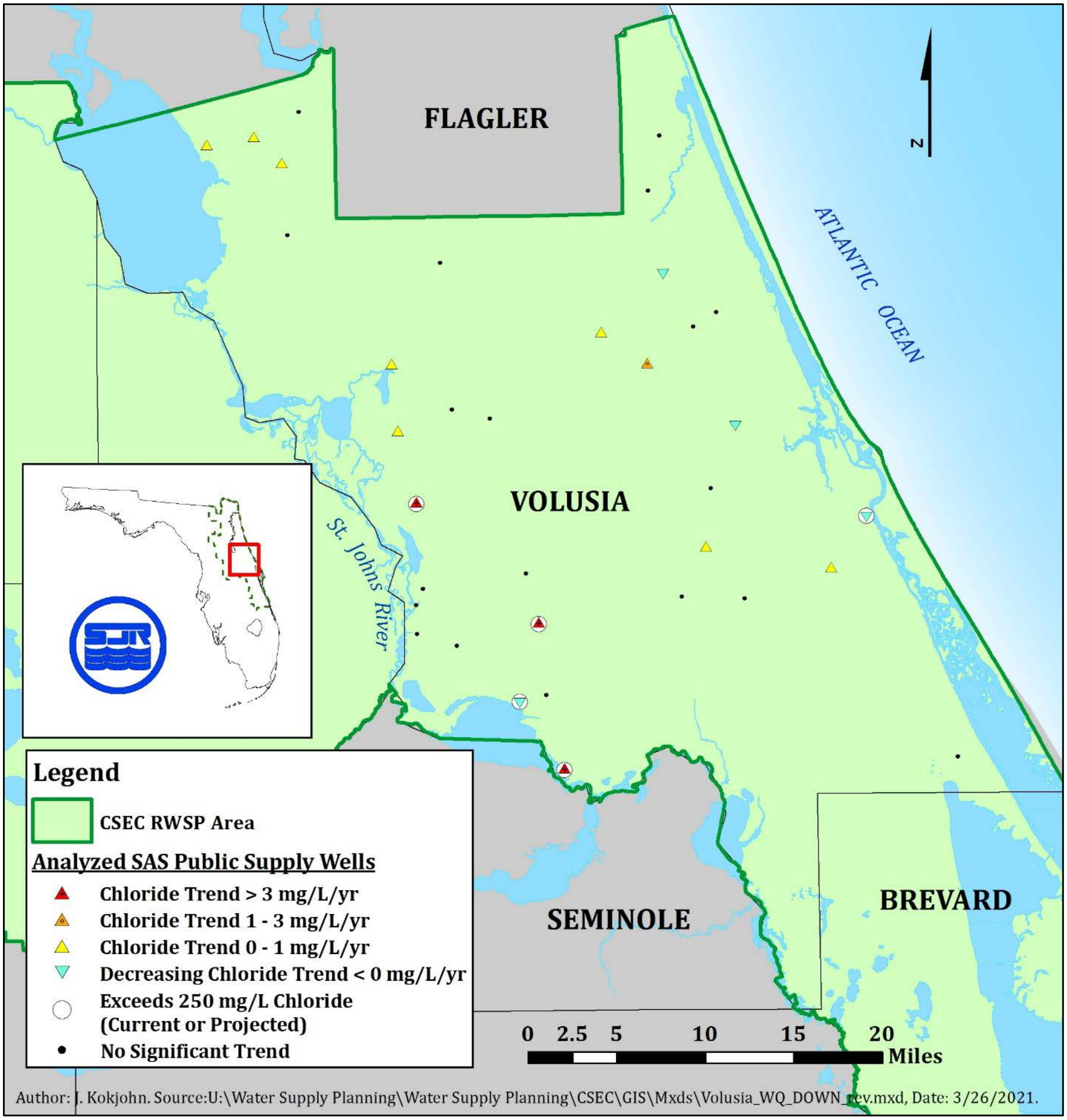


Figure D-2: Spatial Summary of UFA DOWN Well Chloride Trend Analysis in Volusia County

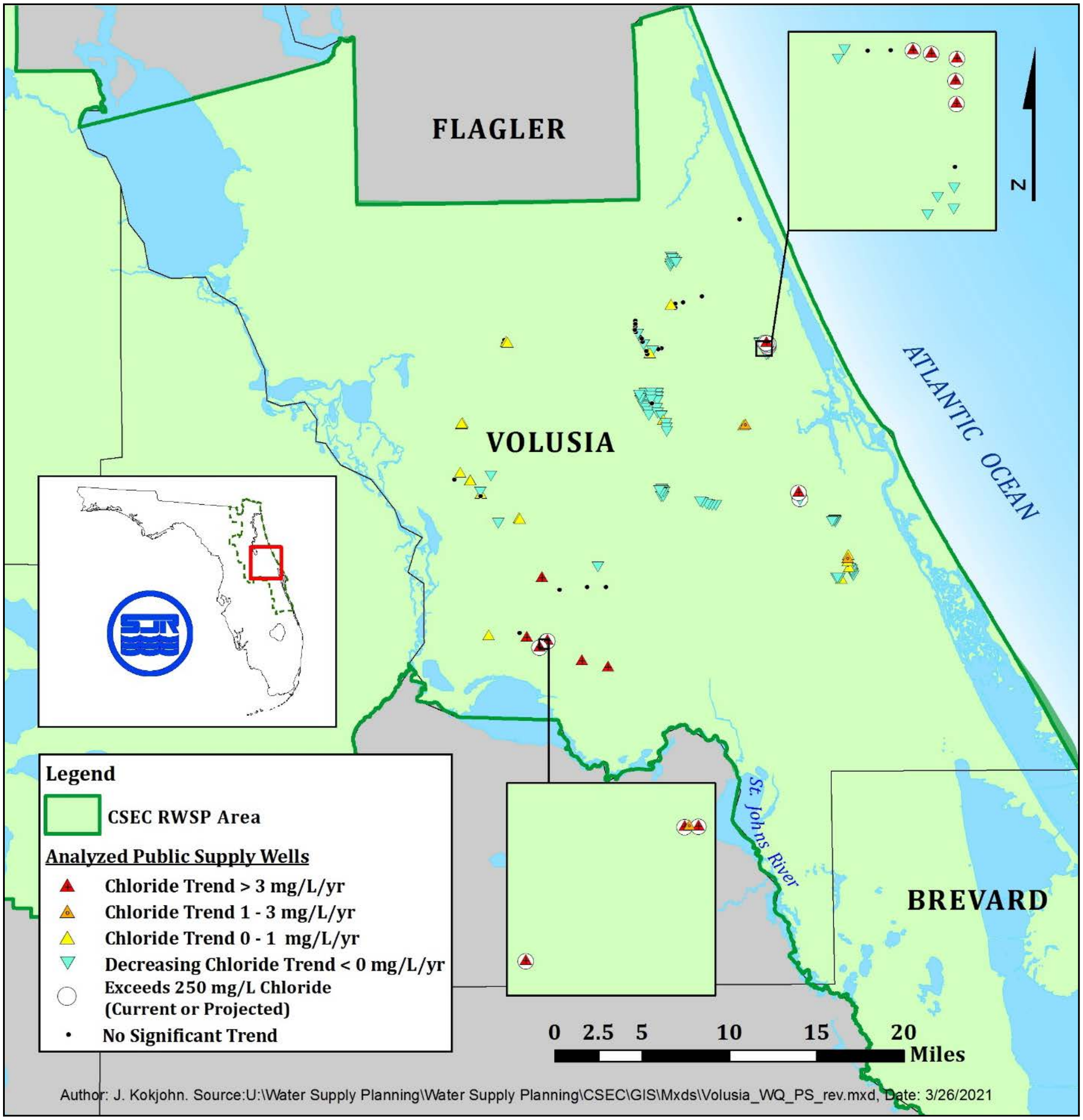


Figure D-3: Spatial Summary of UFA Public Supply Well Chloride Trend Analysis in Volusia County

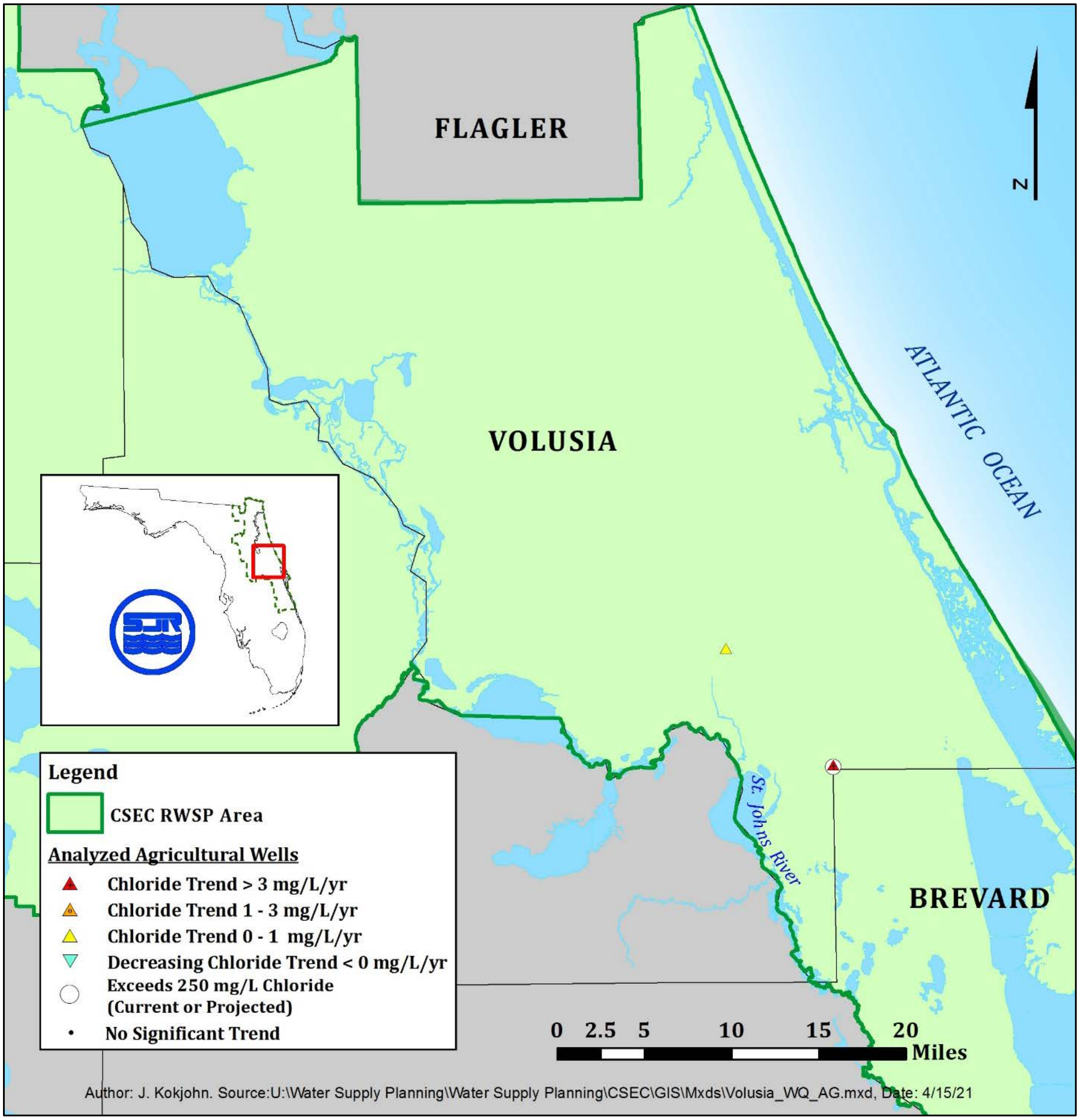


Figure D-4: Spatial Summary of UFA Agricultural Well Chloride Trend Analysis in Volusia County

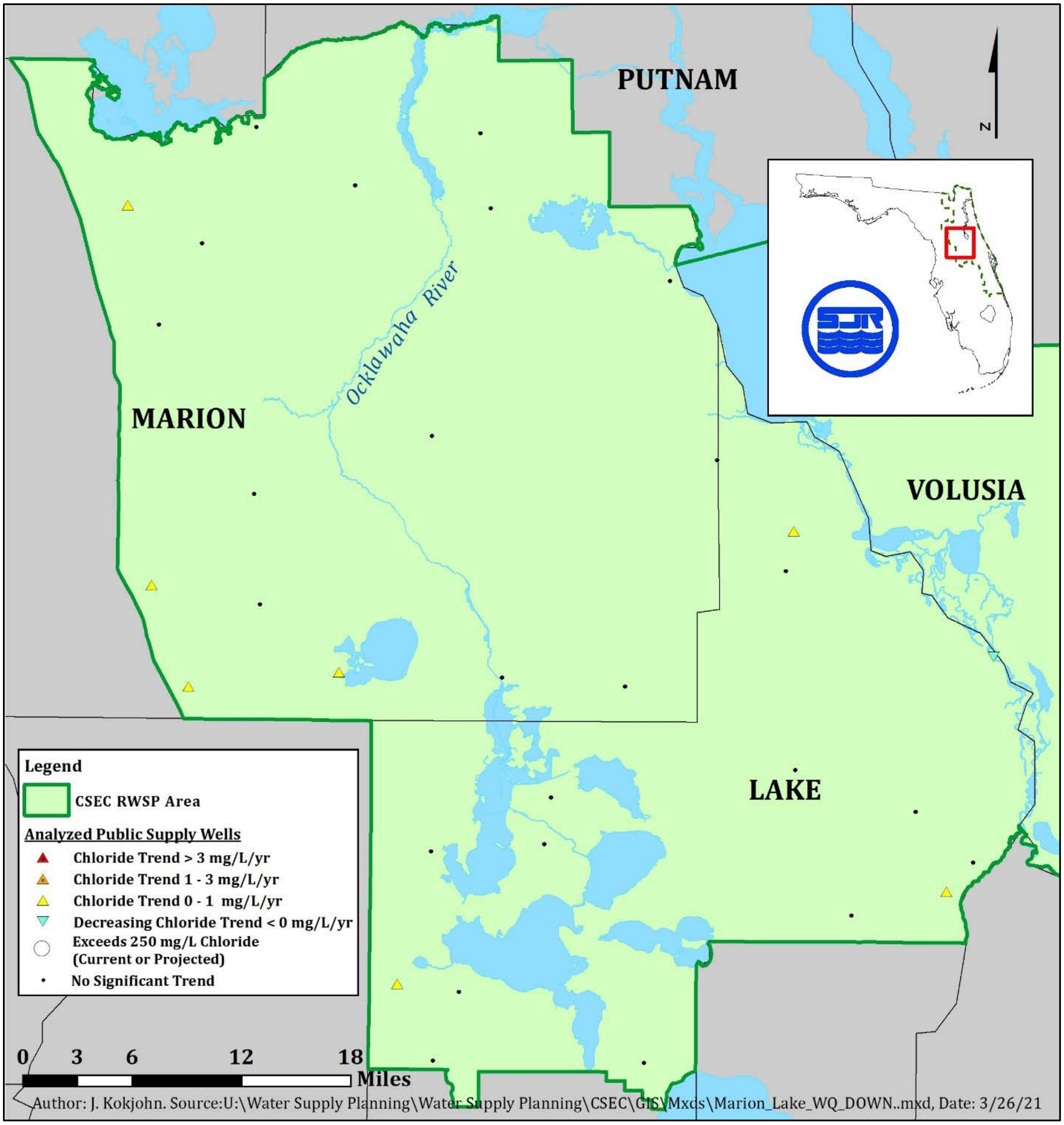


Figure D-5: Spatial Summary of UFA DOWN Well Chloride Trend Analysis in Marion and North Lake Counties

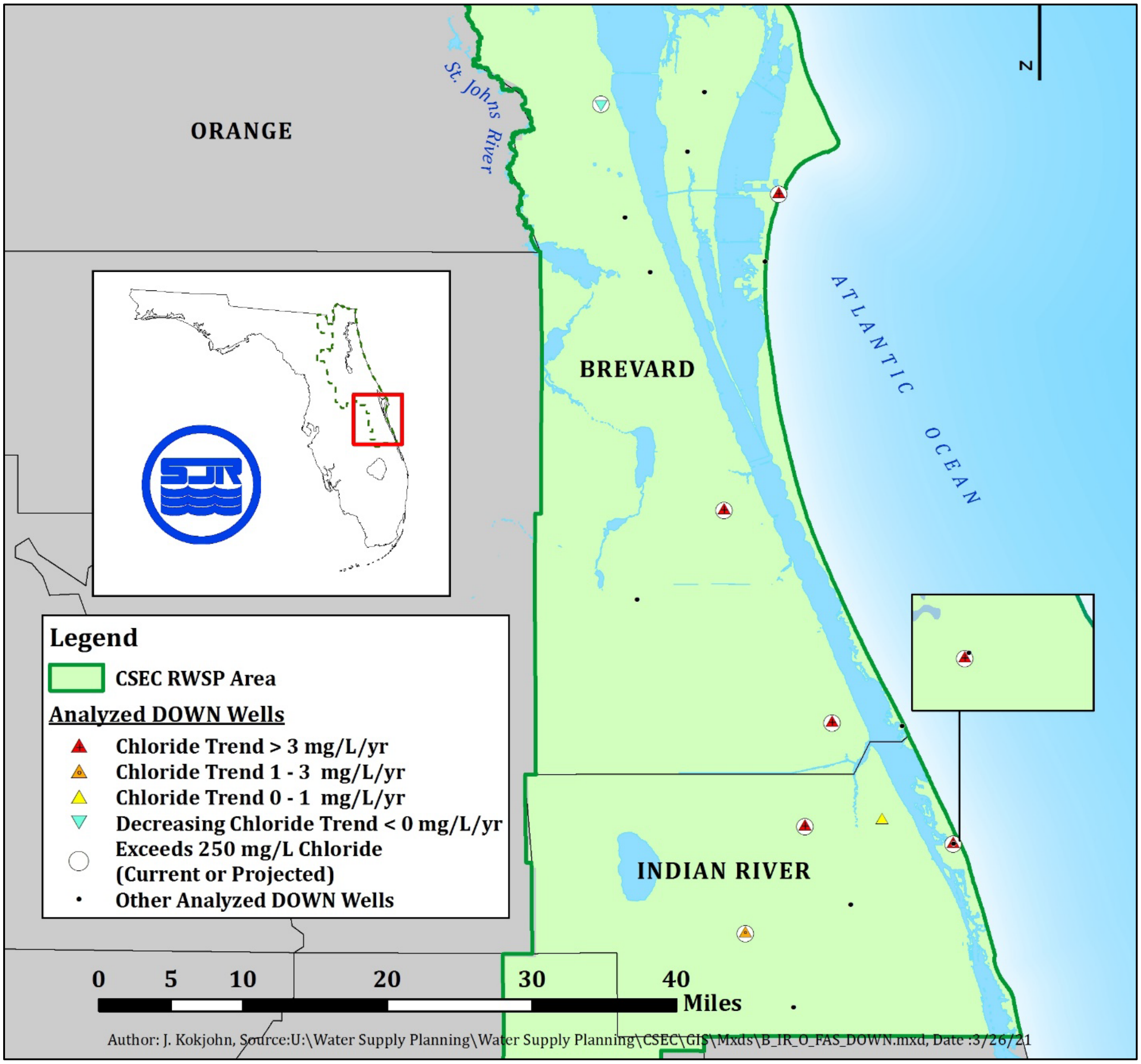


Figure D-6: Spatial Summary of UFA DOWN Well Chloride Trend Analysis in Brevard and Indian River Counties

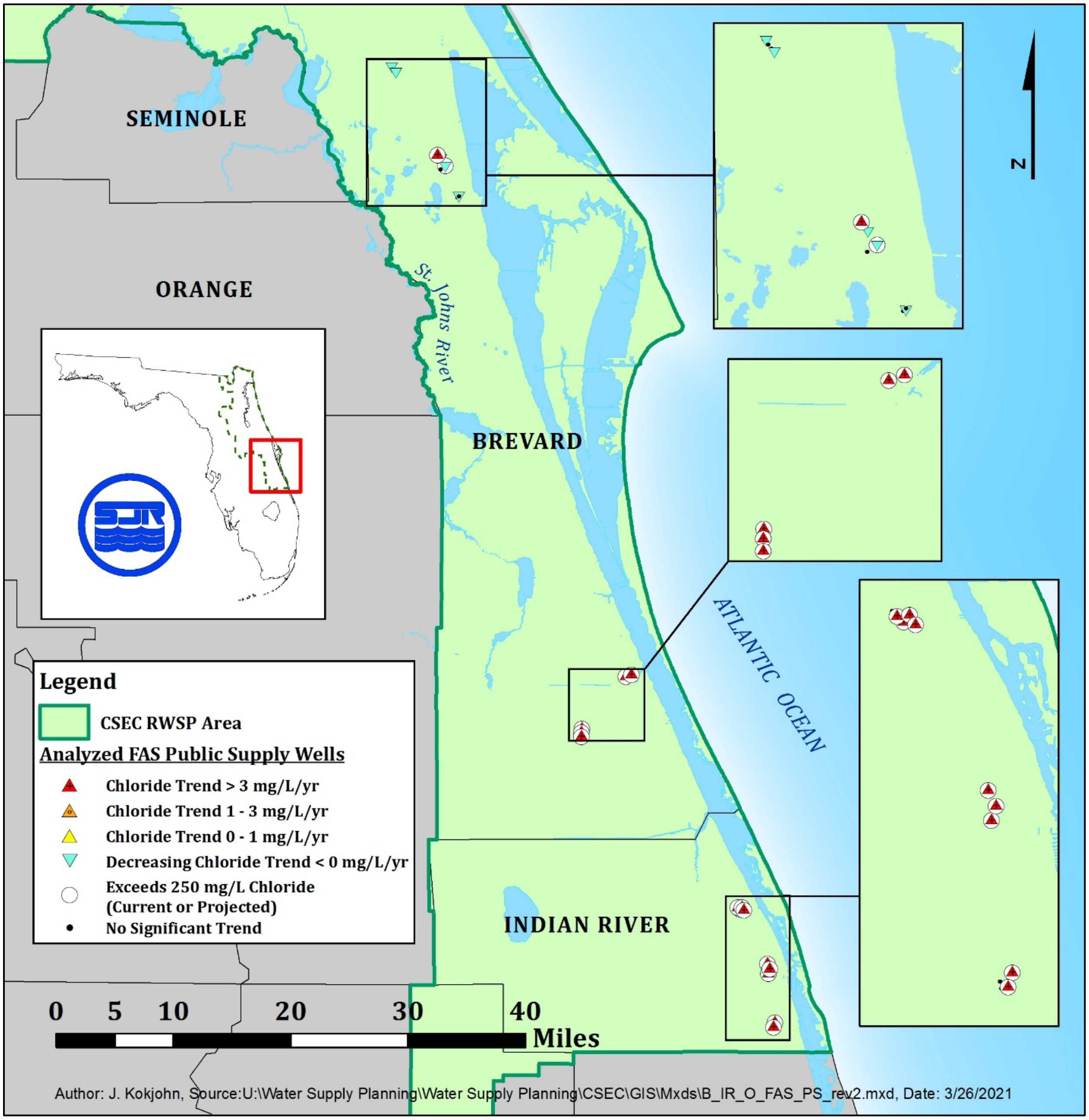


Figure D-7: Spatial Summary of UFA Public Supply Well Chloride Trend Analysis in Brevard and Indian River Counties

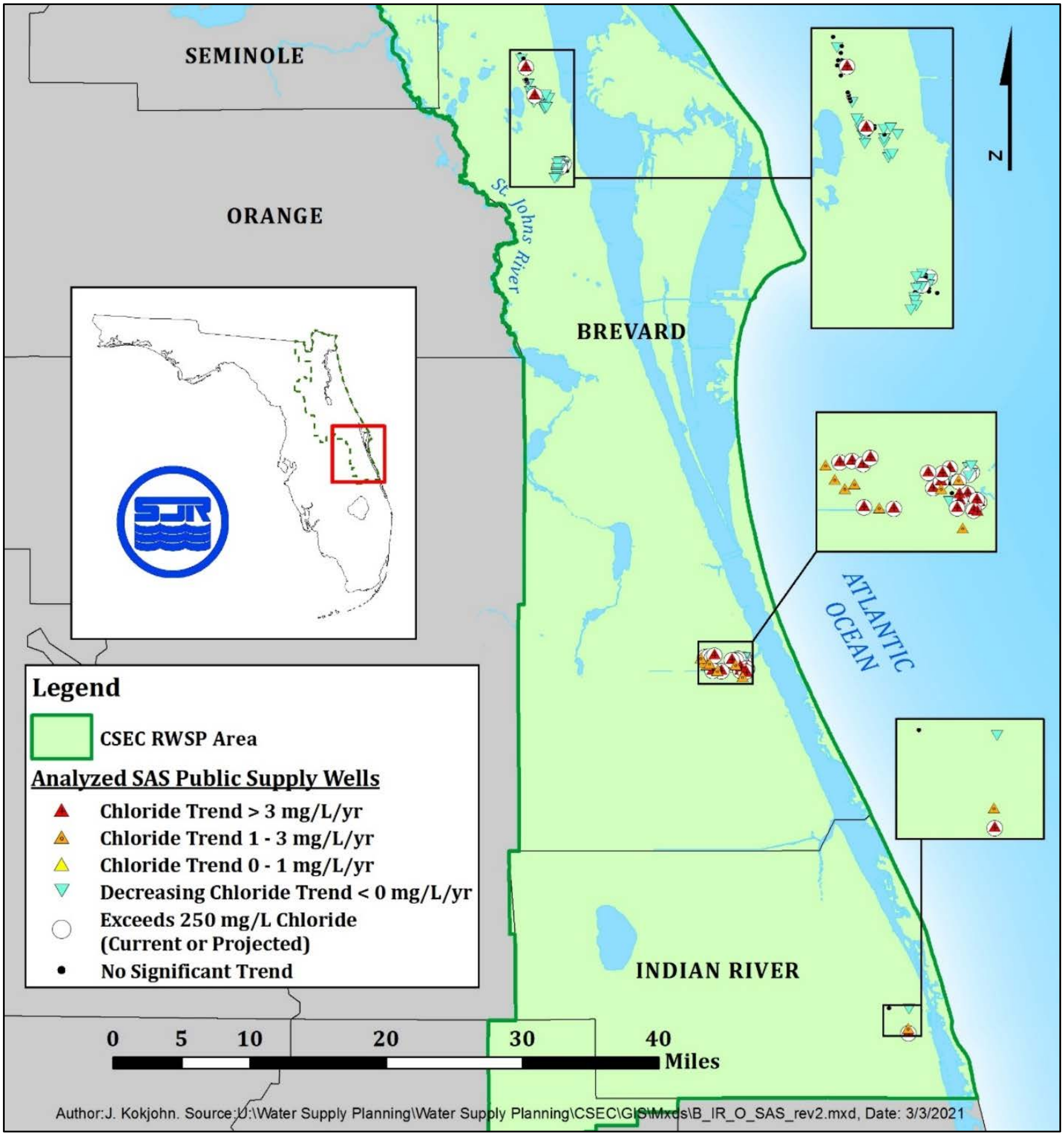


Figure D-8: Spatial Summary of SAS Public Supply Well Chloride Trend Analysis in Brevard and Indian River Counties

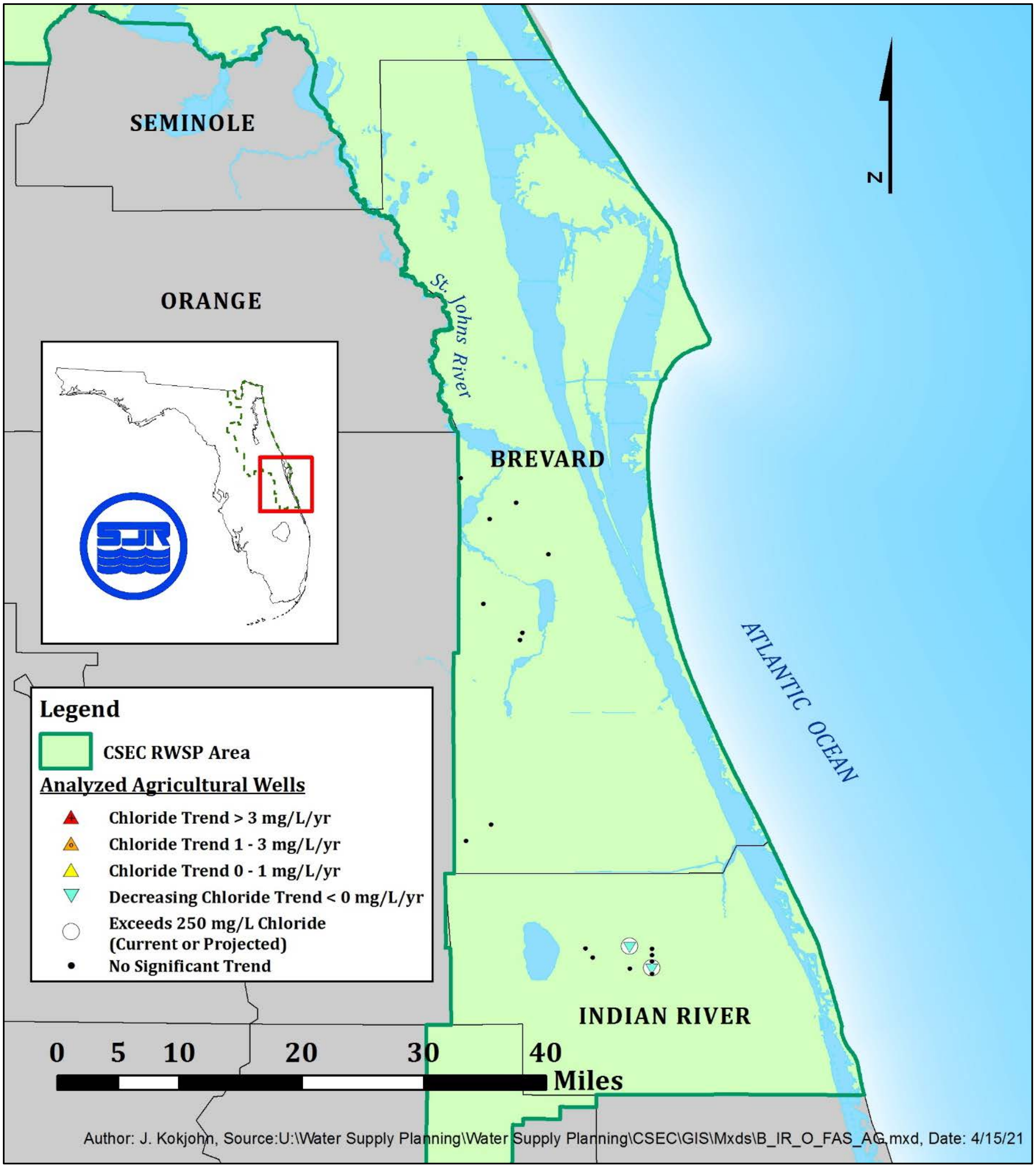


Figure D-9: Spatial Summary of UFA Agricultural Well Chloride Trend Analysis in Brevard and Indian River Counties

Table D-10: Groundwater Quality Analysis Results for CSEC Public Supply and Agricultural Wells Demonstrating an Increasing Chloride Trend of ≥3 mg/L/year

County	Permit Type[1]	Permit Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?	Year at SDWS[2]
Brevard	PS	202	Palm Bay	4216	SAS	Jan-2008	Dec-2019	120	235	463	339	0.448	6.2	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	4237	SAS	Jan-2008	Dec-2019	122	140	398	187	0.603	5.8	<0.0001	Yes	2025
Brevard	PS	202	Palm Bay	4238	SAS	Feb-2008	Dec-2019	105	121	316	188	0.570	6.0	<0.0001	Yes	2024
Brevard	PS	202	Palm Bay	4239	SAS	Feb-2008	Dec-2019	126	121	374	178	0.352	3.1	<0.0001	Yes	2039
Brevard	PS	202	Palm Bay	4244	SAS	Jan-2008	Dec-2019	130	79	290	132	0.706	8.5	<0.0001	Yes	2028
Brevard	PS	202	Palm Bay	4245	SAS	Jan-2008	Dec-2019	133	106	279	180	0.600	4.3	<0.0001	Yes	2030
Brevard	PS	202	Palm Bay	4247	SAS	Jan-2008	Dec-2019	118	100	279	144	0.541	5.3	<0.0001	Yes	2032
Brevard	PS	202	Palm Bay	4248	SAS	Jan-2008	May-2019	121	114	285	150	0.542	4.6	<0.0001	Yes	2036
Brevard	PS	202	Palm Bay	4257	SAS	Jan-2008	Dec-2019	122	159	391	255	0.348	4.3	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	4258	SAS	Jan-2008	Dec-2017	110	125	274	146	0.521	3.1	<0.0001	Yes	>2040
Brevard	PS	202	Palm Bay	4260	SAS	Jan-2008	Dec-2019	126	138	1109	327	0.652	29.9	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	4261	SAS	Jan-2008	Dec-2019	130	132	376	188	0.698	11.3	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	4265	SAS	Jan-2008	Nov-2016	104	154	355	184	0.228	3.2	0.0007	Yes	2033
Brevard	PS	202	Palm Bay	4268	SAS	Feb-2008	Dec-2019	129	211	464	286	0.384	4.4	<0.0001	Yes	<2019

County	Permit Type[1]	Permit Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?	Year at SDWS[2]
Brevard	PS	202	Palm Bay	4270	SAS	Jan-2008	Dec-2019	129	148	338	233	0.310	4.9	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	4271	SAS	Feb-2008	Dec-2019	128	196	368	255	0.505	6.5	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	4272	SAS	Jan-2008	Oct-2019	113	50	208	73	0.398	4.2	<0.0001	Yes	>2040
Brevard	PS	202	Palm Bay	4273	SAS	Jan-2008	Dec-2019	123	100	849	391	0.470	24.7	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	4274	SAS	Jan-2008	Dec-2019	134	72	440	111	0.749	10.6	<0.0001	Yes	2026
Brevard	PS	202	Palm Bay	21954	UFA	Jan-2008	Oct-2019	53	857	3220	2595	0.291	66.8	0.0022	Yes	<2019
Brevard	PS	202	Palm Bay	21955	UFA	Jan-2008	Oct-2019	56	182	1970	888	0.494	26.1	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	23854	UFA	Jan-2008	Dec-2019	81	630	8007	780	0.361	12.5	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	23855	UFA	Jan-2008	Dec-2019	103	698	1080	840	0.329	11.2	<0.0001	Yes	<2019
Brevard	PS	202	Palm Bay	23856	UFA	Feb-2008	Oct-2019	94	718	1076	899	0.435	17.1	<0.0001	Yes	<2019
Brevard	PS	233	Brevard County	4316	SAS	Jun-2011	May-2019	13	36.9	215	96	0.667	14.9	0.0019	Yes	2025
Brevard	PS	233	Brevard County	409482	UFA	Jun-2011	May-2019	13	3620	4720	4130	0.513	121.3	0.0173	Yes	<2019
Brevard	PS	10647	Titusville	36354	SAS	Dec-2013	Sep-2019	21	91.5	282	174	0.740	25.5	<0.0001	Yes	2020
Indian River	PS	10524	Indian River County	7309	UFA	Jan-2015	Oct-2019	18	343	595	508	0.420	21.3	0.0169	Yes	<2019

County	Permit Type[1]	Permit Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?	Year at SDWS[2]
Indian River	PS	10524	Indian River County	7318	UFA	Nov-2015	Oct-2019	16	255	306	277	0.527	8.4	0.0052	Yes	<2019
Indian River	PS	10524	Indian River County	35333	UFA	Oct-2015	Apr-2019	15	263	302	287	0.483	5.8	0.0149	Yes	<2019
Indian River	PS	10524	Indian River County	40143	UFA	Nov-2015	Oct-2019	14	268	307	289	0.469	6.0	0.0242	Yes	<2019
Indian River	PS	10524	Indian River County	181224	UFA	Nov-2015	Oct-2019	16	259	324	293	0.644	12.9	0.0006	Yes	<2019
Indian River	PS	10524	Indian River County	181225	UFA	Nov-2015	Nov-2019	15	285	398	345	0.625	16.2	0.0015	Yes	<2019
Indian River	PS	10705	Vero Beach	7221	SAS	Mar-2003	Sep-2019	46	119	248	148	0.339	4.2	0.0010	Yes	2031
Indian River	PS	10705	Vero Beach	7222	UFA	Jun-2003	Sep-2019	25	622	773	703	0.667	6.6	<0.0001	Yes	<2019
Indian River	PS	10705	Vero Beach	7230	UFA	Mar-2003	Mar-2019	50	405	612	516	0.796	11.7	<0.0001	Yes	<2019
Indian River	PS	10705	Vero Beach	7231	UFA	Mar-2003	Sep-2019	27	628	857	747	0.532	9.2	0.0001	Yes	<2019
Volusia	PS	8595	Port Orange	16517	UFA	Apr-2003	Jun-2019	53	100	444	200	0.521	15.6	<0.0001	Yes	2020
Volusia	PS	8595	Port Orange	16536	UFA	Sep-2002	Jun-2019	58	83	287	117	0.790	7.8	<0.0001	Yes	2026
Volusia	PS	8595	Port Orange	16537	UFA	Sep-2002	Jun-2019	56	96	446	248	0.762	20.7	<0.0001	Yes	2020
Volusia	PS	8595	Port Orange	16538	UFA	Dec-2002	Jun-2019	52	107	518	200	0.619	12.4	<0.0001	Yes	2020
Volusia	PS	8595	Port Orange	16539	UFA	Sep-2002	Jun-2019	51	131	558	250	0.803	23.8	<0.0001	Yes	2020

County	Permit Type[1]	Permit Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?	Year at SDWS[2]
Volusia	PS	8658	Deltona	16557	UFA	Jan-1998	Jul-2019	42	12	163	52	0.551	5.0	<0.0001	Yes	>2040
Volusia	PS	8658	Deltona	16566	UFA	May-1994	Jul-2019	47	12	200	48	0.274	3.3	0.0070	Yes	>2040
Volusia	PS	8658	Deltona	16567	UFA	May-1994	Jul-2019	47	12	250	85	0.370	6.6	0.0003	Yes	2030
Volusia	PS	8658	Deltona	16571	UFA	May-1994	Jul-2019	36	75.8	231	150	0.305	3.3	0.0108	Yes	2037
Volusia	PS	8658	Deltona	26948	UFA	May-1994	Jul-2019	44	12	157.5	50	0.370	4.2	0.0005	Yes	>2040
Volusia	PS	8658	Deltona	26949	UFA	Jan-1998	Jul-2019	44	12	230	145	0.321	6.5	0.0030	Yes	2022
Volusia	PS	8747	New Smyrna Beach	38424	UFA	Mar-2016	Dec-2019	16	140	170	160	0.650	6.7	0.0009	Yes	2031
Volusia	PS	8747	New Smyrna Beach	38425	UFA	Mar-2016	Dec-2019	16	160	210	195	0.821	10.8	<0.0001	Yes	2023
Volusia	PS	50157	Volusia County	33673	UFA	Jul-2003	Oct-2019	29	22	140	101	0.488	3.6	0.0002	Yes	>2040
Volusia	AG	127579	Farmton Services LLC	447581	UFA	May-2017	Feb-2020	16	492	619	556.5	0.639	31.8	0.0007	Yes	<2019

[1] PS = public supply; AG = agricultural

[2] SDWS = Secondary Drinking Water Standard. The SDWS for chloride is 250 milligrams per liter (mg/L).

Table D-11: Groundwater Quality Analysis Results for SJRWMD DOWN Wells Demonstrating an Increasing Chloride Trend of ≥3 mg/L/year

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?	Year at SDWS[1]
Brevard	BR1572	UFA	Apr-2004	Nov-2018	24	2,960	10,900	3,760	0.341	33.2	0.0211	Yes	<2019
Brevard	BR1935	UFA	Aug-2006	Oct-2018	23	370	470	412	0.565	4.4	0.0002	Yes	<2019
Brevard	BR1983	UFA	Sep-2007	Oct-2018	20	573	710	634	0.326	3.5	0.0478	Yes	<2019
Brevard	BR1990	UFA	Apr-2008	Dec-2018	18	157	825	788	0.542	6.9	0.0019	Yes	<2019
Indian River	IR0916	UFA	Mar-2008	Oct-2018	19	402	550	441	0.380	5.2	0.0250	Yes	<2019
Indian River	IR1058	UFA	Jan-2007	Oct-2018	21	283	620	531	0.429	7.3	0.0071	Yes	<2019
Volusia	V-0115	UFA	Feb-2004	Mar-2018	39	239	435	286	0.491	9.5	0.0000	Yes	<2019
Volusia	V-0772	UFA	Jan-2004	Apr-2018	21	246	795	532	0.581	23.0	0.0003	Yes	<2019
Volusia	V-0818	UFA	Jan-2004	Apr-2018	22	37	1,121	659	0.420	4.6	0.0068	Yes	<2019

[1] SDWS = Secondary Drinking Water Standard. The SDWS for chloride is 250 milligrams per liter (mg/L).

Table D-12: Groundwater Quality Analysis Results for CSEC Public Supply and Agricultural Wells Demonstrating an Increasing Chloride Trend of <3 mg/L/year and ≥1 mg/L/year

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?	Year at SDWS[2]
Brevard	PS	202	Palm Bay	4235	SAS	Feb-2008	Dec-2019	130	61	237	108	0.397	1.9	<0.0001	Yes	>2040
Brevard	PS	202	Palm Bay	4240	SAS	Feb-2008	Dec-2019	122	74	221	99	0.468	1.8	<0.0001	Yes	>2040
Brevard	PS	202	Palm Bay	4243	SAS	Feb-2008	Aug-2019	111	98	311	155	0.381	1.9	<0.0001	Yes	>2040
Brevard	PS	202	Palm Bay	4249	SAS	Jan-2008	Sep-2019	122	158	479	174	0.311	1.8	<0.0001	Yes	>2040
Brevard	PS	202	Palm Bay	4250	SAS	Jan-2008	Dec-2019	129	70	260	103	0.483	2.4	<0.0001	Yes	>2040
Brevard	PS	202	Palm Bay	4263	SAS	Jan-2008	Dec-2019	118	112	314	192	0.404	2.6	<0.0001	Yes	2035
Brevard	PS	202	Palm Bay	4266	SAS	Jan-2008	Dec-2019	121	116	380	171	0.261	1.6	<0.0001	Yes	>2040
Brevard	PS	202	Palm Bay	4275	SAS	Jan-2008	Dec-2019	127	78	234	121	0.375	2.2	<0.0001	Yes	>2040
Indian River	PS	10705	Vero Beach	7220	SAS	Mar-2003	Sep-2019	46	123	371	133	0.698	1.7	<0.0001	Yes	>2040
Volusia	PS	8658	Deltona	16569	UFA	May-1994	Jul-2019	46	12	170	63.5	0.267	2.5	0.0094	Yes	>2040
Volusia	PS	9157	Edgewater	38565	UFA	Apr-2011	Dec-2019	55	56	75	61	0.524	1.2	<0.0001	Yes	>2040
Volusia	PS	50157	Volusia County	33667	UFA	Jun-2003	Oct-2019	55	51	107	86	0.314	1.7	0.0008	Yes	>2040

[1] PS = public supply; AG = agricultural

[2] SDWS = Secondary Drinking Water Standard. The SDWS for chloride is 250 milligrams per liter (mg/L).

Table D-13: Groundwater Quality Analysis Results for SJRWMD DOWN Wells Demonstrating an Increasing Chloride Trend of <3 mg/L/year to ≥1 mg/L/year

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?	Year at SDWS[1]
Indian River	IR0955	UFA	Jan-2004	Nov-2018	24	257	330	287	0.460	1.9	0.0018	Yes	<2019
Volusia	V-0188	UFA	Feb-2004	Jan-2018	41	19	62	27	0.395	1.3	0.0003	Yes	>2040

[1] SDWS = Secondary Drinking Water Standard. The SDWS for chloride is 250 milligrams per liter (mg/L).

Table D-14: Groundwater Quality Analysis Results for CSEC Public Supply and Agricultural Wells Demonstrating an Increasing Chloride Trend of <1 mg/L/year

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	PS	8595	Port Orange	23899	UFA	Oct-2006	Jun-2019	34	10	15	12	0.348	0.2	0.0048	Yes
Volusia	PS	8834	Daytona Beach	17168	UFA	Nov-2013	Nov-2019	25	27	33	29	0.442	0.6	0.0022	Yes
Volusia	PS	8834	Daytona Beach	17173	UFA	Nov-2013	Nov-2019	25	26	29	27	0.422	0.2	0.0039	Yes
Volusia	PS	9157	Edgewater	17617	UFA	Oct-1989	Dec-2019	68	52	71	58	0.348	0.2	<0.0001	Yes
Volusia	PS	9157	Edgewater	17626	UFA	May-1994	Dec-2019	62	51	72	58	0.364	0.4	<0.0001	Yes
Volusia	PS	9157	Edgewater	38564	UFA	Apr-2011	Dec-2019	55	60	79	66	0.388	0.8	<0.0001	Yes
Volusia	PS	9157	Edgewater	38566	UFA	Apr-2011	Dec-2019	55	56	74	61	0.312	0.6	0.0013	Yes
Volusia	PS	50116	DeLand	395	UFA	Jan-2006	Nov-2019	63	6	20	12	0.440	0.2	<0.0001	Yes
Volusia	PS	50116	DeLand	396	UFA	Jan-2006	Nov-2019	63	11	19	14	0.596	0.3	<0.0001	Yes
Volusia	PS	50116	DeLand	397	UFA	Jan-2006	Nov-2019	63	10	17	14	0.329	0.1	0.0002	Yes
Volusia	PS	50116	DeLand	409	UFA	Jan-2006	Nov-2019	65	11	36	27	0.310	0.3	0.0003	Yes
Volusia	PS	50116	DeLand	410	UFA	Jan-2006	Nov-2019	64	23	39	29	0.424	0.4	<0.0001	Yes

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	PS	50116	DeLand	411	UFA	Jan-2006	Nov-2019	62	12	18	15	0.628	0.3	<0.0001	Yes
Volusia	PS	50116	DeLand	414	UFA	Jan-2006	Nov-2019	63	12	32	17	0.611	0.9	<0.0001	Yes
Volusia	PS	50116	DeLand	36209	UFA	May-2008	Nov-2019	41	5	7	5	0.398	0.1	0.0003	Yes
Volusia	PS	50116	DeLand	36210	UFA	May-2008	Nov-2019	45	4	6	5	0.514	0.1	<0.0001	Yes
Volusia	PS	50116	DeLand	36215	UFA	Aug-2013	Nov-2019	23	9	12	11	0.432	0.3	0.0049	Yes
Volusia	PS	50116	DeLand	36218	UFA	Aug-2013	Nov-2019	25	10	13	12	0.387	0.3	0.0081	Yes
Volusia	PS	50116	DeLand	38469	UFA	Jan-2006	Nov-2019	62	14	26	20	0.741	0.6	<0.0001	Yes
Volusia	PS	50157	Volusia County	33666	UFA	Apr-2002	Oct-2019	41	27	88	44	0.223	0.9	0.0419	Yes
Volusia	PS	50157	Volusia County	33686	UFA	Jul-2003	Oct-2019	33	12	26	18	0.503	0.4	<0.0001	Yes
Volusia	AG	127579	Farmton Services LLC	447577	UFA	Nov-2016	Feb-2021	18	29.6	35.1	31.3	0.452	0.8	0.0108	Yes

[1] PS = public supply; AG = agricultural

Table D-15: Groundwater Quality Analysis Results for SJRWMD DOWN Wells Demonstrating an Increasing Chloride Trend of <1 mg/L/year

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Indian River	IR1183	UFA	Aug-2008	Oct-2018	22	112	130	120	0.351	0.8	0.0235	Yes
Lake	L-0038	UFA	May-2004	Apr-2018	23	5	15	10	0.360	0.4	0.0175	Yes
Lake	L-0040	UFA	Nov-2004	Jun-2018	13	7	19	8	0.564	0.2	0.0087	Yes
Lake	L-0924	UFA	May-2007	Dec-2018	20	9	26	13	0.737	0.9	0.0000	Yes
Marion	M-0031	UFA	Sep-2004	May-2018	20	2	11	5	0.374	0.3	0.0231	Yes
Marion	M-0041	UFA	Sep-2004	May-2018	19	6	13	9	0.450	0.2	0.0078	Yes
Marion	M-0467	UFA	Mar-2004	May-2018	20	5	13	8	0.563	0.3	0.0006	Yes
Marion	M-0527	UFA	Mar-2009	May-2018	22	8	18	14	0.450	0.6	0.0037	Yes
Volusia	V-0064	UFA	May-2004	Apr-2018	14	10	19	13	0.637	0.2	0.0017	Yes
Volusia	V-0086	UFA	Feb-2004	Jan-2018	23	18	24	19	0.482	0.2	0.0013	Yes
Volusia	V-0110	UFA	Apr-2004	Jan-2018	24	10	25	12	0.493	0.3	0.0008	Yes
Volusia	V-0156	UFA	Sep-2004	Mar-2018	15	29	42	32	0.438	0.6	0.0258	Yes
Volusia	V-0184	UFA	Jun-2004	Apr-2018	14	17	29	20	0.692	0.5	0.0007	Yes

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	V-0435	UFA	Jan-2004	Jan-2018	23	32	58	53	0.455	0.6	0.0026	Yes
Volusia	V-1030	UFA	Mar-2004	Mar-2018	25	14	20	16	0.567	0.3	0.0001	Yes
Volusia	V-4033	UFA	May-2004	Apr-2018	22	12	17	12	0.320	0.1	0.0391	Yes

Table D-16: Groundwater Quality Analysis Results for CSEC Public Supply and Agricultural Wells Demonstrating a Decreasing Chloride Trend

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	PS	202	Palm Bay	4218	SAS	Jan-2008	Dec-2019	134	124	267	144	-0.138	-0.7	0.0203	Yes
Brevard	PS	202	Palm Bay	4242	SAS	Jan-2008	Dec-2019	140	97	253	176	-0.121	-0.8	0.0364	Yes
Brevard	PS	202	Palm Bay	4252	SAS	Jan-2008	Dec-2019	125	218	435	288	-0.539	-10.9	<0.0001	Yes
Brevard	PS	202	Palm Bay	4253	SAS	Jan-2008	Dec-2019	135	150	397	310	-0.368	-9.2	<0.0001	Yes
Brevard	PS	202	Palm Bay	4256	SAS	Jan-2008	Dec-2019	136	92	354	220	-0.633	-12.1	<0.0001	Yes
Brevard	PS	202	Palm Bay	4264	SAS	Feb-2008	Dec-2019	115	151	372	194	-0.188	-1.8	0.0032	Yes
Brevard	PS	233	Brevard County	4315	SAS	Jun-2011	May-2018	12	30	53	35	-0.485	-1.8	0.0335	Yes
Brevard	PS	233	Brevard County	409483	UFA	Jun-2011	May-2018	12	43	88	72	-0.515	-6.0	0.0236	Yes
Brevard	PS	233	Brevard County	409484	UFA	Jun-2011	May-2018	12	530	859	644	-0.636	-39.6	0.0049	Yes
Brevard	PS	10647	Titusville	3841	SAS	Dec-2013	Sep-2017	13	6	17	12	-0.520	-1.8	0.0169	Yes
Brevard	PS	10647	Titusville	3843	SAS	Dec-2013	Oct-2019	20	17	282	158	-0.375	-10.5	0.0231	Yes
Brevard	PS	10647	Titusville	3844	SAS	Sep-2013	Oct-2019	22	14	68	24	-0.503	-8.2	0.0012	Yes
Brevard	PS	10647	Titusville	3845	SAS	Sep-2013	Oct-2019	24	22	120	47	-0.735	-17.0	<0.0001	Yes

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	PS	10647	Titusville	3846	SAS	Dec-2013	Oct-2019	21	25	89	41	-0.574	-6.7	0.0003	Yes
Brevard	PS	10647	Titusville	3849	SAS	Dec-2013	Oct-2019	21	27	111	46	-0.486	-5.2	0.0023	Yes
Brevard	PS	10647	Titusville	3850	SAS	Dec-2013	May-2019	20	38	61	49	-0.328	-1.6	0.0476	Yes
Brevard	PS	10647	Titusville	3856	SAS	Dec-2013	Oct-2019	20	8	89	35	-0.396	-2.4	0.0163	Yes
Brevard	PS	10647	Titusville	3865	SAS	Dec-2013	Sep-2019	19	266	536	405	-0.771	-30.0	<0.0001	Yes
Brevard	PS	10647	Titusville	3867	SAS	Dec-2013	Oct-2019	19	71	363	100	-0.340	-8.6	0.0460	Yes
Brevard	PS	10647	Titusville	3873	SAS	Dec-2013	Oct-2019	22	42	145	71	-0.460	-5.9	0.0031	Yes
Brevard	PS	10647	Titusville	3882	SAS	Sep-2014	Oct-2019	19	57	410	252	-0.591	-62.4	0.0005	Yes
Brevard	PS	10647	Titusville	3884	SAS	Dec-2013	Oct-2019	21	84	340	198	-0.711	-48.2	<0.0001	Yes
Brevard	PS	10647	Titusville	3887	SAS	Sep-2013	Oct-2019	20	5	391	119	-0.642	-38.5	<0.0001	Yes
Brevard	PS	10647	Titusville	3891	SAS	Sep-2013	Oct-2019	22	30	81	63	-0.723	-4.3	<0.0001	Yes
Brevard	PS	10647	Titusville	3892	SAS	Sep-2013	Oct-2019	21	7	34	20	-0.511	-2.2	0.0014	Yes
Brevard	PS	10647	Titusville	3893	SAS	Dec-2013	May-2019	19	30	68	42	-0.406	-4.2	0.0172	Yes
Brevard	PS	10647	Titusville	3895	SAS	Sep-2013	May-2019	16	15	172	45	-0.717	-14.9	0.0001	Yes

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	PS	10647	Titusville	3897	SAS	Dec-2013	May-2019	17	25	254	34	-0.735	-12.1	<0.0001	Yes
Brevard	PS	10647	Titusville	3898	SAS	Sep-2013	Oct-2019	23	27	92	68	-0.671	-4.3	<0.0001	Yes
Brevard	PS	10647	Titusville	3900	SAS	Sep-2013	Oct-2019	22	5	64	51	-0.700	-3.3	<0.0001	Yes
Brevard	PS	10647	Titusville	3902	UFA	Dec-2014	Oct-2019	19	32	99	48	-0.727	-10.5	<0.0001	Yes
Brevard	PS	10647	Titusville	3910	SAS	Dec-2013	Oct-2019	21	82	253	140	-0.895	-25.9	<0.0001	Yes
Brevard	PS	10647	Titusville	3911	SAS	Dec-2013	Oct-2019	22	67	204	77	-0.668	-3.9	<0.0001	Yes
Brevard	PS	10647	Titusville	3912	SAS	Sep-2013	Dec-2017	17	80	150	123	-0.756	-15.5	<0.0001	Yes
Brevard	PS	10647	Titusville	3914	SAS	Sep-2014	Sep-2017	12	66	303	156	-0.546	-81.0	0.0164	Yes
Brevard	PS	10647	Titusville	3918	SAS	Dec-2013	Mar-2017	13	95	184	167	-0.736	-26.0	0.0006	Yes
Brevard	PS	99052	Titusville	38774	UFA	Oct-2013	May-2019	12	53	66	59	-0.455	-1.2	0.0467	Yes
Brevard	PS	99052	Titusville	38779	UFA	Oct-2013	May-2019	12	46	62	55	-0.727	-2.3	0.0013	Yes
Indian River	AG	2186	Sun Ag LLC	7173	UFA	Feb-2001	May-2020	15	377	722	473	-0.695	-11.2	0.0004	Yes
Indian River	AG	2186	Sun AG LLC	8028	UFA	Jun-2005	May-2019	15	228	921	352	-0.479	-23.5	0.0152	Yes
Indian River	PS	10705	Vero Beach	7218	SAS	Mar-2003	Sep-2019	49	58	129	112	-0.247	-1.1	0.0133	Yes

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	PS	8528	Holly Hill	16365	UFA	Apr-1985	Nov-2018	53	19	40	22	-0.490	-0.3	<0.0001	Yes
Volusia	PS	8528	Holly Hill	16366	UFA	Apr-1985	Nov-2018	51	20	42	24	-0.421	-0.3	<0.0001	Yes
Volusia	PS	8528	Holly Hill	16367	UFA	Apr-1985	Nov-2018	54	21	109	26	-0.345	-0.2	0.0003	Yes
Volusia	PS	8528	Holly Hill	16368	UFA	Apr-1985	Jun-2019	55	21	65	24	-0.347	-0.2	0.0002	Yes
Volusia	PS	8528	Holly Hill	16369	UFA	Apr-1985	Nov-2018	53	19	44	25	-0.407	-0.3	<0.0001	Yes
Volusia	PS	8528	Holly Hill	16370	UFA	Apr-1985	Nov-2018	51	20	40	23	-0.376	-0.2	0.0001	Yes
Volusia	PS	8528	Holly Hill	16371	UFA	Apr-1985	Nov-2018	54	20	38	25	-0.391	-0.3	<0.0001	Yes
Volusia	PS	8595	Port Orange	16518	UFA	Sep-2002	Jun-2019	57	31	54	44	-0.239	-0.6	0.0105	Yes
Volusia	PS	8595	Port Orange	16520	UFA	Sep-2002	Jun-2019	58	32	65	42	-0.262	-0.4	0.0052	Yes
Volusia	PS	8595	Port Orange	16521	UFA	Mar-2003	Jun-2019	57	33	56	46	-0.305	-0.5	0.0011	Yes
Volusia	PS	8595	Port Orange	16522	UFA	Sep-2002	Jun-2019	59	34	66	47	-0.334	-0.5	0.0003	Yes
Volusia	PS	8595	Port Orange	16523	UFA	Sep-2002	Jun-2019	60	34	75	56	-0.324	-0.5	0.0004	Yes
Volusia	PS	8595	Port Orange	16524	UFA	Sep-2002	Jun-2019	60	30	68	54	-0.354	-0.8	<0.0001	Yes
Volusia	PS	8595	Port Orange	16525	UFA	Sep-2002	Jun-2019	60	44	64	54	-0.291	-0.4	0.0014	Yes

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	PS	8595	Port Orange	16526	UFA	Sep-2002	Jun-2019	56	43	67	56	-0.207	-0.3	0.0294	Yes
Volusia	PS	8595	Port Orange	16527	UFA	Sep-2002	Jun-2019	60	30	75	48	-0.367	-0.6	<0.0001	Yes
Volusia	PS	8595	Port Orange	16528	UFA	Sep-2002	Jun-2019	58	40	75	62	-0.228	-0.4	0.0133	Yes
Volusia	PS	8595	Port Orange	16531	UFA	Sep-2002	Jun-2019	57	51	112	79	-0.472	-2.3	<0.0001	Yes
Volusia	PS	8595	Port Orange	16532	UFA	Sep-2002	Jun-2019	59	61	126	88	-0.570	-2.2	<0.0001	Yes
Volusia	PS	8595	Port Orange	16534	UFA	Feb-2004	Jun-2019	55	116	225	159	-0.628	-2.2	<0.0001	Yes
Volusia	PS	8595	Port Orange	16535	UFA	Feb-2004	Jun-2019	53	149	250	172	-0.374	-0.9	0.0001	Yes
Volusia	PS	8595	Port Orange	16542	UFA	Sep-2002	Jun-2019	53	51	100	62	-0.243	-0.4	0.0123	Yes
Volusia	PS	8595	Port Orange	16543	UFA	Sep-2002	Jun-2019	58	11	50	23	-0.304	-0.6	0.0010	Yes
Volusia	PS	8595	Port Orange	16544	UFA	Sep-2002	Jun-2019	59	14	50	23	-0.213	-0.2	0.0206	Yes
Volusia	PS	8595	Port Orange	16545	UFA	Apr-2003	Jun-2019	56	13	45	24	-0.414	-0.6	<0.0001	Yes
Volusia	PS	8595	Port Orange	16547	UFA	May-2004	Jun-2019	51	17	65	28	-0.230	-0.5	0.0202	Yes
Volusia	PS	8595	Port Orange	16548	UFA	Sep-2002	Jun-2019	52	17	50	26	-0.306	-0.4	0.0019	Yes
Volusia	PS	8595	Port Orange	16549	UFA	Sep-2002	Jun-2019	54	14	50	27	-0.269	-0.6	0.0050	Yes

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	PS	8595	Port Orange	16550	UFA	Sep-2002	Jun-2019	59	14	50	26	-0.281	-0.4	0.0022	Yes
Volusia	PS	8595	Port Orange	16551	UFA	Sep-2002	Jun-2019	57	16	42	28	-0.192	-0.3	0.0391	Yes
Volusia	PS	8595	Port Orange	23897	UFA	Sep-2006	Jun-2019	36	18	45	26	-0.372	-0.6	0.0019	Yes
Volusia	PS	8595	Port Orange	23898	UFA	Sep-2006	Jun-2019	45	10	35	20	-0.449	-0.9	<0.0001	Yes
Volusia	PS	8595	Port Orange	23900	UFA	Sep-2006	Mar-2019	44	9	35	20	-0.333	-0.8	0.0019	Yes
Volusia	PS	8595	Port Orange	23901	UFA	Sep-2006	Jun-2019	45	11	54	22	-0.435	-0.9	<0.0001	Yes
Volusia	PS	8595	Port Orange	23902	UFA	Sep-2006	Jun-2019	44	0	58	23	-0.408	-0.8	0.0001	Yes
Volusia	PS	8658	Deltona	26943	UFA	May-1994	Jul-2019	40	6	20	10	-0.223	-0.1	0.0471	Yes
Volusia	PS	8747	New Smyrna Beach	16836	UFA	Sep-2003	Dec-2019	59	68	140	110	-0.310	-1.3	0.0007	Yes
Volusia	PS	8747	New Smyrna Beach	16837	UFA	Sep-2003	Dec-2019	57	62	136	74	-0.247	-0.6	0.0087	Yes
Volusia	PS	8747	New Smyrna Beach	16839	UFA	Sep-2003	Dec-2019	58	120	148	130	-0.456	-1.1	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	16840	UFA	Sep-2003	Dec-2019	56	70	102	90	-0.293	-0.5	0.0022	Yes
Volusia	PS	8747	New Smyrna Beach	16841	UFA	Sep-2003	Dec-2019	57	66	86	76	-0.449	-0.5	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	16842	UFA	Sep-2003	Dec-2019	58	38	68	56	-0.238	-0.3	0.0125	Yes

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	PS	8747	New Smyrna Beach	16843	UFA	Sep-2003	Dec-2019	68	12	32	17	-0.471	-0.3	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	16844	UFA	Sep-2003	Dec-2019	56	12	21	16	-0.427	-0.2	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	16845	UFA	Sep-2003	Dec-2019	55	12	21	16	-0.464	-0.2	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	16846	UFA	Sep-2003	Dec-2019	55	10	24	16	-0.357	-0.2	0.0003	Yes
Volusia	PS	8747	New Smyrna Beach	16847	UFA	Sep-2003	Dec-2019	56	8	22	17	-0.456	-0.2	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	16848	UFA	Sep-2003	Dec-2019	54	10	21	16	-0.306	-0.1	0.0024	Yes
Volusia	PS	8747	New Smyrna Beach	22238	UFA	Sep-2003	Dec-2019	56	32	50	40	-0.680	-0.8	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	22239	UFA	Sep-2003	Dec-2019	59	26	50	36	-0.301	-0.5	0.0012	Yes
Volusia	PS	8747	New Smyrna Beach	22240	UFA	Sep-2003	Dec-2019	69	21	59	44	-0.462	-0.6	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	22241	UFA	Sep-2003	Dec-2019	55	28	66	48	-0.431	-0.5	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	22242	UFA	Sep-2003	Dec-2019	59	44	78	64	-0.422	-0.8	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	22243	UFA	Sep-2003	Sep-2019	57	36	54	46	-0.412	-0.4	<0.0001	Yes
Volusia	PS	8747	New Smyrna Beach	38426	UFA	Mar-2016	Dec-2019	16	166	187	175	-0.423	-2.5	0.0396	Yes
Volusia	PS	8747	New Smyrna Beach	406433	UFA	Dec-2007	Dec-2019	39	310	605	425	-0.600	-8.4	<0.0001	Yes

County	Permit Type[1]	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	PS	8834	Daytona Beach	17151	UFA	Nov-2013	Nov-2019	25	63	92	74	-0.484	-2.2	0.0008	Yes
Volusia	PS	8834	Daytona Beach	17172	UFA	Nov-2013	Nov-2019	23	24	28	25	-0.317	-0.2	0.0408	Yes
Volusia	PS	8834	Daytona Beach	17177	UFA	Nov-2013	Nov-2019	24	34	52	41	-0.358	-1.3	0.0160	Yes
Volusia	PS	9157	Edgewater	17618	UFA	Jan-2006	Dec-2019	98	54	82	65	-0.374	-0.6	<0.0001	Yes
Volusia	PS	9157	Edgewater	17619	UFA	Jan-2006	Dec-2019	98	61	84	68	-0.405	-0.5	<0.0001	Yes
Volusia	PS	9157	Edgewater	17621	UFA	Jan-2006	Dec-2019	98	72	97	84	-0.438	-0.9	<0.0001	Yes
Volusia	PS	9157	Edgewater	17622	UFA	Jan-2006	Dec-2019	95	73	96	84	-0.412	-0.8	<0.0001	Yes
Volusia	PS	9157	Edgewater	17623	UFA	Jan-2006	Dec-2019	98	74	97	83	-0.464	-0.8	<0.0001	Yes
Volusia	PS	9157	Edgewater	17624	UFA	Jan-2006	Dec-2019	98	72	95	82	-0.400	-0.7	<0.0001	Yes
Volusia	PS	9157	Edgewater	17625	UFA	Jan-2006	Dec-2019	98	71	91	80	-0.377	-0.6	<0.0001	Yes
Volusia	PS	9157	Edgewater	17628	UFA	Jan-2006	Dec-2019	94	58	80	65	-0.217	-0.3	0.0029	Yes
Volusia	PS	50116	DeLand	404	UFA	Jan-2006	Nov-2019	63	11	96	37	-0.423	-2.9	<0.0001	Yes
Volusia	PS	50116	DeLand	412	UFA	Jan-2006	Nov-2019	64	10	20	13	-0.284	-0.1	0.0011	Yes
Volusia	PS	50116	DeLand	415	UFA	Jan-2006	Nov-2019	65	13	22	19	-0.351	-0.3	<0.0001	Yes

[1] PS = public supply; AG = agricultural

Table D-37: Groundwater Quality Analysis Results for SJRWMD DOWN Wells Demonstrating a Decreasing Chloride Trend

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	BR0586	UFA	Apr-2004	Dec-2018	25	227	576	476	-0.300	-7.71	0.0377	Yes
Lake	L-0059	UFA	Mar-2004	Mar-2018	26	114	179	154	-0.394	-1.19	0.0050	Yes
Volusia	V-0127	UFA	Oct-2004	Jan-2018	13	5	70	19	-0.487	-1.78	0.0240	Yes
Volusia	V-0240	UFA	Apr-2004	Apr-2018	14	296	533	474	-0.473	-13.18	0.0215	Yes
Volusia	V-0508	UFA	Apr-2004	Jan-2018	22	4972	5660	5200	-0.372	-20.33	0.0164	Yes
Volusia	V-1161	UFA	Jul-2009	Jan-2018	18	104	1200	116	-0.712	-20.26	0.0000	Yes

Table D-48: Groundwater Quality Analysis Results for CSEC Public Supply and Agricultural Wells Not Showing Statistically Significant Trends

County	Permit Type	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	PS	202	Palm Bay	4251	UFA	Jan-2008	Dec-2019	101	138	874	643	0.009	0.1	0.9019	No
Brevard	PS	202	Palm Bay	4259	SAS	Jan-2008	Dec-2019	134	142	347	196	-0.082	-0.7	0.1660	No
Brevard	PS	202	Palm Bay	4262	SAS	Feb-2008	Dec-2019	22	112	170	152	0.189	0.7	0.2352	No
Brevard	PS	233	Brevard County	4304	SAS	Jun-2011	May-2019	13	61	154	118	-0.103	-2.9	0.6693	No
Brevard	PS	233	Brevard County	4312	SAS	Jan-2013	May-2018	11	29	34	33	-0.150	-0.2	0.5823	No
Brevard	PS	233	Brevard County	4313	SAS	Jan-2013	May-2018	10	33	65	44	0.225	2.8	0.4190	No
Brevard	PS	233	Brevard County	4317	SAS	Jun-2011	May-2018	10	42	61	54	0.090	0.0	0.7876	No
Brevard	PS	233	Brevard County	4318	SAS	Jun-2011	May-2018	11	37	46	43	-0.257	-0.6	0.3100	No
Brevard	PS	233	Brevard County	4319	SAS	Jun-2011	May-2018	11	33	42	35	0.346	0.5	0.1611	No
Brevard	PS	233	Brevard County	4320	SAS	Jun-2011	May-2018	12	24	84	44	-0.303	-5.8	0.1926	No
Brevard	PS	233	Brevard County	4321	SAS	Jun-2011	May-2018	11	46	75	63	0.273	1.7	0.2758	No
Brevard	PS	233	Brevard County	409485	UFA	Jan-2013	May-2018	11	10	13	11	0.150	0.1	0.5816	No
Brevard	AG	3249	S Duda & Sons Inc	4090	UFA	Jun-1998	Jun-2019	14	372	685	597	0.044	0.3	0.8694	No

County	Permit Type	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	AG	3249	S Duda & Sons Inc	4112	UFA	Jun-1998	Jun-2019	14	587	758	641	-0.177	-2.1	0.4108	No
Brevard	AG	3249	S Duda & Sons Inc	4117	UFA	Jun-1998	Jun-2019	14	579	894	704	-0.077	-0.9	0.7426	No
Brevard	AG	3426	East Central Florida Services Inc	13074	UFA	Jun-2006	May-2019	11	545	749	653	0.187	3.8	0.4786	No
Brevard	AG	3426	East Central Florida Services Inc	13184	UFA	Jun-2006	May-2019	10	489	674	585	-0.045	-1.4	0.9284	No
Brevard	AG	3426	East Central Florida Services Inc	13217	UFA	Jun-2006	May-2019	10	296	444	344	0.090	3.5	0.7876	No
Brevard	AG	3426	East Central Florida Services Inc	13219	UFA	Jun-2006	May-2019	11	307	497	360	0.346	5.1	0.1611	No
Brevard	AG	10662	Robert A Tucker	4403	UFA	May-2008	Jul-2020	13	206	291	233	0.065	0.7	0.8069	No
Brevard	PS	10647	Titusville	3842	SAS	Sep-2013	Oct-2019	20	23	131	69	-0.242	-8.3	0.1443	No
Brevard	PS	10647	Titusville	3847	SAS	Sep-2013	Oct-2019	20	19	187	28	-0.307	-1.5	0.0641	No
Brevard	PS	10647	Titusville	3848	SAS	Sep-2013	Oct-2019	26	26	403	137	-0.259	-32.0	0.0673	No
Brevard	PS	10647	Titusville	3857	SAS	Dec-2013	Oct-2019	19	10	35	20	-0.053	-0.4	0.7796	No
Brevard	PS	10647	Titusville	3858	SAS	Dec-2013	Nov-2019	21	27	56	39	-0.191	-1.6	0.2389	No

County	Permit Type	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	PS	10647	Titusville	3859	SAS	Dec-2013	Oct-2019	19	32	86	52	0.229	2.1	0.1832	No
Brevard	PS	10647	Titusville	3860	SAS	Sep-2013	Oct-2019	23	32	97	51	0.063	0.9	0.6919	No
Brevard	PS	10647	Titusville	3861	SAS	Mar-2012	Oct-2019	14	56	178	85	-0.209	-8.3	0.3244	No
Brevard	PS	10647	Titusville	3863	SAS	Sep-2013	Sep-2019	22	11	435	307	0.070	4.8	0.6719	No
Brevard	PS	10647	Titusville	3864	UFA	Mar-2015	Oct-2019	18	6	17	12	-0.262	-0.8	0.1393	No
Brevard	PS	10647	Titusville	3866	SAS	Dec-2013	Oct-2019	19	5	175	35	-0.170	-4.6	0.3273	No
Brevard	PS	10647	Titusville	3868	SAS	Sep-2013	Oct-2019	21	15	76	42	-0.152	-1.6	0.3492	No
Brevard	PS	10647	Titusville	3869	SAS	Sep-2013	May-2019	21	14	33	26	-0.110	-0.2	0.5059	No
Brevard	PS	10647	Titusville	3870	SAS	Dec-2015	Oct-2019	14	40	130	54	-0.385	-5.3	0.0627	No
Brevard	PS	10647	Titusville	3871	SAS	Dec-2015	Oct-2019	14	35	266	120	0.385	26.4	0.0627	No
Brevard	PS	10647	Titusville	3872	SAS	Dec-2015	Sep-2019	15	42	449	89	0.352	22.8	0.0748	No
Brevard	PS	10647	Titusville	3877	SAS	Sep-2013	Oct-2019	18	10	108	49	0.033	0.9	0.8796	No
Brevard	PS	10647	Titusville	3883	SAS	Sep-2013	Nov-2019	22	10	200	175	-0.284	-5.6	0.0707	No

County	Permit Type	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	PS	10647	Titusville	3888	SAS	Sep-2013	Jun-2019	19	6	356	124	-0.205	-14.0	0.2342	No
Brevard	PS	10647	Titusville	3889	SAS	Sep-2013	Jun-2018	18	7	401	43	-0.105	-3.6	0.5696	No
Brevard	PS	10647	Titusville	3890	SAS	Mar-2014	Oct-2019	20	14	63	23	0.238	1.7	0.1532	No
Brevard	PS	10647	Titusville	3894	SAS	Dec-2013	May-2019	19	29	51	37	-0.158	-0.6	0.3630	No
Brevard	PS	10647	Titusville	3899	SAS	Dec-2013	Oct-2019	23	20	105	95	-0.135	-0.8	0.3833	No
Brevard	PS	10647	Titusville	3903	UFA	Dec-2014	Oct-2019	18	13	110	101	-0.172	-1.0	0.3426	No
Brevard	PS	10647	Titusville	36353	SAS	Dec-2013	Oct-2019	21	23	77	29	0.033	0.1	0.8562	No
Brevard	PS	10647	Titusville	36355	SAS	Sep-2013	Oct-2019	22	19	51	41	-0.230	-0.9	0.1423	No
Brevard	PS	10647	Titusville	36357	SAS	Sep-2013	Oct-2019	22	28	64	43	-0.191	-0.9	0.2251	No
Brevard	AG	50196	AgReserves, Inc.	605	UFA	May-2007	May-2019	10	209	263	245	0.180	1.3	0.5296	No
Brevard	PS	99052	Titusville	38773	UFA	Oct-2013	May-2019	12	53	63	57	-0.273	-0.7	0.2437	No
Brevard	PS	99052	Titusville	38775	UFA	Oct-2013	Nov-2019	13	51	62	55	-0.333	-1.0	0.1272	No
Brevard	PS	99052	Titusville	38777	UFA	Oct-2013	Oct-2019	13	51	63	56	-0.231	-0.6	0.2997	No

County	Permit Type	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	PS	99052	Titusville	38778	UFA	Oct-2013	Oct-2019	13	54	62	56	-0.090	-0.2	0.7138	No
Indian River	AG	2186	Sun Ag LLC	7182	UFA	Feb-2001	May-2020	14	81.9	463	325	-0.121	-1.2	0.5841	No
Indian River	AG	2186	Sun Ag LLC	7193	UFA	Feb-2001	May-2020	15	480	724	531	-0.048	-1.3	0.8431	No
Indian River	AG	2186	Sun Ag LLC	7202	UFA	Feb-2001	May-2020	15	788	1110	910	-0.257	-6.1	0.1982	No
Indian River	AG	2186	Sun Ag LLC	7211	UFA	Feb-2001	May-2020	15	760	1390	1070	-0.200	-7.8	0.3223	No
Indian River	AG	2186	Sun Ag LLC	7976	UFA	Jun-2005	May-2020	16	456	714	614	-0.245	-4.9	0.2057	No
Indian River	AG	2186	Sun Ag LLC	8002	UFA	Jun-2005	May-2020	15	326	921	642	0.295	12.5	0.1376	No
Indian River	AG	2186	Sun Ag LLC	8041	UFA	Jun-2006	May-2020	15	369	909	470	0.105	3.8	0.6207	No
Indian River	PS	10524	Indian River County	7310	UFA	Jan-2015	Oct-2019	18	307	405	361	0.333	11.0	0.0582	No
Indian River	PS	10524	Indian River County	7313	UFA	Jan-2015	Oct-2019	18	256	299	274	0.264	2.7	0.1386	No
Indian River	PS	10524	Indian River County	7314	UFA	Jan-2015	Oct-2019	18	265	309	294	0.079	1.8	0.6763	No
Indian River	PS	10524	Indian River County	7316	UFA	Jun-2015	Oct-2019	19	252	355	275	0.189	3.9	0.2772	No
Indian River	PS	10524	Indian River County	7317	UFA	Nov-2015	Oct-2019	15	251	297	281	0.345	5.8	0.0829	No

County	Permit Type	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Indian River	PS	10524	Indian River County	40142	UFA	Nov-2015	Oct-2019	15	264	298	281	0.232	4.0	0.2533	No
Indian River	PS	10524	Indian River County	181223	UFA	Nov-2015	Oct-2019	12	265	293	278	0.308	2.1	0.1905	No
Indian River	PS	10705	Vero Beach	7224	SAS	Mar-2003	Sep-2019	44	63	89	72	-0.167	-0.4	0.1144	No
Volusia	PS	8528	Holly Hill	16364	UFA	May-2002	Jun-2019	22	21	280	108	-0.290	-4.3	0.0627	No
Volusia	PS	8595	Port Orange	16519	UFA	Oct-2006	Jun-2019	34	30	44	34	0.223	0.3	0.0678	No
Volusia	PS	8595	Port Orange	16533	UFA	Sep-2002	Mar-2019	56	80	184	107	-0.143	-0.3	0.1294	No
Volusia	PS	8595	Port Orange	16540	UFA	Sep-2002	Jun-2019	50	54	176	86	0.164	0.9	0.0989	No
Volusia	PS	8595	Port Orange	16541	UFA	Sep-2002	Jun-2019	58	43	115	66	-0.073	-0.2	0.4280	No
Volusia	PS	8595	Port Orange	16546	UFA	Sep-2002	Jun-2019	59	16	50	25	-0.177	-0.3	0.0535	No
Volusia	PS	8595	Port Orange	16552	UFA	Sep-2002	Jun-2019	58	25	62	34	-0.057	-0.1	0.5407	No
Volusia	PS	8658	Deltona	16561	UFA	May-1994	Jul-2019	35	9	148	44	-0.044	-0.3	0.7224	No
Volusia	PS	8658	Deltona	16572	UFA	May-1994	Jul-2019	37	7	17	13	0.089	0.0	0.4656	No
Volusia	PS	8658	Deltona	26941	UFA	May-1994	Jul-2019	38	30	110	52	0.178	1.5	0.1217	No

County	Permit Type	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	PS	8658	Deltona	26942	UFA	May-1994	Jul-2019	39	12	34	22	0.179	0.1	0.1222	No
Volusia	PS	8658	Deltona	26946	UFA	May-1994	May-2018	40	6	17	10	0.021	0.0	0.8606	No
Volusia	PS	8747	New Smyrna Beach	16835	UFA	Dec-2003	Dec-2019	68	76	118	103	-0.034	0.0	0.6903	No
Volusia	PS	8747	New Smyrna Beach	38427	UFA	Dec-2009	Dec-2019	28	160	190	174	-0.229	-0.7	0.1041	No
Volusia	PS	8834	Daytona Beach	17149	UFA	Nov-2013	Nov-2019	24	20	32	26	-0.113	-0.3	0.4564	No
Volusia	PS	8834	Daytona Beach	17152	UFA	Nov-2013	Nov-2019	25	14	28	21	0.222	0.4	0.1283	No
Volusia	PS	8834	Daytona Beach	17153	UFA	Nov-2013	Nov-2019	25	29	47	32	0.000	0.0	1.0000	No
Volusia	PS	8834	Daytona Beach	17154	UFA	Nov-2013	Nov-2019	25	14	21	16	0.275	0.2	0.0582	No
Volusia	PS	8834	Daytona Beach	17163	UFA	Nov-2013	May-2019	22	34	72	36	0.022	0.0	0.9099	No
Volusia	PS	8834	Daytona Beach	17165	UFA	Nov-2013	Nov-2019	25	31	33	31	-0.027	0.0	0.8696	No
Volusia	PS	8834	Daytona Beach	17166	UFA	Nov-2013	Nov-2019	24	29	31	30	0.026	0.0	0.8813	No
Volusia	PS	8834	Daytona Beach	17167	UFA	Nov-2013	Nov-2019	25	26	39	27	-0.031	0.0	0.8512	No
Volusia	PS	8834	Daytona Beach	17169	UFA	Nov-2013	Nov-2019	22	21	52	26	0.026	0.1	0.8877	No

County	Permit Type	CUP Number	Permittee	Station Number	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	PS	8834	Daytona Beach	17170	UFA	Nov-2013	Nov-2019	25	19	25	21	0.108	0.1	0.4680	No
Volusia	PS	8834	Daytona Beach	17174	UFA	Nov-2013	Nov-2019	25	28	33	30	0.282	0.2	0.0545	No
Volusia	PS	8834	Daytona Beach	17175	UFA	Nov-2013	Nov-2019	25	26	35	29	0.209	0.3	0.1536	No
Volusia	PS	8834	Daytona Beach	17178	UFA	Nov-2013	Nov-2019	22	19	21	20	0.105	0.1	0.5158	No
Volusia	PS	8834	Daytona Beach	17179	UFA	Nov-2013	Nov-2019	24	26	43	30	-0.105	-0.5	0.4872	No
Volusia	PS	8834	Daytona Beach	23860	UFA	Nov-2013	Nov-2019	24	22	47	24	0.265	0.6	0.0774	No
Volusia	PS	8834	Daytona Beach	23861	UFA	Nov-2013	Nov-2019	25	23	36	25	0.084	0.1	0.5748	No
Volusia	PS	9157	Edgewater	35638	UFA	Apr-2011	Dec-2019	55	57	68	61	0.016	0.0	0.8812	No
Volusia	PS	50116	DeLand	413	UFA	Jan-2006	Nov-2019	62	12	19	15	0.165	0.1	0.0627	No
Volusia	PS	50116	DeLand	35446	UFA	Jan-2006	Nov-2019	58	12	23	17	0.090	0.0	0.3268	No
Volusia	PS	50116	DeLand	36213	UFA	Aug-2013	Nov-2019	25	9	14	12	-0.158	-0.4	0.2819	No
Volusia	PS	50116	DeLand	36214	UFA	Aug-2013	Nov-2019	25	8	11	10	0.174	0.1	0.2334	No
Volusia	PS	50157	Volusia County	33668	UFA	Jun-2003	Oct-2019	57	21	93	53	-0.145	-0.9	0.1132	No

[1] PS = public supply; AG = agricultural

Table D-19: Groundwater Quality Analysis Results for SJRWMD DOWN Wells Not Showing Statistically Significant Trends

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Brevard	BR0585	UFA	Apr-2004	Nov-2018	24	12	231	88	-0.065	-1.69	0.6733	No
Brevard	BR0624	UFA	Apr-2004	Oct-2018	27	134	170	153	0.211	0.69	0.1276	No
Brevard	BR1526	UFA	Apr-2004	Nov-2018	16	166	2428	1662	0.033	0.65	0.8926	No
Brevard	BR1557	UFA	Jan-2004	Dec-2018	15	195	2009	1930	0.095	1.38	0.6556	No
Brevard	BR1558	UFA	May-2005	Dec-2018	15	906	1030	949	-0.248	-1.68	0.2155	No
Brevard	BR1748	UFA	Jan-2004	Dec-2018	16	1250	1448	1344	-0.300	-6.72	0.1151	No
Brevard	BR1914	UFA	Oct-2006	Nov-2018	19	1770	6893	5586	0.251	25.82	0.1417	No
Brevard	BR1995	UFA	Mar-2008	Oct-2018	19	351	430	371	-0.058	-0.59	0.7527	No
Brevard	BR2115	UFA	Aug-2008	Dec-2018	18	197	1159	1049	0.229	5.66	0.1972	No
Brevard	BR2125	UFA	Dec-2008	Dec-2018	17	573	622	601	0.044	0.47	0.8368	No
Indian River	IR0954	UFA	Jan-2004	Nov-2018	27	91	110	96	0.142	0.20	0.3069	No
Indian River	IR0963	UFA	Jan-2004	Oct-2018	23	462	575	505	0.292	1.50	0.0538	No

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Indian River	IR0988	UFA	Sep-2006	Oct-2018	23	90	110	99	0.123	0.29	0.4282	No
Lake	L-0032	UFA	May-2004	Apr-2018	23	655	824	741	0.249	2.10	0.1013	No
Lake	L-0066	UFA	Nov-2004	Jun-2018	13	245	397	276	-0.141	-1.11	0.5410	No
Lake	L-0095	UFA	Jan-2004	Dec-2018	22	10	16	12	0.229	0.14	0.1418	No
Lake	L-0290	UFA	Aug-2004	May-2018	13	6	19	7	0.410	0.21	0.0586	No
Lake	L-0620	UFA	Feb-2004	May-2018	19	6	20	8	0.251	0.11	0.1417	No
Lake	L-0816	UFA	Feb-2004	Apr-2018	20	6	12	7	0.116	0.05	0.4957	No
Lake	L-0902	UFA	Sep-2005	Dec-2018	25	4	11	7	0.237	0.13	0.1020	No
Lake	L-0927	UFA	Sep-2006	May-2018	23	4	10	5	0.237	0.13	0.1191	No
Lake	L-0935	UFA	Nov-2007	May-2018	19	8	13	10	0.281	0.11	0.0999	No
Lake	L-1020	UFA	Aug-2008	Apr-2018	19	4	9	5	0.263	0.19	0.1233	No
Lake	L-1023	UFA	Oct-2008	Dec-2018	19	5	10	6	0.076	0.04	0.6742	No
Marion	M-0021	UFA	Feb-2004	Jun-2018	24	156	187	170	-0.094	-0.21	0.5340	No

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Marion	M-0024	UFA	Aug-2004	Jun-2018	15	5	10	6	0.324	0.11	0.1020	No
Marion	M-0044	UFA	Aug-2004	May-2018	21	3	11	7	0.186	0.07	0.2510	No
Marion	M-0063	UFA	Mar-2004	May-2018	21	3	12	5	0.271	0.14	0.0907	No
Marion	M-0419	UFA	Mar-2004	May-2018	22	3	11	6	-0.048	-0.04	0.7780	No
Marion	M-0443	UFA	Mar-2004	May-2018	23	5	11	6	0.063	0.04	0.6916	No
Marion	M-0463	UFA	Mar-2004	Jun-2018	15	5	11	6	0.086	0.06	0.6922	No
Marion	M-0465	UFA	Mar-2004	May-2018	20	5	12	8	0.200	0.10	0.2300	No
Marion	M-0471	UFA	Jan-2004	Jun-2018	18	5	273	37	0.111	0.60	0.5445	No
Marion	M-0483	UFA	Feb-2004	May-2018	24	8	14	10	0.123	0.04	0.4130	No
Marion	M-0501	UFA	Oct-2007	Oct-2018	24	19	27	20	0.174	0.07	0.2427	No
Marion	M-0528	UFA	Apr-2008	May-2018	22	11	17	13	0.294	0.22	0.0588	No
Marion	M-0612	UFA	Nov-2008	Jun-2018	17	15	26	17	0.309	0.19	0.0907	No
Volusia	V-0083	UFA	Feb-2004	Mar-2018	24	1542	3600	3215	-0.069	-6.45	0.6552	No

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	V-0099	UFA	Feb-2004	Jan-2018	40	36	51	45	-0.003	0.00	0.9907	No
Volusia	V-0101	UFA	Apr-2004	Jan-2018	15	22	29	24	0.295	0.23	0.1367	No
Volusia	V-0113	UFA	Oct-2004	Jan-2018	13	12	18	14	0.269	0.09	0.2215	No
Volusia	V-0117	UFA	Oct-2004	Jan-2018	21	10	19	16	0.200	0.20	0.2147	No
Volusia	V-0196	UFA	Jan-2004	Mar-2018	19	5	13	8	0.146	0.05	0.4011	No
Volusia	V-0446	UFA	Jan-2005	Jan-2018	35	138	170	150	-0.193	-0.43	0.1044	No
Volusia	V-0531	UFA	Sep-2004	Apr-2018	14	7	13	11	-0.044	-0.01	0.8694	No
Volusia	V-0742	UFA	Feb-2005	Apr-2018	14	10	17	12	0.231	0.07	0.2736	No
Volusia	V-0769	UFA	Apr-2004	Apr-2018	15	19	26	22	0.210	0.10	0.2981	No
Volusia	V-0777	UFA	Mar-2004	Mar-2018	24	6	12	8	0.076	0.05	0.6197	No
Volusia	V-0808	UFA	Jun-2004	Mar-2018	19	11	24	14	-0.018	-0.01	0.9441	No
Volusia	V-0810	UFA	Feb-2004	Apr-2018	24	658	1250	1016	-0.130	-6.33	0.3850	No
Volusia	V-0840	UFA	Apr-2004	Jan-2018	14	13400	16000	14237	-0.132	-9.22	0.5464	No

County	Well ID	Source	Period of Record Start	Period of Record End	Sample Size	Cl^- Min (mg/L)	Cl^- Max (mg/L)	Cl^- Median (mg/L)	Mann-Kendall τ	Cl^- Median Slope (mg/L/yr) aka Sen Slope	Sen Slope p-value	Significant?
Volusia	V-0924	UFA	Apr-2008	Apr-2018	17	12	136	13	-0.007	0.00	1.0000	No
Volusia	V-1091	UFA	Jan-2004	Mar-2018	24	613	1641	673	0.199	2.73	0.1803	No
Volusia	V-1094	UFA	Jan-2004	Jan-2018	25	84	208	92	0.133	0.31	0.3624	No
Volusia	V-1150	UFA	Sep-2008	Jan-2018	14	44	122	54	-0.297	-1.54	0.1546	No
Volusia	V-1152	UFA	Nov-2008	Mar-2018	21	12	17	14	0.171	0.09	0.2895	No

APPENDIX E

MINIMUM FLOWS AND MINIMUM WATER LEVELS – ADOPTED AND PRIORITY LIST

APPENDIX E

MINIMUM FLOWS AND MINIMUM WATER LEVELS – ADOPTED AND PRIORITY LIST

Adopted Minimum Flows and Minimum Water Levels

Minimum Flows and Minimum Water Levels (MFLs) are the minimum water flows and/or minimum water levels adopted by water management district governing boards or the Florida Department of Environmental Protection (FDEP) to prevent significant harm to the water resources or the ecological structure and function of an area resulting from groundwater or surface water withdrawals. MFLs characterize water resource values (WRVs) for individual water bodies and define the duration and frequency of critical flooding and drying events necessary to protect these WRVs from significant harm. MFLs provide information that assist in decision making regarding consumptive use permitting, water shortages, assessments of water supply sources, and development of water resource and water supply projects.

Establishing MFLs is required pursuant to section (s.) 373.042(2), *Florida Statutes* (F.S.). Adoption is typically a four- to six-month process that involves public workshops, review by FDEP, and publication in the Florida Administrative Weekly. MFLs are to be reviewed periodically and revised as necessary under s. 373.0421(3), F.S.

As of September 2020, the St. Johns River Water Management District (SJRWMD) had established 54 MFLs in the Central Springs/East Coast (CSEC) Regional Water Supply Plan (RWSP) area; 42 lakes, two rivers (three reaches), eight springs, and one water management area (Table E-1). The full list of SJRWMD-adopted MFLs can be found in chapter 40C-8, *Florida Administrative Code*. Adopted MFLs located outside of the CSEC RWSP area are listed in Table E-2.

MFL Lakes

Although there are 42 lakes with adopted MFLs in the CSEC RWSP area, only 25 were assessed in the CSEC RWSP. The SJRWMD lake MFL assessment methodology only applies to lakes that have a significant connection to the Floridan aquifer. Lakes without such a connection (12 total within the CSEC RWSP area), along with the Blue Cypress Water Management Area, are noted in Table E-1 as having "no significant Floridan aquifer connection" (NSFAC). SJRWMD staff is in the process of evaluating the entire list of MFLs to determine optimal coverage within SJRWMD and the appropriateness of each water body as a groundwater supply indicator. Lake Gertie is one of the MFL lakes that may be replaced with a more suitable water body. Since replacement is being considered, the Lake Gertie MFLs were not assessed in the CSEC RWSP. Lake Weir was also not assessed as it is scheduled for re-evaluation in 2024 via the 2020 SJRWMD MFLs Priority List and Schedule discussed below. The remaining non-assessed lakes (Hokey, Sunset, and Trout) lacked sufficient data for assessment at the time of analysis. For the Hokey and Sunset lake systems, surface water models have not yet been developed to assess whether MFLs are being met. For Trout Lake, recent peer review recommendations include surface water model redevelopment, which will not be complete in time for inclusion in the CSEC RWSP. The SJRWMD is working expeditiously to develop surface water models for all MFL systems that currently lack them.

MFL Rivers

One of the three MFL river reaches in the CSEC RWSP area was not assessed in this version of the CSEC RWSP. At the time of plan development, the Wekiva River Basin surface water model was being expanded and updated. The expansion includes the Black Water Creek watershed and will be essential in determining current compliance of the existing Black Water Creek MFLs. Results from this effort will be utilized in future versions of the CSEC RWSP.

MFL Springs

Of the eight MFL springs within the planning area, two were not assessed in the CSEC RWSP. Messant and Seminole springs, both in North Lake County[1], are located on private property. Due to access issues negatively impacting SJRWMD's ability to obtain monitoring data, SJRWMD staff are currently evaluating the possible repeal of these MFLs.

MFLs Priority List

Each year, the SJRWMD Governing Board approves and submits to FDEP an updated MFLs Priority List and Schedule. This list identifies the water bodies and year in which MFLs will be developed or re-evaluated. The Priority List is updated and resubmitted to FDEP annually. On October 13, 2020, the Governing Board approved the 2020 MFLs Priority List and Schedule, summarized in Table E-3, which identifies new MFLs and MFL re-evaluations scheduled for 2020 through 2024.

[1] Within the CSEC RWSP, North Lake County is defined as that portion of Lake County that is not included in the Central Florida Water Initiative.

Table E-1: SJRWMD Adopted MFLs within the CSEC RWSP Area

Water Body Type	Water Body Name	County	Assessed in CSEC RWSP
Lake	Ashby	Volusia	No – NSFAC
Lake	Big	Volusia	Yes
Lake	Bowers	Marion	Yes
Lake	Butler	Volusia	Yes
Lake	Charles	Marion	No - NSFAC
Lake	Colby	Volusia	Yes
Lake	Coon Pond	Volusia	Yes
Lake	Cow Pond	Volusia	No – NSFAC
Lake	Daugharty	Volusia	Yes
Lake	Davis	Volusia	Yes
Lake	Dias	Volusia	No – NSFAC
Lake	Dorr	Lake	No – NSFAC
Lake	Drudy	Volusia	No – NSFAC
Lake	Emporia	Volusia	Yes
Lake	Fox	Brevard	Yes
Lake	Gertie	Volusia	No – Possible replacement
Lake	Halfmoon	Marion	Yes
Lake	Helen	Volusia	Yes
Lake	Hires	Volusia	Yes
Lake	Hokey	Volusia	No – Insufficient data
Lake	Hopkins Prairie	Marion	Yes
Lake	Indian	Volusia	Yes
Lake	Kerr	Marion	Yes
Lake	Lower Louise	Volusia	Yes
Lake	Nicotoon	Marion	Yes
Lake	Norris	Lake	No – NSFAC
Lake	North Talmadge	Volusia	No – NSFAC
Lake	Pierson	Volusia	No – NSFAC
Lake	Purdom	Volusia	No – NSFAC
Lake	Savannah	Volusia	No – NSFAC
Lake	Scoggin	Volusia	Yes
Lake	Shaw	Volusia	Yes

Water Body Type	Water Body Name	County	Assessed in CSEC RWSP
Lake	Smith	Marion	Yes
Lake	South	Brevard	Yes
Lake	Sunset	Lake	No – Insufficient data
Lake	Three Island	Volusia	Yes
Lake	Trout	Volusia	No – Insufficient data
Lake	Upper Louise	Volusia	Yes
Lake	Washington	Brevard	No – NSFAC
Lake	Weir	Marion	No – Priority List for 2024[1]
Lake	Winnemisett	Volusia	Yes
Lake	Winona	Volusia	Yes
River	Black Water Creek @ the SR 44 bridge	Lake	No – Insufficient data
River	St. Johns @ SR 44 near DeLand	Volusia	Yes
River	St. Johns 1.5 miles downstream of Lake Washington weir	Brevard	Yes
Spring	Alexander	Lake	Yes
Spring	Blue	Volusia	Yes
Spring	De Leon	Volusia	Yes
Spring	Gemini	Volusia	Yes
Spring	Messant	Lake	No – Private property
Spring	Seminole	Lake	No – Private property
Spring	Silver	Marion	Yes
Spring	Silver Glen	Marion	Yes
Water Management Area	Blue Cypress WMA	Indian River	No – NSFAC

Note: NSFAC = No significant Floridan aquifer connection

[1] The 2020 MFLs Priority List and Schedule shows the re-evaluation of Lake Weir MFLs in 2024.

Table E-2: SJRWMD Adopted MFLs Outside the CSEC RWSP Area

Water Body Type	Water Body Name	County
Lake	Apshawa North	Lake (CFWI)
Lake	Apshawa South	Lake (CFWI)
Lake	Argenta	Putnam
Lake	Banana	Putnam
Lake	Bell	Putnam
Lake	Bird Pond	Putnam
Lake	Blue Pond	Clay
Lake	Boggy Marsh	Lake (CFWI)
Lake	Brantley	Seminole
Lake	Brooklyn	Clay
Lake	Broward	Putnam
Lake	Burkett	Orange
Lake	Cherry	Lake (CFWI)
Lake	Clear	Putnam
Lake	Como	Putnam
Lake	Cowpen	Putnam
Lake	Crystal/Baker/Ida	Putnam
Lake	Deep	Putnam
Lake	Disston	Flagler
Lake	Dream Pond	Putnam
Lake	Echo	Putnam
Lake	Emma	Lake (CFWI)
Lake	English/Nettles	Putnam
Lake	Estella	Putnam
Lake	Geneva	Clay
Lake	Georges	Putnam
Lake	Gore	Flagler
Lake	Grandin	Putnam
Lake	Howell	Putnam
Lake	Howell	Seminole
Lake	Irma	Orange
Lake	Little Como	Putnam
Lake	Little Mall	Putnam

Water Body Type	Water Body Name	County
Lake	Lizzie	Putnam
Lake	Lochloosa	Alachua
Lake	Louisa	Lake (CFWI)
Lake	Lowry/Sand Hill	Clay
Lake	Lucy	Lake (CFWI)
Lake	Magnolia	Clay
Lake	Margaret	Putnam
Lake	Martha	Orange
Lake	Marvin	Putnam
Lake	McGrady	Putnam
Lake	McKasel	Putnam
Lake	Melrose	Putnam
Lake	Mills	Seminole
Lake	Minneola	Lake (CFWI)
Lake	Monroe	Seminole/Volusia
Lake	North Como Park	Putnam
Lake	Omega	Putnam
Lake	Orio	Putnam
Lake	Pam	Putnam
Lake	Pearl	Orange
Lake	Pine Island	Lake (CFWI)
Lake	Prevatt	Orange
Lake	Prior	Putnam
Lake	Sand	Putnam
Lake	Silver	Putnam
Lake	South Como Park	Putnam
Lake	Star	Putnam
Lake	Stella	Putnam
Lake	Swan	Putnam
Lake	Sylvan	Seminole
Lake	Tarhoe	Putnam
Lake	Trone	Putnam
Lake	Tuscawilla	Alachua

Water Body Type	Water Body Name	County
Lake	Wauberg	Alachua
River	Taylor Creek 1.7 miles downstream of S-164	Orange
River	St. Johns @ SR 50	Orange/Brevard
River	Wekiva @ SR 46	Seminole/Lake (CFWI)
Spring	Miami	Seminole
Spring	Palm	Seminole
Spring	Rock	Orange
Spring	Sanlando	Seminole
Spring	Starbuck	Seminole
Spring	Wekiwa	Orange

Table E-3: SJRWMD 2020 MFLs Priority List and Schedule

Year	Water Body Type	Water Body Name	County	Within CSEC RWSP Area
2020	Lake	Brooklyn (re-eval)	Clay	No
2020	Lake	Geneva (re-eval)	Clay	No
2021	Lake	Sylvan (re-eval)	Seminole	No
2021	Lake	Apshawa South (re-eval)	Lake (CFWI)	No
2021	River, Spring	Little Wekiva and associated springs	Seminole, Orange	No
2021	River	Wekiva at SR46 (re-eval)	Seminole, Orange	No
2021	Spring	Wekiwa (re-eval)	Seminole, Orange	No
2021	Spring	Rock (re-eval)	Orange	No
2022	Lake	Johns/Avalon/Apopka	Orange/Lake (CFWI)	No
2022	Lake	Prevatt (re-eval)	Orange	No
2022	Lake	Red Bug	Seminole	No
2022	Lake	Griffin	Lake	Yes
2022	Lake	Burrell Basin Lakes (Beauclair, Dora, Eustis, Harris)	Lake	Yes
2023	Lake	East Crystal	Seminole	No
2024	Lake	Weir (re-eval)	Marion	Yes

Note: Re-eval = re-evaluation of adopted MFLs

APPENDIX F

MINIMUM FLOWS AND MINIMUM WATER LEVELS – ASSESSMENT AND RESULTS

Appendix F

Minimum Flows and Minimum Water Levels – Assessment and Results

Introduction

Minimum Flows and Minimum Water Levels (MFLs) were evaluated during the Central Springs/East Coast (CSEC) Regional Water Supply Plan (RWSP) process to determine whether adopted flows and/or levels would be achieved with projected groundwater withdrawals at the 20-year planning horizon (2040) in the CSEC RWSP area. This document reviews the basic methodology used to assess the status of MFLs for the different types of water bodies evaluated within the CSEC RWSP area followed by a summary of the assessment results.

For all types of MFL water bodies, freeboard is commonly used to describe the quantity of additional water available for consumptive uses of water, which would not cause a violation of a water body's adopted MFLs. Freeboard can be expressed in terms of Upper Floridan aquifer (UFA) drawdown (for MFL lakes) or flow (for MFL rivers and springs). A positive freeboard value indicates the availability of additional groundwater or surface water, while a negative value, or deficit, indicates that an MFL is not met or is not projected to be met in a future withdrawal scenario. Each MFL assessment included a current freeboard calculation (most associated with 2015 pumping conditions) and a projected freeboard at 2040 pumping conditions. A deficit at current conditions indicates a water body is in recovery with regard to its MFLs. A positive freeboard at current conditions with a deficit at 2040 projected conditions indicates a water body is in prevention with regard to its MFLs. Finally, a positive freeboard at current conditions and at 2040 projected conditions indicates the MFLs are met throughout the planning horizon.

Lake MFLs Assessment

Within the CSEC RWSP area, there are 42 lakes with adopted MFLs. Twenty-five of these lakes were assessed in the CSEC RWSP. Of the 17 non-assessed MFL lakes, 12 show no significant connection to the UFA and, therefore, are not expected to be influenced by groundwater withdrawals. One of the non-assessed lakes is currently on the St. Johns River Water Management District (SJRWMD) Priority List for reevaluation in 2024. The effectiveness of another non-assessed MFL lake is being evaluated and may be replaced with a more suitable water body if warranted. The three remaining lakes lacked sufficient data for assessment at the time of analysis. See Appendix E for additional details regarding the non-assessed MFL lakes.

Current Status Assessment

For the majority of assessed MFL lakes, a previously estimated freeboard value corresponding to the lake's surface water model year, most ranging from 1995 to 2005, provided the amount of allowable drawdown in the UFA before the most constraining MFL would no longer be achieved. For lakes whose surface water model year corresponded to an existing groundwater flow model simulation, the surface water model year freeboard was brought forward to 2015 by comparing drawdown beneath the lake at the surface water model year and at 2015. For lakes whose surface water model year did not correspond to an existing model simulation, a relationship between groundwater pumping and UFA drawdown was generated using modeled withdrawals within a 10-mile buffer surrounding each lake and modeled drawdown from the available model simulations. It should be noted that the drawdown values were estimated based on pumping within the entire model domain. Pumping within the 10-mile buffer was only used as a proxy to develop the pumping/drawdown relationship. This relationship was used to estimate the drawdown from the surface water model year, allowing for the comparison of drawdown values predicted for the surface water model year and 2015. The difference in drawdown was applied to the surface water model year freeboard value to update freeboard values to 2015.

Future Status Assessment

The groundwater models were then used to derive predicted aquifer drawdown beneath each MFL lake from current pumping conditions to 2040. The differences in drawdown were applied to the current condition freeboard values to determine 2040 MFL status.

Results of the CSEC MFL analysis show that 21 of the 25 assessed lakes are currently meeting their MFLs and will continue to meet their MFLs throughout the planning horizon. Butler, Indian, Scoggin, and Shaw lakes (Volusia County) are in prevention, as they are currently meeting their MFLs, but are not projected to meet their MFLs in 2040. Results are summarized in Table F-1.

Specific deviations from the assessment methodology and any unique circumstances are specified below for each corresponding CSEC RWSP sub-region.

Volusia

For the majority of the Volusia County MFL lakes, the model simulations used to establish the pumping/drawdown relationships utilized historic water use from 1995, 2002, and 2010. The 2015 water use simulation was excluded due to changes in model-wide pumping distributions, which impacted the statistical validity of the relationships.

The pumping/drawdown relationship analysis did not produce statistically valid results for Indian Lake, Coon Pond, or Lake Shaw, likely due to varying pumping distributions within the corresponding buffer regions. For these water bodies, staff created new model simulations (2004 and 2005) to correspond with each lake's surface water model year, thereby eliminating the need for establishing pumping/drawdown relationships. Freeboard values corresponding to 2004 (for Shaw) and 2005 (for Indian Lake and Coon Pond) were then brought forward to 2015 after comparing drawdown in 2004 or 2005 with 2015. For consistency, the 2005 model simulation was then utilized for Scoggin Lake, whose surface water model year was also 2005. For Indian Lake, the benefit of the Tiger Bay Weir, constructed in 2016, could not be accurately assessed with the Volusia model. Instead, the benefit was extracted from a contractor-developed model (DHI 2015) and added to the 2015 freeboard in order to determine the current MFL status.

For Lake Butler, whose MFLs were recently adopted in 2020, the freeboard value for the most constraining MFL was associated with a five-year average water withdrawal condition, specifically, 2014 to 2018 (Jennewein et. al. 2020). The estimated drawdown under this five-year average condition was compared to the modeled drawdown at 2040 projected pumping. The difference in drawdown was then applied to the 2014–2018 condition freeboard value to determine the MFL status at 2040.

Of the 17 MFL lakes assessed in Volusia County, seven have surface water withdrawals authorized through the SJRWMD consumptive use permitting program. These lakes include Daugharty, Davis, Emporia, Hires, Lower Louise, Shaw, and Upper Louise with withdrawals authorized for mostly nursery and cut foliage irrigation and freeze protection. For each of these lakes, permitted surface water withdrawals were accounted for in the respective surface water models and the original freeboard values. Review of reported 2015 surface water withdrawals from these lakes revealed totals much less than that permitted. As such, the 2015 freeboard values were calculated by simply applying the difference in UFA drawdown beneath each lake from the surface water model year to 2015. It should be noted that the 2015 and projected 2040 freeboard values for these lakes, similar to the surface water model year freeboard values, account for permitted surface withdrawals, which are significantly greater than the reported withdrawals for at least the past four years (2015 through 2018). This decline in surface water use is likely the result of decreased nursery and cut foliage production within northwest Volusia County. Projected growth in surface water use from these smaller lakes, beyond what is currently permitted, is not anticipated within the planning horizon. Future increases in surface water use in Volusia County will most likely occur from the St. Johns River.

Marion/North Lake

Unlike the analysis in Volusia County, model simulations were developed for each of the specific surface water model years for the assessed MFL lakes in Marion and North Lake[1] counties, therefore, a pumping/drawdown relationship for these lakes was not calculated.

[1] Within the CSEC RWSP, North Lake County is defined as that portion of Lake County that is not included in the Central Florida Water Initiative.

Brevard/Indian River/Okeechobee

For Brevard, Indian River, and Okeechobee counties, the MFLs analysis was performed using the East-Central Florida Transient Extended Model Version 1.0 (ECFTX)(CFWI 2020), which was developed collaboratively for the Central Florida Water Initiative (CFWI). The ECFTX model was the only regional groundwater model that spanned the Brevard, Indian River, and Okeechobee counties sub-region. Due to the extensive collaboration employed during ECFTX model development, only the CFWI-approved simulations were utilized for the MFLs analysis in the CSEC RWSP.

The surface water model year for lakes Fox and South, 2000, was not a simulation developed for the ECFTX. An analysis was performed to determine if the existing 2003, 2005, or 2014 simulation could be utilized as a surrogate for 2000 based on similar withdrawal quantities in Brevard County. Results demonstrated that county-wide water use was greater in 2003 (34%) and less in 2005 and 2014 (17% and 8%, respectively) when compared to withdrawals in 2000. However, a comparison of modeled UFA elevations beneath lakes Fox and South in 2003, 2005, and 2014 showed negligible differences. Based on this finding, the surface water model-derived freeboard values from 2000 were brought forward to 2014 as the "current" freeboard.

Spring MFLs Assessment

There are eight springs within the CSEC RWSP area with adopted MFLs, two of which were not assessed in this plan due to property access issues (see Appendix E). Based on the current MFL status assessments, it was determined five of the six assessed springs were achieving their respective MFLs under current pumping conditions (Table F-1). To determine the MFL status for these five springs at 2040, the current freeboard for each spring was compared to the model-predicted decrease in flow resulting from projected 2040 water demand. The results indicate that Alexander, De Leon, Gemini, and Silver Glen springs will continue to meet their MFLs throughout 2040. Silver Springs was classified as being in prevention with regard to its MFLs since it is not projected to achieve its MFLs at the 2040 planning horizon. Finally, although Blue Spring was achieving its previous minimum flow as reported in the first five-year assessment of the 2013 Volusia prevention and recovery strategy (SJRWMD 2019), on April 1, 2019, the minimum flow increased pursuant to the regime identified in chapter 40C-8, *Florida Administrative Code* (*F.A.C.*). The updated MFL status assessment determined that the increased minimum flow would not be met under current pumping conditions, therefore, the status of the Blue Springs MFL shifted to recovery.

Specific deviations from the assessment methodology and any unique circumstances are specified below for each corresponding sub-region.

Volusia

The original MFL status assessments for De Leon and Gemini springs were completed in 2016 based on 2010 water use conditions. Freeboard values for 2010 were brought forward to 2015 using a comparison of predicted spring flow from model simulations corresponding to 2010 and 2015 groundwater withdrawals.

The Blue Spring MFL is unique in that it defines a minimum flow regime that increases in five-year increments with the final minimum flow of 157 cfs becoming effective in 2024 (40C-8, *F.A.C.*) A Blue Spring MFL status evaluation was performed in 2018 to support the first five-year assessment of the 2013 Volusia prevention and recovery strategy (SJRWMD 2019). Results from the analysis showed that the Blue Spring MFL applicable to 2018 (142 cfs) was being achieved under current pumping conditions and the MFL status remained in prevention. In 2019, the Blue Spring minimum flow increased to 148 cfs, pursuant to the adopted MFL. An updated MFL status determination showed that the higher minimum flow was not being met and, therefore, the status of the Blue Spring MFL shifted to recovery. Pursuant to 40C-8.031(13)(a), *F.A.C.*, SJRWMD will perform a causation analysis to evaluate the potential impacts of various stressors on Blue Spring, including whether groundwater pumping is a factor. Based on the results of this analysis, SJRWMD will evaluate existing MFL criteria and may adjust any existing prevention/recovery strategies, if necessary, to ensure the protection of Blue Spring from significant harm due to consumptive uses of water. In addition, SJRWMD staff may request Governing Board authorization to include Blue Spring on the MFL Priority List and Schedule for re-evaluation prior to the next CSEC RWSP.

The existing Blue Spring MFL requires a final minimum flow increase to 157 cfs by 2024. Table A1-5 shows the amount of flow needed to meet the current (148 cfs) and final (157 cfs) Blue Spring MFL at current and projected pumping conditions. Currently, there are sufficient projects and measures identified in the Volusia MFL prevention/recovery strategy (SJRWMD 2013) and five-year assessment (SJRWMD 2019) to ensure achievement of the final Blue Spring MFL at 2040 projected water demand.

Marion/North Lake

Like De Leon and Gemini springs in Volusia County, the original MFL status assessments for Alexander, Silver, and Silver Glen springs were completed in 2016 based on 2010 water use conditions. Freeboard values for 2010 were brought forward to 2015 using a comparison of predicted spring flows from model simulations corresponding to 2010 and 2015 groundwater withdrawals. Due to a county-wide decrease in groundwater withdrawals from 2010 to 2015, the freeboard values for all three springs increased from 2010 to 2015.

Brevard/Indian River/Okeechobee

There are no MFL springs in this sub-region of the CSEC RWSP area.

River MFLs Assessment

There are two rivers (three river reaches) within the CSEC RWSP area with adopted MFLs, one of which was not assessed in this plan due to insufficient data at the time of plan development (see Appendix E). The two assessed river reaches are both located on the St. Johns River; the first at State Road 44 near DeLand in Volusia County and the second 1.5 miles downstream of the Lake Washington weir in Brevard County. Both assessed river reaches are currently meeting their MFLs and are projected to meet their MFLs at 2040.

Volusia

The St. Johns River at State Road (SR) 44 near DeLand in Volusia County is located within the middle St. Johns River. This area is characterized by considerable flow contributions from the UFA from both spring flow and diffuse upward leakage (SJRWMD 2012). In order to assess the current MFL status, a previous analysis of surface water availability (Robison 2004) was compared to permitted upstream river withdrawals and changes in groundwater flow contributions to the river from 2015 to 2040 within the Volusia model domain. In further support of Robison's surface water availability estimate, the SJRWMD Water Supply Impact Study (2012) showed that a similar quantity of withdrawals would result in minor or negligible impacts to the river. Any request for additional surface water withdrawals beyond which are permitted today will be evaluated with the best available analysis tools to ensure continued achievement of MFLs under current and 2040 water demand conditions.

Marion/North Lake

There were no assessed MFL rivers in this sub-region of the CSEC RWSP area.

Brevard/Indian River/Okeechobee

The second assessed MFL river reach is located on the St. Johns River in Brevard County, approximately 1.5 miles downstream of the Lake Washington weir. In this region, the UFA underlies a very thick confining layer, which limits impacts of UFA withdrawals on surface water flows (SJRWMD 2012). As such, a groundwater modeling assessment was not necessary to determine the MFL status for this river reach. Instead, previous analyses of surface water availability (Rao 2008 and Adkins 2008) were compared to upstream permitted withdrawals to estimate a current freeboard and determine current MFL status. Although one availability analysis was associated with a downstream site on the St. Johns River (SR 50), the SJRWMD Water Supply Impact Study (2012) also supports the potential availability of additional withdrawals at Lake Poinsett (located between Lake Washington and SR 50). Any further river withdrawals requested during the planning horizon will be assessed for MFL compatibility using the most current surface water availability determination at the Lake Washington weir prior to withdrawal authorization.

Table F-1: CSEC RWSP MFLs Assessment Summary

Type	Name	County	Current Freeboard/Deficit[1] (ft, mgd, or cfs)[2]	Current MFL Status	MFL Status at 2040 Conditions[3]
Lake	Big	Volusia	1.1	Met	Met
Lake	Bowers	Marion	3.9	Met	Met
Lake	Butler	Volusia	0.2	Met	Prevention
Lake	Colby	Volusia	1.3	Met	Met
Lake	Coon Pond	Volusia	3.5	Met	Met
Lake	Daugharty	Volusia	1.7	Met	Met
Lake	Davis	Volusia	3.1	Met	Met
Lake	Emporia	Volusia	4.4	Met	Met
Lake	Fox	Brevard	0.8	Met	Met
Lake	Halfmoon	Marion	0.7	Met	Met
Lake	Helen	Volusia	1.2	Met	Met
Lake	Hires	Volusia	1.6	Met	Met
Lake	Hopkins Prairie	Marion	1.2	Met	Met
Lake	Indian	Volusia	0.3[4]	Met	Prevention
Lake	Kerr	Marion	0.7	Met	Met
Lake	Lower Louise	Volusia	1.9	Met	Met
Lake	Nicotoon	Marion	2.3	Met	Met
Lake	Scoggin	Volusia	0.4	Met	Prevention
Lake	Shaw	Volusia	0.7	Met	Prevention
Lake	Smith	Marion	1.4	Met	Met
Lake	South	Brevard	0.8	Met	Met
Lake	Three Island	Volusia	1.0	Met	Met
Lake	Upper Louise	Volusia	2.0	Met	Met
Lake	Winnemisett	Volusia	2.1	Met	Met
Lake	Winona	Volusia	2.2	Met	Met
River	St. Johns at SR 44 near DeLand	Volusia	93.9 to 125.9(est[5])	Met	Met
River	St. Johns downstream of Lake Washington	Brevard	11.7 to 73.0(est[5])	Met	Met
Spring	Alexander	Lake	6.6	Met	Met
Spring	Blue	Volusia	-5.9[6]	Recovery	
Spring	De Leon	Volusia	3.0	Met	Met
Spring	Gemini	Volusia	0.7	Met	Met
Spring	Silver	Marion	19.2	Met	Prevention
Spring	Silver Glen	Marion	0.5	Met	Met

[1] Current freeboard/deficit values for the majority of water bodies are associated with 2015 pumping conditions. Exceptions include lakes Fox and South (associated with 2014 pumping conditions), Lake Butler (associated with 2014 – 2018 average pumping), and Blue Spring (associated with 2019 projected pumping).
[2] Freeboard/Deficit is expressed in feet (ft) for MFL lakes, million gallons per day (mgd) for MFL rivers, and cubic feet per second (cfs) for MFL springs.
[3] Represents 2040 MFL status without implementation of projects identified in an MFL prevention/recovery strategy.
[4] Includes benefit of Tiger Bay weir (0.47 ft; DHI 2015), which was constructed in 2016.
[5] Estimate (est) was calculated using a range of starting freeboard values from multiple published reports.
[6] Current freeboard estimated using minimum flow of 148 cfs at 2019 projected pumping.

References

Adkins, M. 2008. *Hydrologic Analysis of Alternative C-1 Rediversion Project*. SJRWMD; Palatka, FL.

Central Florida Water Initiative (CFWI). 2020. *Model Documentation Report East-Central Florida Transient Expanded (ECFTX) Model*. Available from: https://cfwiwater.com/pdfs/ECFTX_Model_Final_Report_Feb_2020.pdf

DHI. 2015. *Tiger Bay Bennett Swamp Model Update and Recalibration; Telescoped Model and Scenario Analysis*. DHI Water and Environment Inc., Lakewood, CO.

Jennewein, S., J. Di, O. Leta, R. Deschler, and A. Sutherland. 2020. *Minimum Levels Determination for Lake Butler, Volusia County, Florida*. SJRWMD Technical Publication SJ2020-1. Available from: www.sjrwmd.com

Rao, D. 2008. *Determination of Potential Water Supply Yield of the Upper St. Johns River at State Road 50, Florida, Using Minimum Flows and Levels Compliance as a Constraint*. SJRWMD Special Publication SJ2009-SP2.

Robison, P. 2004. *Middle St. Johns River Minimum Flows and Levels Hydrologic Methods Report*. SJRWMD Technical Publication SJ2004-2.

SJRWMD. 2012. *Water Supply Impact Study*. SJRWMD Technical Publication SJ2012-1. Available from: www.sjrwmd.com/documents/water-supply/#wsis-final-report

SJRWMD. 2013. *Prevention/Recovery Strategy for Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes.* SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/gb1311_005.pdf

SJRWMD. 2019. *2018 Five-Year Strategy Assessment for the Implementation of Minimum Flow and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes*. SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/Volusia_5year_assessment_2019.pdf

APPENDIX G

SJRWMD APPROVED PREVENTION AND RECOVERY STRATEGIES WITHIN THE CSEC RWSP AREA

Table of Contents

Prevention/Recovery Strategy for Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes

October 2013

SJRWMD Division of Regulatory, Engineering, and Environmental Services

A. Introduction

Within the Volusia Minimum Flows and Levels/Minimum Flow Regime Prevention/Recovery Strategy Area (VSA), Minimum Flows and Levels (MFLs) have been adopted for 26 waterbodies (Figure 1). Among these waterbodies, seven are in prevention/recovery status relative to their adopted MFLs (see Figure 2): Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island lakes. The VSA Strategy identifies measures needed to achieve the MFLs for these waterbodies and, through implementation of such measures, avoid and/or mitigate unacceptable adverse impacts to wetlands, lakes, streams, springs and aquifer levels that are due to consumptive uses of water.

Consistent with provisions for establishing and implementing MFLs provided in Chapter 373, F.S., Chapter 62-40, *F.A.C.*, and Chapter 40C-8, *F.A.C.*, this document includes the following components:

- List of affected MFL waterbodies;
- Prevention/recovery status assessment of the MFL waterbodies;
- Strategy objective (sustainable groundwater yield);
- Apportionment by user group;
- Regulatory component;
- Proposed suite of measures that would achieve the Strategy objective;
- Funding component;
- Monitoring component; and
- Timetable for phased implementation

Multiple lines of evidence provide assurance that the projects proposed in Section G of this Strategy would be sufficient to achieve MFLs in Blue Spring and the VSA lakes with projected 2030 water use demands.

B. Strategy Objective, Approach, and Phased Implementation

Objective

The objective of the Strategy is to establish and maintain actual and permitted groundwater withdrawals at or below the sustainable groundwater yield or mitigate the impact of withdrawals via recharge or other methods supported by the District that achieve equivalent water resource benefits.

Approach

The approach outlined in the VSA Strategy includes project implementation, regulatory revisions, monitoring, and routine assessment of the Strategy goals and accomplishments. The intent is to provide assurance that the water resource goals defined by the MFLs will be met in a way that maximizes flexibility for permittees and project partners. The basic approach includes the following:

- Implement projects and measures that provide water resource benefits sufficient to achieve the MFLs. *(see Section G)*
- Monitor trends in spring flow and aquifer levels at individual wells and across an appropriate regional network. Use this information to confirm benefits of implemented projects and adjust the Strategy measures as necessary. *(see "Phased Implementation" below and Section I)*
- Work with existing permittees to align permitted allocations with demonstrated need. *(Section F)*
- If necessary, conduct rulemaking to address permitting of withdrawals, including new quantities of water, that affect waterbodies in "recovery" status. *(Section F)*
- Establish standard permit conditions and related language for integrating MFLs criteria with CUPs. *(Section F)*
- Identify and obtain sufficient funding resources to facilitate Strategy implementation. *(Section H)*
- Implement in a phased approach with a full Strategy revision at 5-year intervals, including MFLs assessment and recalculation of MFLs freeboard, if necessary. *(see "Phased Implementation" below)*

Phased Implementation

Strategy implementation will occur in 5-year phases (see Table 1). Actions to occur in subsequent phases will be determined during the Strategy revision processes envisioned at the end of Phases 1 and 2, respectively. Phase 1 will begin upon SJRWMD Governing Board Strategy approval.

Annual status reports will be developed by the District, in cooperation with project partners. Status reports will contain an update on rule revisions, permit modifications, and projects implemented in the prior year that support the VSA Strategy. Upon completion of each phase, a Five-Year Strategy Assessment report will be developed. The Five-Year Assessment Report will likely include the following:

- Newly adopted/re-evaluated MFLs
- Updated freeboard calculations (based on revised planning period)
- Updated assessment of prevention/recovery status
- Updated apportionment calculations
- Project implementation status, including alternative projects, if warranted
- Permit revisions
- Rule revision status
- Water resource data assessment
- Adjustment to sustainable groundwater yield, if needed

Based on findings in each Five-Year Assessment Report, the Strategy may be revised by the Governing Board.

Table 1. VSA Strategy Phased Implementation – Phases 1 & 2

Actions	Phase 1 (Year 1-5)	Phase 2 (Year 5-10)	Details
Implement projects and measures with associated permit revisions.	• Initiate as permits come up for renewal or earlier by request of the permittee.	Continue per phased approach or earlier by request of the permittee.	Strategy Sections G and I
Monitor trends in spring flow and aquifer levels via individual sites and over regional network.	• Review existing monitoring resources. • Continue data collection at existing sites; initiate data collection at new sites (if needed).	Continue	Strategy Section I
Rulemaking, as necessary, including amendments to Ch. 40C-2, F.A.C. to implement substitution credits.	• Initiate and complete.	N/A (Completed in Phase 1)	Strategy Section F
Modify permitted allocations.	• Complete review of permits. • Reach out to permittees. • Initiate permit modifications with willing permittees.	Continue	Strategy Section F
Status Report	Annually	Annually	Strategy Section B
5-Year Strategy Assessment	Assess, refine, & approve revised Strategy.	Assess, refine, & approve revised Strategy.	Strategy Section B

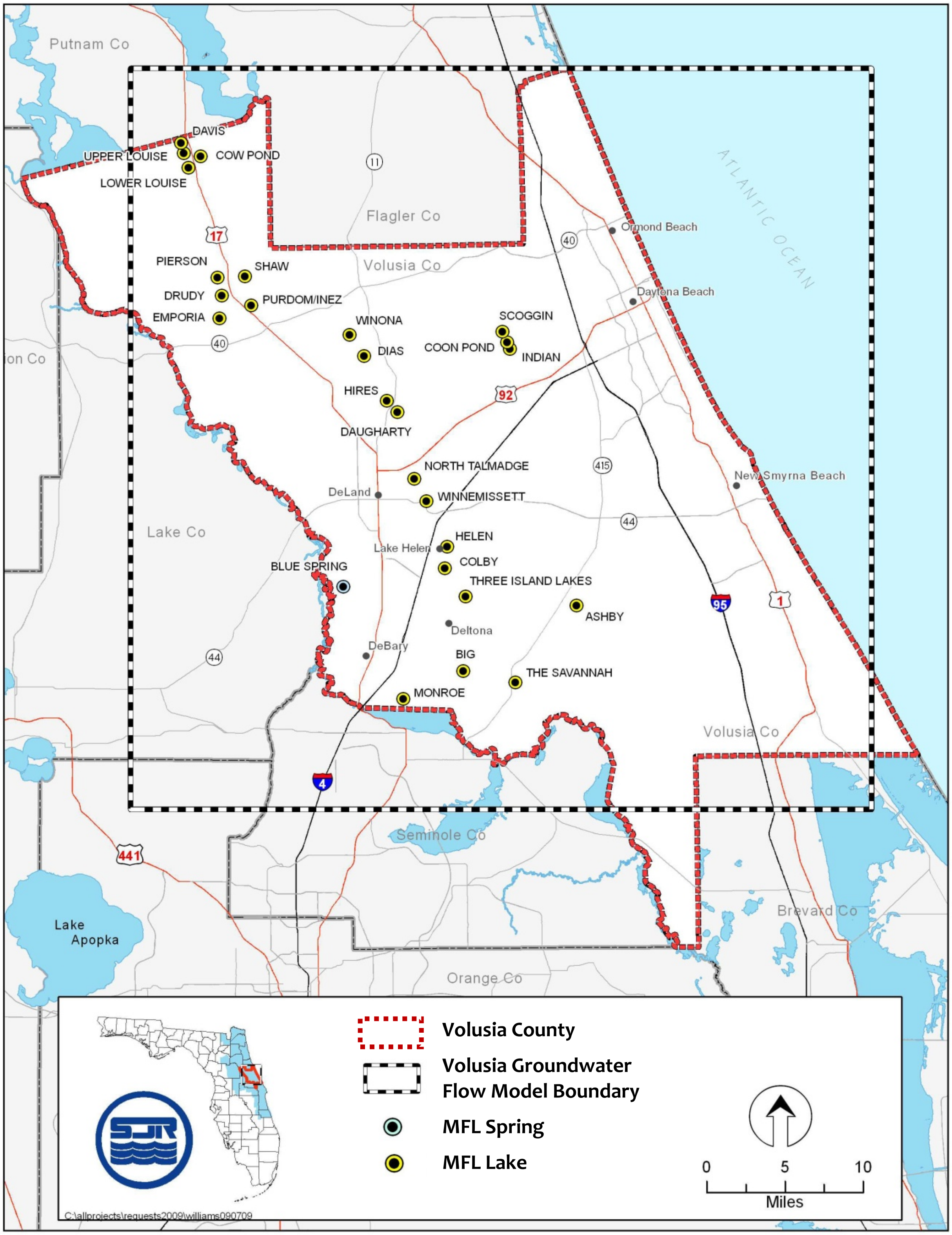


Figure 1. Volusia Strategy Area Waterbodies with Adopted MFLs

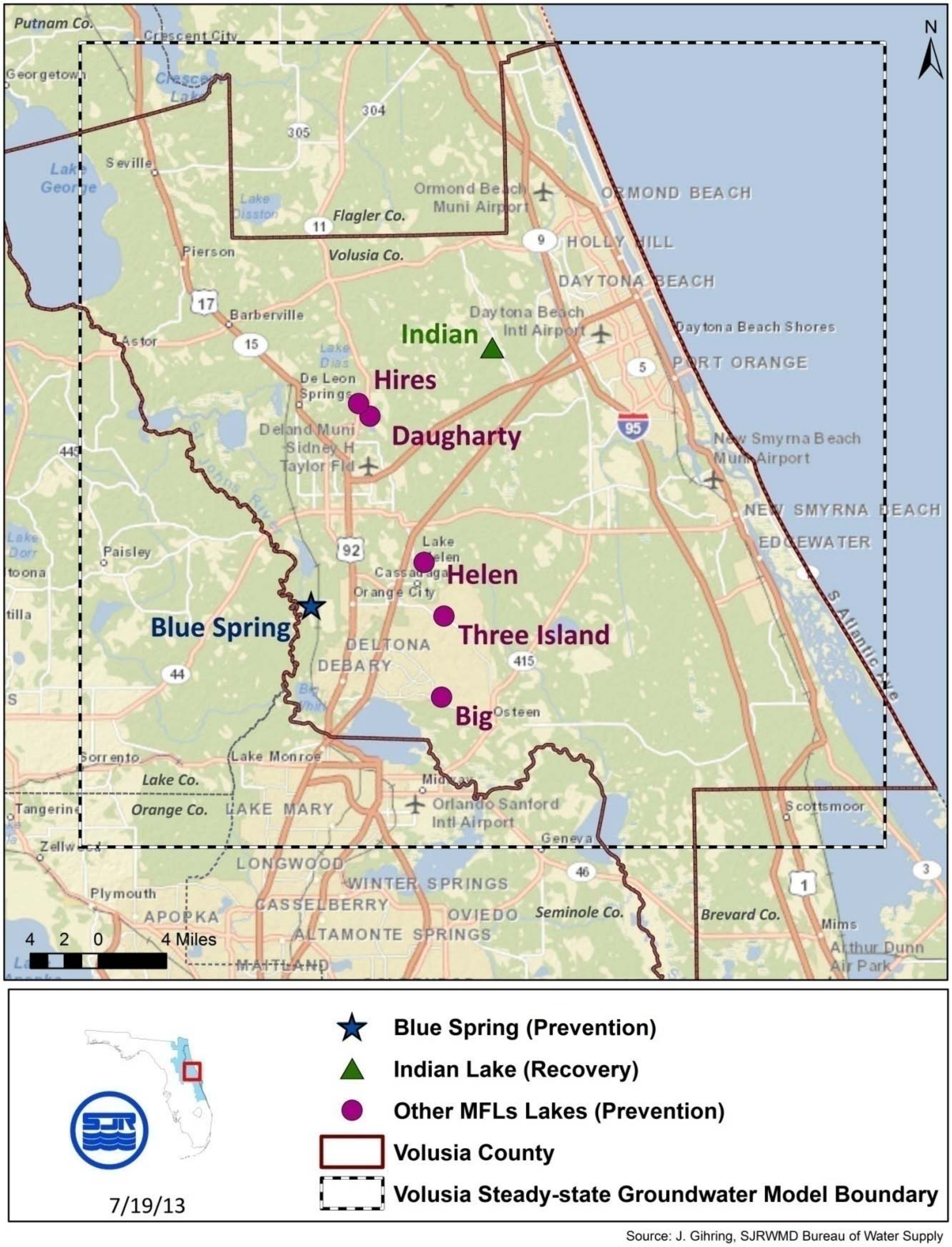


Figure 2. Volusia Strategy Area Prevention/Recovery Strategy Waterbodies

C. Minimum Flows and Levels and Minimum Flow Regime for Affected Waterbodies

Adopted & Re-evaluated MFLs

SJRWMD's MFLs approach can be applied to lakes, rivers, springs, isolated wetland systems, and aquifers. The method is used in a regulatory water management framework to protect aquatic and wetland systems from ecological harm due to surface or groundwater withdrawals. MFLs are primarily ecologically based. Multiple MFLs typically are adopted for a system to ensure that the full range of hydrologic conditions are protected. SJRWMD's MFLs are represented by hydrologic statistics and are implemented with output from hydrologic water budget and groundwater flow models.

Table 2 shows the adopted MFLs for Big Lake, Lake Daugharty, Lake Helen, Lake Hires, Indian Lake, and Three Island Lakes, established by rule in chapter 40C-8, F. A. C. All levels are in feet NGVD.

Adopted minimum flows for Blue Spring (Table 3) define a minimum long-term mean flow regime with mean flows that increase in five-year increments through 2024. From 2024 on, a minimum long-term mean flow of 157 cubic feet per second (cfs) must be maintained. The Blue Spring MFLs are based upon providing adequate cold weather refugia habitat needs for the endangered West Indian Manatee.

Table 2: Adopted MFLs for Big Lake, Lake Daugharty, Lake Helen, Lake Hires, Indian Lake, and Three Island Lakes

	Frequent Low		**Minimum Average**		**Frequent High**	
	Level (ft NGVD)	**Hydroperiod**	**Level**	**Hydroperiod**	**Level**	**Hydroperiod**
Big *	23.7	Semipermanently Flooded	25.0	Typically Saturated	26.1	Seasonally Flooded
Daugharty	41.2	Semipermanently Flooded	42.6	Typically Saturated	44.8	Temporarily Flooded
Helen	43.6	Semipermanently Flooded	44.2	Typically Saturated	46.1	Temporarily Flooded
Hires *	38.0	Semipermanently Flooded	39.5	Typically Saturated	41.0	Seasonally Flooded

	Frequent Low			**Minimum Average**			**Frequent High**		
	Level	**Duration** (days)	**Return Interval** (RI; years)	**Level**	**Duration**	**RI**	**Level**	**Duration**	**RI**
Indian	32.8	120	5	35.0	180	1.7	36.2	30	3
Three Island	19.4	120	10	---	---	---	23.7	30	5

** MFLs for these lakes are not scheduled for re-evaluation. All other MFLs shown above are re-evaluated values which have been adopted by rule.*

Table 3: Adopted Minimum Flows for Blue Spring

Phased Schedule	Minimum Long-Term Mean Flow
December 3, 2006 – March 31, 2009	133 cfs
April 1, 2009 – March 31, 2014	137 cfs
April 1, 2014 – March 31, 2019	142 cfs
April 1, 2019 – March 31, 2024	148 cfs
After March 31, 2024	157 cfs

MFLs Assessment

SJRWMD uses lake-specific surface water hydrologic models for assessing compliance with MFLs for lakes. These models use long-term water level data from an Upper Floridan aquifer monitor well nearest to each lake. The model uses an adjusted well hydrograph coupled with lake stage data to produce long-term simulations of lake levels. Hydrologic statistics of the simulated lake levels are compared to MFLs for the lakes to determine whether the MFLs are met.

To determine the allowable decline in the potentiometric surface of the Upper Floridan aquifer at each of the lakes (i.e. freeboard), model runs are performed . This aquifer level is then compared to water demand projections to determine if the waterbody is in "recovery" status (aquifer levels currently below those which are required to meet the MFLs) or "prevention" status (aquifer levels projected to fall below those needed to meet the MFLs within the twenty-year planning horizon, based on projected water demands). Table 4 shows the prevention/recovery status and available freeboard under 2030 demands for the VSA lakes and Blue Spring. Among the six lakes in the VSA not achieving their MFLs, five are in "prevention" status and one is in "recovery." SJRWMD has projected that flows from Blue Spring would fall below the applicable minimum mean flows by 2019 and, as such, Blue Spring is in "prevention" status.

Table 4: 2030 Freeboard Values and Prevention/Recovery Status

Waterbody	2030 Freeboard *	Prevention/Recovery Status
Big	-0.1 ft	Prevention
Daugharty	-0.1 ft	Prevention
Helen	-0.2 ft	Prevention
Hires	-0.3 ft	Prevention
Indian	-1.3 ft	Recovery
Three Island	-0.2 ft	Prevention
Volusia Blue Spring	-16 cfs	Prevention

* All lake values are rounded to the nearest tenth of a foot. Freeboard for Daugharty was rounded from -0.06 ft and Helen from -0.16 ft. "Freeboard" for Volusia Blue Spring represents the difference between the flow needed to achieve MFLs and projected flow under 2030 water demands.

D. Sustainable Groundwater Yield

SJRWMD completed an assessment in July 2013 using the Volusia Steady-state Groundwater Flow Model to determine the sustainable Upper Floridan aquifer yield applicable to the VSA, as constrained by lake and Blue Spring MFLs (Figure 1). Water use demands were reduced incrementally from end of permit allocations until all lake and spring MFLs were met. Lake constraints were relative to aquifer levels needed to meet adopted MFLs. The Blue Spring constraint was relative to the 2024 minimum flow of 157 cfs. The resulting value was the "sustainable groundwater yield" under that set of conditions. Withdrawals in excess of this sustainable yield would result in Blue Spring flow dropping below 157 cfs. Because the sustainable yield varies depending on optimization of withdrawals and the spatial extent used in the calculation, a specific yield value is not provided in the Strategy. Estimated benefits of the proposed projects and measures were compared against the sustainable groundwater yield and future demand projections. Results of this comparison are discussed in Section G.

E. Apportionment

Apportionment quantifies the relative hydrologic impact of users on MFL water bodies. The purpose of calculating apportionment is two-fold:

1) Focus the type of projects and measures that would be most appropriate and effective for individual waterbodies by clarifying the relative impact of user groups (Table 5); and

2) Provide a basis for quantifying the magnitude of responsibility for individual permittees through the combination of water resource impacts (freeboard or increase in spring flow) and permittee-specific apportionment values.

The approach relies on end-of-permit allocations for users that have an individual or standard general consumptive use permit and estimates of domestic self-supply withdrawals and other user groups that do not have permitted allocations (see Table 5). The apportionment methodology quantifies the proportional impact of users and user groups relative to each other for a specific waterbody. Because the methodology is based on existing numerical groundwater flow models, apportionment values account for climatic considerations but do not quantify the relative influence of withdrawals relative to climate and other factors. Refinement of water demand projections in the future, including current information from the Florida Department of Agriculture and Consumer Services (DACS) and demand projections derived from the District's Water Supply Planning process, will affect the apportionment values.

Table 5: Apportionment by User Group and Waterbody

User Group	% Apportionment (Hydrologic Influence) *						
	Blue Spring	Big Lake	Lake Daugharty	Lake Helen	Lake Hires	Indian Lake	Three Island Lake
Public Supply	88.0	90.3	57.7	86.1	56.1	98.0	90.5
Agriculture	5.3	3.7	35.4	7.3	38.1	1.3	3.8
Commercial/ Industrial	1.7	1.4	3.4	1.5	2.4	0.1	1.3
Domestic Self-Supply	3.1	3.2	3.3	4.4	3.1	0.4	3.0
Recreation	0.7	0.8	0.2	0.4	0.2	0.2	0.7
Other Uses	~0	~0	~0	~0	~0	~0	~0
Mining/ Dewatering	~0	~0	~0	~0	~0	~0	~0
Power Generation	1.2	0.6	~0	0.3	0.1	0.0	0.7
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**

* Values shown as "~0" are user groups with less than 0.04% hydrologic influence for the specific waterbody identified.

F. Regulatory Component

The primary purpose of the regulatory component is to provide certainty for water users that they can use for planning purposes. The proposed regulatory refinements provide equity among water users, increase certainty and predictability in the application of MFLs constraints to consumptive use permits, clarify the relationship between existing permittees and future applications for additional quantities, and provide regulatory incentives for implementation of Strategy projects and measures. The proposed regulatory component is summarized as follows:

- As necessary, amend provisions of Chapter 40C-2, F.A.C. (including Applicant's Handbook: Consumptive Uses of Water) to incorporate concepts of "impact offsets" and "substitution credits."
- Develop a consistent suite of CUP conditions that address MFLs constraints, with permit duration and cost-share qualification as incentives.

- Integrate project requirements and allocation modifications into permits through phased permit modifications.
- Review existing rule provisions and amend, if necessary, to achieve the Strategy Objective.

Definitions

Definitions used in this Strategy area as follows:

> *Impact Offset* - the use of reclaimed water to reduce or eliminate a harmful impact that has occurred or would otherwise occur because of other surface water or groundwater withdrawals. (§373.250(5)(a)1., Fla. Stat.).
>
> *Net Benefit* - activities or measures that will result in an improvement to a water body that offsets the impact of a proposed withdrawal on an adopted Minimum Flow, Level, or Flow Regime. The degree of offset required remains to be determined and may require adoption of a new rule provision.
>
> *New Quantities* - groundwater that is not currently authorized to be withdrawn by the applicant or not currently authorized to be used for the intended use by the applicant. This includes applications to modify existing permits to increase quantities, and/or change the Permit Use Type (affecting only the modified portion) and applications for an initial permit, but does not include a full or partial permit transfer.
>
> *Substitution Credit* – the use of reclaimed water to:
>
> - Replace all or a portion of an existing permitted use of resource-limited surface water or groundwater; or
> - Allow a different user or use to initiate a withdrawal or increase its withdrawal from the same resource-limited surface water or groundwater source provided that the withdrawal creates no net adverse impact on the limited water resource or creates a net positive impact if required by district rule as part of a strategy to protect or recover a water resource. (§373.250(5)(a)2, Fla.Stat.)
>
> *Sustainable Groundwater Yield* - maximum magnitude of withdrawals that can occur which result in aquifer levels sufficient to support MFLs in the Strategy Area, assuming the spatial distribution of withdrawals is optimized.

Applications for New Quantities and Renewals

Generally, requests for withdrawals of new quantities of water or renewals of existing allocations that are projected to impact VSA MFLs waterbodies in recovery status would need to meet the conditions for issuance, such that they provide a net benefit to the MFLs. The only waterbody within the VSA currently designated as "recovery" status is Indian Lake. Details of how the "net benefit" concept will be implemented remain to be determined. As part of Strategy implementation, the District will develop a clear and consistent approach to integration of MFLs constraints for applicants whose proposed withdrawals affect a waterbody designated as “recovery” status, relative to its MFLs.

Maximum Permitted Allocations in Current Permits

When considering how to address their impact on the MFLs, individual permittees may find that reducing their permitted allocation is preferable to implementing a capital project. The incentive for permittees to reduce their permitted allocation is primarily cost-benefit, comparing the cost and implications of permit modifications against the cost of a capital project(s) sufficient to address the permittees’ proportional impact. For purposes of the VSA Strategy, proportional impacts are calculated through a combination of individual permittee apportionment values and aquifer levels needed to maintain MFLs, as defined by freeboard (lakes) and projected spring flow.

Based on a comparison of maximum permitted allocations and 2030 projected demands for public supply utilities within Volusia County, the potential reduction in permitted allocations is relatively limited - approximately 1 mgd. Changes in the projected future demand (e.g. decreased projected demand in 2035 relative to 2030 estimates) would directly affect this value. Similar potential reductions in permitted allocations for commercial/industrial, agricultural, and other permitted non-public supply water users were not calculated. Opportunities for achieving benefits through modification of permitted allocations are more limited for commercial/industrial permittees than public supply permittees, given that market conditions and associated water demands tend to be more volatile than population growth. However, the same approach, incentives, and opportunities available to public supply permittees for reducing permitted allocations as a measure to achieve the MFLs in the VSA will be available to non-public supply permittees.

Step-up or step-down allocations within existing permits do not impact the magnitude of an individual permittee’s mitigation obligation under future demand scenarios because analyses conducted for the P/R Strategy address 2030 demands, which are beyond the time horizon of existing permits which include step-up or step-down allocations. Variable allocations may be incorporated into future permits, but withdrawal impacts would remain constrained by the MFLs and associated sustainable groundwater yield.

Permittees that have allocations based on rainfall-year conditions (e.g. permits for agricultural, golf course, or municipal recreation irrigation with allocations based on 2-in-10 drought year demands) will be reviewed to determine if greater efficiencies and expanded implementation of best management practices (BMPs) would be economically feasible. Depending on the outcome of this review, allocations may be modified to reflect increased efficiencies gained through implementation of irrigation BMPs (see Section G) and additional actions may be identified to improve the participation rate in BMP implementation. Further details remain to be determined.

The District intends to use information regarding permitted allocations versus demonstrated need as the basis for conversations with permittees regarding the feasibility of mitigating their impact on the MFLs through allocation reductions or capital projects. Investigation of allocation reduction opportunities on an individual basis would involve refinement of planning-level estimates with permittee-specific information and analyses.

G. Projects and Measures that Achieve the Strategy Objective

Table 6 provides a proposed suite of projects and measures that together would be sufficient to achieve the VSA MFLs. Projects and measures include a combination of conservation, development of alternative water supplies, regulatory changes, aquifer recharge, and expansion of reclaimed water systems. These projects are included herein as a suite of measures that would be sufficient to achieve the Strategy objectives. Projects and measures implemented to achieve the Strategy objectives may differ from those shown in Table 6. Further, projects and measures identified in Table 6 do not become permit conditions by virtue of Strategy approval. Projects in Table 6, or alternative projects that the District concurs will provide an equivalent benefit, may be developed and incorporated as CUP conditions through standard permitting procedures (also see Section F) and in future Strategy revisions, as appropriate. Benefits of specific projects will be compared against values derived from the combination of projected water resource impacts (freeboard) and apportionment values for individual permittees.

Proposed projects include:

- Five reclaimed water projects, two aquifer recharge projects, and two water supply projects proposed by the West Volusia Water Suppliers (WVWS).
- Proposed reclaimed water project and wellfield optimization efforts by the City of Ormond Beach.
- Wellfield optimization project proposed by the City of Daytona Beach.
- An increase in the participation rate and effectiveness of conservation activities implemented by agricultural water users, public supply utilities, and domestic self-supply users.
- Limited reduction in permitted allocations.

Projects proposed by the WVWS constitute the bulk of the benefit for Blue Spring and the MFL lakes in western Volusia County. Overall, these projects can be divided into two categories: projects designed to avoid impacts from groundwater withdrawals on Blue Spring and VSA lakes and projects designed to meet future demand with alternative water supplies that minimize both water resource impacts and cost. Greater than 16 mgd in reclaimed water projects for the WVWS are identified in the Strategy (Table 6). The Alexander Avenue and Aquifer Recharge Enhancement projects provide 3.6 mgd of direct aquifer recharge in close proximity to Blue Spring. The two water supply development projects, Deep Creek/Leffler and Farmton, provide approximately 8 mgd of groundwater to support future growth, with the associated withdrawals located outside (east) of the area considered as the Volusia Blue springshed to minimize impacts on spring flow and lake levels (Shoemaker, et al., 2004).

In addition to the projects shown in Table 6, three other large-scale project concepts developed by stakeholders in the VSA may benefit the Blue Spring and lake MFLs:

- Seminole – Volusia County Yankee Lake Potable Water Interconnect
- Deltona Lower Floridan Aquifer Test Well (Project 6; WVWS, 2013)
- Maytown Reservoir (Project 10; WVWS, 2013)

These projects were not included in the current proposed suite of Strategy measures, as the project concepts are still under development (see "*Project Benefit Assessment*" and Table 7 below). As these three projects progress, it may be appropriate to incorporate them in a future revision of the VSA Strategy (see Section B).

Regarding agricultural conservation, the Strategy envisions implementation of agricultural best management practices consistent with commodity-specific manuals adopted by DACS in Title 5M, F.A.C. Agricultural conservation estimates shown in Table 6 assume an adoption rate of 12.5% among agricultural operations in Volusia County. Given the extent to which agricultural withdrawals affect lakes Daugharty and Hires in particular (see Table 5), the District intends to work closely with DACS and individual permittees in those areas to identify and implement feasible water conservation practices.

Assessment Tools

Currently, several groundwater modeling tools cover portions of the VSA: the District Volusia Steady-state Groundwater Flow Model, the Volusia Regional Transient Groundwater Flow Model, and a site-specific shallow aquifer MODFLOW model (WVWS, 2013). Tool development is an ongoing process and different tools are appropriate for different purposes. The specific modeling tool selected for purposes of VSA Strategy project assessment (SJRWMD Volusia Steady-state Groundwater Flow Model) does not constrain the District or permittees' option to use alternative tools for future analyses related to permitting, MFLs Strategy revision, compliance, project cost-share evaluations, or other purposes.

Project Benefit Assessment

District staff used the Volusia Steady-state Groundwater Flow Model, information provided in Table 6, additional project details from the WVWS, Ormond Beach, Daytona Beach, and other sources to estimate the benefits of this suite of projects relative to Blue Spring and lake MFLs. Results are shown in Table 7. Based on this modeling assessment, the proposed projects would provide sufficient aquifer recovery to achieve the Blue Spring and lake MFLs within the VSA, assuming a 2030 projected demand scenario.

The WVWS conducted independent analysis of their proposed projects using the Volusia Regional Transient Groundwater Flow Model. The transient model analysis also found that the proposed WVWS projects would be sufficient to maintain minimum flow of 157 cfs from Blue Spring . The similarity between results from these independent modeling efforts provides assurance that, upon full implementation, the proposed projects would achieve MFLs for Blue Spring and VSA lakes.

Table 6. Proposed Suite of Strategy Measures Sufficient to Achieve MFLs

Project Type	Project Title [1]	Est. Volume (mgd)	Est. Capital Cost ($)
Conservation	Implementation of Agricultural Best Management Practices	1.1	Estimate pending
	Domestic Self-Supply	0.3	$1.4M
	Public Supply	3.7	$8.4M
Regulatory	Modify Permitted Allocations	1	N/A
Reuse	Deland Reuse Retrofit Part 'B' and Wiley M. Nash Augmentation Facilities (Project 1)	4.1	$3.8M
	West Volusia Reclaimed Water Interconnects (Project 2a)	2.5	$9.3M
	Sanford - Volusia County Reclaimed Water Interconnect (Project 2b)	1.5	$3.4M [2]
	Deltona Lakes Pump Station, Transmission Main and Augmentation Facilities (Project 4)	4	$6.9M
	Doyle Road Reclaimed Water Main Extension (Project 7)	2	$6.0M
	City of Deltona Golf Course Reclamation Water Expansion [3]	0.7	$1.8M
	City of Deltona – Howland Blvd. Phase 3 Reclaimed Water Project [3]	2.0	$0.5M
	Ormond Beach reclaimed water distribution project [3]	1.3	$3.3M
Aquifer Recharge	WVWS Aquifer Recharge Enhancement Project (Project 3)	2.4	$4.4M
	Alexander Avenue Water Resource Management Site (Project 8)	1.2	$1.5M
Water Supply	Deep Creek/Leffler Water Supply, Treatment and Transmission Facilities (Project 5)	4	$44.1M + Additional Transmission Costs (Estimate pending)
	Farmton Water Supply and Transmission Facilities (Project 9)	4	$40.5M
	Daytona Beach Wellfield Optimization	N/A	Estimate pending
		TOTAL	**$135.3M + Pending Project Costs**

Notes:

1 Project identification numbers match naming conventions in the WVWS Phase III Water Supply Plan (2013). Volumes and costs for these projects were derived from the same source, with the exceptions noted.

2 Total project cost $3.4M, per 2013 Alternative Water Supply Project Cost-share Solicitation (SJRWMD). Proportional cost for the West Volusia Water Suppliers is $1.6M (per WVWS 2013).

3 Volumes and costs for the City of Deltona and Ormond Beach projects are per 2013 SJRWMD Alternative Water Supply Project Cost-share Solicitation submittals.

Table 7. Aquifer Benefits Associated with Proposed Projects

Waterbody	2030 Freeboard / Flow with No Project Implementation	UFA Rebound / Flow with Proposed Project Scenario
Big Lake	-0.1 ft	1.10 ft
Lake Daugharty	-0.1 ft	0.96 ft
Indian Lake	-0.2 ft	2.64 ft
Lake Hires	-0.3 ft	1.00 ft
Lake Helen	-2.6 ft	1.03 ft
Three Island Lakes	-1.3 ft	1.10 ft
Blue Spring	141 cfs *	160 cfs

* 141 cfs = MFL (157 cfs) - Freeboard (16 cfs). See Table 4.

H. Funding

Projects implemented as part of this Strategy will likely be funded through cooperative cost-share among permittees and, in select cases, the District. Available District cost-share is contingent upon budget availability. Although not directly quantified, projects and measures funded by District ad valorem funds, either through District projects or via cost-share agreements with project partners, are intended to mitigate the water resource impact of domestic self-supply uses and uses authorized under a permit by rule. Under the assumption that permitted water users are only responsible for their proportion of the water resource impact, District cost-share may exceed the typical 40% threshold for projects if additional action is needed beyond mitigating the effect of permitted withdrawals in order to meet the MFLs.

Based on the scenario provided in Table 6, 40% District cost-share results in a minimum of $54M in District cost-share that would be needed to construct the projects identified. The following factors are important to note, relative to this estimate:

1) This estimate does not include cost-share for capital projects noted in Table 6 for which estimated costs remain to be determined;
2) District and partner agency costs for monitoring are not included in this estimate; and
3) This estimate primarily addresses capital costs. It does not reflect the perpetual operation and maintenance costs that would become obligations for project partners.

Through the 2013 cooperative cost-share solicitation process, the District provided funding for construction of water resource development, alternative water supply development, water conservation and springshed nutrient-loading reduction projects. Table 8 shows a subset of these cooperative cost-share projects which benefit water resources in the VSA. The District has committed $15M in cost-share funding to support implementation of the projects shown in Table 8. This does not reflect the entire financial investment on the part of the District in the VSA, but provides a view of current investment on the part of the District and project partners.

Details regarding cost-share agreements will be developed on a project-by-project basis, consistent with statutory directives and District cost-share guidelines. It should be noted that certain water supply development projects that are consistent with the District's Water Supply Plan and that "bring[] about replacement of existing sources in order to help implement a minimum flow or level" are to be given "first consideration" for state or water management district funding assistance. (§373.705(4), Fla. Stat.)

I. Project Implementation and Monitoring Progress

Project Implementation

The implementation schedule for particular projects will be set forth in applicable cost-share agreements and/or the consumptive use permit(s), as appropriate. For projects that involve District cost-share, funding recipients shall provide annual progress reports summarizing project status, demonstrated change in withdrawals or aquifer benefits achieved to-date, and expenditures. On an annual basis, the District will compile project progress reports into a MFLs Strategy Implementation report, summarizing pertinent permit modifications, permit compliance, project progress during the previous year, and anticipated permit revisions, projects and anticipated cost-share for the upcoming year. Annual reports shall be developed on a calendar-year or fiscal-year basis, as appropriate.

The District will identify a monitoring network of existing monitoring wells that reflect both conditions near the subject lakes and regional aquifer rebound needed to support water resources within the VSA. This network will be based primarily on existing Floridan aquifer wells with an extended period-of-record. Manatee counts in the Blue Spring run will also continue, in cooperation with partner agencies. Use of the Volusia Steady-state Groundwater Flow Model for purposes of this document does not constrain the District or project partners' future options regarding which tools to use for Strategy assessment and revision.

Table 8. Current Cooperative Cost-share Projects in the VSA

Project Type	Project Title	Estimated Construction Cost (M)	FY 14 District Share (M)	FY 15 District Share (M)	Total District Share (M)
Reuse	Deland Reuse Retrofit Part 'B' and Wiley M. Nash Augmentation Facilities (Project 1)	$3.8	$1.1	$0.4	$1.5
	West Volusia Reclaimed Water Interconnects (Project 2a)	$9.3	$2.6	$1.1	$3.7
	Sanford - Volusia County Reclaimed Water Interconnect (Project 2b)	$3.4	$1.4	-	$1.4
	Doyle Road Reclaimed Water Main Extension (Project 7)	$6.0	$1.7	$0.7	$2.4
	City of Deltona Golf Course Reclamation Water Expansion	$1.8	$0.7	-	$0.7
	City of Deltona – Howland Blvd. Phase 3 Reclaimed Water Project	$0.5	$0.2	-	$0.2
	Deltona Lakes Pump Station, Transmission Main and Augmentation Facilities (Project 4)	$6.9	-	$2.7	$2.7
	Ormond Beach Reclaimed Water Distribution Project	$3.3	-	-	$1.32
Aquifer Recharge	WVWS Aquifer Recharge Enhancement Project (Project 3)	$4.4	-	$1.8	$1.8
	Alexander Avenue Water Resource Management Site (Project 8)	$1.5	-	$0.6	$0.6
	Total	**$44.2**	**$7.7**	**$7.3**	**$16.3**

Water Resource Response

The combination of flow at Blue Spring, aquifer levels, and lake levels will form the statistical basis from which the District can determine if the MFLs are being achieved. Continuous discharge monitoring of Blue Spring will continue. In addition, throughout the duration of Strategy implementation, existing or equivalent lake level stations will continue to be monitored at a frequency sufficient to facilitate statistical evaluation of MFLs.

Data Analysis

The combination of spring flow, lake level, and aquifer level data will be used to evaluate progress toward achieving MFLs. Data assessments will include four primary components:

1) Volusia Blue Spring flow;
2) Upper Floridan aquifer levels near each of the VSA lakes;
3) Aquifer levels across a local Upper Floridan trend network; and
4) Quantitative relationship between lake levels and aquifer levels.

The District will develop a statistical methodology for integrating aquifer level data from these wells as part of Strategy implementation. Aquifer level protection goals will integrate levels needed to achieve lake MFLs as well as head needed to achieve the Blue Spring minimum flows. Interpolated freeboard values identified in Table 9 are provided as interim goals against which progress can be measured. Linear change in freeboard values is not anticipated, but these values provide a trend against which monitoring data can be evaluated. Aquifer level targets may be set to advise and guide in tracking the accuracy of the estimated sustainable groundwater yield, but neither aquifer levels, nor the interim freeboard targets, will be used as the sole basis by which the District will approve or disapprove the Strategy and subsequent amendments or updates.

Table 9. Interim Freeboard Targets for VSA Lakes

Lake	Starting Freeboard (1995 Conditions)	Interim Freeboard Targets		
		2015	2020	2025
Big	0.8	0.3	0.2	0.1
Daugharty	1.1	0.5	0.3	0.2
Helen	1.0	0.4	0.3	0.1
Hires	1.0	0.5	0.3	0.2
Indian	-0.7	-0.3	-0.2	-0.1
Three Island	0.7	0.3	0.2	0.1

Note: Values rounded to the nearest tenth-foot.

J. References

Shoemaker, W.B., O'Reilly, A.M., Sepúlveda, N., Williams, S.A., Motz, L.H., and Sun, Q, 2004, Comparison of estimated areas contributing recharge to selected springs in north-central Florida by using multiple ground-water flow models: U.S. Geological Survey Open-File Report 03-448.

West Volusia Water Suppliers. 2013. Water Supply Plan, Phase III (Draft). Prepared by Quentin L. Hampton Associates.

2018 Five-Year Strategy Assessment
for the
Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes

March 2019

A. Background

The Prevention/Recovery Strategy for the Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes (2013 Volusia Strategy; SJRWMD, 2013) was approved by the St. Johns River Water Management District (SJRWMD) Governing Board on November 12, 2013. As part of the phased implementation approach proposed within the 2013 Volusia Strategy, completion of 5-year strategy assessments was recommended. The 2018 strategy assessment contained herein is the first assessment since approval of the 2013 Volusia Strategy in 2013. The 2018 strategy assessment includes the following components:

- Newly adopted/re-evaluated minimum flows and minimum levels (MFLs)
- Current water resource assessment
- Updated freeboard calculations (based on revised planning period)
- Updated assessment of prevention/recovery status
- Updated apportionment calculations
- Project implementation status, including alternative projects, if warranted

B. New and Re-evaluated MFLs

In Volusia County, two new and one re-evaluated set of MFLs were adopted by the SJRWMD Governing Board since approval of the 2013 Volusia Strategy (Figure 1). The re-evaluated MFLs for Lake Purdom were adopted in 2014. New MFLs for the two remaining Outstanding Florida Springs (OFS) in Volusia County, DeLeon and Gemini springs, were adopted in 2017. All of SJRWMD's adopted MFLs can be found in Chapter 40C-8, Florida Administrative Code (F.A.C.).

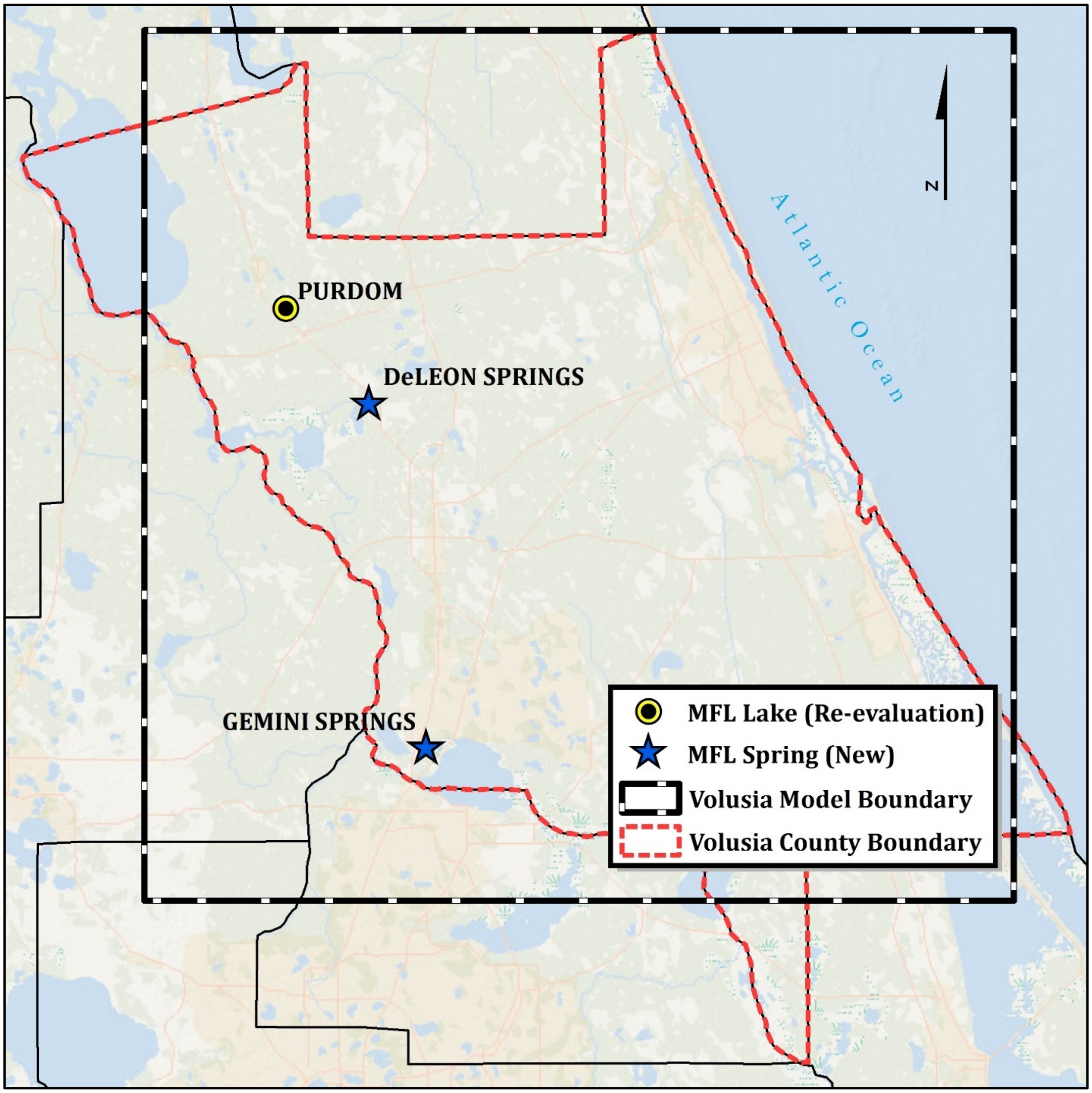


Figure 1: Location of new and re-evaluated MFL waterbodies in Volusia County

C. 2040 Water Resource Assessment

Staff utilized the 2015 Volusia Groundwater Flow Model (Volusia Model) to perform the water resource assessment (WRA) for Volusia County. Current (i.e., 2015) MFL freeboard values were compared to changes in aquifer level (for lakes) or flow (for springs) at the projected 2040 water demand scenario to determine the status of the MFLs at present and future conditions. The 2040 projected groundwater withdrawals within the Volusia Model domain was 136.5 million gallons per day (mgd), approximately 27% higher than in 2015.

Prevention/Recovery Status Update

Table 1 shows the updated status of MFLs for waterbodies identified in 2013 as being in prevention or recovery, as well as waterbodies identified as being in prevention or recovery in the 2018 WRA. All but one of the lakes identified in 2013 as being in prevention or recovery are no longer of concern, currently or through the 20-year planning horizon. Since adoption of the 2013 Volusia Strategy, SJRWMD has developed and implemented an improved approach to evaluating the future compliance status of MFLs. This approach meets the statutory requirement to evaluate projected conditions at the 20-year planning horizon (subsection 373.0421(2), *Florida Statutes*). Utilizing the revised assessment methodology, lakes Big, Daugharty, Helen, Hires, and Three Island all demonstrated compliance with their MFLs at 2040 projected water demand conditions.

Indian Lake was determined to be in recovery in the 2013 WRA. However, since 2013 nearby utilities have implemented wellfield optimization protocols and construction of the Tiger Bay Weir was completed. The water resource benefit from these projects has resulted in Indian Lake's improved MFL classification from recovery to prevention. The 2018 WRA identified two additional lakes, Scoggin and Shaw, projected to be in prevention by 2040. The assessment also indicated that Blue Spring continues to remain in prevention. Figure 2 shows the location of the impacted waterbodies.

Table 1: MFL status of waterbodies determined to be in prevention or recovery in the 2013 and/or 2018 water resource assessment (WRA)

Waterbody Name	Type	MFL Status at 2035 (Previous 2013 WRA)	**MFL Status at 2040 (Current 2018 WRA)**
Big	Lake	Prevention	**Met**
Daugharty	Lake	Prevention	**Met**
Helen	Lake	Prevention	**Met**
Hires	Lake	Prevention	**Met**
Indian	Lake	Recovery	**Prevention**[1]
Scoggin	Lake	Met	**Prevention**
Shaw	Lake	Met	**Prevention**
Three Island	Lake	Prevention	**Met**
Blue	Spring	Prevention	**Prevention**

[1] Prevention status accounts for benefits of the Tiger Bay Weir (constructed in 2016) at current (2015) conditions.

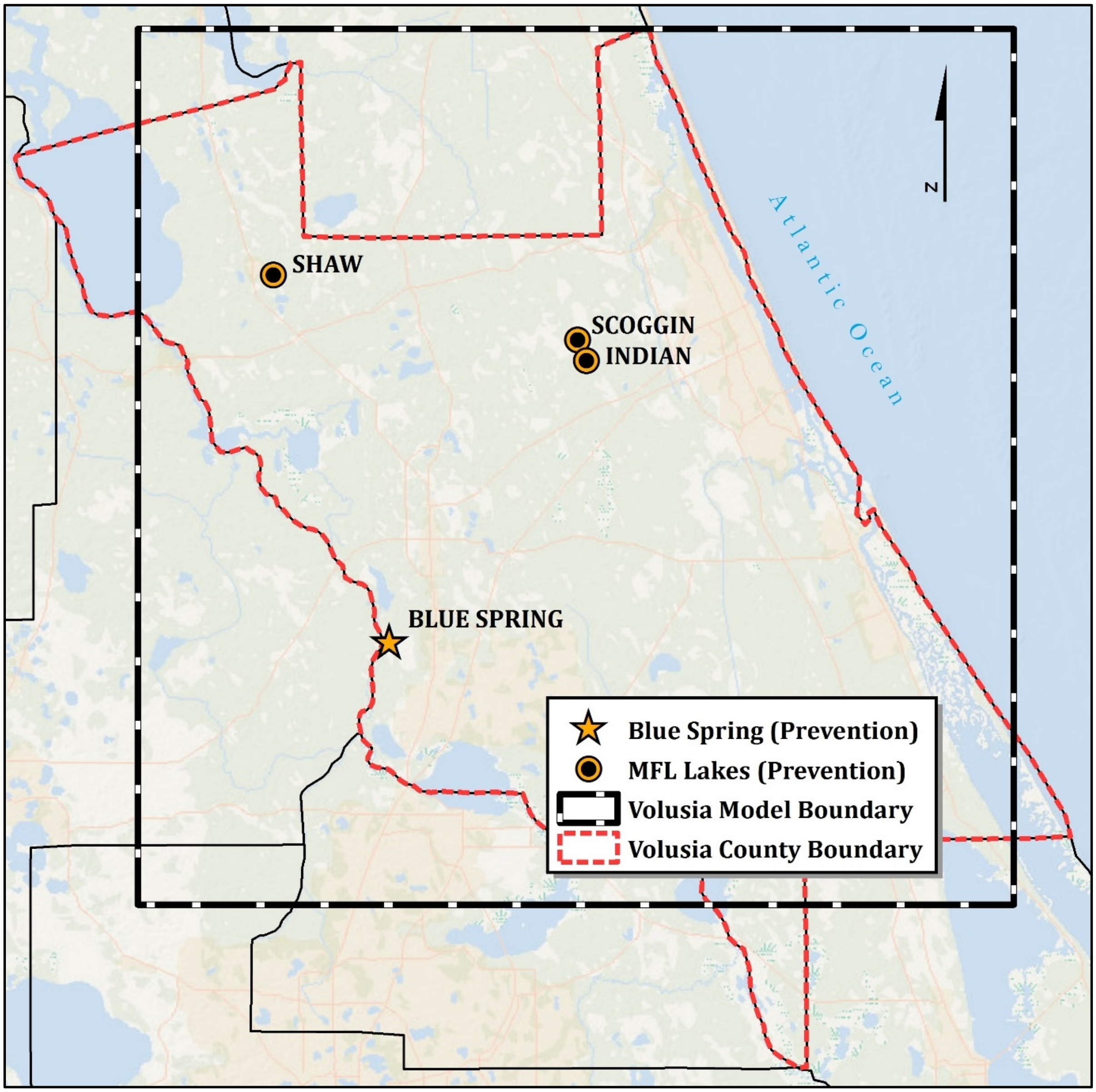


Figure 2: Location of MFL waterbodies identified as being in prevention or recovery in the 2018 water resource assessment

Influence by Use Type

Groundwater modeling was performed to determine the percent influence of impacts by withdrawal user group on the impacted MFL waterbodies. The results are displayed in Table 2.

Table 2: Impact influence by use type at 2040 projected water demand

User Group	Percent of Total Impact[1]			
	Indian	Scoggin	Shaw	Blue Spring
Public Supply	96	95	3	71
Domestic Self-supply	1	2	1	7
Agriculture	1	2	95	5
Commercial/Industrial/Institutional	<1	<1	<1	10
Landscape/Recreational/Aesthetic	<1	1	0	1
Power Generation	0	0	0	1
Users outside of Volusia County[2]	<1	<1	1	4

[1] Percentages may not total 100 due to rounding

[2] Withdrawals from all user groups outside of Volusia County but located within the Volusia Model domain

D. Project Implementation Status

Fourteen projects were identified in the 2013 Volusia Strategy. These projects, when implemented, would provide the water resource benefit required at the time to ensure achievement of the MFLs in Volusia County. The status of each of these projects is listed below. A 15th project, the Tiger Bay Weir, was not listed in the 2013 Volusia Strategy, however, construction of the weir was completed in 2016 and it currently provides a benefit to certain impacted MFL lakes.

Conservation — **ONGOING**

The 2013 Volusia Strategy estimated water conservation potential for public supply, domestic self-supply, and agricultural water use. Total water savings at 2035 was estimated at 5.1 mgd and was based on reductions in water use ranging from 4.6 % (public supply in western Volusia County) to 5.9% (agriculture). Five conservation cost-share projects (four agricultural and one public supply) have been partially funded by SJRWMD in Volusia County since 2016 with water savings estimated at 0.3 mgd.

West Volusia Water Suppliers (WVWS) Reclaimed Water Interconnects — **COMPLETE**

The reclaimed water interconnects between Volusia County and the cities of DeLand and Deltona were completed in 2016.

Sanford – Volusia County Reclaimed Water Interconnect — **COMPLETE**

The reclaimed water interconnect between the City of Sanford and Volusia County was completed in 2015.

Doyle Road Reclaimed Water Main Extension — **COMPLETE**

The Doyle Road reclaimed water main extension that connects the Deltona Lakes Water Reclamation Facility to the Alexander Avenue Resource Management Site was completed in 2015.

City of Deltona Golf Course Reclamation Water Expansion — **COMPLETE**

Originally anticipated to occur at the City of Deltona golf course, this project was subsequently renamed the "City of Deltona Reclaimed Pumping and Storage Expansion Project" and included the installation of a new reclaimed water pump station and a reclaimed water ground storage tank at the Alexander Avenue Water Resources Facility. Construction was completed in 2015.

City of Deltona — Howland Blvd. Phase 3 Reclaimed Water Project — **COMPLETE**

The reclaimed water extension to Howland Boulevard in the City of Deltona, was completed in 2015.

Ormond Beach Reclaimed Water Distribution Project — **COMPLETE**

The extension of Ormond Beach reclaimed water lines to the Hunters Ridge/Breakaway Trails development was completed in 2014.

Daytona Beach Wellfield Optimization — **COMPLETE**

To facilitate achievement of the MFLs established for Indian Lake, the City of Daytona Beach implemented a wellfield optimization plan in 2013. The wellfield optimization plan limits the use of wells 13 through 21, which are in close proximity to Indian Lake.

Tiger Bay Weir — **COMPLETE**

The Tiger Bay Weir was constructed in 2016 to retain stormwater and limit discharges from a wetland system located to the southeast of Indian Lake. Anticipated benefits from the weir include wetland hydration, aquifer recharge and stormwater treatment. Based on groundwater modeling performed for SJRWMD in 2015 (DHI, 2015), it is estimated that the Tiger Bay Weir raises the aquifer level beneath Indian Lake by almost 0.5 foot.

Alexander Avenue Water Resource Facility — **IN PROGRESS**

Project 4A (formerly Alexander Avenue Water Resources Site)
This phase is currently under construction and includes storage, treatment and pumping facilities for 4 mgd of stormwater and surface water.

Project 4B (formerly Deltona Lakes Pump Station, Transmission Main and Augmentation Facilities)

This phase of the project, which will include infrastructure to withdraw and pump surface water from Lake Monroe, has not yet begun. The City of Deltona has not yet received authorization for the use of surface water in its consumptive use permit (CUP).

<u>West Volusia Water Suppliers (WVWS) Aquifer Recharge Enhancement Project — **IN PROGRESS**</u>

The WVWS Aquifer Recharge Enhancement Project was conceptualized to provide recharge via 4 mgd of reclaimed water at several sites. Currently, the City of Deltona is in the process of constructing phase I of this project, which includes a new rapid infiltration basin at the Alexander Avenue Water Resource Facility that will provide 0.6 mgd of recharge to the Upper Floridan aquifer. Phase I is expected to be completed in 2020.

<u>DeLand Reuse Retrofit Part 'B' and Wiley M. Nash Augmentation Facilities — **IN PROGRESS**</u>

The retrofit of approximately 190 homes to receive reclaimed water was completed in 2016. The City of DeLand's CUP was modified in 2017 to authorize 4 mgd of withdrawals from the St. Johns River for augmentation of its reclaimed water system. The city is currently in the process of enhancing the river intake system and replacing necessary filters at the wastewater treatment plant. This project is anticipated to be fully functional by the end of 2019.

<u>Deep Creek/Leffler Water Supply, Treatment and Transmission Facilities — **IN PROGRESS**</u>

Aquifer performance tests (APTs) were completed at two sites within the Leffler property in 2018. Groundwater modeling of the proposed new wellfield should be completed in 2019, with wellfield operation planned to occur prior to 2024.

<u>Farmton Water Supply and Transmission Facilities — **NOT YET STARTED**</u>

The Farmton Services LLC CUP authorizes 4 mgd of withdrawals for bulk public water supply to the WVWS. This allocation, however, is limited by the quantity of water established in legal agreements between the permittee and the WVWS by December 31, 2019, with the allocation expiring at the end of 2019 if no agreements are in place. Since March of 2019, there have been no updates provided to SJRWMD concerning any established legal agreements.

E. New Projects and Measures

Even with the comprehensive list of projects identified in the 2013 Volusia Strategy, the 2018 strategy assessment determined that the list of projects was not sufficient to meet all the Volusia County MFLs at 2040 projected water demand conditions, therefore, it was necessary to supplement the current list with additional projects. The following list of projects provides the additional water resource benefits necessary to ensure achievement of Volusia MFLs at the current planning horizon, year 2040. Table 4, which follows the list below, summarizes the projects, project capacities, and estimated costs.

Updated Water Conservation Potential — **ONGOING**

As part of the Central Springs and East Coast (CSEC) regional water supply plan (RWSP) process, updated water conservation potential for all water use types was calculated for Volusia County for 2040. The potential savings were generally greater that what was estimated in the 2013 Volusia Strategy for 2035 (Table 3). The maximum savings estimates were incorporated in the Volusia Model to evaluate the water resource benefit from a higher level of conservation and to be able to report a range of conservation and associated benefits.

Table 3. Comparison of water conservation potential estimates at 2035 and 2040

Water Use Category	Water Conservation Potential at 2035[1] (mgd)	Water Conservation Potential at 2040[2] (mgd)
Public Supply	3.7	2.7 – 6.1
Domestic Self-supply	0.3	0.3 – 0.6
Agriculture	1.1	2.5
Commercial/Industrial/Institutional	NA	0.04
Landscape/Recreational/Aesthetic	NA	0.04
Power Generation	NA	<0.01
TOTAL	**5.1**	**5.6 – 9.3**

[1] As calculated within the 2013 Volusia Strategy (SJRWMD, 2013)
[2] From the draft 2019 Central Springs East Coast Regional Water Supply Plan (SJRWMD, 2019, draft)

Reclaimed Water Expansion in Eastern Volusia County — **ONGOING**

Although the 2013 Volusia Strategy identified several proposed reclaimed water projects in western Volusia County, only one reclaimed water project was identified for the eastern portion of the county. Two MFL lakes in eastern Volusia County, Indian and Scoggin, are in prevention as determined by the 2018 WRA. With public supply uses causing the majority of aquifer level decline beneath these lakes (Table 2), additional projects are necessary to obtain the aquifer level rebound required to achieve their MFLs. Based on the assessment of current available reclaimed water and additional reclaimed water projected to become available in 2040, it is estimated that 9.3 mgd of reclaimed water can offset public supply withdrawals in 2040 in eastern Volusia County, thus providing additional aquifer rebound beneath lakes Indian and Scoggin.

The City of Daytona is currently implementing a direct potable reuse (DPR) demonstration project. It is likely that the city will move forward with full-scale DPR facilities to meet a portion of its potable demand upon completion of the demonstration. Based on the schedule for implementation, full scale operation will not occur prior to the next 5-year assessment. Project progress and the city's future DPR plans will be detailed in the 2023 strategy assessment.

Volusia Blue Wetland Recharge Project — **IN PROGRESS**

This project consists of converting a sand mine into a wetland treatment and recharge basin approximately 0.5 mile from Blue Spring, which is anticipated to provide 2 to 4 mgd of recharge to the Upper Floridan aquifer. The recharge water will consist of stormwater from Mill Lake and possibly other areas, reclaimed water produced by the WVWS, and surface water from the St. Johns River. At the time of this assessment, the Volusia Blue Wetland Recharge Project was in the feasibility and preliminary design phase.

WVWS Groundwater Withdrawal Optimization — **IN PROGRESS**

The groundwater modeling simulations that evaluated the benefits of the projects in the 2013 Volusia Strategy and the new projects listed above did not consider the optimization of groundwater withdrawals. This final project involves reducing public supply withdrawals closest to Blue Spring and replacing those withdrawals with withdrawals from the two new wellfields, which are both located outside of the springshed.

WVWS Aquifer Enhancement Expansion — **PROPOSED**

This proposed project would increase the number of recharge sites in the primary and secondary recharge areas for Blue Spring in order to increase recharge to the Upper Floridan aquifer by 0.6 mgd to 1.8 mgd.

Deltona Reclaimed Water Augmentation Expansion — **PROPOSED**

The City of Deltona is currently exploring the possibility of expanding the proposed surface water intake, transmission lines, and treatment capability associated with the Alexander Avenue Water Resource Facility from 4 mgd to 12 mgd. For this assessment, staff considered an expansion to 8 mgd, which, once fully permitted, would provide an additional 4 mgd of surface water available to augment the reclaimed water system to replace groundwater for irrigation or recharge the Upper Floridan aquifer.

Table 4. Summary of new projects with volume and cost estimates

Project Type	Project Title	Est. Volume (mgd)	Est. Capital Cost ($)
Conservation	Updated Water Conservation Potential (difference between 2030 and 2040 estimates)	0.5 – 4.2	$1.0M - $7.4M
Reuse	Reclaimed Water Expansion in Eastern Volusia County	9.3	$45.2M
	Deltona Reclaimed Water Augmentation Expansion	4.0	$0.9M
Aquifer Recharge	Volusia Blue Wetland Recharge	2.0 – 4.0	$5.4M - $8.5M
	WVWS Aquifer Enhancement Expansion	0.6 – 1.8	$1.1M – $3.3M
Water Supply	WVWS Groundwater Withdrawal Optimization	N/A	TBD[1]
		TOTAL	**$53.6M – $65.3M**

[1] To be determined. It is likely that some of the cost for this project was previously included as a component in the estimates for the Deep Creek/Leffler and Farmton transmission facilities.

F. Project Benefits

Staff utilized the Volusia Model at 2040 water demand conditions to evaluate the benefit of the projects listed in sections F and G above. Table 5 summarizes the benefits of both suite of projects with respect to the MFL lakes identified as being in prevention. The combined suite of projects is sufficient to achieve the aquifer level rebound necessary to achieve the lake MFLs in 2040.

Table 5. Summary of project benefits with respect to impacted MFL lakes

MFL Waterbody	Freeboard at 2040 (ft)	Project Benefits			Revised 2040 Freeboard with Projects (ft)
		2013 Volusia Strategy (ft)	2018 New Projects[1] (ft)	Total[2] (ft)	
Indian Lake	-1.0	0.5	1.2	1.7	0.6 ft
Scoggin Lake	-0.4	0.3	0.9	1.3	0.9 ft
Shaw Lake	-0.6	0.3	0.3	0.6	0.0 ft

[1] For MFL lakes, new projects include Blue Spring Wetland Recharge Park at 4 mgd, Reclaimed Water Expansion in Eastern Volusia County, and Updated Water Conservation Potential for agriculture only.

[2] Totals may not appear accurate due to rounding.

Table 6 summarizes the project benefits with respect to flow at Blue Spring. Implementation of all projects in the 2013 Volusia Strategy as well as the implementation of all proposed projects within this assessment can provide the benefit needed to meet the Blue Spring MFL in 2040. Achievement of the MFLs at 2040, however, will require the maximum amount of conservation described in section G, as well the most effective recharge options.

Table 6. Summary of project benefits with respect to Blue Spring

MFL Waterbody	Freeboard at 2040[1] (cfs)	Estimated Project Benefits					Revised 2040 Freeboard with Projects (cfs)	
		2013 Volusia Strategy (cfs)	2018 New Projects (cfs)		Total (cfs)			
			Low	High	Low	High	Low	High
Blue Spring	-17	9.4	5.3	8.1	14.7	17.5	-2.3	0.5

cfs = cubic feet per second

[1] For Blue Spring, freeboard value is based on the final minimum flow, effective in 2024, and 2040 projected water demand.

G. Next Steps

The 2018 Volusia Strategy 5-Year Assessment provides assurance that, with implementation of the projects identified in the 2013 Volusia Strategy as well as those proposed in this assessment, Volusia County waterbodies will meet their MFLs at 2040 water demand conditions. The next 5-year assessment of the 2013 Volusia Strategy will occur in 2023 at which time SJRWMD will assess the Volusia MFLs at the 2045 planning horizon.

H. References

DHI, 2015. Tiger Bay Bennett Swamp Model Update and Recalibration Telescoped Model and Scenario Analysis. DHI Water and Environment Inc., Lakewood, CO.

SJRWMD, 2013. *Prevention/Recovery Strategy for Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes.* SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/gb1311_005.pdf

SJRWMD, 2019 (draft). Central Springs/East Coast Regional Water Supply Plan (2015 – 2040). SJRWMD, Palatka, FL.

Prevention Strategy for the
Implementation of Silver Springs Minimum Flows and Levels

April 2017

St. Johns River Water Management District
Division of Water Supply Planning and Assessment
Bureau of Water Supply Planning

A. Introduction

Silver Springs, located in Marion County in north central Florida, is an iconic first-magnitude spring that was designated as an Outstanding Florida Spring (OFS) pursuant to subsection 373.802(4), Florida Statutes (F.S.). At the time of minimum flows and minimum levels (MFLs) adoption for an OFS, a prevention or recovery strategy must be adopted concurrently if the spring is below, or is projected within 20 years to fall below, an adopted MFL (subsection 373.805(1), F.S.). The St. Johns River Water Management District (SJRWMD) evaluated the recommended MFLs for Silver Springs based on current and projected water use conditions and determined that the MFLs would not be achieved over the next 20 years; therefore, a prevention strategy was required.

Consistent with the provisions for establishing and implementing MFLs provided for in section 373.0421, F.S., the Prevention Strategy for the Implementation of Silver Springs MFLs (Strategy) identifies a suite of projects and measures that, when implemented, prevents the Silver Springs MFLs from being violated due to consumptive uses of water, while simultaneously providing sufficient water supplies for all existing and projected reasonable beneficial uses.

To meet the requirements of an OFS prevention strategy according to subsection 373.805(4), F.S., this Strategy contains the following information:

- A listing of all specific projects and measures identified for implementation of the plan
- A priority listing of each project
- The estimated cost and date of completion for each project
- The source and amount of financial assistance offered by the St. Johns River Water Management District (SJRWMD)
- An estimate of each project's benefit to the OFS
- An implementation plan to achieve the adopted MFLs

Groundwater withdrawals within Marion County contribute to the majority of the pumping-related impacts to Silver Springs. Therefore, this Strategy focuses primarily on projects and measures within the county boundary where their benefits will be the greatest. This does not preclude the development of projects outside of Marion County that are anticipated to result in flow increases at Silver Springs. The proposed projects (Section G) and regulatory component (Section I) listed within this Strategy provide assurance that the MFLs for Silver Springs will be achieved while meeting projected 2035 water use demand and permitted withdrawal quantities[1] (PQ).

[1] Permitted withdrawal quantities represents a groundwater model simulation where withdrawals are equal to the allocations authorized by existing consumptive use permits. Exceptions within the Northern District Groundwater Flow Model Version 5.0 include permitted agricultural allocations which were adjusted to better reflect average irrigation, and domestic self-supply (a use exempt from permitting) and subthreshold agricultural use (authorized via a general permit by rule), which were both estimated using 2035 projected demand.

B. Strategy Objective, Approach, and Phased Implementation

Objective

The objective of the Strategy is to ensure that flows and levels within Silver Springs do not fall below adopted MFLs during the next 20 years. This objective can be achieved by establishing and maintaining groundwater withdrawals at or below the sustainable groundwater yield[2] through water conservation and water supply development projects or by mitigating the impact of groundwater withdrawals on Silver Springs through water resource development projects.

Approach

The approach outlined in this Strategy includes project and measure identification and implementation, proposed regulatory actions, monitoring, and routine assessment of the Strategy goals and accomplishments. The intent is to provide assurance that MFLs will be met in a way that maximizes flexibility for permittees and project partners. The basic approach includes the following:

- Identify projects and measures that provide water resource benefits sufficient to achieve the MFLs. *(Section G)*
- Identify sufficient funding resources to facilitate Strategy implementation. *(Section H)*
- Prescribe regulatory measures that define a permitting path for existing and new uses. *(Section I)*
- Monitor trends in flow and water levels and then utilize this data to confirm benefits of implemented projects and adjust the Strategy measures as necessary. *(Section J)*
- Implement Strategy projects and measures in a phased approach with a comprehensive review at five-year intervals, including MFLs assessment, recalculation of MFLs freeboard[3], and Strategy revisions, if necessary. (*below*)

Phased Implementation

Strategy implementation will occur in five-year phases (Table 1). Actions to occur in subsequent phases will be determined during the Strategy review process envisioned at the end of Phases 1 and 2. Phase 1 would begin upon Strategy approval by the SJRWMD Governing Board. Upon completion of each five-year phase, a Five-Year Strategy Assessment report will be prepared. This report may include the following information:

- Newly adopted/re-evaluated MFLs

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[2] For purposes of this Strategy, the sustainable groundwater yield is defined as the quantity of groundwater from the Upper Floridan aquifer which can be withdrawn without causing significant harm to Silver Springs (i.e., violate its MFLs).

[3] For Silver Springs, freeboard is defined by the amount of spring flow in excess of the MFLs (positive freeboard) or less than the MFLs (negative freeboard). Positive freeboard indicates that the MFLs are met with additional water available for withdrawal. Negative freeboard indicates the MFLs are not, or will not be, met and the water body is considered in recovery or prevention, respectively.

- Utilization of updated tools for resource assessments and analyses
- Updated freeboard calculations (based on the revised planning period)
- Updated assessment of prevention/recovery status
- Project implementation status, including alternative projects, if warranted
- Rule revision status
- Water resource data assessment
- Evaluation of the sustainable groundwater yield

Based on the findings in each Five-Year Strategy Assessment report, the Strategy may be revised by the Governing Board.

Table 1. Silver Springs Strategy Phased Implementation – Phases 1 and 2

Actions	Phase 1 (2017 - 2022)	Phase 2 (2023 – 2027)
Strategy approval	- By SJRWMD Governing Board (2017) - Initiates Strategy implementation	- If necessary, recommend revised Strategy for Governing Board approval
Implement projects and measures	- Continue to work with Ocala to develop and construct the major Strategy projects - Through the District Cost Share program, incentivize water conservation and reclaimed water project development	- Continue to incentivize project development with an emphasis on water conservation, reclaimed water, and stormwater harvesting projects
Alignment of permitted allocations	- As permits expire, adjust allocations where necessary to meet reasonable/beneficial use criteria	- Continue
Rulemaking for regulatory component	- Complete concurrent with Strategy approval	- As necessary based on recommended Strategy revisions
Monitor trends in flow and water levels	- Continue data collection at existing sites	- Continue
Five-Year Strategy Assessment	- Assess, refine and approve revised Strategy, if necessary	- Assess, refine and approve revised Strategy, if necessary

C. Stakeholder Outreach

SJRWMD has been coordinating with stakeholders within the region for several years regarding potential projects to benefit Silver Springs. Stakeholder outreach activities specifically related to the formal Strategy began in February 2017 with briefings to staff from Marion County and the City of Ocala. The draft Silver Springs MFLs report and Strategy were posted for public viewing on the District's website on March 9, 2017, and a public workshop was held on March 16, 2017, in Ocala, Florida.

D. Silver Springs MFLs

Table 2 shows the MFLs for Silver Springs, which consist of three minimum flows and levels that protect the ecological functions of Silver Springs and the Silver River; the minimum frequent high, minimum average and minimum frequent low (Sutherland et. al. 2017). At the time of proposing MFLs, an assessment is made of the existing and projected future hydrologic regimes compared with the MFLs. If the MFLs are not achieved under existing conditions, a recovery strategy is necessary. If existing conditions meet or exceed the MFLs, but conditions during the next 20 years are projected to not meet the MFLs, then a prevention strategy is necessary.

Table 2. Minimum flows and levels associated with the Silver Springs MFLs[1]

MFLs	Flow (cfs[2])	Level NAVD88 (ft)	Duration (days)	Return Interval (years)	2010 Baseline Condition Freeboard (cfs)
Minimum Frequent High	828	40.0	30	5	98
Minimum Average	638	38.2	180	1.7	19
Minimum Frequent Low	572	37.0	120	3	17

[1] MFLs are tied to Silver Springs surface water flows and levels at the USGS 02239501 gauging station.
[2] cfs = cubic feet per second

A frequency analysis was performed on Silver Springs flow at a 2010 baseline condition to determine the current compliance status associated with the three minimum flows and levels. The baseline year was selected to correlate with the most current regional groundwater model output. It should be noted that pumping during more recent years has actually been less than the amount pumped in 2010. For Silver Springs, the minimum frequent low, which protects floodplain and marsh habitats along the Silver River from excessive drying, was determined to be the most sensitive MFL. The frequency analysis for the minimum frequent low demonstrated 17 cubic feet per second (cfs) of freeboard under 2010 pumping conditions. In other words, the Silver Springs minimum frequent low flow was met (i.e., not in recovery) under the current baseline condition with 17 cfs of flow reduction available to consumptive uses.

To determine the MFLs compliance status in 2035 and at PQ conditions, groundwater modeling results were used to compare the predicted change in flow under the 2010 baseline condition and under projected 2035 and PQ conditions. The Northern District Groundwater Flow Model Version 5.0 (NDMv5) was determined to be the best available tool to evaluate the status of the Silver Springs MFLs and to estimate the benefits of projects recommended in this Strategy. The model predicted a 27.3 cfs decline in flow at Silver Springs at 2035 conditions when compared to the 2010 baseline condition. This exceeds the available freeboard by 10.3 cfs (Table 3). Since the Silver Springs MFLs will not be met under projected 2035 pumping conditions, Silver Springs is in prevention. Under PQ pumping conditions, flow in Silver Springs declined by 29.4 cfs exceeding the available freeboard by 12.4 cfs.

Table 3. Silver Springs predicted freeboard under 2010 baseline, 2035 projected, and PQ conditions

Model Scenario	Modeled Silver Springs Flow (cfs)	Silver Springs Freeboard (cfs)	SJRWMD-Marion Withdrawals[1] (mgd[2])
2010 Baseline	708.8	17 cfs	36.5
2035	681.5	-10.3 cfs	62.7
Permitted Quantities[3]	679.4	-12.4 cfs	66.9

[1] Does not include recharge wells or return flow estimates for irrigation withdrawals.
[2] mgd = million gallons per day
[3] Agricultural allocations (based on 2-in-10 year drought) adjusted to represent estimated average irrigation demands. Domestic self-supply and subthreshold agricultural use represented by 2035 projected demand.

E. Sustainable Groundwater Yield

For purposes of this strategy, the sustainable groundwater yield (SGY) defines the quantity of Upper Floridan aquifer groundwater withdrawals that can occur without causing significant harm to Silver Springs. However, due to infinite potential variation in withdrawal distribution, it is not practicable to define the SGY as a finite number. SJRWMD completed an assessment using the NDMv5 to estimate a range for the sustainable Upper Floridan aquifer yield applicable to the SJRWMD-portion of Marion County as constrained by Silver Springs MFLs. For this assessment, gross withdrawals[4] and corresponding freeboard values were annually interpolated between 2010 and 2035 modeled conditions and between 2010 and PQ modeled conditions (PQ withdrawals were assumed to occur at 2035). The gross withdrawal quantity associated with the last year of positive freeboard for the 2035 and PQ withdrawal distribution provided an estimated range of the sustainable groundwater yield.

The resulting estimated SGY for the SJRWMD-portion of Marion County ranges from 52.2 to 53.5 million gallons per day (mgd). Based on current projections and permitted allocations, it is estimated that the SGY of the SJRWMD-portion of Marion County will be exceeded between 2025 and 2026.

F. Influence by Use Type

When determining project types to implement in a prevention or recovery strategy, it is important to develop an understanding of the water uses that have the largest impact on the water resource of concern. Only then can projects be developed that will result in the

[4] For the sustainable groundwater yield analysis, only permitted, estimated domestic self-supply, and General Permit by Rule withdrawals and permitted return flows were considered.

greatest benefit to the constrained water resource. An analysis was performed using the NDMv5 PQ simulation that evaluated the impacts to Silver Springs from groundwater withdrawals by water use type in the SJRWMD-portion of Marion County. The results indicate that impacts due to public supply withdrawals contribute 62% of the total impacts when only assessing SJRWMD-Marion County withdrawals (Table 4). Agricultural and domestic self-supply account for 16% and 14% of the impacts, respectively. Impacts from the remaining use types account for less than 8% of the impacts to Silver Springs.

Table 4. Impact Influence by Use Type in the SJRWMD-portion of Marion County at PQ Conditions

Use Type	Estimated Impact to Silver Springs (cfs)	Percent of SJRWMD-Marion County Impact	Modeled Groundwater Withdrawals (mgd)
Public Supply	26	62%	29.1
Agriculture	7	16%	18.0
Domestic Self-supply	6	14%	14.0
Commercial/Industrial/ Institutional	2	5%	2.8
Landscape/Recreation/ Aesthetic	1	2%	2.2
Mining/Dewatering	<1	<1%	0.7
TOTAL	42	100%	66.9

G. Projects and Measures that Achieve the Strategy Objective

Table 5 provides a proposed suite of projects and measures specific to the SJRWMD-portion of Marion County that, implemented together, would be sufficient to achieve the Silver Springs MFLs while meeting projected 2035 water use needs (see also Appendix A). Projects and measures include enhanced conservation, aquifer recharge, development of alternative water supplies, and expansion of reclaimed water systems. The benefits predicted from the suite of proposed projects and measures listed within this Strategy, together with the regulatory component described in Section H, provide assurance that the Silver Springs MFLs will be achieved through 2035.

Table 5. Strategy projects and measures to achieve Silver Springs MFLs in 2035

Project/Measure	Est. Volume (mgd)		Est. Silver Springs Flow Benefit (cfs)		Est. Capital Cost ($)		Implementation Priority
	Low	High	Low	High	Low	High	
Water Conservation	4.4	7.6	1.9	4.2	9.6M	13.1M	1
Aquifer Recharge	2.9		1.4		8.0M		2
Ocala LFA Conversion	7.5		7.0		6.7M – 31.7M		3
Reclaimed water conversion	1.9[1]		0.5		3.2M		4
TOTAL	16.7	19.9	10.8	13.1	27.5M	56.0M	

[1] Total reclaimed water available at 2035 (less the 2.9 mgd planned for recharge). Actual groundwater offset is less.

Actual projects and measures implemented to achieve the goals of the Strategy objective may differ from those shown in Table 5. Moreover, projects and measures identified in Table 5 do not become permit conditions by virtue of their inclusion in an approved Strategy. Projects in Table 5, or alternative projects that SJRWMD concurs will provide an equivalent benefit, may be developed and incorporated as consumptive use permit (CUP) conditions through standard permitting procedures and in future Strategy revisions, as appropriate.

Water Conservation

Water conservation is an important component of any prevention or recovery strategy as it directly affects projected demand and, therefore, the magnitude of resource impacts. Water conservation may be the preferred measure to achieve the Strategy objective rather than development of costly alternative water supplies. Best management practices such as improved irrigation scheduling, conversion to more efficient irrigation systems, or moisture sensor-controlled automation can reduce the amount of water applied to crops and landscape. Water efficient fixture replacement, such as showerheads, appliances, urinals, and faucet aerators, reduce water use in homes, commercial establishments, institutions, and any facility with sinks and restrooms.

For this Strategy, two scenarios of potential water conservation for public supply and domestic self-supply (DSS) were explored. Irrigation efficiency estimates for agriculture were adapted from the FSAID II Final Report (FDACS, 2015). For the remaining water use categories and low range public supply and DSS, conservation quantities were estimated based on the methodologies employed for the North Florida Regional Water Supply Plan (SJRWMD and SRWMD, 2017) and the Central Florida Water Initiative Regional Water Supply Plan (SFWMD et. al., 2015). The high range conservation potential for public supply and DSS would be achieved if all public supply systems and DSS residents achieved the average 2010-2014 gross per capita rate, 169 gallons per day per capita, for the SJRWMD-portion of Marion County. The predicted range of benefits to Silver Springs with achievement of the low to high conservation savings is approximately 1.9 and 4.2 cfs, respectively.

Table 6. Estimated 2035 conservation potential for the SJRWMD-portion of Marion County

Category	2035 Projected Water Use[1] (mgd)	2035 Low Conservation Potential (mgd)	2035 High Conservation Potential (mgd)
Public Supply	24.3	1.0	3.0
Domestic Self-supply	15.5	0.6	1.7
Agriculture	16.3	2.7	2.7
Landscape/Recreation/ Aesthetic Self-supply	3.3	0.1	0.1
Commercial/Industrial/ Institutional Self-supply and Mining/Dewatering	3.8	<0. 1	<0. 1
TOTAL	63.2	4.4	7.6

[1] As calculated by SJRWMD Water Supply Planning (June 2016). Modeled water use may vary slightly due to timing of well file development and processing of multi-District well files.

Aquifer Recharge

Of the 4.8 mgd of reclaimed water projected at 2035 (see *Reclaimed Water* subsection below), it is currently anticipated that 2.9 mgd will be used for aquifer recharge. The majority of this quantity, 2.8 mgd, is projected for the City of Ocala who is in the process of designing a wetland groundwater recharge park in the groundwater contributing area of Silver Springs. Located adjacent to the Pine Oaks Golf Course, it is anticipated that the recharge park could accept between 3 and 5 mgd of reclaimed water and stormwater. For purposes of this Strategy, the 2035 projected reclaimed water quantity, 2.8 mgd, was utilized to assess the benefits of this project. If additional reclaimed water becomes available or when stormwater quantities can be verified, the benefits of the project could potentially exceed Strategy estimates. Although there are many parameters that affect the potential level of benefit assigned to the recharge park, staff was able to calculate an estimated benefit of 1.4 cfs based on the range of parameters that were evaluated.

The remaining 0.1 mgd of available reclaimed water planned for recharge is associated with the growth of a small public supply utility in Marion County whose current reclaimed water disposal method is considered beneficial recharge based on SJRWMD guidelines. The predicted benefit to Silver Springs is negligible.

Ocala Lower Floridan Aquifer Conversion

The City of Ocala currently obtains its potable water from an Upper Floridan aquifer wellfield located approximately two miles from Silver Springs. Expansion plans currently dictate the construction of a second wellfield located six miles southwest of Silver Springs. Although relocating the wellfield further from Silver Springs would itself alleviate a portion of the groundwater pumping impacts, the City is interested in further reducing impacts by transferring a portion of their withdrawals to the Lower Floridan aquifer (LFA), which is considered an alternative water supply based on initial water quality testing results.

Preliminary investigations have shown appreciable confinement between the Upper and Lower Floridan aquifers in the vicinity of the City's new wellfield which would likely result in reduced impacts to the Upper Floridan aquifer, the source of Silver Springs. The SJRWMD and the City of Ocala are currently partnering on an LFA aquifer performance test (APT) to more accurately predict the benefits of a 7.5 mgd conversion. The results of the APT will be incorporated into future versions of SJRWMD groundwater flow models. Interim benefit estimates resulting from a 7.5 mgd conversion to the LFA at the new wellfield predict a 7.0 cfs increase in flow at Silver Springs.

Reclaimed Water

Marion County has the largest domestic self-supplied population in the state (Marella 2014). As such, the quantities of reclaimed water generated within the County are relatively limited compared to other counties within SJRWMD. The majority of reclaimed water within the SJRWMD-portion of Marion County is produced by the City of Ocala, Marion County Utilities, and the City of Belleview. According to SJRWMD planning estimates, an additional 2.6 mgd of reclaimed water from utilities in Marion County is currently available to offset groundwater withdrawals. Growth through 2035 is anticipated to make available an additional 2.2 mgd of reclaimed water for a total available quantity of 4.8 mgd (Table 7). Of the 4.8 mgd of available reclaimed water at 2035, it is anticipated that 2.9 mgd will be utilized for recharge leaving 1.9 mgd to offset groundwater withdrawals. Recent expansion projects are providing, or will provide, up to 0.9 mgd of reclaimed water to several area golf courses and parks. Assuming that reclaimed water provides a 75% groundwater offset for recreational/aesthetic irrigation self supply users and a 60% offset for mixed users, replacing existing groundwater withdrawals with 1.9 mgd of reclaimed water within the SJRWMD-portion of Marion County results in a modeled increase in flow at Silver Springs of 0.4 cfs.

Table 7. 2035 projected reclaimed water quantities for SJRWMD-Marion County

Waste Water Treatment Facility Name	2035 Total Potential Additional Reclaimed Water (mgd)	Anticipated Reclaimed Water Use
Marion Co. - Silver Springs Shores	1.2	Reuse
Belleview	0.3	Reuse
Ocala WWTPs	2.8	Recharge
Marion Co. - Stonecrest WWTF	0.4	Reuse
Rolling Greens	0.1	Recharge
TOTAL	4.8	Reuse (1.9 mgd); Recharge (2.9 mgd)

Stormwater Harvesting

The SJRWMD is expanding efforts to promote stormwater harvesting within the Silver Springs groundwater contributing area to increase recharge opportunities. Two feasibility studies were completed in 2016 to estimate potential quantities of surface runoff that could be diverted and potential locations where this diverted stormwater within and near the Silver Springs Forest Conservation Areas could recharge the Upper Floridan aquifer. In addition, the District has been coordinating with the Florida Department of Transportation on opportunities to incorporate stormwater harvesting design concepts in upcoming projects within Marion County with the goal of promoting greater recharge and enhancing water quality. At the time of Strategy development, potential stormwater harvesting projects to enhance recharge were conceptual and in the process of being further developed. It is anticipated that stormwater harvesting projects, once fully vetted, will be incorporated within the Five-Year Strategy Assessment reports and any subsequent Strategy revisions.

H. Funding

Pursuant to subsection 373.805(4)(b), F.S., which defines the guidelines for prevention and recovery strategies for OFS MFLs, the SJRWMD will provide financial assistance for the implementation of projects and measures identified in the Strategy totaling no less than 25% for each project. Based on the estimated cost of Strategy implementation (Table 5), the SJRWMD will be responsible for providing a minimum of $6.9M to $14.0M in financial assistance for the projects identified in this Strategy.

The SJRWMD primarily provides funding assistance through the Districtwide Annual Cost-Share Program, which is administered annually and supports projects that benefit one or more of the District's four core missions; water supply (alternative water supply, non-traditional sources, and water conservation), water quality, natural systems restoration (including projects that provide a significant percent recovery for an MFL waterbody whose status is in prevention or recovery), and flood protection. This funding assistance is exclusively available for construction-related costs with the District's percent match typically at 33% or 50% (conservation projects only). However, cost-share projects that benefit springs may be eligible to receive additional funding through the Florida Department of Environmental Protection (FDEP). The SJRWMD scoring criteria is geared such that projects that benefit an MFL waterbody that is determined to be in prevention or recovery receive the highest score in the core mission benefit ranking criterion, thereby giving weight to projects with demonstrated benefits that are listed within a prevention or recovery strategy.

The SJRWMD Agricultural Cost Share program provides funding assistance to agricultural operations for the implementation of projects that conserve water and/or result in nutrient loading reductions. This program is offered to agricultural operations outside of the Tri-County Agricultural Area[5] and as such is available to the agricultural community in Marion County. The cost-share is up to 75%, not to exceed $250,000 per project, and covers engineering, design, construction, and implementation costs. Funds allocated to this program typically include $1.5 million from ad valorem funds.

With the passage of the 2016 Legacy Florida legislation, $50 million from the Land Acquisition Trust Fund was earmarked for the next 20 years for springs restoration. These funds are typically administered through FDEP to the water management districts to increase the percent match for springs-related projects selected for funding through each districts' cost share program. This often results in a 50% total cost-share match, 25% from FDEP and 25% from SJRWMD. It is anticipated that the districts, local governments and public supply utilities will continue to partner with the state of Florida through FDEP to aggressively implement springs protection projects well into the future.

I. Regulatory Component

Ensuring the maintenance of the Silver Springs MFLs will require careful management of local and regional groundwater withdrawals. As such, a regulatory component is necessary to ensure that existing and future groundwater use is consistent with maintaining Silver Springs MFLs. The regulatory component of this Strategy will be developed and adopted concurrently with the proposed MFLs. These new regulatory measures along with existing rules will provide the regulatory framework needed to ensure achievement of the Silver Springs MFLs through 2035.

Current Permitting Rules

Presently, the SJRWMD possesses a comprehensive system of rules, which regulate consumptive uses of water. These permit criteria are listed in Chapter 40C-2, Florida Administrative Code (F.A.C.)., and are expanded upon in the SJRWMD *Applicant's Handbook: Consumptive Uses of Water*. Several existing permit requirements will continue to provide assurance that existing and new permitted consumptive uses are consistent with the Strategy objective:

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[5] The Tri-County Agricultural Area (TCAA) includes Flagler, Putnam and St. Johns counties. A separate cost-share partnership exists to assist agricultural projects in the TCAA.

- Reasonable-beneficial water uses *must utilize the lowest quality water source that is technically, economically and environmentally feasible*. Lower quality water sources include reclaimed water, stormwater, saline water, and other alternative water supplies.
- Reasonable-beneficial uses *must not cause harm to the water resources of the area*. According to the definition of an MFL, withdrawals that result in MFLs not being achieved are considered significantly harmful to that waterbody.
- Reasonable-beneficial uses *must be in accordance with any minimum flow or level and implementation strategy*.
- Reasonable-beneficial uses *must be in such quantity as is necessary for economic and efficient use*. To meet the requirements of this criterion, water use must be consistent with the demonstrated demand for a particular water use.

Regarding the economic and efficient use permitting criterion as it relates to demonstrated demand, the demonstrated demand at the time of permit issuance may differ from the realized water use over the life of a CUP due to a variety of causes. Population projections for specific utility service areas increase and decrease over time due to fluctuations in growth rates or economic conditions. Actual water use for specific facilities can change over time due to process improvements or updated equipment. In addition, the actual demand may be less than the projected demand due to the implementation of conservation measures and expanded use of reclaimed water. At the time of permit renewal, applicants must again provide a demonstration of need for the requested quantities. This provides SJRWMD the opportunity to realign the allocation with current demand.

An evaluation of reported water use versus permitted allocations was completed in 2014 for Marion County non-agricultural[6] CUPs with allocations greater than 0.1 mgd. The average reported groundwater use for 25 permits from 2011 to 2013 totaled approximately 76% of the corresponding 2013 permitted groundwater allocations. The unused allocations equate to just over 5 mgd that could potentially be reduced from existing permitted quantities as these permits are renewed.

Water Shortage

In addition to permitting rules, the SJRWMD Governing Board is authorized via section 373.175, F.S., to declare a water shortage if it determines that "insufficient ground or surface water is available to meet the needs of the users or when conditions are such as to require temporary reduction in total water use within the area to protect natural resources from serious harm." Extended periods of less than average precipitation can exacerbate declining groundwater levels (which can lead to decreased spring discharge) as there will typically be an increase in groundwater withdrawals for irrigation to offset the rainfall deficit. Water Shortage Orders provide a mechanism to reduce impacts to water resources during periods of water deficit. As necessitated by local climatic patterns and hydrologic

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[6] Analysis focused on non-agricultural projects since SJRWMD agricultural allocations are based on a 2-in-10 drought scenario with actual anticipated water use expected to be less than the allocation except during drought conditions.

conditions, the SJRWMD may utilize Water Shortage Orders to implement water conservation and management practices to prevent or reduce impacts to Silver Springs from consumptive uses during periods of drought.

New Rules

In addition to rules currently in place, the SJRWMD will adopt additional regulatory measures designed to ensure the Silver Springs MFLs will continue to be met. The rule language to implement these measures is provided in Appendix B. Specifically, the new regulatory measures will:

- Allow existing permitted uses to retain reasonable-beneficial groundwater allocations up to their demonstrated 2024 demand.
- Require potential impacts to Silver Springs to be offset for groundwater allocation requests greater than the demonstrated 2024 demand and for new uses.
- Define a series of opportunities for permittees to offset potential impacts by implementing alternative water supplies, impact offset projects, water resource development project participation, and the retiring of water use from existing CUPs.
- Authorize the inclusion of irrigation allocations for average climatic conditions in addition to drought conditions, for landscape, recreational, and agricultural irrigation CUPs.
- Outline a process by which permittees can relocate existing permitted withdrawals to reduce impacts to Silver Springs.

J. Project Implementation and Monitoring Progress

Project Implementation

Water conservation, recharge, alternative water supply, and reclaimed water projects will be incorporated as permit conditions, where applicable and feasible, in CUPs that impact Silver Springs. These additional conditions will be incorporated as appropriate over the next 20 years as permits are modified or renewed. The implementation schedule for specific projects will be set forth in applicable cost-share projects and/or the CUP(s), as appropriate.

The City of Ocala has already begun implementing two of the major Strategy projects. The City of Ocala Pine Oaks wetland recharge park project is anticipated to be operational within the first five-year phase of Strategy implementation (by 2022). Engineering and design is currently underway and the City plans to apply for cost-share funding in the SJRWMD 2017 cycle. Additionally, the City's utilization of the Lower Floridan aquifer as a primary source of water, in lieu of the Upper Floridan aquifer, will benefit flows in Silver Springs. Construction of the first LFA well at the City of Ocala's new wellfield was completed in early 2017. It is anticipated that this first 5 mgd production well will be fully operational within Phase 1 of Strategy implementation (by 2022). The City's second proposed LFA well will likely be constructed during the second five-year phase (by 2027). The resulting benefits to Silver Springs from the Strategy projects and measures will ensure achievement of the MFLs through 2035.

Silver Springs' Response

The period of record water levels and flows collected at Silver Springs and Silver River form the baseline from which SJRWMD will determine compliance with the Silver Springs MFLs in the future. Continuous water level monitoring at the SJRWMD stations listed in Figure 1 will continue throughout Strategy implementation until such time that monitoring revisions may be necessary as determined by SJRWMD staff. Data analysis results from future data collected from the monitoring sites will be used by SJRWMD to perform revised freeboard determinations to coincide with the Five-Year Strategy Assessment Reports.

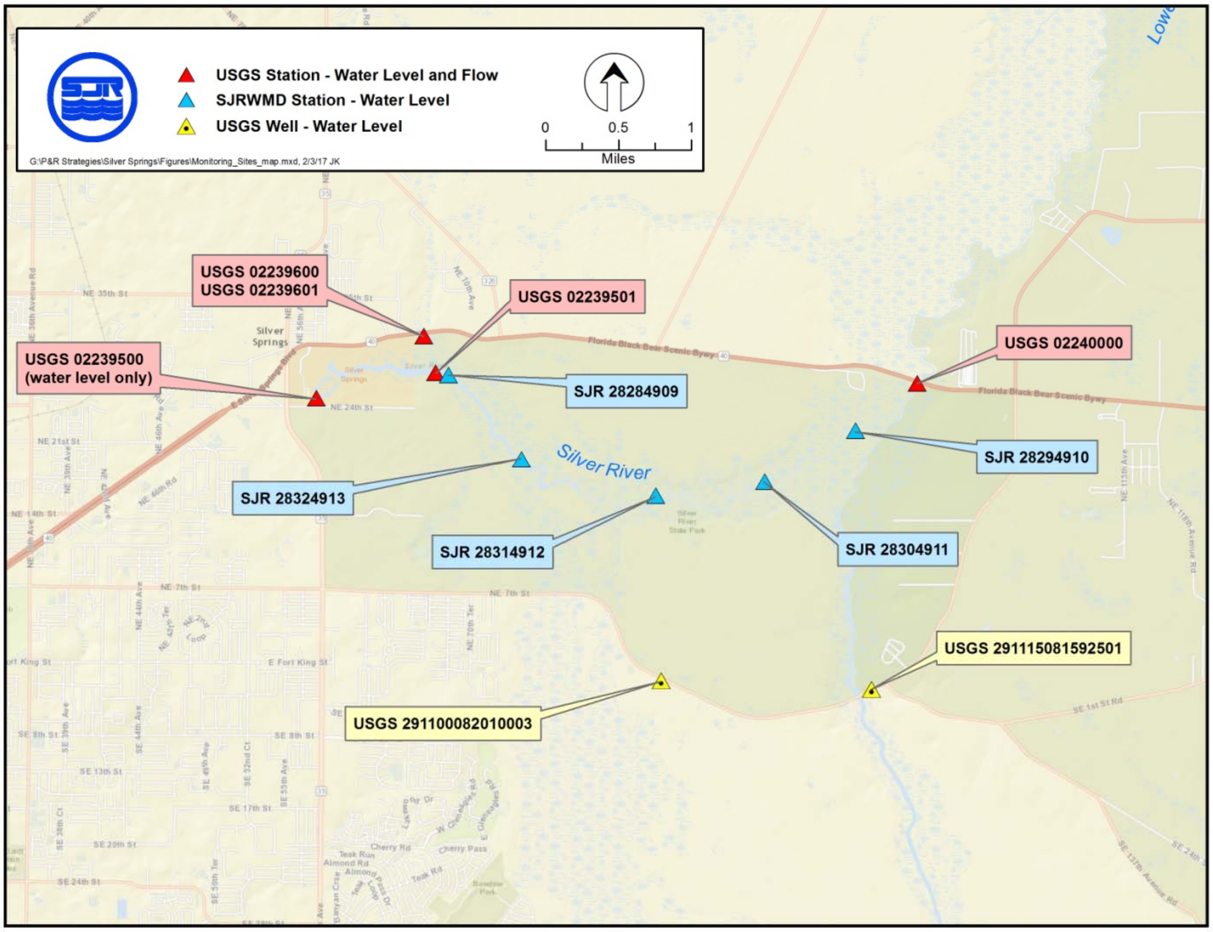

Figure 1. Monitoring sites for future Silver Springs MFLs assessments

As directed by section 373.036(7), F.S., each water management district is required to submit a consolidated water management district annual report to FDEP, which describes each district's managing of water resources. This report must contain, in part, the following information regarding all projects related to water quantity:

- A list of all projects identified to implement a recovery or prevention strategy.
- A priority ranking for each listed project for which state funding through the water resources development work program is requested.
- The estimated cost for each listed project.

- The estimated completion date for each listed project.
- The source and amount of financial assistance to be made available by FDEP, a water management district, or other entity for each listed project.
- A quantitative estimated of each listed project's benefit to the water body identified in the recovery or prevention strategy.

This report will track the status of projects identified in this Strategy with annual updates reflecting new information and realized values added upon project completion. As a means to measure Strategy progress towards meeting its objective, the estimated flow increases identified in Table 8 are provided as interim goals.

Table 8. Predicted flow increases at Silver Springs resulting from project implementation

Waterbody	Cumulative Predicted Flow Increase (cfs)			Target Flow Increase[1] (cfs)
	2025	2030	2035	
Silver Springs	6.0	10.2	12.0	10.3

[1] Based on estimated freeboard deficit at 2035 projected pumping conditions.

References

FDACS. 2015. *Florida Statewide Agricultural Irrigation Demand.* Prepared by The Balmoral Group. FDACS, Tallahassee, FL.

Marella, R.L. 2014. Water withdrawals, use and trends in Florida, 2010. U.S. Geological Survey Scientific Investigations Report 2014-5088. Reston, VA.

SFWMD, SJRWMD, and SWFWMD. 2015. *Central Florida Water Initiative Regional Water Supply Plan 2015*. South Florida Water Management District, St. Johns River Water Management District and Southwest Florida Water Management District.

SJRWMD and SRWMD. 2017. *North Florida Regional Water Supply Plan (2015 – 2035).* St. Johns River Water Management District and Suwannee River Water Management District.

Sutherland, A.B., R. Freese, J.B. Slater, and G.B. Hall. 2017. *Minimum Flows Determination for Silver Springs; Marion County, Florida (Draft)*. St. Johns River Water Management District.

Appendix A

Proposed Projects and Measures within the Prevention Strategy for the Implementation of Silver Springs Minimum Flows and Levels

Table A1. Proposed projects and measures within the Prevention Strategy for the Implementation of Silver Springs MFLs

Project/Measure Priority	Project Description	Estimated Date of Completion	Estimated Construction Cost ($M)	Mandated District Contribution[1] ($M)	Estimated Project Benefit[2] (cfs[3])
1	**Water Conservation** - Includes residential indoor fixture replacement (toilets, showers, and faucets) and outdoor irrigation audits with subsequent system improvements and soil moisture sensor installation. For commercial-type establishments, includes replacement of pre-rinse spray valves, toilets, urinals, showers, and site specific water audits. Agricultural conservation measures include installation of soil moisture sensors, irrigtion system retrofits, and construction of tailwater ponds.	Ongoing through 2035	9.6 - 13.1	2.4 - 3.3	1.9 - 4.2
2	**Aquifer Recharge** - Construction of the Ocala wetland groundwater recharge park, which will polish reclaimed water (and stormwater in the future) prior to recharge to the Upper Floridan aquifer.	2022	8.0	2	1.4
3	**Ocala Lower Floridan Aquifer Conversion** - Relocation and replacement of 7.5 mgd of withdrawals from the Upper Floridan aquifer at Ocala's historic wellfield to the Lower Floridan aquifer at Ocala's new wellfield. Note the range in cost is the result of the uncertainty related to the level of water treatment that will be required, which directly affects the cost of the water treatment plant.	5.0 mgd conversion - 2022 2.5 mgd conversion - 2027	6.7 - 31.7	1.7 - 7.9	7.0
4	**Reclaimed Water** - Expanded use of reclaimed water from Marion County Silver Springs Shores WRF, Marion County Stonecrest WRF, and the City of Belleview WRF.	Ongoing through 2035	3.2	0.8	0.5
TOTAL			27.5 - 56.0	6.9 - 14.0	10.8 - 13.1

[1] Pursuant to subsection 373.805(4)(b), F.S., SJRWMD will provide financial assistance for the implementation of Strategy projects/measures totaling no less than 25% for each project.

[2] Benefits, as measured by the predicted increase in flow at Silver Springs, were estimated using the Northern District Groundwater Flow Model Version 5.0.

[3] cfs = cubic feel per second

Appendix B

Supplemental Rules for Silver Springs

3.3.3 Supplemental Rules for Silver Springs

3.3.3.1 Effect of Supplemental Rules.

These “Supplemental Regulatory Measures for Silver Springs” shall be adopted by the District, as a component of the overall prevention strategy for Silver Springs. In adopting these rules, the District acknowledges the increasing stress on Silver Springs and the mandate of the legislature to foster the development of additional water supplies and avoid the adverse effects of competition. However, these rules do not abrogate the rights of the Governing Board or of any other person under Section 373.233, F.S. This regulatory framework provides a comprehensive strategy for allocations of available Upper Floridan groundwater and expeditious development of alternative water supplies and offset projects to minimize competition and thereby provide greater certainty of outcome than competition.

3.3.3.2 Definitions

Demonstrated 2024 Demand - the quantity of water from the Upper Floridan aquifer needed to meet demands in 2024. Demonstrated 2024 Demand will be calculated utilizing the methodologies described in Section 2.2 of the Applicant’s Handbook and water use data.

Existing permitted uses – permitted uses as of April 12, 2017.

Silver Springs MFLs – the minimum flows and levels adopted for Silver Springs in 40CER17-01 or as adopted in rule 40C-8.031, F.A.C., whichever is in effect.

3.3.3.3 Evaluation of Potential Impacts

All applications, including applications for renewals, modifications, and new uses, shall be evaluated for their potential individual and cumulative impacts on the Silver Springs MFLs. Potential impacts to the Silver Springs MFLs shall be assessed using the Northern District Groundwater Flow Model Version 5.0. Section 3.3.3 and all subsections thereof shall not apply within the Central Florida Water Initiative Area, as defined in paragraph 373.0465(2)(a), F.S. (2016).

3.3.3.4 Existing Permitted Uses

Existing permitted uses shall be considered consistent with the Prevention Strategy for uses up to the Demonstrated 2024 Demand, or its permitted allocation in 2024, whichever is lower.

3.3.3.5 Individual Permit Applicants that do not have a Potential Impact to the Silver Springs MFLs

Permit applications that do not demonstrate a potential impact to the Silver Springs MFLs based on the total requested allocation shall be issued provided the applicant meets the conditions for issuance.

3.3.3.6 Additional Review Criteria for all Individual Permit Applicants that have a Potential Impact to the Silver Springs MFLs

3.3.3.6.1 Renewals and Modifications with a Requested Allocation Less Than or Equal to the Demonstrated 2024 Demand

(a) Renewals and modifications of existing permitted uses with requested allocations from the Upper Floridan aquifer less than or equal to the Demonstrated 2024 Demand shall be issued provided the applicant meets the conditions for issuance; however, an applicant may seek a duration that extends beyond 2024 for that level of allocation.

(b) Exceptions

The limitation in Subsection 3.3.3.6.1(a) on groundwater allocations to an amount no greater than a permittee's Demonstrated 2024 Demand shall not limit permitted groundwater withdrawals from:

1. Aquifer storage and recovery wells that receive only surface water, stormwater, or reclaimed water, when the volume of water withdrawn does not exceed the volume of water injected; or

2. The surficial aquifer immediately below or adjacent to a stormwater management system or surface water reservoir where any drawdown in the surficial aquifer will be offset by recharge from the system or reservoir.

3.3.3.6.2 Renewals and Modifications with Requested Allocations Greater Than the Demonstrated 2024 Demand

Renewal and modification applications for existing permitted uses proposing an allocation of groundwater from the Upper Floridan aquifer greater than the Demonstrated 2024 Demand shall provide reasonable assurance of elimination or offset of potential impacts to the Silver Springs MFLs for that portion of the requested allocation that exceeds the Demonstrated 2024 Demand.

3.3.3.6.3 New Permits

In addition to meeting the conditions for issuance, applications that request the use of groundwater from the Upper Floridan aquifer for a duration beyond 2024 shall provide reasonable assurance of elimination or offset of potential impacts to the Silver Springs MFLs for the requested allocation.

3.3.3.6.4 Methods for Addressing Potential Impacts

An applicant may eliminate or offset potential impacts to the Silver Springs MFLs by implementation of one or more of the options listed below:

(a) Propose an alternative water supply, as defined in Section 373.019(1), F.S., sufficient to meet the additional demand, and identify a schedule for implementation, construction and operation for the alternative water supply system. An alternative water supply will be approved under this rule if it is adequate to meet the reasonable increased demands without causing harm to the water resources of the area and meets all other permitting criteria in Chapter 40C-2, F.A.C.

(b) Propose adequate offset projects to eliminate potential impacts to the Silver Springs MFLs, and identify a schedule for implementation, construction and operation of the offset project(s). Offset projects may include, but are not limited to, the use of impact offsets [Subsection 62-40.416(7), F.A.C.] and recharge systems. For offset projects that are not addressed by Subsection 62-40.416(7), F.A.C., the following requirements apply:

1. The benefit of any offset project, or a portion thereof, shall accrue to the entity providing the offset project, or one or more entities designated by the providing entity, so long as the providing entity or designated entity demonstrates a demand for the water and meets the conditions for permit issuance. If the providing entity or designated entity cannot demonstrate a demand for all the water made available by the offset project during the recommended duration of the permit, any remaining water shall be available for use in the following order:

    i. Deficits associated with existing exempt and sub-threshold uses.

ii. Deficits associated with anticipated exempt and sub-threshold uses.

iii. Deficits associated with existing permitted uses.

iv. Applications for new uses or increases in allocation in accordance with District rules.

2. The proposed withdrawal, after application of the offset project credit, must result in no net adverse impact on the limited water resource.

3. If an applicant meets the conditions for permit issuance after consideration of an offset project (either as a providing entity or designated entity), the District shall incorporate the project into the permit. The duration of an offset project must be, at a minimum, equal to or greater than the duration of the consumptive use permit in which it is incorporated.

4. When reviewing an application for renewal of a consumptive use permit containing an offset project, the District shall renew the allocation based on the continuation of the offset project provided the conditions for permit issuance are met.

5. Credits shall not be granted for past actions or actions taken under existing permits, unless the credits are already authorized in a permit. This limitation shall not restrict the District's consideration of the effect of past actions when considering the potential impacts of a permit application, or consideration of a permittee's request to modify an existing permit to quantify the amount of any credit remaining available.

6. Offset projects recognized in a consumptive use permit cannot be transferred to other users, except in the same manner as the permit itself and in compliance with applicable water management district rules.

(c) The District anticipates that its water resource development projects and its designation as a receiving entity of offsets from District's cost-share projects may result in the development of new quantities above and beyond the quantities necessary to ensure that the Silver Springs MFLs will be met. All or a portion of these new quantities that are not reserved or otherwise designated for the water resource will be made available to permit. If an applicant has contributed to a District water resource development project, the applicant may apply for quantities made available through a District water resource development project as an offset to potential impacts to the Silver Springs MFLs, provided the applicant demonstrates that:

1. Both the proposed withdrawal and the water resource development or cost-share project affect the Silver Springs MFLs.

2. The quantity developed in excess of the quantity reserved or otherwise designated for Silver Springs has been determined.

3. The proposed quantities will not interfere with quantities reserved or otherwise designated by the District for water resource development.

(d) Permanently retiring from use the reasonable-beneficial quantities associated with one or more CUPs that impact the Silver Spring MFLs. The amount of offset credit for retiring CUPs will be limited to the amount of reduction in potential impacts to the Silver Springs MFLs associated with the retired quantity. For agricultural, recreational, and landscape irrigation uses, the retired quantity will be based on the average annual allocation which is the amount of supplemental irrigation required during a five in ten rainfall condition. For all other use types, the retired quantity will be based on the actual permitted allocation.

For each option selected under Subsection 3.3.3.6.4, an applicant must provide reasonable assurance that the option will be implemented as proposed.

3.3.3.7 Conservation

In determining the amount of offsets that must be developed as set forth in Subsection 3.3.3.6 above, the applicant may subtract the portion of its demand that the applicant demonstrates will be satisfied by water conservation under Subsection 2.2.2.5.

3.3.3.8 Temporary Allocation

A permittee that will lack sufficient supplemental water supplies or offsets after 2024 from which to obtain the increase in quantity above its

Demonstrated 2024 Demand shall be allocated a temporary amount of groundwater to meet that increase only if it has exercised due diligence to meet all schedule requirements in the permit for developing and using supplemental water supply and providing that other conditions for issuance in Rule 40C-2.301, F.A.C., and this Handbook are met. Any such temporary allocation shall cease when water from the supplemental water supply or offset project becomes available.

3.3.3.9 Irrigation Uses

The reasonable need for an agricultural, recreational, or landscape irrigation use is based on the amount of water needed to supply the supplemental irrigation requirements of the type of crop, turf or landscape grown. In determining reasonable need, the District will determine the supplemental irrigation requirements for both drought and average annual conditions. Drought allocation will be considered the amount of supplemental irrigation required during a two in ten year rainfall condition. Average annual allocation will be considered the amount of supplemental irrigation required during a five in ten year rainfall condition. This quantity does not include crop protection.

3.3.3.10 Self-Relocation

A Permittee with existing permitted impacts on Silver Springs may modify its consumptive use permit to relocate to a different property all or a portion of the used and unused reasonable-beneficial permitted quantity. When relocated, the withdrawal of the quantities cannot increase impacts to Silver Springs and must meet all other applicable permitting criteria included in Chapter 40C-2, F.A.C., and this Applicant's Handbook. A Self-Relocation cannot include any change in ownership, control, Use Type or increase in quantities. Crop rotation, by planting and irrigating non-contiguous properties within the same locale in a structured, revolving fashion, is allowed under a single permit and is not considered Self-Relocation.

Prevention Strategy for the Implementation of Lake Butler Minimum Levels

June 2020

St. Johns River Water Management District
Division of Water Supply Planning and Assessment
Bureau of Water Supply Planning

A. Introduction

Lake Butler is a sandhill lake located almost entirely within the city limits of Deltona in southwestern Volusia County and is included on the St. Johns River Water Management District (SJRWMD) minimum flows and minimum levels (MFLs) Priority List for adoption in 2020. The Lake Butler MFLs are currently met, however, they are projected to not be met during the 20-year planning horizon as a result of increased groundwater demand (Jennewein et. al. 2020). Pursuant to subsection 373.0421(2), *Florida Statutes* (F.S.), a prevention or recovery strategy must be approved concurrently with MFLs adoption if the water body is below, or is projected within 20 years to fall below, an adopted MFL. Consistent with the provisions for establishing and implementing MFLs provided for in section 373.0421, F.S., the *Prevention Strategy for the Implementation of Lake Butler Minimum Levels* (Lake Butler Prevention Strategy) lists projects and measures that, when implemented, ensure the Lake Butler MFLs will be met, while simultaneously providing sufficient water supplies for existing and projected reasonable beneficial uses.

B. Background

Volusia County has had a prevention/recovery strategy covering its boundary since 2013. On November 12, 2013, the SJRWMD Governing Board approved the *Prevention/Recovery Strategy for the Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes* (2013 Volusia Strategy; SJRWMD 2013). As part of a phased implementation approach proposed within the 2013 Volusia Strategy, completion of five-year strategy assessments was recommended, and in 2018, SJRWMD performed its first assessment. The *2018 Five-Year Strategy Assessment for the Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes* (2018 Volusia Strategy Assessment; SJRWMD 2019) identified additional projects that were necessary to ensure achievement of MFLs through the 2040 planning horizon.

Upon completion of the MFLs assessment for Lake Butler, SJRWMD reviewed the project scenario defined within the 2013 Volusia Strategy and determined that the projects contained therein would provide sufficient benefit to Lake Butler to ensure achievement of its MFLs at 2040. Furthermore, the projects identified in the 2018 Volusia Strategy Assessment, when implemented, would provide additional benefit to Lake Butler. Since Lake Butler MFLs will be achieved through the 2040 planning horizon as a result of the implementation of projects identified in the 2013 Volusia Strategy, it was not necessary to identify a new list of projects. All projects listed in the Lake Butler Prevention Strategy were extracted from the approved 2013 Volusia Strategy and the 2018 Volusia Strategy Assessment.

C. Strategy Objective, Approach, and Phased Implementation

Objective

The objective of the Lake Butler Prevention Strategy is to ensure that the Lake Butler adopted MFLs continue to be met during the next 20 years. This objective can be achieved by establishing and maintaining groundwater withdrawals at or below the sustainable groundwater yield through water conservation and water supply development projects or by mitigating the impact of groundwater withdrawals on Lake Butler through water resource development projects.

Approach

The approach outlined in the Lake Butler Prevention Strategy is intended to provide assurance that Lake Butler MFLs will be met in a way that maximizes flexibility for permittees and project partners. The basic approach includes the following:

- Identify projects and measures that provide water resource benefits sufficient to achieve the MFLs
- Identify and obtain funding resources to facilitate strategy implementation
- Continue to monitor water level trends to confirm benefits of projects and adjust projects and measures as necessary
- Implement projects and measures in a phased approach with a comprehensive review at five-year intervals

Phased Implementation

Strategy implementation will occur in five-year phases (Table 1). Actions to occur in subsequent phases will be determined during the strategy review process envisioned at the end of phases 1 and 2. Upon completion of each five-year phase, a five-year strategy assessment report will be prepared. This report may include the following information:

- Utilization of updated tools for resource assessments and analyses
- Updated freeboard calculation (based on the revised planning period)
- Updated MFL status assessment
- Project implementation status, including alternative projects, if warranted

Based on the findings of a five-year strategy assessment, the Lake Butler Prevention Strategy may be revised by the SJRWMD Governing Board. It is also possible that Lake Butler will be included in a future comprehensive update of the 2013 Volusia Strategy.

Table 1. Lake Butler Prevention Strategy Implementation

Action	Phase 1 (2020–2025)	Phase 2 (2025–2030)
Strategy approval	- By SJRWMD Governing Board (2020) - Initiates strategy implementation	- If necessary, recommend revised strategy for Governing Board approval
Implement projects and measures	- Continue to work with the WVWS[1] to develop and construct strategy projects - Through the SJRWMD cost-share program, provide funding dollars, when available, to strategy projects	- Continue to incentivize project development with an emphasis on water conservation and alternative water supply projects
Alignment of permitted allocations	- As permits modify or renew, adjust allocations where necessary to meet reasonable/ beneficial use criteria	- Continue
Monitor trends in Lake Butler water levels	- Continue data collection efforts	- Continue
Five-year strategy assessment	- Assess, refine, and approve revised strategy, if applicable	- Assess, refine and approve revised strategy, if applicable

[1] WVWS = West Volusia Water Suppliers, which include Volusia County and the cities of DeLand, Deltona, and Orange City.

D. Stakeholder Outreach

SJRWMD has been coordinating with stakeholders for numerous years regarding MFL constraints in western Volusia County. Specifically, regular meetings with the West Volusia Water Suppliers (WVWS), consisting of Volusia County and the cities of DeLand, Deltona, and Orange City, have been helpful in identifying and implementing strategic projects in the area that benefit MFL water bodies. SJRWMD briefed interested members of the WVWS on the draft Lake Butler MFLs and Lake Butler Prevention Strategy on June 16, 2020. In addition, Lake Butler Prevention Strategy was posted for public viewing on the SJRWMD website on June 26, 2020.

E. Lake Butler MFLs

The MFLs for Lake Butler consist of seven environmental criteria with associated minimum level conditions (Jennewein et. al. 2020). These environmental criteria include a minimum infrequent high water level, minimum emergent marsh habitat reduction, large and small wading bird forage habitat reduction, sandhill crane nesting habitat reduction, game fish spawning habitat reduction, and lake lobe connectivity (for small boat and fish passage). The MFL current status was assessed for each of the environmental criterion by comparing the minimum level condition with the current-pumping condition[1]. The MFLs current status provides an Upper Floridan aquifer (UFA) freeboard value in cases where the MFL is currently met, or an UFA deficit in cases where the MFL is not currently met. For Lake Butler, all the MFLs were met under the current-pumping condition. The lake lobe connectivity MFL condition was the most constraining with 0.1 foot (ft) of UFA freeboard. Detailed information regarding the Lake Butler MFLs and current status assessment can be found in Lake Butler MFLs report (Jennewein et. al. 2020).

To determine the MFLs status at 2040, the UFA drawdown beneath Lake Butler was compared under current-pumping conditions (i.e., average withdrawals from 2014 to 2018) and 2040 projected-pumping conditions. The pumping/drawdown relationship provided in the Lake Butler hydrological analysis (Jennewein et. al. 2020) was used to estimate the drawdown associated with current-pumping conditions (1.8 ft). The Volusia groundwater flow model (Volusia model; Williams 2006) was then utilized to quantify the drawdown associated with 2040 projected-pumping conditions (2.3 ft). The increase in drawdown (0.5 ft) was applied to the current-pumping freeboard (0.1 ft) which resulted in a deficit of -0.4 ft at 2040. Because the Lake Butler MFLs will not be met under projected 2040 pumping conditions, Lake Butler is in prevention. Table 2 summarizes Lake Butler drawdown and freeboard values for the two pumping conditions.

Table 2. Lake Butler UFA Freeboard/Deficit at Current and 2040 Pumping Conditions

Pumping Scenario	UFA Drawdown from No Pumping (ft)	Lake Butler UFA Freeboard/Deficit (ft)	Withdrawals (10-mile radius[2]) (mgd)
Current Pumping (2014–2018)	1.8	0.1	22.1
2040 Projections	2.3	-0.4	26.0

ft = feet; mgd = million gallons per day

[1] The current-pumping condition is defined as the reference hydrologic condition in which the lake was under the constant influence of *current groundwater pumping* for the period from 1948 to 2018. *Current groundwater pumping* in this analysis totaled average withdrawals from 2014 through 2018 (Jennewein et. al. 2020).

[2] Groundwater withdrawals within a 10-mile radius of Lake Butler is shown for comparative purposes only. The modeled drawdown and pumping/drawdown relationship both reflect impacts from groundwater withdrawals within the entire Volusia model domain.

F. Influence by Use Type

When determining project types to implement in a prevention or recovery strategy, it is important to develop an understanding of the water uses that have the largest impact on the water resource of concern. Only then can projects be selected that will result in the greatest benefit to the constrained water resource. An analysis was performed using the Volusia model 2040 simulation that evaluated UFA drawdown beneath Lake Butler from projected groundwater withdrawals by the various water use types in the Volusia model domain. The results indicate that UFA drawdown due to public supply withdrawals contribute 81 percent of the total impacts (Table 3). Commercial/ industrial/institutional and agricultural uses each account for 6 percent of the impacts to Lake Butler, with domestic self-supply use accounting for 5 percent. Impacts from the remaining use types account for less than 3 percent of the impacts to Lake Butler.

Table 3. 2040 Lake Butler Impact Influence by Use Type

Use Type	Percent of Total Impact[1]	Modeled Groundwater Withdrawals (mgd)
Public Supply	81%	93.2
Commercial/Industrial/Institutional	6%	3.7
Agriculture	6%	26.7
Domestic Self-supply	5%	10.3
Landscape/Recreation/Aesthetic	2%	2.5
Power Generation	<1%	0.3
TOTAL	**100%**	**136.7**

ft = feet; mgd = million gallons per day

[1] For Lake Butler, impact is defined as the UFA drawdown beneath the lake.

G. Projects and Measures that Achieve the Strategy Objective

Lake Butler is located in Volusia County, which has been covered by an approved prevention and recovery strategy since 2013. An analysis of the projects identified in the 2013 Volusia Strategy demonstrate that their implementation would provide sufficient benefit (i.e., UFA rebound) to Lake Butler to ensure MFL compliance through 2040 while meeting projected 2040 water demand. Furthermore, projects proposed in the 2018 Volusia Strategy Assessment will provide additional benefit to Lake Butler. Therefore, the Lake Butler Prevention Strategy does not propose new projects but instead summarizes the existing projects that provide benefit to Lake Butler, which were identified within the 2013 Volusia Strategy and 2018 Volusia Strategy Assessment.

Projects and measures that were identified in the 2013 Volusia Strategy include water conservation, aquifer recharge, development of alternative water supplies, and expansion of reclaimed water systems. These existing projects provide more than enough benefit to Lake Butler to ensure MFLs compliance at 2040. Projects proposed in the 2018 Volusia Strategy Assessment provide additional benefit to Lake Butler and include enhanced water conservation, increased aquifer recharge, and increased use of alternative water supplies.

2013 Strategy Project Implementation Status

Fourteen projects were identified in the 2013 Volusia Strategy, 11 of which provide measurable benefits to Lake Butler. As stated previously, implementation of the 2013 Volusia Strategy projects alone is sufficient to ensure compliance with Lake Butler MFLs at 2040. The status of each of these eleven projects is listed below.

Conservation — **ONGOING**

The 2013 Volusia Strategy estimated water conservation potential for public supply, domestic self-supply, and agricultural water use. Total water savings at 2035 was estimated at 5.1 million gallons per day (mgd) and was based on reductions in water use ranging from 4.6 percent (public supply in western Volusia County) to 5.9 percent (agriculture). Six conservation cost-share projects (five agricultural and one public supply) have been partially funded by SJRWMD in western Volusia County since 2016 with water savings estimated at 0.3 mgd.

West Volusia Water Suppliers (WVWS) Reclaimed Water Interconnects — **COMPLETE**

The reclaimed water interconnects between Volusia County and the cities of DeLand and Deltona were completed in 2016.

Sanford — Volusia County Reclaimed Water Interconnect — **COMPLETE**

The reclaimed water interconnect between the City of Sanford and Volusia County was completed in 2015.

Doyle Road Reclaimed Water Main Extension — **COMPLETE**

The Doyle Road reclaimed water main extension that connects the Deltona Lakes Water Reclamation Facility to the Alexander Avenue Resource Management Site was completed in 2015.

City of Deltona Golf Course Reclamation Water Expansion — **COMPLETE**

Originally anticipated to occur at the city of Deltona golf course, this project was subsequently renamed the "City of Deltona Reclaimed Pumping and Storage Expansion Project" and included the installation of a new reclaimed water pump station and a reclaimed water ground storage tank at the Alexander Avenue Water Resources Facility. Construction was completed in 2015.

<u>City of Deltona — Howland Blvd. Phase 3 Reclaimed Water Project — **COMPLETE**</u>

The reclaimed water extension to Howland Boulevard in the city of Deltona, was completed in 2015.

<u>Alexander Avenue Water Resource Facility — **IN PROGRESS**</u>

Project 4A (formerly Alexander Avenue Water Resources Site)
This phase, completed in 2019, included storage, treatment, and pumping facilities for 4 mgd of stormwater and surface water.

Project 4B (formerly Deltona Lakes Pump Station, Transmission Main and Augmentation Facilities)
This phase of the project, which will include infrastructure to withdraw and pump surface water from Lake Monroe, is currently being designed. The city of Deltona has not yet requested authorization for the use of surface water from Lake Monroe in its consumptive use permit (CUP).

<u>West Volusia Water Suppliers (WVWS) Aquifer Recharge Enhancement Project — **IN PROGRESS**</u>

The WVWS Aquifer Recharge Enhancement Project was conceptualized to provide recharge with 4 mgd of reclaimed water at several sites. Currently, the city of Deltona is in the process of constructing phase I of this project, which originally included a new rapid infiltration basin at the Alexander Avenue Water Resource Facility. The project was recently redesigned as an exfiltration trench that will provide 0.6 mgd of recharge to the UFA. Phase I is expected to be completed in 2020.

<u>DeLand Reuse Retrofit Part "B" and Wiley M. Nash Augmentation Facilities — **COMPLETE**</u>

The retrofit of approximately 190 homes to receive reclaimed water was completed in 2016. The city of DeLand's CUP was modified in 2017 to authorize 4 mgd of withdrawals from the St. Johns River for augmentation of its reclaimed water system. The withdrawal and treatment facilities became fully operational in 2019 upon the completion of enhancements to the river intake system and the replacement of filters at the treatment plant.

Deep Creek/Leffler Water Supply, Treatment and Transmission Facilities — **IN PROGRESS**

Aquifer performance tests (APTs) were completed at two sites within the Leffler property in 2018. Groundwater modeling of the proposed new wellfield should be completed in 2020, with wellfield operation planned to occur prior to 2024.

Farmton Water Supply and Transmission Facilities — **EXPIRED**

The Farmton Services LLC CUP authorized 4 mgd of withdrawals for bulk public water supply to the WVWS. However, an agreement between the permittee and the WVWS was never finalized and authorization of this allocation expired on December 31, 2019. In order to pursue this project in the future, Farmton Services LLC will need to reapply and receive authorization for a bulk public water supply allocation. Because this project is not currently being actively pursued, its benefits were not included in the analysis.

2018 Assessment Project Implementation Status

Six additional projects were identified in the 2018 Volusia Strategy Assessment, five of which provide a measurable benefit to Lake Butler. Although these projects are not necessary to achieve Lake Butler MFLs, their inclusion does offer flexibility to water users as additional project options. The status of each of these five projects is listed below.

Updated Water Conservation Potential — **ONGOING**

As part of the Central Springs/East Coast (CSEC) regional water supply plan (RWSP) process, updated water conservation potential for all water use types was calculated for Volusia County for 2040. The potential savings were generally greater than what was estimated in the 2013 Volusia Strategy for 2035. The maximum savings estimates were incorporated in the Volusia model to evaluate the water resource benefit from a higher level of conservation.

Volusia Blue Wetland Recharge Project — **IN PROGRESS**

This project consists of converting a sand mine into a wetland treatment and recharge basin approximately 0.5 mile from Blue Spring, which is anticipated to provide 2 to 4 mgd of recharge to the UFA. The recharge water will consist of stormwater from Mill Lake, reclaimed water produced by the WVWS, and surface water from the St. Johns River. Additional feasibility analyses, including construction and performance of a load test, are currently underway with a final project feasibility determination expected in the fall of 2020.

WVWS Groundwater Withdrawal Optimization — **IN PROGRESS**

The groundwater modeling simulations that evaluated the benefits of the projects in the 2013 Volusia Strategy, did not consider the optimization of groundwater withdrawals. This project involves reducing public supply withdrawals closest to Blue Spring and replacing those withdrawals with withdrawals from the proposed Deep Creek/Leffler wellfield.

WVWS Aquifer Enhancement Expansion — **PROPOSED**

This proposed project would increase the number of recharge sites in the primary and secondary recharge areas for Blue Spring in order to increase recharge to the Upper Floridan aquifer by 0.6 to 1.8 mgd (final recharge quantity depends on the realized capacity of the Volusia Blue Wetland Recharge Project).

Deltona Reclaimed Water Augmentation Expansion — **PROPOSED**

The city of Deltona is currently exploring the possibility of expanding the proposed surface water intake, transmission lines, and treatment capability associated with the Alexander Avenue Water Resource Facility from 4 mgd to 12 mgd. For the 2018 Volusia Strategy Assessment, staff considered an expansion to 8 mgd, which, once fully implemented, would provide an additional 4 mgd of surface water available to augment the reclaimed water system to replace groundwater for irrigation or recharge the Upper Floridan aquifer.

Project Benefits

The projects within the 2013 Volusia Strategy provide 0.8 ft of UFA rebound beneath Lake Butler, which is more than sufficient to ensure compliance with its MFLs at 2040 projected water demand (Table 4). Implementation of the projects within the 2018 Volusia Strategy Assessment, although not necessary to achieve Lake Butler MFLs, would provide an additional 0.1 to 0.3 ft of UFA rebound and offer flexibility to permittees in terms of project selection. Implementation of all projects within both the 2013 Volusia Strategy and 2018 Volusia Strategy Assessment would provide between 1.0 and 1.1 ft of UFA rebound beneath Lake Butler resulting in freeboard of 0.6 to 0.7 ft in 2040.

Table 4. Summary of Project Benefits[1] at Lake Butler

2040 Freeboard/ Deficit (ft)	2013 Volusia Strategy Benefits (ft)	2040 Freeboard/Deficit with 2013 Strategy Projects (ft)	2018 Strategy Assessment Benefits (ft)	2040 Freeboard/ Deficit with All Projects[2] (ft)
-0.4	0.8	0.4	0.1 – 0.3	0.6 – 0.7

ft = feet
[1] For Lake Butler, benefit is defined as the amount of UFA rebound beneath the lake.
[2] Totals may not appear accurate as a result of rounding.

Actual projects and measures implemented to achieve the goals of the strategy objective may differ from those discussed in this strategy. Moreover, projects and measures listed within this and previous strategy documents do not become permit conditions by virtue of their inclusion in an approved strategy. Projects listed within this or previous strategy documents, or alternative projects that SJRWMD concurs will provide an equivalent benefit, may be developed and incorporated as CUP conditions through standard permitting procedures and in future strategy revisions, as appropriate.

H. Funding

Projects implemented as part of this and related strategies can be funded through cooperative cost-share among permittees and possibly SJRWMD through its cost-share program. The SJRWMD cost-share program is offered annually, upon budget availability, as a competitive solicitation for projects that benefit at least one SJRWMD core mission. SJRWMD provides 33 percent of construction costs for selected cost-share projects. From fiscal year (FY) 2014 through FY 2020, SJRWMD has awarded more than $30 million in cost-share funds to cooperators in western Volusia County, with $16.9 million awarded specifically for water supply, natural systems, and water conservation projects. Once fully implemented, these projects will provide approximately 16.9 mgd of alternative water supply and 0.3 mgd in water savings, with 0.2 mgd providing a natural systems benefit.

In addition to funding from SJRWMD, fiscal support may be available from the Florida Department of Environmental Protection (FDEP) for projects that benefit Florida springs. Because Lake Butler is located along the boundary of the Blue Spring springshed, it is possible that projects that benefit Lake Butler will also benefit Blue Spring. In these cases, cost-share dollars can increase to 50 percent of total construction cost with the addition of FDEP springs protection funds.

It is important to note that SJRWMD cost-share funding derived from ad valorem funds are intended to mitigate the water resource impact of domestic self-supply use and uses authorized under a general permit by rule. Therefore, a portion of the benefit achieved by a cost-share project may be reserved for the benefit of the water resource to offset these impacts, with the remaining benefit assigned to the entity(ies) constructing the project.

I. Regulatory Component

Ensuring the maintenance of Lake Butler and other Volusia County water body MFLs will require careful management of local and regional groundwater withdrawals. This can be achieved via the existing comprehensive system of rules, which regulate consumptive uses of water.

Consumptive Use Permit Criteria

The SJRWMD CUP permit criteria are listed in Chapter 40C-2, Florida Administrative Code (F.A.C.), and are expanded upon in the SJRWMD Applicant's Handbook: Consumptive Uses of Water. Several permit requirements will continue to provide assurance that existing and new consumptive uses are consistent with the strategy objective:

- Reasonable-beneficial water uses *must utilize the lowest quality water source that is technically, economically, and environmentally feasible*. Lower quality water sources include reclaimed water, stormwater, surface water, and other alternative water supplies.
- Reasonable-beneficial uses *must not cause harm to the water resources of the area*.
- Reasonable-beneficial uses *must be in accordance with any minimum flow or level and implementation strategy*.
- Reasonable-beneficial uses *must be in such quantity as is necessary for economic and efficient use*. To meet the requirements of this criterion, water use must be consistent with the demonstrated demand for a particular water use.

Regarding the economic and efficient use permitting criterion as it relates to demonstrated demand, the demonstrated water demand at the time of permit issuance may differ from the realized water use over the life of a CUP due to a variety of causes. Population projections for utility service areas increase and decrease over time due to fluctuations in growth rates or economic conditions. Actual water use for specific facilities can change over time due to process improvements or updated equipment. In addition, the actual water demand may be less than the projected water demand due to the implementation of conservation measures and expanded use of reclaimed water. At the time of CUP renewal, applicants must again provide a demonstration of need for the requested CUP allocations. This provides SJRWMD the opportunity to realign the CUP allocation with current water demand.

Water Shortage

In addition to permitting rules, the SJRWMD Governing Board is authorized via section 373.175, F.S., to declare a water shortage if it determines that "insufficient ground or surface water is available to meet the needs of the users or when conditions are such as to require temporary reduction in total water use within the area to protect natural resources from serious harm." Extended periods of less than average precipitation can exacerbate declining groundwater levels as there will typically be an increase in groundwater withdrawals for irrigation to offset the rainfall deficit. Water Shortage Orders provide a mechanism to reduce impacts to water resources during periods of water deficit. As necessitated by local climatic patterns and hydrologic conditions, SJRWMD may utilize Water Shortage Orders to implement water conservation and management practices to prevent or reduce impacts to Lake Butler, or other MFL water bodies, from consumptive uses during periods of drought. Additional information regarding the SJRWMD water shortage rule can be found in 40C-21, F.A.C.

J. Project Implementation and Monitoring Progress

Project Implementation

Water conservation, aquifer recharge, alternative water supply, and reclaimed water projects originally identified in the 2013 Volusia Strategy will be incorporated as permit conditions where applicable and feasible in CUPs that impact Volusia County MFL water bodies that are in prevention or recovery. These project conditions will be incorporated as appropriate over the next 20 years as CUPs are modified or renewed. The implementation schedule for specific projects will be set forth in applicable cost-share projects and/or the CUP(s), as appropriate.

With the exception of one project that is currently not actively being pursued (Farmton), all of the projects from the 2013 Volusia Strategy have been completed or are in the feasibility determination or design phase. This level of project implementation has only been possible due to the extensive cooperation among the WVWS and its members' dedication to protecting MFL water bodies in western Volusia County.

Lake Butler's Response

The model-derived current-pumping condition water levels at Lake Butler form the baseline from which SJRWMD will determine compliance with the Lake Butler MFLs in the future. Water level monitoring at the SJRWMD Lake Butler monitoring station will continue throughout strategy implementation until such time that monitoring revisions may be necessary as determined by SJRWMD staff. Water level data will be added to the current pumping-condition water levels and frequency analyses will be performed to determine revised freeboard values for Lake Butler, which will occur no less than every five years to coincide with the Lake Butler five-year strategy assessments, or a comprehensive updated Volusia Strategy that would include all Volusia County MFL water bodies.

Reporting Requirements

As directed by subsection 373.036(7), F.S., each water management district is required to submit a consolidated water management district annual report to FDEP, which describes each water management district's managing of water resources. This report must contain, in part, the following information regarding all projects related to water quantity:

- A list of all projects identified to implement a recovery or prevention strategy
- A priority ranking for each listed project for which state funding through the water resources development work program is requested
- The estimated cost for each listed project
- The estimated completion date for each listed project
- The source and amount of financial assistance to be made available by FDEP, a water management district, or other entity for each listed project
- A quantitative estimate of each listed project's benefit to the water body identified in the recovery or prevention strategy

This report will track the status of projects listed in this and other SJRWMD strategies with annual updates reflecting new information and realized benefits added upon project completion. In order to ensure that Lake Butler MFLs will continue to be met throughout the 20-year planning horizon, interim UFA deficit values were calculated based on projected increases in Volusia County groundwater demand at five-year intervals. The interim deficit values dictate the minimum amount of UFA rebound that will be necessary through project implementation at each five-year interval (Table 5). Although it is estimated that UFA rebound will exceed the interim goals and ultimate target for Lake Butler, by achieving the minimum interim goals, Lake Butler MFLs will continue to be met throughout the entire 20-year planning horizon to 2040.

Table 5. Minimum Interim UFA Rebound Goals for Lake Butler

Total UFA Rebound at 2025 (ft)	Total UFA Rebound at 2030 (ft)	Total UFA Rebound at 2035 (ft)	Total UFA Rebound at 2040 (ft)	Target UFA Rebound (ft)
0.1	0.2	0.3	0.4	0.4

ft = feet

K. References

Jennewein, S., J. Di, F. Gordu, O. Leta, R. Deschler, and A. Sutherland. 2020 draft. Minimum Levels Determination for Lake Butler, Volusia County, Florida. SJRWMD, Palatka, FL.

SJRWMD. 2013. *Prevention/Recovery Strategy for Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes*. SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/gb1311_005.pdf

SJRWMD. 2019. *2018 Five-Year Strategy Assessment for the Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes*. SJRWMD, Palatka, FL. Available from: www.sjrwmd.com/static/mfls/Volusia_5year_assessment_2019.pdf

Williams, S.A. 2006. *Simulations of the Effects of Groundwater Withdrawals from the Floridan Aquifer System in Volusia County and Vicinity*. Technical Publication SJ2006-4. SJRWMD, Palatka, FL.

Appendix H

Potential Adverse Change to Wetland Function — Methodology and Results

Appendix H

Potential Adverse Change to Wetland Function — Methodology and Results

Introduction

As part of Central Springs/East Coast (CSEC) Regional Water Supply Plan (RWSP) development, St. Johns River Water Management District (SJRWMD) assessed the extent to which water resources and related natural systems may be impacted by projected increases in water use through 2040. Assessing the potential for adverse change to wetland function was one component of the CSEC water resource assessment, along with a saltwater intrusion analysis and an evaluation of water bodies with minimum flows and minimum water levels (MFLs). In addition to serving as an educational tool, this information helps guide the delineation of water resource caution areas and the formulation of project options.

This document details the methods used to assess the potential adverse change to wetland function associated with the increase in projected water demand at the planning horizon (2040) and includes the assessment results. The historic alteration of wetlands has been significant in the CSEC RWSP area (and statewide), resulting mostly from farmland conversion and urbanization. In addition, wetlands can be altered by factors other than groundwater withdrawals, including modification of natural surface water hydrology. Due to these complexities, this analysis focused exclusively on assessing the potential for adverse change to existing wetlands resulting only from the projected increase in water demand from 2015 (or 2014 for Brevard, Indian River and Okeechobee counties) to 2040. The outcome of this assessment was used with results of the other water resource assessments in determining whether traditional water supply sources (i.e., fresh groundwater) are sufficient to meet future water demands.

Background

In previous SJRWMD water resource assessments, the potential of adverse change to wetland function was determined using variations of the Kinser-Minno method (Kinser and Minno 1995; Kinser et. al. 2003). Changes to the analysis time frame and minor soil/vegetation classification revisions have occurred over time, along with shifting geographic scopes and improvements to the input data and groundwater flow models. In 2008, a modified Kinser-Minno method (Dunn et. al. 2008) was developed for assessing the potential adverse change to wetland function in areas where the Upper Floridan aquifer (UFA) is unconfined. The modified method includes two additional steps that effectively remove those areas where the vegetative community and the Surficial Aquifer System (SAS) are not hydraulically connected to the UFA and, therefore, would not be influenced by increases in UFA withdrawals. With some minor modifications discussed below, the

Kinser-Minno method and the modified Kinser-Minno method were used for the CSEC RWSP wetland assessment in the confined and unconfined portions of the planning area, respectively. For purposes of the CSEC RWSP, the terms sensitive vegetation and wetland are considered interchangeable as the majority of the vegetation community types that are highly sensitive to SAS drawdown are wetlands.

Both Kinser-Minno methods use a geographic information system (GIS) model to conduct a matrix analysis of soil permeability, sensitivity of plant communities to dewatering, and projected declines in the SAS to estimate the potential adverse change to individual plant communities that may occur if future water demands were met with traditional sources. The modified method adds depth from land surface to the potentiometric surface of the unconfined UFA to the final matrix. The results of the GIS analyses highlight wetlands with low, moderate, and high potential for adverse change due to potential declines in the SAS from 2015 (or 2014) to 2040.

Data and Information Sources

GIS data used in the wetland analysis included:

1. 2012 Soil Survey Geographic Database for Florida (SSURGO)
2. 2009 Land Cover/Land Use GIS Data Layer, SJRWMD
3. Unconfined Floridan Aquifer System Boundary, United States Geologic Survey (Miller 1986)
4. 2008 Digital Elevation Model for the State of Florida, Florida Department of Environmental Protection (FDEP)
5. May 2014 UFA Potentiometric Surface GIS Data Layer, SJRWMD

Soil permeability classifications were derived from the soil survey for each county (Title 430-VI, United States Department of Agriculture, Soil Conservation Service). Vegetation type classifications were derived from the Land Cover/Land Use GIS database and classified based on technical expertise from SJRWMD wetland scientists (P. Kinser, SJRWMD — retired; M. Minno, Suwannee River Water Management District).

Soil Permeability Classification

Soil permeability describes the capacity of a soil to allow fluids to pass through it. For purposes of the wetland assessment, permeability is a key component since it dictates how quickly an area of sensitive vegetation becomes dewatered when the water table declines in elevation.

The Natural Resources Conservation Service (NRCS) provides estimates of the inches of water per hour that can move downward through a saturated soil based upon laboratory measurements. For the CSEC RWSP, NRCS permeability classes in Florida (U.S. Department of Agriculture, NRCS, National Cooperative Soil Survey) were grouped in high, moderate, or low categories of drawdown sensitivity, as shown in Table H-1.

Table H-1: Soil Permeability Classification (NRCS)

NRCS Permeability Class	NRCS Permeability Rate (inches/hour)	CSEC RWSP Soil Permeability Classification
Very Slow	Less than 0.06	Low
Slow	0.06 – 0.2	Low
Moderately Slow	0.2 – 0.6	Low
Moderate	0.6 – 2.0	Moderate
Moderately Rapid	2.0 – 6.0	Moderate
Rapid	6.0 – 20	High
Very Rapid	Greater than 20	High

Vegetation Type Classification

The extent to which vegetation types are sensitive to SAS drawdown varies dramatically. Hydric vegetation communities such as swamps are highly sensitive to water table elevation, whereas more xeric communities such as sand pine are much less affected by water table level changes.

The SJRWMD 2009 land use/land cover GIS layer was used as the input data for vegetative community classification. This data source relies on digitized aerial photography with classifications derived from the Florida Land Use and Cover Classification System.

For purposes of the CSEC RWSP, polygons in the land cover/land use layers were classified with "high, moderate, or low" sensitivity to drawdown, relative to their dominant vegetation type, per Table H-2.

Table H- 2: Classification of Vegetation Type Sensitivity

Land Use Code	CSEC RWSP Vegetation Sensitivity Classification
4100: Upland Coniferous Forests	Low
4110: Pine Flatwoods	Moderate
4120: Longleaf Pine — Xeric Oak	Low
4130: Sand Pine	Low
4140: Pine — Mesic Oak	Low
4190: Hunting Plantation Woodlands	Low
4200: Upland Hardwood Forests	Moderate
4210: Xeric Oak	Low
4270: Live Oak	Low
4271: Oak — Cabbage Palm Forests	Low
4280: Cabbage Palm	Moderate
4340: Upland Mixed — Coniferous /	Moderate
4400: Tree Plantations	Low
4410: Coniferous Plantations	Moderate
4420: Hardwood Plantations	Low
4430: Forest Regeneration Areas	Moderate
6100: Wetland Hardwoods Forests	High
6110: Bay Swamps	High
6111: Bayhead	High
6120: Mangrove Swamps	Low
6130: Gum Swamps	High
6140: Titi Swamps	High
6150: Stream and Lake Swamps (bottomland)	High
6170: Mixed Wetland Hardwoods	High
6172: Mixed Shrubs	High
6180: Cabbage Palms	High
6181: Cabbage Palm Hammock	High
6182: Cabbage Palm Savannah	High
6200: Wetland Coniferous Forests	High
6210: Cypress	High
6215: Cypress — Domes/Heads	High
6216: Cypress — Mixed Hardwoods	High
6220: Pond Pine	High

Land Use Code	CSEC RWSP Vegetation Sensitivity Classification
6240: Cypress — Pine — Cabbage Palm	High
6250: Hydric Pine Flatwoods	High
6260: Pine Savannah	High
6300: Wetland Forested Mixed	High
6400: Vegetated Non-Forested Wetlands	High
6410: Freshwater Marshes	High
6411: Freshwater Marshes — Sawgrass	High
6420: Saltwater Marshes	Low
6430: Wet Prairies	High
6440: Emergent Aquatic Vegetation	High
6460: Mixed Scrub — Shrub Wetland	High
6500: Non-Vegetated Wetlands	High
6510: Tidal Flats	Low
6520: Shoreline	Low
6530: Intermittent Ponds	High
6600: Salt Flats	Low

Potential for Future Impacts

A key component of the wetland assessment is the magnitude to which the projected increase in future groundwater withdrawals through the planning horizon will affect the water table elevation of the SAS throughout the planning region and, thus, potentially alter wetland function. For this step in the analysis, each polygon was assigned a potential for wetland change classification (Table H-3) through a combination of the soil permeability (Table H-1) and vegetation sensitivity (Table H-2) classes. The potential for wetland change classification assigned a high and moderate rank to only those vegetation communities that have a high sensitivity to water table drawdown, mostly freshwater wetland communities.

Table H-3: Potential for Wetland Change Classification (Integrated Soil Permeability and Vegetation Type Sensitivity)

	High Vegetation Sensitivity	Moderate Vegetation Sensitivity	Low Vegetation Sensitivity
High Soil Permeability	High	Low	Low
Moderate Soil Permeability	Moderate	Low	Low
Low Soil Permeability	Low	Low	Low

Regional groundwater models were then used to predict the change in SAS elevation (i.e., SAS drawdown) between the base year (2014 or 2015) and 2040 for each model grid cell. Surficial Aquifer System drawdown for each vegetation polygon was derived from the most applicable model grid cell. The potential for wetland change classification (Table H-3) and the projected SAS drawdown were combined into a polygon-specific potential future wetland change classification (Table H-4). The surficial aquifer drawdown divisions categorized in Table H-4 were derived from published literature and unpublished data, as discussed in the Water 2020 Constraints Handbook (CH2M Hill 1998). The results of this assessment provided an estimate of magnitude (acres), degree (moderate vs. high), and spatial distribution of the potential for future adverse change to wetland function throughout the portion of the CSEC RWSP area where the UFA is confined.

Table H-4: Potential Future Wetland Change Classification (Confined UFA)(Integrated Potential for Wetland Change and Projected SAS Drawdown from 2015[1] to 2040)

	High Potential for Wetland Change	Moderate Potential for Wetland Change	Low Potential for Wetland Change
Projected SAS Drawdown > 1.2 ft	High	High	Low
Projected SAS Drawdown from 0.35 – 1.2 ft	High	Moderate	Low
Projected SAS Drawdown < 0.35 ft	Low	Low	Low

[1] Or 2014 for Brevard, Indian River, and Okeechobee counties.

Modified Kinser-Minno Method — Additional Steps

There are two additional steps in the modified methodology for assessing potential adverse change to wetland function in areas where the UFA is unconfined. A spatial representation of the unconfined areas of the UFA was used to extract a new dataset showing only those polygons identified as having a high and moderate future potential for change (Table H-4) within the unconfined portions of the planning region. Depth from land surface to the 2014 UFA potentiometric surface was calculated and categorized into three 15-ft intervals. The initial potential future adverse change designation of wetland polygons (Table H-4) was then reclassified based on the depth to the unconfined UFA (Table H-5).

Table H-5: Potential Future Wetland Change Classification (Unconfined UFA)(Integrated Potential for Future Change for Confined UFA and Depth to the Unconfined UFA)

	High Potential for Future Change[1]	Moderate Potential for Future Change[1]
0 – 15 ft to Unconfined UFA	High	Moderate
15 – 30 ft to Unconfined UFA	Moderate	Low
>30 ft to Unconfined UFA	Low	Low

[1] As determined for areas where the UFA is confined (Table H-4).

Results

When assessing potential future change to the function of existing wetlands due to 2040 projected water demand within the CSEC RWSP area, it is estimated that 34,091 acres of wetlands have a high or moderate potential of being altered (Table H-6, Figures H-1, H-2, and H-3). This represents 4 percent of the sensitive vegetation acreage in the CSEC RWSP area.

Table H- 6: Wetland Acreage Identified as Having a Moderate or High Potential for Adverse Change in the CSEC RWSP Area

County	Wetland Acreage at Risk for Potential Future Adverse Change at 2040 Water Demand
Volusia	4,558
Marion	4,686
North Lake[1]	24,504
Brevard	327
Indian River	7
Okeechobee	10
CSEC RWSP Total[2]	**34,091**

[1] Within the CSEC RWSP, North Lake County is defined as that portion of Lake County that is not included in the Central Florida Water Initiative.
[2] Total may be slightly different due to rounding of county values.

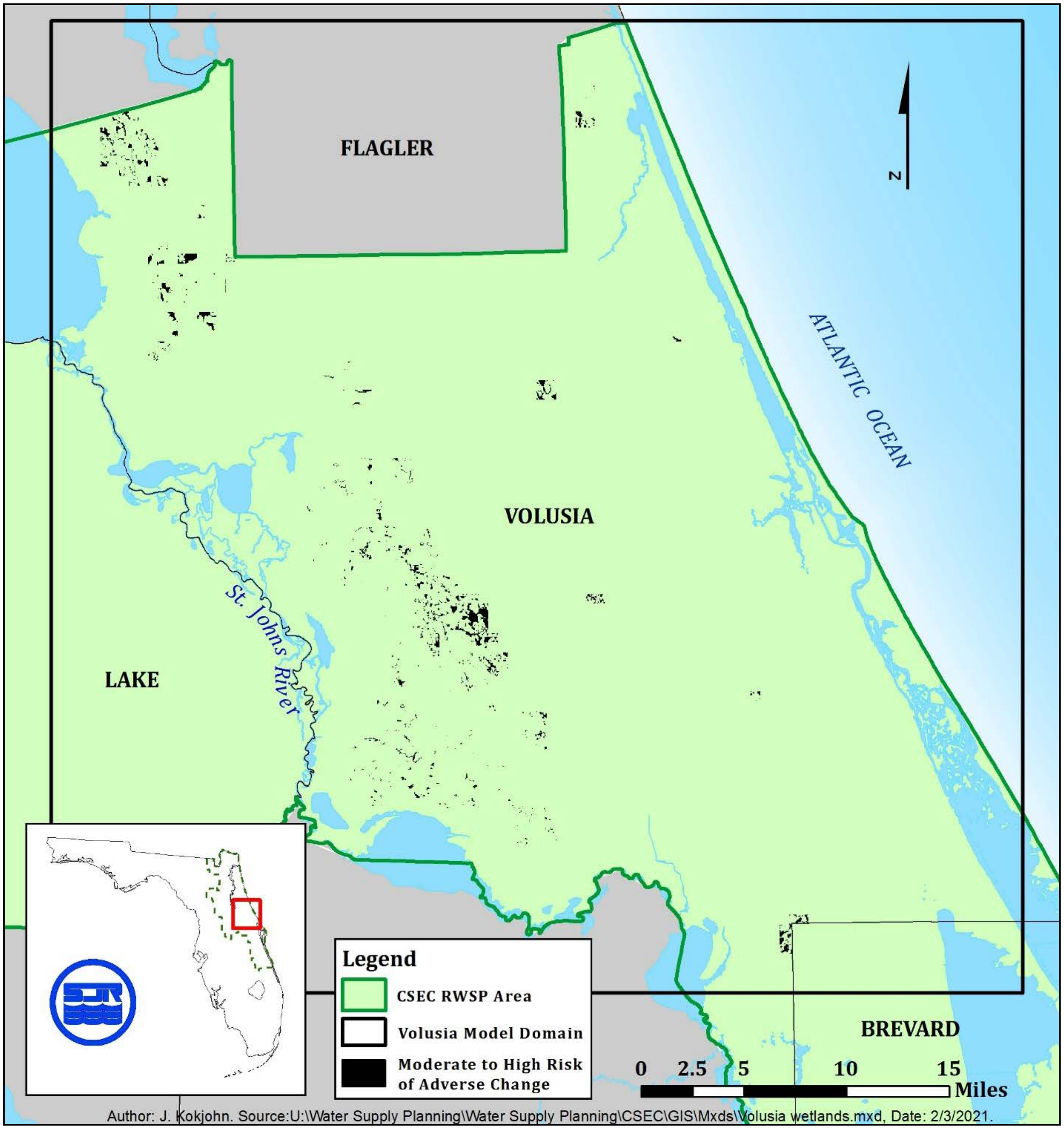

Figure H-1: Wetlands at Risk of Adverse Change Due to 2040 Projected Withdrawals within Volusia County

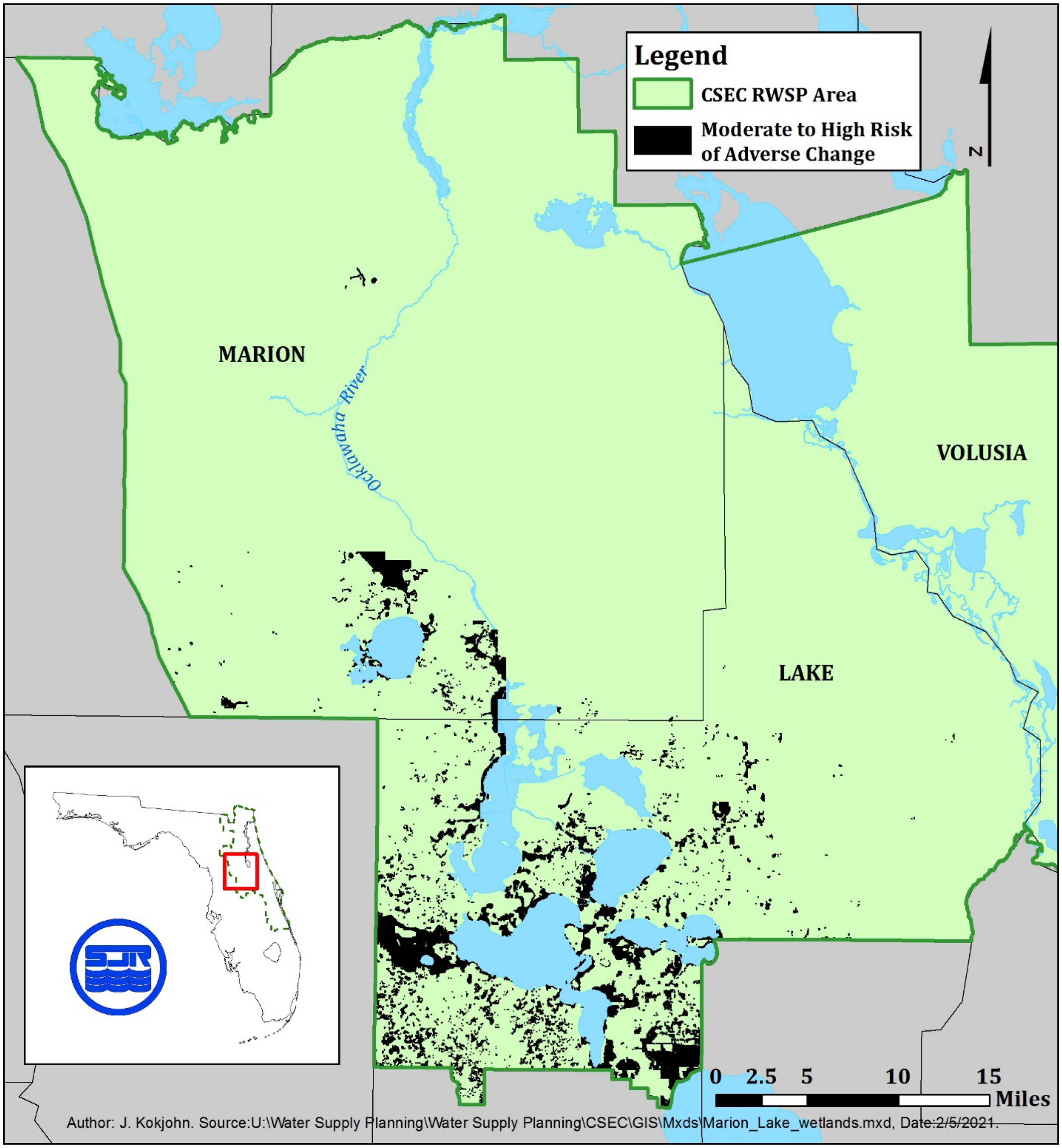

Figure H-2: Wetlands at Risk of Adverse Change Due to 2040 Projected Withdrawals within Marion and North Lake Counties

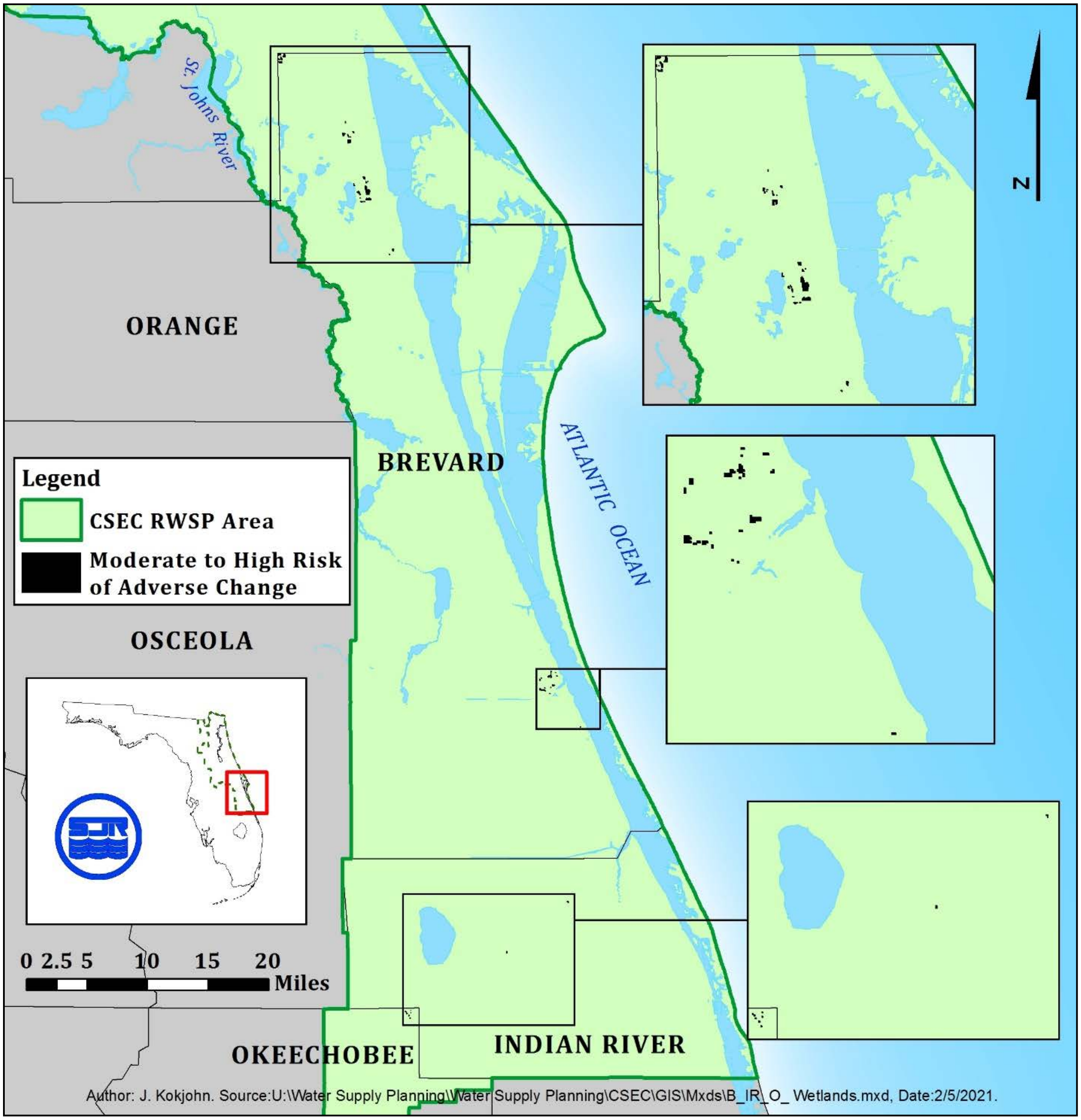

Figure H-3: Wetlands at Risk of Adverse Change Due to 2040 Projected Withdrawals within Brevard, Indian River, and Okeechobee Counties

References

CH2M HILL. 1998. *Water 2020 Constraints Handbook*. SJRWMD Special Publication SJ2005-SP8.

Dunn, W., P. Burger, S. Brown, and M. Minno. 2008. *Development and Application of a Modified Kinser-Minno Method for Assessing the Likelihood of Harm to Native Vegetation and Lakes in Areas with an Unconfined Aquifer*. SJRWMD Special Publication SJ2008-SP24.

Kinser, P. and M. Minno. 1995. *Estimating the Likelihood of Harm to Native Vegetation from Groundwater Withdrawals*. SJRWMD Technical Publication SJ95-8.

Kinser, P., M. Minno, P. Burger, and S. Brown. 2003. *Modification of Modeling Criteria for Application in the 2025 Assessment of Likelihood of Harm to Native Vegetation*. SJRWMD Professional Paper SJ2003-PP3.

Miller, J. 1986. *Hydrogeologic Framework of the Floridan Aquifer System in Florida and Parts of Georgia, Alabama, and South Carolina*. U.S. Geological Survey Professional Paper no. 1403-B. 91 p.

APPENDIX I

WATER RESOURCE DEVELOPMENT PROJECT OPTIONS

Table I-1: Central Springs/East Coast Regional Water Supply Plan Water Resource Development Project Options for Volusia County

County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Status	Anticipated Completion (Year)
Volusia	Volusia Blue Wetland Recharge Project	West Volusia Water Suppliers (WVWS)	Construction of wetland treatment and groundwater recharge project in a 60-acre borrow pit approximately 0.5 miles upgradient from Volusia Blue Spring.	Recharge	Reclaimed, Stormwater, Surface Water	4.0	$14.6	$137,500	Feasibility	2024
Volusia	WVWS Aquifer Recharge Enhancement Project, Phase #1	City of Deltona	Construction of a 20-acre rapid infiltration basin (original design modified to exfiltration system) .	Recharge	Reclaimed, Stormwater, Surface Water	0.6	$1.3	$15,000	Complete	2020
Volusia	WVWS Aquifer Recharge Enhancement Project, Future Phases	WVWS	Construction of additional recharge facilities in the primary and secondary recharge areas for Blue Spring.	Recharge	Reclaimed, Stormwater, Surface Water	1.8	$3.3	$45,000	Planning	TBD
Volusia	Alexander Avenue Water Resource Management Site (same as WVWS Project 4A Deltona Storage & Treatment Improvements)	WVWS	Construction of a series of stormwater and reclaimed water RIBs.	Reuse, Recharge	Reclaimed, Stormwater, Surface Water	1.2	$1.5	$33,000	Complete	2019
Volusia	Tiger Bay Weir	SJRWMD	Construction of a weir across Tiger Bay Canal.	Recharge	Stormwater	3.0	$0.3	N/A	Complete	2016
Volusia	Daytona Beach Bennett Swamp Rehydration and Conservation	City of Daytona Beach	Construction of a rehydration system at Bennett Swamp consisting of pipe dispersal units, and flow regulating values and meters.	Recharge	Reclaimed	6.0	$5.3	$53,000	Complete	2020
					Total:	**16.6**	**$26.3**			

Table I-2: Central Springs/East Coast Regional Water Supply Plan Water Resource Development Project Options for Marion and North Lake Counties

County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Status	Anticipated Completion (Year)
Marion	Ocala Wetland Groundwater Recharge Park	City of Ocala	Construction of wetland treatment and groundwater recharge project on a 33-acre site (Pine Oaks Golf Course).	Recharge	Reclaimed, Stormwater	5.0	$9.3	$100,000	Complete	2020
					Total:	**5.0**	**$9.3**			

Table I-3: Central Springs/East Coast Regional Water Supply Plan Water Resource Development Project Options for Brevard, Indian River, and Okeechobee Counties

County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Project Status	Anticipated Completion (Year)
Brevard	Crane Creek M-1 Canal Flow Restoration	SJRWMD	Construction of infrastructure to reduce nutrient loading to the Indian River Lagoon by treating and rediverting baseflows back to the St. Johns River.	AWS	Surface Water	7.0	$10.7	$250,000	Construction	2022
Brevard	C-10 Water Management Area	SJRWMD	Construction of infrastructure to redivert and treat freshwater flow from the Indian River Lagoon to the Upper St. Johns River Basin.	AWS	Surface Water	7.9	$28.0	$1,300,000	Design/ Permitting	2025
Brevard	Brevard County Abandoned Artesian Well Plugging Program (FY 2020 - FY 2022)	SJRWMD. Brevard County	Abandonment of artesian wells in Brevard County ($10,000 per year provided by Brevard County).	Well Abandonment	Groundwater	4.5	$0.1	NA	In progress	2022
Indian River	Indian River County Abandoned Artesian Well Plugging Program (FY 2018 - FY 2020)	SJRWMD, Indian River County	Abandonment of artesian wells in Indian River County ($20,000 per year provided by Indian River County).	Well Abandonment	Groundwater	9.0	$0.1	NA	Complete	2020
Indian River	Indian River County Abandoned Artesian Well Plugging Program (FY 2021 - FY 2023)	SJRWMD, Indian River County	Abandonment of artesian wells in Indian River County ($20,000 per year provided by Indian River County).	Well Abandonment	Groundwater	9.0	$0.1	NA	In progress	2023
					Total:	**37.4**	**$39.0**			

County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Project Status	Anticipated Completion (Year)
Indian River, Okeechobee	Grove Land Reservoir and Stormwater Treatment Areas[1]	Grove Land Utilities	Construct a reservoir and stormwater treatment area that will retain water from the C-23, C-24, and C-25 Canals, which is otherwise lost to tide. Discharge treated water to the headwaters of the St. Johns River as an AWS for water utilities and other water users. Project is also located in SFWMD.	AWS	Surface Water	100.0	$691.0	TBD	Planning	2026

[1] Project was not included in the project totals within the Central Springs/East Coast Regional Water Supply Plan.

APPENDIX J

WATER SUPPLY DEVELOPMENT PROJECT OPTIONS

Table J-1: Central Springs/East Coast Regional Water Supply Plan Water Supply Development Project Options for Volusia County

County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Status	Anticipated Completion (Year)
Volusia	Deep Creek/Leffler Water Supply, Treatment and Transmission Facility	West Volusia Water Suppliers (WVWS)	Construction of Upper Floridan aquifer wells, raw water transmission lines, centralized treatment, finished water storage, high service pumping and potable water transmission.	Well Field Optimization	Upper Floridan	4.00	$44.10	$1,600,000	Testing/ Design	2024
Volusia	Farmton Water Supply and Transmission Facilities	WVWS/Farmton LLC	Construction of 30 wells with transmission facilities; a lime softening water treatment plant; a ground storage tank; and a high service pump station.	Well Field Optimization	Upper Floridan	4.00	$37.50	$1,600,000	Planning	2027
Volusia	DeLand Reuse Retrofit Part 'B' and Wiley M. Nash Augmentation Facilities	WVWS	Reclaimed retrofit of 190 homes and the construction of surface water augmentation facilities serving the Wiley M. Nash WRF.	AWS, Reuse	Reclaimed, Surface Water	4.13	$3.79	$300,000	Complete	2015
Volusia	West Volusia Reclaimed Water Interconnects	WVWS	Construction of reclaimed water interconnects among the WVWS to maximize the beneficial reuse of reclaimed water.	Reuse	Reclaimed	2.50	$8.59	$100,000	Complete	2016
Volusia	Sanford-Volusia County Reclaimed Water Interconnect	WVWS	Construction of a 16" reclaimed water transmission main to convey reclaimed water from Sanford's WRF to Volusia County's distribution network.	Reuse	Reclaimed	2.00	$1.57	$365,000	Complete	2018
Volusia	Deltona Lakes Pump Station, Transmission Main and Augmentation (same as WVWS Project 4B Deltona Storage & Treatment Improvements)	WVWS	Construction of surface water intake, pump, and transmission facilities at Lake Monroe and treatment and storage facilities at Alexander Avenue for reclaimed water augmentation.	AWS, Reuse	Stormwater, Surface Water	8.00	$7.77	$300,000	Construction	2024
Volusia	Doyle Road Reclaimed Water Main Extension	WVWS	Construction of a transmission main to convey reclaimed water to the Alexander Ave. RIB site and to the Deltona Lakes WRF.	Reuse	Reclaimed	2.00	$6.00	$100,000	Complete	2015
Volusia	Breakaway Trails Reclaimed Water Storage & Pumping Facility	City of Ormond Beach	Construction of a 2 MG ground storage tank with high service pumps to increase storage capacity and improve reliability of existing reuse distribution system.	Reuse	Reclaimed	1.00	$2.40	$10,000	Complete	2020
Volusia	Holly Avenue Reclaimed Water Elements	City of Orange City	Extension of reclaimed water service in the Blue Spring Basin.	Reuse	Reclaimed	0.16	$0.37	N/A	Complete	2020
Volusia	Deltona Reclaimed Water Retrofits	City of Deltona	Retrofit of three existing residential neighborhoods (421 units) and one sports complex to replace potable water for irrigation with reclaimed water.	Reuse	Reclaimed	0.16	$1.95	$15,000	Complete	2020
Volusia	Daytona Beach - Williamson Blvd. Reuse	City of Daytona Beach	Installation of reclaimed water line on Williamson Blvd, between Dunn Avenue and Mason Avenue.	Reuse	Reclaimed	0.65	$1.68	$1,000	Complete	2019
Volusia	2.5 MG Reuse Storage Tank	City of Daytona Beach	Construction a 2.5 MG reclaimed water storage tank.	Reuse	Reclaimed	0.40	$4.50	21,000	Complete	2019
Volusia	Howland Blvd. Phase 3 Reclaimed Water	City of Deltona	Reclaimed water main extension on Howland Blvd from SR415 to Elkcam Blvd.	Reuse	Reclaimed	2.00	$0.49	$1,000	Complete	2015

Table J-1: Central Springs/East Coast Regional Water Supply Plan Water Supply Development Project Options for Volusia County

County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Status	Anticipated Completion (Year)
Volusia	Orange City Reclaimed Water Main and Water Meters	City of Orange City	Construction of a reclaimed water main extension along Veteran's Memorial Parkway from Hospice to Harley Strickland Blvd.	Reuse	Reclaimed	0.25	$0.49	N/A	Complete	2015
Volusia	Ormond Beach South Peninsula Reclaimed Water Expansion	City of Ormond Beach	Reclaimed water distribution network expansion to 653 properties.	Reuse	Reclaimed	0.56	$5.10	$10,000	Complete	2017
Volusia	Volusia County Advanced Wastewater Treatment for the Protection of Blue Spring	Volusia County	Expansion in capacity and improvement in treatment level to increase nitrogen removal from the Volusia County Southwest Regional WRF.	Reuse	Reclaimed	0.02	$12.10	$865,000	Complete	2016
Volusia	Volusia RCW Main Extension for I-4/SR 472 Activity Center	Volusia County	Construction of a reclaimed water main along Normandy Blvd north to the Graves Ave/Howland Blvd intersection.	Reuse	Reclaimed	0.10	$6.15	$5,000	Complete	2018
Volusia	DeLand RCW Master Plan Update - Phase 3 and 3a (Crystal Cove and Alexandria Point)	City of DeLand	Provision of reclaimed water to 239 homes.	Reuse	Reclaimed	0.14	$1.45	$25,000	Complete	2019
Volusia	DeLand Reclaimed Water Retrofit Project 2B	City of DeLand	Construction of a reclaimed water main to provide reclaimed water to 215 homes in Waterford and Heather Glen developments.	Reuse	Reclaimed	0.13	$1.52	$6,000	Complete	2018
Volusia	DeLand Reclaimed Water Retrofit Project Phase 1	City of DeLand	Construction of a reclaimed water main to provide reclaimed water to 195 existing homes in Blue Lake Woods, Southridge Point, and University Ave region.	Reuse	Reclaimed	0.12	$1.21	$6,000	Complete	2017
Volusia	Reclaimed Pumping and Storage Expansion	City of Deltona	Expansion of reclaimed water pumping and storage.	Reuse	Reclaimed	0.75	$1.80	$30,000	Complete	2015
Volusia	DeLand Reclaimed Water Storage and Recovery	City of DeLand	Construction of transmission mains connecting wastewater treatment plan with two reservoirs.	Reuse	Reclaimed	0.16	$1.03	$6,000	Complete	2016
Volusia	Edgewater Reclaimed Water Quality Reservoir	City of Edgewater	Construction of reclaimed water main extensions, a reuse storage reservoir, and a wetland outfall.	Reuse	Reclaimed	0.20	$4.89	$20,000	Complete	2020
Volusia	Daytona Beach Potable Reuse Demo Testing Facility	City of Daytona Beach	Pilot project to demonstrate if highly treated reclaimed water can supplement the potable supply and reduce withdrawals from the Upper Floridan aquifer. Current flow supplements the reclaimed water system. Should Daytona implement on a production scale, the first phase could provide up to 2.0 MGD of alternative water supply for potable use.	AWS, Reuse	Reclaimed	0.20	$1.90	TBD	Complete (construction)	2017
					Total:	**33.64**	**$158.35**			

Table J-1: Central Springs/East Coast Regional Water Supply Plan Water Supply Development Project Options for Volusia County

County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Status	Anticipated Completion (Year)
Volusia	Kentucky Road Reclaimed Expansion[1]	City of Orange City	Ground storage tank for alternative water sources.	Reuse	Reclaimed, Surface Water	1.00	$2.00	$20,000	Planning	2026
Volusia	City of Orange City Brackish Water Project[1]	City of Orange City	Development of a brackish water source through the construction of a Lower Floridan aquifer well, raw water transmission line, and treatment facility.	AWS	Lower Floridan	2.00	$30.00	TBD	Planning	2027
Volusia	City of Orange City Wellfield Optimization[1]	City of Orange City	Implementation of strategies to relocate withdrawals further from Blue Spring.	Well Field Optimization	Upper Floridan	3.00	$6.00	TBD	Planning	2027
Volusia	CRA Septic to Sewer[1]	City of Orange City	Collection and transfer of septic tank wastewater for treatment at the county-owned Southwest Regional Wastewater Reclamation Facility, thereby increasing the quantity of available reclaimed water.	AWS	Reclaimed	0.50	$10.00	$40,000	Construction (Phase I)	2030

[1] These projects were submitted during the public comment period and, therefore, were not included in the project totals identified within the Central Springs/East Coast Regional Water Supply Plan.

Table J-2: Central Springs/East Coast Regional Water Supply Plan Water Supply Development Project Options for Marion and North Lake Counties

County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Status	Anticipated Completion (Year)
Lake	Caldwell Citrus Gorgeous Groves Project	Caldwell Citrus LLC	Connection of a reclaimed water line to serve an agricultural operation.	Reuse	Reclaimed	0.11	$0.04	$0	Complete	2015
Lake	Mount Dora RCW Interconnect with Apopka	City of Mount Dora	Construction of a reclaimed water line from the Orange County line on South Round Lake Rd to the intersection of West Kelly Park Rd and Golden Gem Rd in Apopka.	Reuse	Reclaimed	3.00	$1.10	$20,000	Complete	2020
Marion	Marion County Silver Springs Shores Reuse to Spruce Creek	Marion County	Upgrade the Silver Springs Shores WWTF and the construction of reclaimed water transmission facilities including two reclaimed water lines that will serve an HOA and several golf courses.	Reuse	Reclaimed	1.20	$9.82	$1,000	Complete	2016
Marion	Marion County US441 Water Main Interconnect	Marion County	Construction of a potable water interconnect between the Spruce Creek Golf and Country Club PWS and the Stonecrest PWS.	Well Field Optimization	Upper Floridan	0.12	$1.41	$1,349	Complete	2018
Marion	Marion County SE 108 Water Main Interconnect	Marion County	Construction of a potable water interconnect between the Spruce Creek Golf and County Club PWS and the Silver Springs Shores PWS.	Well Field Optimization	Upper Floridan	0.12	$1.81	$7,100	Complete	2020
Marion	Marion County Lower Floridan Conversion	Marion County	Construction of two Lower Floridan aquifer production wells to replace withdrawals from the Upper Floridan aquifer in south central Marion County.	AWS	Lower Floridan	1.50	$2.90	$10,000	Design	2022
Marion	Marion County Well Field Optimization	Marion County	Implementation of strategies to relocate withdrawals from the Upper Floridan aquifer further from Silver Springs.	Well Field Optimization	Upper Floridan	6.04	$4.72	Unknown	In progress	TBD
Marion	Ocala Lower Floridan Aquifer Conversion[1]	City of Ocala	Phased construction of Lower Floridan aquifer wells and a water treatment plant.	AWS	Lower Floridan	11.34	$50.00	$1,620,600	Construction	2028
Marion	Ocala Parks Connection Project	City of Ocala	Connection of nine parks and one right-of-way to the reclaimed water system and retrofit of respective irrigation systems to accommodate reclaimed water.	Reuse	Reclaimed	0.04	$0.08	Unknown	Complete	2016
Marion	Ocala Reuse Main Extension	City of Ocala	Construction of reclaimed water mains that will transmit reclaimed water to two city parks and replace groundwater for irrigation.	Reuse	Reclaimed	0.03	$0.98	Unknown	Complete	2015
Marion	Ocala Septic Tank and Well Elimination Program	City of Ocala	Removal of septic tanks and wastewater treatment package plants with connection to Ocala's central sewer system, which will increase reclaimed water flows.	Reuse	Reclaimed	0.22	$10.00	Unknown	Complete	2018
Lake	Eustis Eastern WWTP Upgrade	City of Eustis	Expansion to the capacity of the Eustis Eastern WWTP that will make additional reclaimed water available.	Reuse	Reclaimed	1.00	$7.50	$2,189,000	Complete	2018
Marion	Marion County Silver Springs Shores Regional Capacity Improvements/Package Plant Removal	Marion County	Expansion to the capacity of the Silver Springs Shores WWTP that will make additional reclaimed water available.	Reuse	Reclaimed	0.01	$10.57	$362,413	Construction	2022
					Total:	**24.73**	**$100.93**			

[1] The planned capacity of the Lower Floridan aquifer wellfield and water treatment plant will be 15 mgd, however, Ocala's 2040 projected water demand is 11.34 mgd, which is the value used in the sufficiency analysis.

Table J-3: Central Springs/East Coast Regional Water Supply Plan Water Supply Development Project Options for Brevard, Indian River, and Okeechobee Counties

County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Status	Anticipated Completion (Year)
Indian River	Vero Beach Hybrid Septic Tank Effluent Pumping System Phase 2 Service Lines	City of Vero Beach	Construction of service lines to direct 0.3 mgd of effluent from low pressure sewage collection system to the wastewater treatment facility.	Reuse	Reclaimed	0.30	$0.62	TBD	Complete	2019
Indian River	Vero Beach Reverse Osmosis WTF Expansion	City of Vero Beach	Expansion of RO capacity for treatment of brackish groundwater for potable use.	AWS	Upper Floridan (brackish)	2.60	$2.38	Unknown	Complete	2017
Okeechobee	FPL Okeechobee Clean Energy Center UFA to APPZ Conversion	Florida Power & Light	Conversion of an UFA well to the Avon Park Permeable Zone (APPZ), which is a lower quality source.	AWS	Upper Floridan (brackish)	2.20	$0.96	$53,200	Design	2021
Indian River	IRC Olso Reverse Osmosis Enhanced Recovery Process	Indian River County	Replacement of membrane array and optimization of dedicated R.O. trains to pumps, which will increase recovery of brackish UFA water from 75 to 85%.	AWS	Upper Floridan (brackish)	0.94	$11.30	TBD	Design	2022
Indian River	Stormwater Treatment Facility and Pipeline	City of Vero Beach	Development of a surface water source that will replace groundwater withdrawals for irrigation. Includes construction of intake, transmission lines, and high-service pump station and modification of water treatment plant.	AWS	Surface Water	3.00	$10.00	TBD	Design	2024
Brevard	Joe Mullins Reverse Osmosis Water Treatment Plant Expansion	City of Melbourne	Expansion of the Joe Mullins Reverse Osmosis Water Treatment Plant from 5 mgd to 10 mgd of finished water capacity.	AWS	Upper Floridan (brackish)	5.00	$37.00	$400,000	Design	2026
Indian River	IRC West Regional Wastewater Treatment Facility Reclaimed Water Storage	Indian River County	Construction of a reclaimed water reservoir for wet weather flow storage for use during high demand.	Reuse	Reclaimed	4.00	$7.14	TBD	Planning	TBD
Brevard	North Regional Reverse Osmosis WTP Rehab	City of Palm Bay	Rehabilitation of the North Regional Reverse Osmosis WTP including the installation of a new deep injection well that will eliminate the need to dilute brine with treated wastewater prior to disposal.	AWS	Upper Floridan (brackish)	1.50	$21.70	$1,500,000	Design	2023
Brevard	South Regional Reverse Osmosis Plant Expansion (Phase II)	City of Palm Bay	Expansion to increase capacity at South Regional RO Plant from 4 mgd to 6 mgd.	AWS	Upper Floridan (brackish)	2.00	$14.60	$200,000	Construction	2022
Brevard	South Regional Reverse Osmosis Plant Expansion (Phase III)	City of Palm Bay	Expansion to increase capacity at South Regional RO Plant from 6 mgd to 10 mgd.	AWS	Upper Floridan (brackish)	4.00	$19.80	TBD	Planning	2027
Brevard	South Regional Water Reclamation Facility (Phase I-A)	City of Palm Bay	Construction of a 1.0 mgd membrane bioreactor water reclamation facility.	AWS	Reclaimed	0.34	$27.00	$3,040,000	Construction	2022
Brevard	South Regional Water Reclamation Facility RCW Line Extensions	City of Palm Bay	Extension of reclaimed lines to provide reclaimed water for irrigation to existing groundwater users.	AWS	Reclaimed	0.66	$3.80	$25,000	Design	2023
Brevard	South Regional Water Reclamation Facility (Phase I-B)	City of Palm Bay	Expansion of the South Regional Water Reclamation Facility from 1.0 mgd to 2.0 mgd.	AWS	Reclaimed	1.00	$8.50	TBD	Planning	2024
Brevard	South Regional Water Reclamation Facility (Phase I-C)	City of Palm Bay	Expansion of the South Regional Water Reclamation Facility from 2.0 mgd to 3.0 mgd.	AWS	Reclaimed	1.00	$20.00	TBD	Planning	2025
Indian River	Hammond Groves Surface Water Capture	Hammond Groves, Inc.	Installation of a pump to capture surface water to mix with groundwater for irrigation.	AWS	Surface Water	0.33	$0.25	Unknown	Complete	2020
Indian River	Sun Ag Surface Water Pumps	Sun Ag LLC	Upgrade of pumps and relocation to canal to access surface water for irrigation.	AWS	Surface Water	0.29	$0.24	Unknown	Complete	2020
					Total:	**29.16**	**$185.29**			

Appendix K

Water Conservation Project Options

Table K-1: Central Springs/East Coast Regional Water Supply Plan Water Conservation Project Options for Volusia County

County	Project Name	Implementing Entity	Project Description	Water Source	Water Saved (MGD)	Total Capital ($M)	Status	Anticipated Completion (Year)
Volusia	Volusia County Water Conservation	Volusia County	Implementation of water conservation infrastructure to reduce unaccounted for water use.	Upper Floridan	0.22	$0.96	Complete	2019
Volusia	William Barrie Ferneries	William C. Barrie	Completion of irrigation system retrofit for efficiency improvements.	Upper Floridan	<0.01	$0.02	Complete	2018
Volusia	Legacy Farms and Ornamentals Conservation Project	Legacy Farms and Ornamentals, LLC	Completion of irrigation system retrofit for efficiency improvements.	Upper Floridan	0.04	$0.07	Complete	2019
Volusia	Alpha Fern Company	Alpha Fern Company	Completion of irrigation system retrofit for efficiency improvements.	Upper Floridan	0.01	$0.02	Complete	2019
Volusia	Hammond Station Growers Irrigation Retrofit	Hammond Station Growers	Completion of irrigation system retrofit for efficiency improvements.	Upper Floridan	0.01	$0.05	Complete	2019
Volusia	Legacy Farms and Ornamentals	Legacy Farms and Ornamentals, LLC	Completion of irrigation system retrofit for efficiency improvements.	Upper Floridan	0.04	$0.07	Complete	2019
Volusia	Legacy Farms and Ornamentals Emitter and Pump Installation	Legacy Farms and Ornamentals, LLC	Replacement of turbine with electric pump and installation of low volume irrigation emitters.	Upper Floridan	0.01	$0.02	Complete	2020
Volusia	The Magnolia Company Drain Tile, Retention Pond, Sensors and Water Pump	The Magnolia Company	The installation of drain tile, moisture sensors, and a surface water pump and the expansion of a retention pond to reduce use of groundwater for irrigation.	Upper Floridan	0.02	$0.11	Complete	2020
				Total:	**0.35**	**$1.32**		

Table K-2: Central Springs/East Coast Regional Water Supply Plan Water Conservation Project Options for Marion and North Lake Counties

County	Project Name	Implementing Entity	Project Description	Water Source	Water Saved (MGD)	Total Capital ($M)	Status	Anticipated Completion (Year)
Marion	Andrew Frederick Silver Springs Ag BMP	Andrew Frederick	Installation of a soil moisture and climate sensor system and upgrades to the irrigation system.	Upper Floridan	0.002	$0.03	Complete	2019
Lake	Caldwell Citrus Groves Irrigation Retrofit	Caldwell Citrus	Conversion to a more efficient irrigation system.	Upper Floridan	0.015	$0.22	Complete	2019
Marion	George and Teressa Kohn Ag Project	George and Teressa Kohn	Conversion to a more efficient irrigation system.	Surface Water	0.040	$0.23	Complete	2016
Marion	Island Grove Irrigation Automation	Island Grove, LLC	Conversion from manual irrigation to fully automated.	Upper Floridan	0.005	$0.21	Complete	2018
Marion	Kenneth MacKay Silver Springs Ag BMP	Kenneth MacKay	Conversion to a more efficient irrigation system.	Upper Floridan	0.002	$0.05	Complete	2019
Lake	Lake Gems Farm Irrigation Conversion	Lake Jem Farms, Inc.	Conversion to a more efficient irrigation system.	Upper Floridan	0.026	$0.26	Complete	2018
Marion	Marion County Enhanced Irrigation Evaluation Program	Marion County	Provision of enhanced irrigation system evaluations to high water use customers.	Upper Floridan	0.019	$0.04	Complete	2018
Marion	Marion County Toilet Rebate Program	Marion County	Provision of financial incentives to customers for installing low-volume toilets.	Upper Floridan	0.043	$0.10	Complete	2016
Marion	North Caledonia Farm Silver Springs AG BMP	North Caledonia Farm, LLC	Construction of a tailwater recovery system to reduce groundwater withdrawals.	Upper Floridan	0.020	$0.60	Complete	2019
Marion	Southern Grace Berries LLC Silver Springs AG BMP	Southern Grace Berries, LLC	Conversion to a more efficient irrigation system.	Upper Floridan	0.009	$0.22	Cancelled	2019
Marion	Ocala WaterSmart Software Pilot Project	City of Ocala	Implementation of a 12-month water conservation pilot project utilizing WaterSmart platform.	Upper Floridan	0.067	$0.15	Complete	2016
Lake	Benchmark Farms II	Benchmark Farms	Convert from hard hose traveler to center pivot on 40 acres of sod.	Upper Floridan	0.008	$0.05	Complete	2019
Lake	Caldwell Citrus Groves Management LLC 2019	Caldwell Citrus	Conversion to a more efficient irrigation system.	Upper Floridan	0.040	$0.22	Complete	2019
Lake	Liner Source II	Liner Source	Install auto flushing filters for container nursery.	Upper Floridan	0.007	$0.01	Complete	2019
Lake	Lake Gems Farm Irrigation Conversion	Lake Jem Farms Inc.	Conversion to a more efficient irrigation system and use of surface water for irrigation.	Upper Floridan	1.297	$0.17	Complete	2020

Table K-2: Central Springs/East Coast Regional Water Supply Plan Water Conservation Project Options for Marion and North Lake Counties

County	Project Name	Implementing Entity	Project Description	Water Source	Water Saved (MGD)	Total Capital ($M)	Status	Anticipated Completion (Year)
Lake	William Davis/Villa City Micro-Jet Replacement	William Davis	Conversion to a more efficient irrigation system.	Upper Floridan	0.002	$0.01	Complete	2020
Lake	Hooper's Landscape and Nursery Irrigation Conversion	Hooper's Landscape and Nursery	Conversion to a more efficient irrigation system and use of surface water for irrigation and installation of a weather station and moisture sensors.	Upper Floridan	0.012	$0.04	Complete	2020
				Total:	**1.61**	**$2.61**		

Table K-3: Central Springs/East Coast Regional Water Supply Plan Water Conservation Project Options for Brevard, Indian River, and Okeechobee Counties

County	Project Name	Implementing Entity	Project Description	Water Source	Water Saved (MGD)	Total Capital ($M)	Status	Anticipated Completion (Year)
Indian River	Lambeth Citrus Micro Jet Irrigation Replacement	Lambeth Citrus LTD.	Installation of a more efficient irrigation system with soil moisture sensors.	Upper Floridan	0.012	$0.21	Complete	2018
Brevard	Kempfer Sod - Agriculture (Ag) Project	Kempfer Sod	Implementation of a more efficient irrigation system.	Surface Water	0.140	$0.38	Complete	2016
Indian River	IMG Enterprises Irrigation Retrofit	IMG Enterprises	Installation of automated irrigation/fertigation system with soil moisture sensors.	Surface Water	0.007	$0.18	Complete	2018
Indian River	Estes Groves Inc. Pump Automation	Estes Citrus, Inc.	Implementation of pump automation.	Surface Water	0.028	$0.14	Complete	2019
Indian River	Estes Citrus Pump Automation and Retrofit	Estes Citrus, Inc.	Installation of a more efficient irrigation system with pump automation on 80 acres.	Surface Water	0.004	$0.08	Complete	2018
Indian River	Bernard A. Eagan Groves	Bernard A. Eagan Groves	Installation of a remote sensing weather station to increase irrigation efficiency.	Upper Floridan	0.248	$0.22	Complete	2019
Indian River	Blue Goose Pump Station Replacement and Automation Project	Blue Goose Growers, LLC	Installation of a more efficient irrigation system with pump upgrades and automations.	Surface Water	0.25	$0.40	Complete	2018
Indian River	Banack Family Partnership	Banack Family Partnership	Upgrade irrigation system to better utilize surface water on 80 acres of citrus.	Surface Water	0.06	$0.28	Complete	2020
Indian River	Bernard A. Eagan Precision Irrigation	Bernard A. Eagan Groves	Install filters, flow meters and weather stations with remote sensing capabilities.	Upper Floridan	0.25	$0.06	Complete	2019
Indian River	Estes Citrus I Pump Automation	Estes Citrus, Inc.	Pump automation on approximately 30 acres of citrus.	Upper Floridan	0.01	$0.05	Complete	2019
Indian River	Estes Citrus II Pump Automation Expansion	Estes Citrus, Inc.	Move automated station 600 feet south to tie into another 80 acres of citrus and pomgamia.	Upper Floridan	0.02	$0.06	Complete	2019
Indian River	Estes Citrus Pump Automation	Estes Citrus, Inc.	Pump automation and soil moisture sensors on approximately 120 acres of citrus.	Upper Floridan	0.04	$0.14	Complete	2019
Indian River	Riverfront Packing	Riverfront Packing	Irrigation retrofit with surface water pump on approximately 314 acres of citrus.	Surface Water	0.05	$0.03	Complete	2020
Indian River	IMG Citrus Inc. Irrigation Retrofit	IMG Citrus Inc.	Installation of a more efficient irrigation system with automations and moisture sensors.	Surface Water	0.03	$0.13	Complete	2020
Indian River	Twenty Twenty Groves Irrigation Retrofit	Twenty Twenty Groves	Installation of a more efficient irrigation system with automations and moisture sensors.	Surface Water	0.07	$0.25	Complete	2020

Table K-3: Central Springs/East Coast Regional Water Supply Plan Water Conservation Project Options for Brevard, Indian River, and Okeechobee Counties

County	Project Name	Implementing Entity	Project Description	Water Source	Water Saved (MGD)	Total Capital ($M)	Status	Anticipated Completion (Year)
Indian River	West River Groves	Riverfront Packing Company	Installation of a weather station, moisture probes, and a polypropylene ground cover	Surface Water	0.15	$0.19	Complete	2020
				Total:	**1.36**	**$2.79**		

APPENDIX L

SJRWMD COST-SHARE PROJECTS

Table L-1: Central Springs/East Coast Regional Water Supply Plan Cost-Share Projects (Fiscal Years 2014 through 2020)

Project Name	State	Cost-Share Program	SJR Primary Benefit	County	Construction Cost	Recipient Cost	SJRWMD Cost-Share Total Amount	Alternative Water Supplied (MGD)[1]	Water Conserved (MGD)	Natural Systems Benefit (MGD)
Deer Park Ranch Drain Tile Irrigation	Completed	2015 Agricultural Cost-Share Program	Water Conservation	Brevard	$232,500.00	$23,250.00	$209,250.00	---	0.079	---
Brevard County Oyster Reef Living Shorelines	Completed	2015 Districtwide Cost-Share Program	Water Quality	Brevard	$310,000.00	$250,000.00	$60,000.00	---	---	---
Melbourne Beach Basin 1 & 3 Stormwater Drainage Improvements	Completed	2015 Districtwide Cost-Share Program	Water Quality	Brevard	$175,000.00	$117,250.00	$57,750.00	---	---	---
Melbourne Lime Drive Stormwater Enhancement	Completed	2015 Districtwide Cost-Share Program	Water Quality	Brevard	$255,211.00	$170,992.00	$84,219.00	---	---	---
Rockledge Eliminate Failing Septic Tanks and Construct Sewer	Completed	2015 Districtwide Cost-Share Program	Water Quality	Brevard	$3,478,809.00	$2,768,124.00	$710,685.00	---	---	---
Titusville Draa Field Stormwater Park	Completed	2015 Districtwide Cost-Share Program	Water Quality	Brevard	$1,500,000.00	$1,134,000.00	$366,000.00	---	---	---
Kempfer Sod - 28604	Completed	2016 Agricultural Cost-Share Program	Water Conservation	Brevard	$383,105.14	$95,776.28	$287,328.86	---	0.177	---
Brevard County S-17 Lift Station	Completed	2016 Districtwide Cost-Share Program	Water Quality	Brevard	$1,033,313.00	$692,320.00	$340,993.00	---	---	---
Brevard County S-9 Lift Station	Completed	2016 Districtwide Cost-Share Program	Water Quality	Brevard	$1,626,388.00	$1,089,680.00	$536,708.00	---	---	---
Brevard County South Patrick Drive Baffle Box	Completed	2016 Districtwide Cost-Share Program	Water Quality	Brevard	$175,000.00	$117,250.00	$57,750.00	---	---	---
Kempfer Sod - 30010	Completed	2017 Agricultural Cost-Share Program	Water Conservation	Brevard	$205,619.10	$29,507.11	$176,111.99	---	0.167	---
Triple J Farms Fertilizer Project	Completed	2018 Agricultural Cost-Share Program	Water Quality	Brevard	$103,450.00	$25,863.00	$77,587.00	---	---	---
Titusville South Street Basin Baffle Boxes	Completed	2018 Districtwide Cost-Share Program	Water Quality	Brevard	$337,920.00	$227,920.00	$110,000.00	---	---	---
Triple J Farms Precision Fertilizer Equipment	Completed	2019 Agricultural Cost-Share Program	Water Quality	Brevard	$355,895.00	$105,895.00	$250,000.00	---	---	---
West Melbourne Sylvan Drive Septic to Sewer Conversion	Completed	2020 Districtwide Cost-Share Program	Water Quality	Brevard	$2,044,330.00	$1,369,701.00	$674,629.00	---	---	---
J. Patrick Schirard Filtration System and Fertigation Injection System	Completed	2020 Agricultural Cost-Share Program	Water Quality	Brevard	$41,378.19	$10,344.19	$31,034.00	---	---	---
Triple J Farms	Completed	2020 Agricultural Cost-Share Program	Water Quality	Brevard	$192,808.58	$48,202.14	$144,606.44	---	---	---
						Totals for Brevard County:	**$4,174,652.29**	**0.000**	**0.423**	**0.000**
Vero Beach Hybrid STEP System Force Main	Completed	2015 Districtwide Cost-Share Program	Water Quality	Indian River	$885,000.00	$592,950.00	$292,050.00	---	---	---
Blue Cypress Grain	Completed	2016 Agricultural Cost-Share Program	Water Quality	Indian River	$171,265.00	$42,816.25	$128,448.75	---	---	---
Fellsmere Joint Venture	Completed	2016 Agricultural Cost-Share Program	Water Conservation	Indian River	$96,429.68	$24,107.42	$72,322.26	---	0.139	---
St Johns River Farm	Completed	2016 Agricultural Cost-Share Program	Water Conservation	Indian River	$710,861.63	$599,021.53	$111,840.10	---	1.630	---

Table L-1: Central Springs/East Coast Regional Water Supply Plan Cost-Share Projects (Fiscal Years 2014 through 2020)

Project Name	State	Cost-Share Program	SJR Primary Benefit	County	Construction Cost	Recipient Cost	SJRWMD Cost-Share Total Amount	Alternative Water Supplied (MGD)[1]	Water Conserved (MGD)	Natural Systems Benefit (MGD)
West Vero Farms LLC	Completed	2016 Agricultural Cost-Share Program	Water Conservation	Indian River	$250,879.86	$62,719.96	$188,159.90	---	0.770	---
Sebastian Treatment Train Nutrient Reduction Project	Completed	2016 Districtwide Cost-Share Program	Water Quality	Indian River	$140,000.00	$93,800.00	$46,200.00	---	---	---
Vero Beach Hybrid Septic Tank Effluent Pumping System Phase 2 Service Lines	Completed	2016 Districtwide Cost-Share Program	Water Supply	Indian River	$615,497.79	$414,748.23	$200,749.56	0.300	---	---
Vero Beach Reverse Osmosis WWTF Expansion	Completed	2016 Districtwide Cost-Share Program	Water Supply	Indian River	$3,024,000.00	$2,124,000.00	$900,000.00	2.600	---	---
West Vero Farms	Completed	2017 Agricultural Cost-Share Program	Water Conservation	Indian River	$310,264.77	$77,566.19	$232,698.58	---	0.416	---
Indian River County North Sebastian Phase 1 Septic to Sewer	Completed	2017 Districtwide Cost-Share Program	Water Quality	Indian River	$1,967,395.00	$1,318,154.65	$649,240.35	---	---	---
Indian River County Osprey Acres Stormwater Park	Completed	2017 Districtwide Cost-Share Program	Water Quality	Indian River	$3,637,123.00	$2,436,873.00	$1,200,250.00	---	---	---
Fellsmere North Regional Lake	Completed	2017 REDI-Innovative Cost-Share	Water Quality	Indian River	$608,415.00	$108,415.00	$500,000.00	---	---	---
Blue Goose Pump Station Replacement and Automation Project	Completed	2018 Agricultural Cost-Share Program	Water Conservation	Indian River	$402,568.00	$152,568.00	$250,000.00	---	0.250	---
Estes Citrus Pump Automation and Retrofit	Completed	2018 Agricultural Cost-Share Program	Water Conservation	Indian River	$84,507.00	$21,127.00	$63,380.00	---	0.004	---
IMG Enterprises Inc	Completed	2018 Agricultural Cost-Share Program	Water Conservation	Indian River	$175,506.99	$69,022.69	$106,484.30	---	0.007	---
Lambeth Citrus Micro Jet Irrigation Replacement	Completed	2018 Agricultural Cost-Share Program	Water Conservation	Indian River	$213,070.44	$53,267.61	$159,802.83	---	0.012	---
Fellsmere South Regional Lake	Completed	2018 REDI-Innovative Cost-Share	Water Quality	Indian River	$787,187.00	$287,187.00	$500,000.00	---	---	---
Banack Family Partnership	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Indian River	$277,387.55	$69,346.55	$208,041.00	---	0.057	---
Bernard A. Eagan Precision Irrigation	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Indian River	$220,856.00	$55,214.00	$165,642.00	---	0.248	---
Estes Citrus I Pump Automation	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Indian River	$45,812.00	$11,453.00	$34,359.00	---	0.006	---
Estes Citrus II Pump Automation Expansion	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Indian River	$57,304.18	$14,326.18	$42,978.00	---	0.015	---
Estes Citrus Pump Automation	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Indian River	$138,265.36	$34,566.34	$103,699.02	---	0.028	---
IMG Enterprises Soil Grid Mapping	Completed	2019 Agricultural Cost-Share Program	Water Quality	Indian River	$49,682.78	$12,420.69	$37,262.09	---	---	---
Riverfront Packing	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Indian River	$323,174.93	$80,793.93	$242,381.00	---	0.049	---
Indian River County West Wabasso Septic Phase 2	Completed	2019 Districtwide Cost-Share Program	Water Quality	Indian River	$2,500,000.00	$1,675,000.00	$825,000.00	---	---	---

Table L-1: Central Springs/East Coast Regional Water Supply Plan Cost-Share Projects (Fiscal Years 2014 through 2020)

Project Name	State	Cost-Share Program	SJR Primary Benefit	County	Construction Cost	Recipient Cost	SJRWMD Cost-Share Total Amount	Alternative Water Supplied (MGD)[1]	Water Conserved (MGD)	Natural Systems Benefit (MGD)
Kashi Church Foundation Septic to Sewer	Completed	2020 Districtwide Cost-Share Program	Water Quality	Indian River	$290,488.00	$194,627.00	$95,861.00	---	---	---
Indian River County Moorhen Marsh LEAPS	Cancelled	2020 Districtwide Cost-Share Program	Water Quality	Indian River	$8,705,000.00	$7,205,000.00	$1,500,000.00	---	---	---
Hammond Groves Inc.	Completed	2020 Agricultural Cost-Share Program	Water Supply	Indian River	$363,491.00	$113,491.00	$250,000.00	0.334	---	---
IMG Citrus Inc.	Completed	2020 Agricultural Cost-Share Program	Water Conservation	Indian River	$175,959.00	$43,990.00	$131,969.00	---	0.034	---
Sun Ag LLC	Completed	2020 Agricultural Cost-Share Program	Water Supply	Indian River	$317,545.77	$79,386.44	$238,159.33	0.285	---	---
Twenty Twenty Groves	Completed	2020 Agricultural Cost-Share Program	Water Conservation	Indian River	$1,058,462.69	$808,462.69	$250,000.00	---	0.070	---
West River Groves	Completed	2020 Agricultural Cost-Share Program	Water Conservation	Indian River	$253,476.45	$63,369.11	$190,107.34	---	0.153	---
Totals for Indian River County:							**$9,917,085.41**	**3.519**	**3.888**	**0.000**
Lake Jem Farms Overhead Irrigation System	Completed	2015 Agricultural Cost-Share Program	Water Conservation	Lake	$187,796.00	$18,780.00	$169,016.00	---	0.030	---
Orange Bend Harvest Tailwater Recovery Pond	Completed	2015 Agricultural Cost-Share Program	Water Supply	Lake	$358,029.42	$215,904.70	$142,124.72	0.079	---	---
Caldwell Citrus Gorgeous Groves Project	Completed	2015 Districtwide Cost-Share Program	Water Supply	Lake	$44,653.46	$29,917.82	$14,735.64	0.109	---	---
Lake Soil and Water Conservation District for Water Savings	Completed	2015 Districtwide Cost-Share Program	Water Conservation	Lake	$396,900.00	$265,923.00	$130,977.00	---	0.013	---
Caldwell Citrus Groves Management LLC	Completed	2016 Agricultural Cost-Share Program	Water Quality	Lake	$99,519.00	$24,879.75	$74,639.25	---	---	---
May and Whitaker Family Partnership Ltd	Completed	2016 Agricultural Cost-Share Program	Water Conservation	Lake	$59,551.60	$14,887.90	$44,663.70	---	0.015	---
Orange Bend Harvesting Ph 1	Completed	2016 Agricultural Cost-Share Program	Water Quality	Lake	$99,519.00	$24,879.75	$74,639.25	---	---	---
Simpson Fruit Company Variable Rate Fertilizer	Completed	2016 Agricultural Cost-Share Program	Water Quality	Lake	$86,378.00	$21,594.50	$64,783.50	---	---	---
Leesburg Heritage Estates Stormwater Park	Completed	2016 Districtwide Cost-Share Program	Water Quality	Lake	$313,000.00	$219,100.00	$93,900.00	---	---	---
Leesburg Lake Griffin Stormwater Improvements	Completed	2016 Districtwide Cost-Share Program	Water Quality	Lake	$402,000.00	$281,400.00	$120,600.00	---	---	---
Umatilla Wastewater Collection System Rehabilitation	Completed	2016 REDI-Innovative Cost-Share	Water Quality	Lake	$775,000.00	$275,000.00	$500,000.00	---	---	---
Benchmark Farms	Completed	2017 Agricultural Cost-Share Program	Water Conservation	Lake	$333,647.56	$83,647.56	$250,000.00	---	0.103	---
Lake Jem Farms	Completed	2017 Agricultural Cost-Share Program	Water Conservation	Lake	$260,191.86	$66,082.97	$194,108.89	---	0.026	---
Liner Source	Completed	2017 Agricultural Cost-Share Program	Water Quality	Lake	$308,125.92	$77,031.48	$231,094.44	---	---	---
Orange Bend Harvesting Application Equip Citrus & Lake Co	Completed	2017 Agricultural Cost-Share Program	Water Quality	Lake	$49,608.00	$12,402.00	$37,206.00	---	---	---

Table L-1: Central Springs/East Coast Regional Water Supply Plan Cost-Share Projects (Fiscal Years 2014 through 2020)

Project Name	State	Cost-Share Program	SJR Primary Benefit	County	Construction Cost	Recipient Cost	SJRWMD Cost-Share Total Amount	Alternative Water Supplied (MGD)[1]	Water Conserved (MGD)	Natural Systems Benefit (MGD)
Sevorg Trading Company Fertilizer Injection System	Completed	2017 Agricultural Cost-Share Program	Water Quality	Lake	$36,600.26	$10,640.26	$25,960.00	---	---	---
Eustis Eastern Wastewater Treatment Plant Expansion	Completed	2017 Districtwide Cost-Share Program	Water Quality	Lake	$8,171,000.00	$5,696,000.00	$2,475,000.00	---	---	---
Umatilla Cassady Street Drainage Project	Completed	2017 Districtwide Cost-Share Program	Flood Protection	Lake	$35,000.00	0	$35,000.00	---	---	---
Umatilla Wastewater Collection Rehabilitation Phase 2	Completed	2017 REDI-Innovative Cost-Share	Water Quality	Lake	$500,000.00	0	$500,000.00	---	---	---
Lake Jem Farms Precision Ag Equipment with Variable Options	Completed	2018 Agricultural Cost-Share Program	Water Conservation	Lake	$140,374.00	$35,093.00	$105,281.00	---	0.047	---
Mount Dora RCW Interconnect with Apopka	Completed	2018 Districtwide Cost-Share Program	Water Supply	Lake	$1,100,000.00	$550,000.00	$550,000.00	3.000	---	---
Umatilla Sanitary Sewer & Lift Station	Completed	2018 REDI-Innovative Cost-Share	Water Quality	Lake	$500,000.00	0	$500,000.00	---	---	---
Benchmark Farms II	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Lake	$51,394.00	$12,848.00	$38,546.00	---	0.008	---
Caldwell Citrus Groves Management LLC 2019	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Lake	$223,821.64	$55,955.41	$167,866.23	---	0.039	---
Caldwell Citrus Groves Management LLC 2019 Fertilizer	Completed	2019 Agricultural Cost-Share Program	Water Quality	Lake	$13,682.23	$3,420.56	$10,261.67	---	---	---
Liner Source II	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Lake	$9,133.00	$2,283.00	$6,850.00	---	0.007	---
Wilson Training Center	Completed	2019 Agricultural Cost-Share Program	Water Quality	Lake	$22,575.00	$5,644.00	$16,931.00	---	---	---
Lake Jem Farms Inc.	Completed	2020 Agricultural Cost-Share Program	Water Conservation	Lake	$230,739.00	$57,684.75	$173,054.25	---	1.297	---
May and Whitaker Family Partnership Ltd.	Completed	2020 Agricultural Cost-Share Program	Water Quality	Lake	$59,923.00	$14,980.75	$44,942.25	---	---	---
Orange Bend Harvesting	Not Started	2020 Agricultural Cost-Share Program	Water Quality	Lake	$50,339.00	$12,584.75	$37,754.25	---	---	---
William Davis/Villa City Micro-Jet Replacement	Completed	2020 Agricultural Cost-Share Program	Water Conservation	Lake	$17,318.52	$4,329.52	$12,989.00	---	0.002	---
Hooper's Landscape and Nursery	Completed	2020 Agricultural Cost-Share Program	Water Conservation	Lake	$50,215.53	$12,553.88	$37,661.65	---	0.012	---
Wilson Training Center Compost Spreader	Completed	2020 Agricultural Cost-Share Program	Water Quality	Lake	$14,000.00	$3,500.00	$10,500.00	---	---	---
						Totals for Lake County:	**$6,891,085.69**	**3.188**	**1.599**	**0.000**
Marion County Silver Springs Shores Reuse to Spruce Creek Golf and Country Club	Completed	2014 Districtwide Cost-Share Program	Water Supply	Marion	$8,223,738.00	$5,031,738.00	$3,192,000.00	1.200	---	---
Marion County Toilet Rebate Program	Completed	2014 Districtwide Cost-Share Program	Water Conservation	Marion	$200,000.00	$110,000.00	$90,000.00	---	0.043	---
Ocala Reuse Main	Completed	2014 Districtwide Cost-Share Program	Water Supply	Marion	$981,000.00	$589,000.00	$392,000.00	0.030	---	---

Table L-1: Central Springs/East Coast Regional Water Supply Plan Cost-Share Projects (Fiscal Years 2014 through 2020)

Project Name	State	Cost-Share Program	SJR Primary Benefit	County	Construction Cost	Recipient Cost	SJRWMD Cost-Share Total Amount	Alternative Water Supplied (MGD)[1]	Water Conserved (MGD)	Natural Systems Benefit (MGD)
Ocala WRF 2 Nutrient Reduction	Completed	2014 Districtwide Cost-Share Program	Water Quality	Marion	$12,144,000.00	$8,304,000.00	$3,840,000.00	1.000	---	---
Black Bear Ranch Microjet Irrigation System	Completed	2015 Agricultural Cost-Share Program	Water Conservation	Marion	$229,589.72	$22,958.97	$206,630.75	---	0.024	---
Colvin Farms - Retrofit for Center Pivots	Completed	2015 Agricultural Cost-Share Program	Water Conservation	Marion	$102,210.00	$10,221.00	$91,989.00	---	0.027	---
Colvin Farms GPS System Computer Controls-Radios for Five Center Pivots	Completed	2015 Agricultural Cost-Share Program	Water Conservation	Marion	$59,890.00	$5,989.00	$53,901.00	---	0.005	---
Colvin Farms Soil Moisture and Rain Sensors	Completed	2015 Agricultural Cost-Share Program	Water Conservation	Marion	$24,422.40	$2,442.24	$21,980.16	---	0.016	---
Colvin Farms-Grid Soil Samples/Mapping and VRS	Completed	2015 Agricultural Cost-Share Program	Water Quality	Marion	$80,395.08	$8,295.08	$72,100.00	---	---	---
Mid State Research Precision Ag and Soil Mapping Equipment	Completed	2015 Agricultural Cost-Share Program	Water Quality	Marion	$44,864.00	$4,486.40	$40,377.60	---	---	---
Mid-State Research Center Pivot and Climate Sensor	Completed	2015 Agricultural Cost-Share Program	Water Conservation	Marion	$48,682.00	$4,868.20	$43,813.80	---	0.008	---
Spring Valley Farms Irrigation Conversion	Completed	2015 Agricultural Cost-Share Program	Water Conservation	Marion	$182,543.65	$18,254.36	$164,289.29	---	0.023	---
Marion County Package Plant Removal-Sleepy Hollow	Completed	2015 Districtwide Cost-Share Program	Water Quality	Marion	$309,000.00	0	$309,000.00	---	---	---
Ocala Septic Tank and Well Elimination Program	Completed	2015 Districtwide Cost-Share Program	Water Quality	Marion	$10,000,000.00	$5,000,000.00	$5,000,000.00	---	---	0.120
Sevorg Trading Company	Completed	2016 Agricultural Cost-Share Program	Water Quality	Marion	$16,770.00	$4,193.00	$12,577.00	---	---	---
Sevorg Trading Company Soil Moisture Sensors	Completed	2017 Agricultural Cost-Share Program	Water Conservation	Marion	$16,703.52	$4,175.88	$12,527.64	---	0.020	---
Marion County CP #77 Retrofit of DRAs 7244 & 7396	Completed	2017 Districtwide Cost-Share Program	Water Quality	Marion	$1,942,967.93	$1,460,467.93	$482,500.00	---	---	---
Marion County Enhanced Irrigation Evaluation Program	Completed	2017 Districtwide Cost-Share Program	Water Conservation	Marion	$36,000.00	$18,000.00	$18,000.00	---	0.019	---
Marion County Silver Springs Shores DRA Retrofit	Completed	2018 Districtwide Cost-Share Program	Water Quality	Marion	$686,461.00	$343,229.00	$343,232.00	---	---	---
Marion County US441 Water Main Interconnect	Completed	2018 Districtwide Cost-Share Program	Natural Systems	Marion	$1,412,992.00	$706,496.00	$706,496.00	---	---	0.120
Ocala Wetland Recharge	Completed	2018 Districtwide Cost-Share Program	Natural Systems	Marion	$8,362,766.00	$4,362,766.00	$4,000,000.00	---	---	4.000
Andrew Frederick Silver Springs Ag BMP	Completed	2018-2022 Silver Springs Agricultural Cost-Share BMP	Water Conservation	Marion	$25,687.00	$6,421.00	$19,266.00	---	0.002	---
James C LeFils Silver Springs Ag BMP Cost Share	In Progress	2018-2022 Silver Springs Agricultural Cost-Share BMP	Water Quality	Marion	$25,550.00	$6,387.00	$19,163.00	---	---	---
Kenneth MacKay Round 3 Silver Springs BMP	Completed	2018-2022 Silver Springs Agricultural Cost-Share BMP	Water Conservation	Marion	$40,574.00	$10,144.00	$30,430.00	---	0.001	---
Kenneth MacKay Silver Springs Ag BMP	Completed	2018-2022 Silver Springs Agricultural Cost-Share BMP	Water Conservation	Marion	$39,981.00	$9,995.25	$29,985.75	---	0.002	---

Table L-1: Central Springs/East Coast Regional Water Supply Plan Cost-Share Projects (Fiscal Years 2014 through 2020)

Project Name	State	Cost-Share Program	SJR Primary Benefit	County	Construction Cost	Recipient Cost	SJRWMD Cost-Share Total Amount	Alternative Water Supplied (MGD)[1]	Water Conserved (MGD)	Natural Systems Benefit (MGD)
Seiler & Son Farms, LLC Silver Springs Ag BMP	Completed	2018-2022 Silver Springs Agricultural Cost-Share BMP	Water Quality	Marion	$35,000.00	$8,750.00	$26,250.00	---	---	---
Marion County SE 108 Water Main Interconnect	Completed	2019 Districtwide Cost-Share Program	Natural Systems	Marion	$1,806,382.00	$903,190.00	$903,192.00	---	---	0.120
Ocala Lower Floridan Aquifer (LFA) Conversion Phase 1	Completed	2019 Districtwide Cost-Share Program	Water Supply	Marion	$2,411,250.00	$1,205,626.00	$1,205,624.00	15.000	---	---
Ocala Southwood Villas & SE Lake Weir Septic Tank Connection	Completed	2019 Districtwide Cost-Share Program	Water Quality	Marion	$2,565,950.25	$1,282,974.25	$1,282,976.00	---	---	---
Ocala Wyomina Drainage Retention Area (DRA) Retrofit	In progress	2019 Districtwide Cost-Share Program	Water Quality	Marion	$648,000.00	$324,000.00	$324,000.00	---	---	---
Ocala LFA Supply Wells Phase 2	In Progress	2020 Districtwide Cost-Share Program	Water Supply	Marion	$480,000.00	$240,000.00	$240,000.00	0.380[1]	---	---
Marion County Silver Springs Shores Regional Capacity Improvements and Package Plant Removal	In Progress	2020 Districtwide Cost-Share Program	Water Quality	Marion	$10,566,783.00	$7,079,745.00	$3,487,038.00	0.010	---	---
London Farm and Cattle LLC	Completed	2020 Agricultural Cost-Share Program	Water Quality	Marion	$59,268.00	$14,817.00	$44,451.00	---	---	---
Wild Goose Farms Sevorg Trading Company Variable Rate Spreader	Completed	2020 Agricultural Cost-Share Program	Water Quality	Marion	$29,997.00	$7,514.25	$22,482.75	---	---	---
						Totals for Marion County:	**$26,728,272.74**	**17.240**	**0.190**	**4.360**
DeLand Reclaimed Water Retrofit, Part B & Wiley Nash WRF Upgrades	Completed	2014 Districtwide Cost-Share Program	Water Supply	Volusia	$3,790,125.00	$2,274,075.00	$1,516,050.00	2.000	---	---
Deltona - Howland Blvd Phase 3 Reclaimed Water	Completed	2014 Districtwide Cost-Share Program	Water Supply	Volusia	$490,000.00	$294,000.00	$196,000.00	2.000	---	---
Deltona Reclaimed Pumping and Storage Expansion Project	Completed	2014 Districtwide Cost-Share Program	Water Supply	Volusia	$1,800,000.00	$1,080,000.00	$720,000.00	0.300	---	---
Sanford & Volusia County Reclaimed Interconnect	Completed	2014 Districtwide Cost-Share Program	Water Supply	Volusia	$2,852,500.00	$1,711,500.00	$1,141,000.00	1.500	---	---
West Volusia Water Suppliers Doyle Road Reclaimed Water Interconnect	Completed	2014 Districtwide Cost-Share Program	Water Supply	Volusia	$6,000,000.00	$3,600,000.00	$2,400,000.00	2.000	---	---
West Volusia Water Suppliers Reclaimed Water Interconnect	Completed	2014 Districtwide Cost-Share Program	Water Supply	Volusia	$5,576,580.00	$3,345,948.00	$2,230,632.00	2.500	---	---
DeLand Reclaimed Water Storage and Recovery	Completed	2015 Districtwide Cost-Share Program	Water Supply	Volusia	$1,025,000.00	$686,750.00	$338,250.00	0.164	---	---
DeLand Wastewater Treatment Plant Upgrades	Completed	2015 Districtwide Cost-Share Program	Water Quality	Volusia	$1,208,000.00	$604,000.00	$604,000.00	---	---	---
Orange City Reclaimed Water Main and Water Meters	Completed	2015 Districtwide Cost-Share Program	Water Supply	Volusia	$490,000.00	$328,300.00	$161,700.00	0.250	---	---
South Daytona Lantern Park Stormwater Pond	Completed	2015 Districtwide Cost-Share Program	Water Quality	Volusia	$241,017.00	$61,481.39	$179,535.61	---	---	---
Volusia County North Peninsula Force Main	Completed	2015 Districtwide Cost-Share Program	Water Quality	Volusia	$1,138,694.45	$648,553.70	$490,140.75	---	---	---

Table L-1: Central Springs/East Coast Regional Water Supply Plan Cost-Share Projects (Fiscal Years 2014 through 2020)

Project Name	State	Cost-Share Program	SJR Primary Benefit	County	Construction Cost	Recipient Cost	SJRWMD Cost-Share Total Amount	Alternative Water Supplied (MGD)[1]	Water Conserved (MGD)	Natural Systems Benefit (MGD)
Donaldsons Ornamentals Inc Irrigation Retrofit	Completed	2016 Agricultural Cost-Share Program	Water Conservation	Volusia	$8,567.84	$2,141.96	$6,425.88	---	0.019	---
James Register Farm Irrigation Retrofit	Completed	2016 Agricultural Cost-Share Program	Water Conservation	Volusia	$54,362.86	$13,590.71	$40,772.15	---	0.023	---
Edgewater East Thomas Street Septic Elimination	Completed	2016 Districtwide Cost-Share Program	Water Quality	Volusia	$876,600.00	$587,322.00	$289,278.00	---	---	---
Orange City Blue Spring Nutrient Reduction	Completed	2016 Districtwide Cost-Share Program	Water Quality	Volusia	$1,624,540.00	$1,088,442.00	$536,098.00	---	---	---
Port Orange White Acres Utilities Improvements	Completed	2016 Districtwide Cost-Share Program	Water Quality	Volusia	$1,935,290.00	$1,296,644.30	$638,645.70	---	---	---
Volusia County Advanced Wastewater Treatment for the Protection of Blue Spring	Completed	2016 Districtwide Cost-Share Program	Water Quality	Volusia	$12,129,500.00	$4,602,000.00	$7,527,500.00	0.220	---	---
Daytona Beach Potable Reuse Demo Testing Facility	Completed	2016 REDI-Innovative Cost-Share	Water Supply	Volusia	$1,898,000.00	$949,000.00	$949,000.00	0.200	---	---
DeLand Bio-sorption Activated Media in RIB	Completed	2016 REDI-Innovative Cost-Share	Water Quality	Volusia	$400,000.00	$200,000.00	$200,000.00	---	---	---
Underhill Ferneries Irrigation Retrofit	Completed	2017 Agricultural Cost-Share Program	Water Conservation	Volusia	$42,560.27	$10,640.07	$31,920.20	---	0.008	---
Daytona Beach 2.5 MG Reuse Tank	Completed	2017 Districtwide Cost-Share Program	Water Supply	Volusia	$4,450,000.00	$2,981,500.00	$1,468,500.00	0.400	---	---
DeLand Reclaimed Water Retrofit Project 1	Completed	2017 Districtwide Cost-Share Program	Water Supply	Volusia	$1,212,000.00	$606,000.00	$606,000.00	0.115	---	---
DeLand Reclaimed Water Retrofit Project 2B	Completed	2017 Districtwide Cost-Share Program	Water Supply	Volusia	$1,518,750.00	$759,375.00	$759,375.00	0.127	---	---
Deltona - WVWS Project 4A Deltona Storage & Treatment Improvements	Completed	2017 Districtwide Cost-Share Program	Water Supply	Volusia	$7,500,000.00	$3,750,000.00	$3,750,000.00	4.000	---	---
New Smyrna Beach Islesboro Stormwater Improvement Project	Completed	2017 Districtwide Cost-Share Program	Flood Protection	Volusia	$7,424,000.00	$4,974,080.00	$2,449,920.00	---	---	---
Ormond Beach South Peninsula Reclaimed Water Expansion	Completed	2017 Districtwide Cost-Share Program	Water Supply	Volusia	$4,409,630.00	$2,954,452.10	$1,455,177.90	0.560	---	---
South Daytona Jones Street Stormwater Improvement	Completed	2017 Districtwide Cost-Share Program	Water Quality	Volusia	$339,810.00	$227,673.00	$112,137.00	---	---	---
Volusia RCW Main Extension for I-4/SR 472 Activity Center	Completed	2017 Districtwide Cost-Share Program	Water Supply	Volusia	$801,820.00	$599,035.00	$202,785.00	0.100	---	---
William Barrie Ferneries Irrigation Retrofit	Completed	2018 Agricultural Cost-Share Program	Water Conservation	Volusia	$16,421.05	$4,105.26	$12,315.79	---	0.001	---
Daytona Beach Bennett Swamp Rehydration & Conservation	Completed	2018 Districtwide Cost-Share Program	Water Quality	Volusia	$5,336,544.00	$3,575,484.00	$1,761,060.00	---	---	6.000
DeLand RCW Main Extension Phase 3 & 3A	Completed	2018 Districtwide Cost-Share Program	Water Supply	Volusia	$1,300,000.00	$650,000.00	$650,000.00	0.140	---	---
DeLand St. Johns River Filtration System Upgrades	Completed	2018 Districtwide Cost-Share Program	Water Supply	Volusia	$1,200,000.00	$600,000.00	$600,000.00	1.500	---	---

Table L-1: Central Springs/East Coast Regional Water Supply Plan Cost-Share Projects (Fiscal Years 2014 through 2020)

Project Name	State	Cost-Share Program	SJR Primary Benefit	County	Construction Cost	Recipient Cost	SJRWMD Cost-Share Total Amount	Alternative Water Supplied (MGD)[1]	Water Conserved (MGD)	Natural Systems Benefit (MGD)
Volusia County Gemini Springs Baffle Box	Completed	2018 Districtwide Cost-Share Program	Water Quality	Volusia	$380,000.00	$190,000.00	$190,000.00	---	---	---
Volusia County Rio Way Drainage Improvements	Completed	2018 Districtwide Cost-Share Program	Water Quality	Volusia	$1,660,789.00	$1,112,729.00	$548,060.00	---	---	---
Alpha Fern Company	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Volusia	$89,130.28	$22,282.28	$66,848.00	---	0.010	---
Hammond Station Growers Irrigation Retrofit	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Volusia	$51,431.69	$12,857.92	$38,573.77	---	0.012	---
Legacy Farms and Ornamentals	Completed	2019 Agricultural Cost-Share Program	Water Conservation	Volusia	$68,465.59	$17,116.40	$51,349.19	---	0.039	---
Daytona Beach Williamson Blvd Reuse	Completed	2019 Districtwide Cost-Share Program	Water Supply	Volusia	$1,564,784.00	$1,048,405.00	$516,379.00	0.650	---	---
Deltona Reclaimed Water (RCW) Retrofits	Completed	2019 Districtwide Cost-Share Program	Water Supply	Volusia	$1,739,121.00	$1,165,211.00	$573,910.00	0.164	---	---
Deltona West Volusia Water Suppliers Aquifer Recharge Ph 1	Completed	2019 Districtwide Cost-Share Program	Natural Systems	Volusia	$1,108,113.00	$742,436.00	$365,677.00	---	---	1.000
Edgewater Reclaimed Water Quality Reservoir	Completed	2019 Districtwide Cost-Share Program	Water Quality	Volusia	$4,296,000.00	$2,878,320.00	$1,417,680.00	---	---	---
Ormond Beach Breakaway Trails RCW	Completed	2019 Districtwide Cost-Share Program	Water Supply	Volusia	$2,400,000.00	$1,608,000.00	$792,000.00	0.348	---	---
South Daytona Septic to Sewer	Completed	2019 Districtwide Cost-Share Program	Water Quality	Volusia	$825,930.00	$621,000.00	$204,930.00	---	---	---
Volusia County Water Conservation	Completed	2019 Districtwide Cost-Share Program	Water Conservation	Volusia	$956,760.00	$478,380.00	$478,380.00	---	0.220	---
DeLand Spring Hill Septic to Sewer Conversion	In Progress	2020 Districtwide Cost-Share Program	Water Quality	Volusia	$2,641,200.00	$1,769,604.00	$871,596.00	---	---	---
South Daytona Windle Lane Stormwater Improvements	Completed	2020 Districtwide Cost-Share Program	Water Quality	Volusia	$530,000.00	$355,100.00	$174,900.00	---	---	---
Volusia County Thornby Park SW Improvements	Completed	2020 Districtwide Cost-Share Program	Water Quality	Volusia	$341,315.00	$266,315.00	$75,000.00	---	---	---
Volusia County Wastewater Infrastructure for Blue Spring	In Progress	2020 Districtwide Cost-Share Program	Water Quality	Volusia	$5,825,000.00	$2,900,000.00	$2,925,000.00	---	---	---
Legacy Farms and Ornamentals Emitter and Pump Installation	Completed	2020 Agricultural Cost-Share Program	Water Conservation	Volusia	$32,580.35	$8,144.35	$24,436.00	---	0.008	---
Select Growers Inc. Nutrient Application Sprayer	Completed	2020 Agricultural Cost-Share Program	Water Quality	Volusia	$38,755.00	$9,673.00	$29,082.00	---	---	---
The Magnolia Company Drain Tile, Retention Pond, Sensors and Water Pump	Completed	2020 Agricultural Cost-Share Program	Water Conservation	Volusia	$152,614.71	$38,152.71	$114,462.00	---	0.020	---
Totals for Volusia County:							**$43,482,481.94**	**19.238**	**0.360**	**7.000**
Totals for the CSEC RWSP Area:							**$91,193,578.07**	**43.185**	**6.460**	**11.360**

[1] Quantities were extracted from cost-share program database and may differ from water supply planning quantities.

[2] AWS quantity for this project was not included in the totals since it is accounted for in the Ocala Lower Floridan Aquifer (LFA) Conversion Phase 1 project.

APPENDIX M

STAKEHOLDER COMMENTS WITH SJRWMD RESPONSES

Table of Contents

M1: Workshop and Stakeholder Comments with Responses

Table M1: Central Springs/East Coast Regional Water Supply Plan Workshop and Stakeholder Comments and Responses

CSEC RWSP Comment Number	Commenter and Associated Entity	Date Received	Manner of Submittal	Comment as Received[1]	CSEC RWSP Response
1	Bill Young, Wright-Pierce	7/26/2021	Public Workshop - DeLand	Asked if conservation rate structures are required for utilities or are they optional.	A rate structure designed to promote water conservation by encouraging the efficient use of water is required. The specific structure is evaluated on a case-by-case basis during the consumptive use permit review process.
2	Marcel Barbier, ABC Organics, LLC	7/28/2021	Public Workshop - Vero Beach	The CSEC RWSP shows agricultural water use declining, but commenter expects it to increase. Commenter recommends that agricultural demand be reviewed with USDA and University of Florida and water recycling should be encouraged.	Projected agricultural acreage and water demand in the CSEC RWSP were taken directly from estimates provided by the Florida Department of Agriculture and Consumer Services (FDACS) in the Florida Statewide Agricultural Irrigation Demand IV report. SJRWMD utilized FDACS agricultural acreage and demand projections pursuant to ss. 373.709(2)(a)1b, *Florida Statutes* . Added statement to plan indicating that SJRWMD is a partner of One Water Florida. See www.floridadep.gov/southwest/sw-permitting/campaign/one-water-florida for additional information.
3	Richard Baker, Pelican Island Audubon	7/28/2021	Public Workshop - Vero Beach	Spoke about Audubon project to eliminate turf, promote native plants, 60 percent of water is used to irrigate lawns, four month fertilizer ban in Indian River County and that Alachua County ban is eight months of the year, and turf swap program. Could an SJRWMD grant be provided to Indian River County to conduct a turf swap program?	Although the SJRWMD Cost-share Program provides competitive funding assistance to projects that meet the district's core missions, including the conservation of water supplies, the district does not consider solely turf swap programs eligible for this funding. Such programs are considered when they include either irrigation system abandonment or irrigation system retrofit for enhanced efficiency. Turf swap programs can be effective when they also reduce irrigation water use.
4	David E. Gunter, Indian River Farms Water Control District	7/28/2021	Public Workshop - Vero Beach	Concerned with reuse water being dumped into residential retention ponds and discharged into the Indian River Lagoon during storm events. Consider its impact on water quality.	Water quality is considered when reclaimed water is utilized to fill ponds for irrigation use. When reclaimed water will be discharged to a permitted wet detention pond, an environmental resource permit (ERP) modification is required prior to the wet detention pond being used as a storage facility for the reclaimed water. During review of the requested ERP modification, the pollutant load due to the addition of the reclaimed water is analyzed, as well as the operation/withdrawal of water from the wet detention pond. If the wet detention pond is used to store the reclaimed water, then the wet detention pond is typically modified to function as a stormwater harvesting pond so as to address the additional pollutant load and the frequency of discharge from the pond.
5	Robert Ulevich, PolyMath Consulting Services	7/28/2021	Public Workshop - Vero Beach	Spoke about the relationship of the CSEC RWSP with the SFWMD's Upper East Coast WSP and the opportunity of exchanging water from SFWMD and SJRWMD. Population and public supply demand projections look flat. Interested in more frequent updates.	SJRWMD coordinated with SFWMD on the CSEC RWSP and the Upper East Coast WSP update. The CSEC RWSP does not include any projects that divert water from SFWMD to SJRWMD or vice versa. If such diversion projects are identified in the future, they will be considered for inclusion in the respective five-year CSEC RWSP update. Population and public supply projections are not flat within the CSEC planning region but rather show an estimated 30 percent increase in population and 29 percent increase in water demand from 2015 to 2040. Water supply plans are updated every five years, however, SJRWMD does publish annual water use surveys, which quantify changes in districtwide water use on a yearly basis. The water use surveys can be found at www.sjrwmd.com/documents/technical-reports/fact-sheets/.
6	Michael Walther, Clean Water Coalition of Indian River County	7/28/2021	Public Workshop - Vero Beach	Spoke about Clean Water Coalition of Indian River County and its support of plans that protect water resources and all water uses and maximize water recycling. Request that District encourage the utilization of recycled water, both agriculture and domestic, consistent with FDEP's One Florida Water Campaign.	Added text to "Reclaimed Water" section to indicate that SJRWMD is a partner of One Water Florida.
7	Robert Adair, Citrus Grower and Florida Research Center	7/28/2021	Public Workshop - Vero Beach	Indicated that the CSEC RWSP was well prepared and will be helpful for Indian River County. Spoke about the number of private agricultural wells in Indian River County that could be included in future water level and water quality analyses and added that growers would be glad to assist. Requested that additional agricultural wells be included in future water quality analyses. Not many opportunities to change to more chloride-tolerant crops that are as productive as citrus.	Thank you for your comments and your offer to assist with groundwater monitoring. The addition of monitored wells in the five-year update of the CSEC RWSP will be considered. Added clarification to plan indicating that crops with a higher chloride tolerance may also be less productive.
8	Egor Emory, Lake County Conservation Council	7/29/2021	Public Workshop - Tavares	Number of water bodies without MFLs, projects that meet shortfall, catastrophic loss of flow at Silver Springs, well beyond detrimental impacts to users including commenter's well, commenter cannot conserve enough water for all of future increases in demand. Project cost of $4 per gallon seems low.	Each year the SJRWMD Governing Board sends FDEP an MFLs Priority List and Schedule for review and approval. The Governing Board recognizes that it is neither realistic nor necessary to set MFLs on all water bodies. SJRWMD is currently developing an optimized network of MFL water bodies (existing and new) that will ensure that 1) limited SJRWMD resources are efficiently utilized and 2) the MFL monitoring network is scientifically sound, efficient, and effective at assessing regional groundwater withdrawal impacts on surface water bodies throughout the district. The CSEC RWSP identifies 229 mgd of projects, which exceeds the increase in demand from 2015 to 2040 under average climate conditions (75 mgd) and under 1-in-10 year drought conditions (155 mgd). The total quantity of 229 mgd is not the shortfall, but the total capacity of projects. Silver Springs is in prevention with regard to its MFLs (currently meeting MFLs but not projected to meet MFLs at planning horizon). The final MFLs determination report for Silver Springs is located at static.sjrwmd.com/sjrwmd/secure/technicalreports/TP/SJ2017-2.pdf. Under the Silver Springs prevention rules, water users permitted by SJRWMD that have a potential to impact Silver Springs cannot exceed their Demonstrated 2024 Demand, without offsetting their impact (see section 3.3.3 of the CUP Applicant's Handbook at www.sjrwmd.com/documents/permitting/#cup). Consumptive uses of water must not cause interference to existing legal uses of water, which includes private well owners. If an interference complaint is received by the district, the SJRWMD regulatory program will investigate and require mitigation by the responsible party if interference is confirmed. Water conservation potential was calculated for each water use category, not solely private well users. Project cost per gallon of water was not calculated within the CSEC RWSP.
9	Richard Dunkel, ETS, Inc.	7/29/2021	Public Workshop - Tavares	Inquired about O&M costs for identified projects.	O&M costs are included in the project appendices.
10	Angel Martin	8/10/2021	Email	More information is needed regarding the Central Springs Model besides the areal extent as shown on figure 16 in the plan. Some information should be provided concerning the model layering. Will model layers be similar to the other groundwater-flow models within the CSEC RWSP area? Assume that the USGS MODFLOW model code will be used and not another code, such as a hybrid model where fractures are accounted for? Also, some discussion of boundary conditions should be included. Will data and information from the three models within the area be used for the Central Springs Model? Why is a new model needed? Is it expected that the Central Springs Model will better simulate the groundwater-flow system and improve predictions to 2040? Will the periods of simulated calibration and projections be similar for the Central Springs Model as for the Northern District, East-Central Florida Transient, and Volusia Models? Some consideration should be given to developing a saltwater-intrusion model, such as SEAWAT, for simulation in areas prone to saltwater intrusion. Also, there should be some discussion on the effects of climate change on 2040 predictions.	The Central Springs Model (CSM) is currently under development and was not utilized in the development of the CSEC RWSP. Specific details regarding the final model will be included in subsequent updates of the CSEC RWSP. It is anticipated that the CSM will replace the Northern District Model version 5 and the Volusia model. Use of the CSM will eliminate certain boundary condition concerns as the domain will span from the Gulf of Mexico to the Atlantic Ocean. As indicated in the discussion on climate change, SJRWMD will be developing a water quality model to evaluate potential water quality impacts from sea-level rise. This tool will also be used to predict water quality changes resulting from increased groundwater withdrawals. SJRWMD is considering SEAWAT or something similar for this new modeling tool. The CSEC RWSP addresses many of the concerns associated with increased surface temperatures due to climate change during the planning horizon by identifying sufficient projects to meet the 1-in-10 year drought demand.
11	Angel Martin	8/10/2021	Email	Besides the predicted changes in water-level maps from 2015 to 2040 for the three available models within the CSEC RWSP area, suggest adding an accompanying table for each predicted change illustration showing the change in fluxes for the model area from 2015 to 2040. The table should show the predicted changes in spring flows, flows across model boundaries, and other flow features.	Thank you for your comments. Your recommendations will be considered in future updates to the CSEC RWSP.
12	Angel Martin	8/10/2021	Email	Appendix C should not be titled as the simulated change in the potentiometric surface within the CSEC flow model domains. What the illustrations are showing in this appendix are not changes in potentiometric surfaces but the differences in model-simulated drawdowns by model cell. No potentiometric surfaces are shown on the illustrations. Better if the counties were labeled on these illustrations along with a base map showing the position in Florida. Some discussion should be added explaining why there are areas with increasing water levels. On figure C-5, there doesn't seem to be any areas on the map with increasing water levels? There should be no areas defined in the Legend that are not present on the illustration. This also applies to figure C-3 and possible other figures.	Thank you for your comments. Maps in Appendix C were modified to include labels for pertinent counties and Florida inset maps for reference.
13	Angel Martin	8/10/2021	Email	Why are there no water-supply development project options (Appendix I) concerning further use of the Lower Floridan aquifer even if the water quality in Lower Floridan may be of lower quality than the Upper Floridan aquifer? What is the difference in the tables concerning the terms reuse and reclaimed? Do these terms mean the same? What is the difference in the Status column between Feasibility and Planning? These terms should be defined.	There are three water supply development project options listed in Appendix J (Water Supply Development Project Options) that will utilize the Lower Floridan aquifer as a source for public supply. In the project tables, reclaimed water is the source of the water while reuse is the project type. Other reclaimed water project types include recharge and alternative water supply (e.g., direct potable reuse). Planning refers to a project concept that may not be completely defined, whereas, feasibility refers to the further exploration of a project concept prior to committing to design.

CSEC RWSP Comment Number	Commenter and Associated Entity	Date Received	Manner of Submittal	Comment as Received[1]	CSEC RWSP Response
14	Angel Martin	8/10/2021	Email	Concerning the water-supply development projects, there should be follow-up and reporting on what each project is actually producing. The capacities are reported but the actual project totals should be reported on an annual basis.	RWSPs are not intended to function as annual reports. The project tables include the information required by Florida Statutes. This information will be updated in the CSEC RWSP five-year update.
15	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	Page 31 of the DRAFT Plan cites: "It is important to note that reductions in water use resulting from current and historical water conservation efforts are reflected in the 2040 water demand projections … in part, because of the effects of existing water conservation." Page 58 of the DRAFT Plan cites: "However, SJRWMD anticipates that a conservation only strategy will not offset the predicted shortfall in fresh groundwater supplies." Page 59 cites: "savings can also be gained by improving agricultural irrigation efficiency". These questionable conservation assumptions warrant the District to both: 1) identify alternative sources to reliably meet future water demands; and provide District funding to support implementation of conservation measures.	Water demand projections are based, in part, on a five-year historic average per capita. Decreases in historic average per capita are often attributed to increased water conservation and reclaimed water provision. By using historic per capita, water use projections assume the same level of conservation and reclaimed water provision in the future. The CSEC RWSP identified between 27.0 and 38.2 mgd of *additional* water conservation potential at 2040. Included in the 2040 water conservation potential is 16.0 mgd of potential conservation by agricultural operations (estimated by Florida Department of Agriculture and Consumer Services in the 2017 Florida Statewide Agricultural Irrigation Demand report), which can be realized by improving agricultural irrigation efficiency. The SJRWMD Cost-share Program provides competitive funding assistance to projects that meet the district's core missions, including conservation of water supplies. Finally, the maximum total water conservation estimate (38.2 mgd) will not meet the projected 75 mgd increase in projected water demand. The CSEC RWSP identifies 191.2 mgd of water resource and water supply development projects as possible solutions to meet the projected increase in demand. The SJRWMD Cost-share Program provides competitive funding assistance to projects that meet the district's core missions, including the conservation of water supplies. Eligible conservation projects must have quantifiable water savings.
16	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	Chapter 3 of the DRAFT Plan indicates a Purpose to "determine the potential for unacceptable impacts to groundwater quality, springs, and surface water bodies". However, assessment of water quality impacts is based upon the sourced water versus the ultimate fate of the water uses. For example: 1) Domestic water uses result in significant discharge of nutrient rich wastewater either via (a) inadequate wastewater treatment plants which discharge effluent to receiving waters, or (b) via septic tanks which directly affect the surficial aquifer. 2) Agricultural water uses commonly result in discharge of waters with excessive nutrients due to fertilizer use or ranch wastes. As part of the Plan, the District should assess water uses and their ultimate "impacts to groundwater quality, springs, and surface water bodies".	The CSEC RWSP meets the requirements of section 373.709, *Florida Statutes*. The Florida Department of Environmental Protection regulates wastewater treatment facilities and implements the regulations applicable to onsite sewage treatment and disposal systems (e.g., septic tanks). The Florida Department of Agriculture and Consumer Services' Best Management Practices program provides agricultural operations with practical measures that can be implemented to improve the quality of water flowing offsite. Participation in the program provides a presumptive of compliance with water quality standards in areas covered by a Basin Management Action Plan (BMAP). Although the regulation of these subject areas falls outside of the jurisdiction of water management districts, water quality is an SJRWMD core mission, and projects that improve water quality (e.g., wastewater treatment plant upgrades, septic-to-sewer projects, and implementation of agricultural BMPs) are eligible for funding assistance through the SJRWMD Cost-share Program.
17	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	Page 39 of the DRAFT Plan cites: "Increases in groundwater withdrawals and sea level rise may accelerate degrading water quality trends over time. SJRWMD is developing additional tools that will predict water quality changes based on various withdrawal and sea level scenarios". These tools should include a hydrologic and water quality model that should be immediately funded and expanded to include all water sources, their uses, and resulting "impacts to groundwater quality, springs, and surface water bodies". An assessment of existing conditions should be developed ASAP based on available water quality and consumptive use data and used to establish initial conditions of the model, which should be calibrated and verified periodically based on future monitoring data obtained via expansion of the District's Work Plan for "hydrologic and water quality data collection, monitoring, and analysis".	As described in the CSEC RWSP, SJRWMD will be developing an appropriate tool that will be utilized to predict future water quality changes resulting from withdrawal increases and sea-level rise. SJRWMD must work within budgetary constraints and obtain Governing Board approval for project funding, which will ultimately guide the project schedule. Based on the water quality analysis results provided in the CSEC RWSP, SJRWMD does not think it is necessary to expedite tool development.
18	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	These plans are not working to preserve the natural systems through conservation and growth management. As a result, water quality will suffer as natural systems are disrupted. Subsection 373.223(4), F.S., authorizes the Districts and FDEP to reserve water from use by permit applicants for the protection of fish and wildlife or public health or safety; the District should exercise this authority.	The four core missions of the water management districts include water supply, water quality, flood protection, and natural systems. The districts do not have the authority to manage growth within the state. The districts do have the authority to reserve water from use by permit applicants for the protection of fish and wildlife or the public health and safety. At this point in time, SJRWMD is not considering the establishment of a water use reservation in the CSEC RWSP area. The Florida Department of Environmental Protection conducts statewide, basin-scale assessments of surface water quality, determines if water quality standards are met, develops Total Maximum Daily Loads (TMDLs) for impaired water bodies, and facilitates development and implementation of Basin Action Management Plans (BMAPs) to meet the restoration goals of the TMDLs. Through FDEP's TMDL and BMAP programs, water quality problems are identified and restorative efforts are undertaken. Water conservation is an important component of a water supply plan. Water supply plans estimate the potential additional water conservation that can occur during the planning horizon. The regulatory program is responsible for ensuring the implementation of sufficient water conservation measures by permit applicants. Since water conservation is so important, SJRWMD will cost-share up to 50 percent on eligible water conservation projects as part of the SJRWMD competitive cost-share program.
19	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	There appears to be a glaring disconnect between goals of District's consumptive use permitting program and the District's Bureau of Water Supply Planning efforts. As an example: Since 2017, the District has developed a Black Creek Water Resource Development Project – now estimated to cost "between $63.8 and $82.9 million." – intended "to increase recharge to the Upper Floridan aquifer" in Clay County where lakes at Keystone Heights have dried-up due to excessive water withdrawals; the need for this project reflects an absence of planning in the District's issuance of CUPs. A similar plan is under discussion within the Suwannee River Water Management District to pipe water from the Suwannee River to replenish the Ichetucknee Springs watershed; again, this project reflects an absence of planning in the District's issuance of CUPs.	SJRWMD utilizes the best available tools at the time to evaluate potential impacts to water resources. As new tools are developed — including groundwater flow models, water quality models, minimum flows and minimum water levels (MFLs), assessment techniques, etc. — revised assessment results can shift, indicating greater or lesser water resource constraints. These shifts are inherent as the understanding of natural systems improve and will be considered in consumptive use permit review and reflected in water supply plan five-year updates and in new or revised MFL prevention/recovery strategies.
20	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	The proposed Plan for our region of the State indicates (a) a water shortfall in groundwater resources is expected by 2040 to meet the anticipated population growth and water demand within the region, and (b) potential measures to meet the demand. The issuance or denial of proposed Consumptive Use Permits (CUPs) should be consistent with the Plan to avoid shortfalls and to preserve/restore water quality of all regional waters – consistent with Subsection 373.223(4), F.S.	The recommended issuance or denial of a proposed consumptive use permit is guided by the permit issuance criteria in subsection 373.223(1), *Florida Statutes* (F.S.). Water supply planning is conducted at a regional scale and, therefore, projected impacts in a water supply plan may or may not exist at the permit level. Although 373.223(4), F.S., states that a district may reserve water "for the protection of fish and wildlife or the public health and safety," it also states that "all presently existing legal uses of water shall be protected so long as such use is not contrary to the public interest."
21	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	As an additional note, the Plan is based on a deficient model using 2014 data and insufficient sampling. There is a need for current information from additional well monitoring sites, spatially spread throughout the region, that monitor nutrients, chloride levels and potentiometric flow.	The East Central Florida Transient Expanded (ECFTX) model is a peer-reviewed groundwater flow model that was developed collaboratively by three water management districts with stakeholder input. The 2014 reference year condition was utilized for the CSEC RWSP base year as this modeling scenario was previously developed and utilized by the Central Florida Water Initiative. Model development details can be found at https://cfwiwater.com/pdfs/ECFTX_Model_Final_Report_Feb_2020.pdf. The ECFTX was not utilized in the CSEC RWSP water quality analysis, which looked at historic water use trends that were projected out to 2040.
22	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	Additional Recommendation: Allocate additional funding for well (a) monitoring and (b) plugging – where warranted "for the protection of fish and wildlife or public health or safety".	The SJRWMD ambient monitoring program operates within an annual budget, which is approved by the Governing Board. The monitoring network is reviewed annually to ensure adherence to district missions and priorities, and monitored stations may be added or removed as necessary based on the data needs of the district. The inclusion of additional permitted wells in the water quality analysis will be considered in the five-year update of the CSEC RWSP. The SJRWMD Abandoned Artesian Well Plugging program also operates within a Governing Board-approved annual budget. In Brevard, Seminole, and Indian River counties, this program is supplemented with county funds and provides 100 percent of the well plugging costs. The Governing Board has recently expressed interest in expanding this program.
23	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	Additional Recommendation: Fund a Mobile Irrigation Lab to support water conservation associated with irrigation on golf courses and at Homeowner's Associations (HOAs).	The SJRWMD Cost-share Program provides competitive funding assistance to projects that meet the district's core missions, including the conservation of water supplies. Funding assistance for mobile irrigation lab (MIL) programs would be considered provided the recommended retrofits are implemented and provide a quantifiable benefit.

CSEC RWSP Comment Number	Commenter and Associated Entity	Date Received	Manner of Submittal	Comment as Received[1]	CSEC RWSP Response
24	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	Additional Recommendation: Only support increased use of reclaimed water where the reclaimed water meets AWT standards for direct discharge into the Lagoon.	While wastewater effluent limits are regulated by the Florida Department of Environmental Protection (FDEP), SJRWMD is concerned about water quality, especially within the Indian River Lagoon, and will work with FDEP to identify areas where nutrient-enriched reuse water is causing water quality problems which could be lessened by a reduction in effluent concentrations.
25	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	Additional Recommendation: Establish a small grants program to pay homeowners to remove sod and replace with native vegetation.	Although the SJRWMD Cost-share Program provides competitive funding assistance to projects that meet the district's core missions, including the conservation of water supplies, the district does not consider solely turf swap programs eligible for this funding. Such programs are considered when they include either irrigation system abandonment or irrigation system retrofit for enhanced efficiency. Turf swap programs can be effective when they also reduce irrigation water use.
26	Michael Walther, Clean Water Coalition of Indian River County	8/16/2021	Email	Additional Recommendation: Support increased matching State funding to local governments to identify and rectify all water sources contributing nutrients and pollutants into the Indian River Lagoon.	The SJRWMD Cost-share Program provides competitive funding assistance to projects that meet the district's core missions, including water quality. The amount of funding assistance is determined annually by the SJRWMD Governing Board.
27	Sarah M. Whitaker, SMW GeoSciences, Inc.	8/24/2021 8/27/2021	Email	Request to include four water supply development projects in the CSEC RWSP for the City of Orange City.	The four projects were added to Appendix J. Due to the timing of project submittal, the project totals documented throughout the CSEC RWSP were not adjusted to reflect these additional projects.
28	David E. Gunter, Indian River Soil and Water Conservation District	8/26/2021	Email	The RWSP estimates for the potential availability of groundwater are not current. The agricultural projections in the CSEC RWSP are taken from the Florida Department of Agriculture and Consumer Services' (FDACS) Florida Statewide Agricultural Irrigation Demand (FSAID) Geodatabase FSAID IV (2017) while the newest FSAID VII (2020) was published June 30, 2020. This makes the statement in the executive summary that the RWSP "is based on the best data available" dubious.	The water demand projections for the CSEC RWSP were finalized in March 2018 and incorporated into the three groundwater models in order to perform the three water resource assessments required for this planning region. At the time the CSEC RWSP water demand projections were being developed, FSAID IV (2017) was the current dataset available from FDACS. A comparison of Indian River County 2040 projected agricultural demand based on FSAID IV (2017) versus FSAID VII (2020) shows a projected decrease in 2040 demand of over 10 mgd. Use of the higher number from FSAID IV, which was the dataset available at the time of CSEC projected demand development, resulted in a more conservative analysis of impacts to water resources and therefore was more protective of the resource. Revised agricultural acreage and water demand projections will be developed for the five-year update of the CSEC RWSP using the current data available from FDACS at that time. Corrected text in the Executive Summary to reflect that CSEC RWSP is based on the best data available "at the time of plan development."
29	David E. Gunter, Indian River Soil and Water Conservation District	8/26/2021	Email	Groundwater withdrawals from the Upper Florida aquifer have been reported to produce adverse impacts to CUP users east of I-95 in Indian River County. These adverse impacts include: a) diminished flow e.g. potentiometric drawdown. This is a critical concern in that both agricultural and domestic self-supply wells are dependent on artesian flow to supply surface pumps. Without surface flow, both domestic supply and agricultural CUP users are immediately out of water. In light of the three actively pumped (with submersible pumps) well fields in Indian River County, namely the following: i) Indian River County's North and South well fields permitted to withdraw a combined total of 12.84 mgd and ii) FPL's Okeechobee Clean Energy Center permitted in 2017 to withdraw 9 mgd - the decision not to perform a modeling scenario for the Brevard, Indian River, Okeechobee sub-region and to use the older 2014 reference condition is in our estimate a mistake because of the significant increase in withdrawals occurring more that 3-5 years later than the 2014 reference condition.	Consumptive uses of water must not cause interference (i.e., a decrease in withdrawal capability) to existing legal uses of water, which includes other consumptive uses (e.g., agricultural and domestic wells), pursuant to section 373.223, *Florida Statutes* . If an interference complaint is received by the district, regulatory staff will investigate and require mitigation by the responsible party (or parties) if interference is confirmed. As mentioned in Appendix A of the CSEC RWSP, SJRWMD has received one interference complaint in Indian River County related to loss of artesian flow, which has since been mitigated. For the Brevard, Indian River, and Okeechobee sub-region, groundwater modeling was performed using the East Central Florida Transient Expanded model, which predicted the change in surficial aquifer and Upper Floridan aquifer (UFA) water levels from the 2014 reference year to 2040. A "project" scenario (i.e., change in UFA water levels from 2014 to 2040 with water resource and water supply development projects) was not modeled since the projected increase in demand could be met with the low estimates for water conservation potential and additional reclaimed water provision. SJRWMD estimates of annual water use in Indian River County did not show a significant increase in withdrawals three to five years after the 2014 reference condition, mainly due to decreases in agricultural irrigation.
30	David E. Gunter, Indian River Soil and Water Conservation District	8/26/2021	Email	Groundwater withdrawals from the Upper Florida aquifer have been reported to produce adverse impacts to CUP users east of I-95 in Indian River County. These adverse impacts include: b) Water quality as increasing salinity especially chlorides are increasing as reported to the SWCD by growers. In view of this, we suggest that both the number and spatial distribution of water well sampling sites be increased in Indian River County (only 5 DOWN wells in IRC, Fig. A3-12) and location east of I-95. Similarly, the number of agricultural wells should be increased and spatially diverse (e.g. only one farming operation in IRC, page A3-24). The IRSWCD would be willing to assist the District in locating agricultural operations that would provide access to such wells.	SJRWMD is aware of anecdotal instances of water quality changes in agricultural wells in Indian River County, however, the water quality analysis within the CSEC RWSP did not show any increasing chloride trends in the Indian River County agricultural wells that were included in the analysis. SJRWMD will consider adding additional wells to the water quality analysis in the five-year update of the CSEC RWSP. The SJRWMD Regulatory Program will continue to evaluate the potential for harmful saltwater intrusion and upconing during CUP application review to ensure all permitting criteria are met prior to permit issuance. If unforeseen water quality impacts do occur subsequent to permit issuance, SJRWMD will require mitigation by the responsible permittee(s).
31	David E. Gunter, Indian River Soil and Water Conservation District	8/26/2021	Email	Surficial water system is being degraded by leaking artesian well casings that are 50-70 years old. What is missing in the CSEC RWSP is: a) a calculated estimate as to the number of leaking artesian wells and the associated water losses due to leaking well heads and casings. b) adequate funding for the Abandoned Artesian Well Plugging Program. c) a funded well logging program for CUP wells to determine the condition of the well and consideration for possible cost share funding to repair leaking wells.	The SJRWMD Abandoned Artesian Well Plugging program (Program) assists well owners by properly plugging wells that can adversely impact the quantity or quality of groundwater, including wells with leaky casings. The Program operates within an annual budget, which is approved by the Governing Board. In Brevard, Seminole, and Indian River counties, the Program is funded jointly by SJRWMD and the county and provides 100 percent of the plugging costs. Currently, SJRWMD depends upon well owners or other members of the public to report deteriorating wells for consideration for this Program. The Governing Board has recently expressed interest in expanding this Program.
32	David E. Gunter, Indian River Soil and Water Conservation District	8/26/2021	Email	Landscape irrigation using public water supply (PWS) sourced water needs significant more funding to convert to a pressurized reclaimed water source. Furthermore, reuse water should not be supplied to on site retention ponds for storm water retention that are not equipped to handle the associated nutrient loads.	The SJRWMD Cost-share Program provides competitive funding assistance to projects that meet the district's core missions, including water conservation and conversion to alternative water supplies. Historically funded projects have included expansion of reclaimed water provision and irrigation system retrofits. When reclaimed water will be discharged to a permitted wet detention pond for irrigation use, an environmental resource permit (ERP) modification is required prior to the wet detention pond being used as a storage facility for the reclaimed water. During review of the requested ERP modification, the pollutant load due to the addition of the reclaimed water is analyzed, as well as the operation/withdrawal of water from the wet detention pond. If the wet detention pond is used to store the reclaimed water, then the wet detention pond is typically modified to function as a stormwater harvesting pond so as to address the additional pollutant load and the frequency of discharge from the pond.
33	David E. Gunter, Indian River Soil and Water Conservation District	8/26/2021	Email	And our final and most important comment is that the IRSWCD would like to invite the appropriate representatives from the District to attend our meetings to discuss and assess future water supply and management strategies. We are eager to work together with the District to participate in collaborative water supply planning and to develop processes to assess the long-term effectiveness of water management strategies.	Thank you for your comment. SJRWMD staff look forward to continuing to work with the IRCSWD regarding future water supply and management strategies.
34	Eric A. Smith, City of Daytona Beach	8/27/2021	Email	Pages A1-29 thru A1-30 of Appendix A (Supplemental Regional Water Supply Plan Components for the CSEC RWSP Sub-Regions) makes note of future surface water and groundwater modeling for Indian Lake. The write-up discusses additional modeling being done by 2023 to potentially show benefits to Indian Lake from the Tiger Bay Weir and Bennett Swamp rehydration project. Who is doing/paying for the anticipated 2023 water model?	SJRWMD is funding and managing this modeling effort.
35	Eric A. Smith, City of Daytona Beach	8/27/2021	Email	The population projections presented in Appendix B (Population and Water Demand Projections) are low for Daytona Beach based on our data. The projections appear to be based on the City limits rather than the service area, which includes unincorporated Volusia County and portions of Daytona Beach Shores. Additionally, South Daytona is a wholesale customer to Daytona Beach. As such, that population needs to be included in the calculation. As a condition of a previous version of CUP #8834, the City of Daytona Beach has provided Annual Water reports to the District for years 2015-2019, which included population numbers. The report for 2020 was not submitted, as the City obtained a new CUP which no longer required the information to be submitted. However, the population for 2020 was estimated at 93,823 which already exceeds the 2040 population projection of 92,559 outlined in Appendix B.	All draft public supply projections were sent to respective Volusia County utilities for review in October 2017. The water demand projections for the CSEC RWSP were finalized in March 2018 and incorporated into the three groundwater models in order to perform the three water resource assessments required for this planning region. SJRWMD recognizes that projections do fluctuate over time as a result of service area expansions and recent growth rates, which is why utilities are not limited to population or demand projections identified in a water supply plan. During September 2018 through March 2020, the city submitted new data to support increased projected population and water demand. This data was utilized to justify the city's requested allocation in its 2020 CUP renewal. The current CUP authorizes 16.03 mgd associated with a population of 111,846 at 2040. For the five-year update of the CSEC RWSP, population and public supply water demand projections will again be calculated based on the most current data available and will be forwarded to utilities for review and comment prior to finalization for inclusion in the plan update.

CSEC RWSP Comment Number	Commenter and Associated Entity	Date Received	Manner of Submittal	Comment as Received[1]	CSEC RWSP Response
36	Eric A. Smith, City of Daytona Beach	8/27/2021	Email	Pages 28 and 29 of Appendix G (SJRWMD Approved Prevention and Recovery Strategies Within the CSEC RWSP Area) outline the Reclaimed Water Expansion in Eastern Volusia County project. Within that project description, it is noted that the City of Daytona Beach will "likely" move forward with a full-scale DPR facility. The City has <u>NO INTENTION</u> of implementing a full-scale direct potable reuse project in the foreseeable future. If this project is not done, how will the Reclaimed Water Expansion in Eastern Volusia County project, valued at $45.2M, be affected?	The referenced pages 28 and 29 of Appendix G are from the *2018 Five-Year Strategy Assessment for the Implementation of Minimum Flows and Levels for Volusia Blue Spring and Big, Daugharty, Helen, Hires, Indian, and Three Island Lakes.* The draft version of this document was sent to the City of Daytona Beach for review and comment in February 2019. The next five-year strategy update will be developed in 2023 at which time the language indicating the city's interest in moving forward with a full-scale DPR facility will be removed. The DPR facility was not included in the Reclaimed Water Expansion in Eastern Volusia County project, but rather mentioned as a possible alternate use of a portion of the reclaimed water available at 2040. Therefore, if a full-scale DPR project is not implemented, the Reclaimed Water Expansion in Eastern Volusia County project will not be affected.
37	Matt Jordon, Indian River County Department of Utility Services	8/30/2021	Email	**IRCDUS Water Need Demand Projections** - In Table B-5 of Appendix B of the CSEC, IRCDUS' water demand projections for the year 2040 are listed to be 14.76 mgd. We believe this number to be too low, largely because it does not reflect projected expansion in IRCDUS' service area over time to accommodate future development in areas so designated under Indian River County's comprehensive plan. Here is a map showing IRCDUS' existing and projected service area through the year 2040: The annualized population growth rate for Indian River County from the years 1999 through 2018 is 1.97%. We believe this reflects a good estimate of a long-term population growth rate for the County. We also believe that, based on historical IRCDUS' usage rates, and current and projected IRCDUS water conservation measures, a gross per capita usage rate of 101 gpd is appropriate. If this 2% per year growth rate is applied to the BEBR Indian River County population located within the above referenced expanded service area starting in the year 2018 and extended through the year 2040, the resulting projected IRCDUS water demand is 19.01 mgd. This IRCDUS projected 2040 water demand of 19.01 mgd is a more accurate estimation of IRCDUS' water supply needs through the CSEC's planning horizon. IRCDUS requests that the water demand information for IRCDUS shown on Table B-5 of Appendix B be revised accordingly.	Table B-5 in Appendix A shows 2040 projected water demand of 13.92 mgd for Indian River County Department of Utility Services (IRCDUS). The referenced 14.76 mgd demand is actually associated with a 1-in-10 year drought at 2040. All draft public supply projections were sent to respective utilities for review in December 2017. The water demand projections for the CSEC RWSP were finalized in March 2018 and incorporated into the three groundwater models in order to perform the three water resource assessments required for the this planning region. SJRWMD recognizes that projections do fluctuate over time as a result of service area expansions and recent growth rates, which is why utilities are not limited to demand projections identified in a water supply plan. In November 2019, SJRWMD and IRCDUS tentatively agreed to a 2040 demonstrated demand of 19.01 mgd during a pre-application discussion related to an upcoming CUP renewal. This updated demand was based on the most current information available to both parties. For the five-year update of the CSEC RWSP, population and public supply water demand projections will be again be calculated based on the most current data available and will be forwarded to utilities for review and comment prior to finalization for inclusion in the plan update.
38	Matt Jordon, Indian River County Department of Utility Services	8/30/2021	Email	**WRCA Justification** – On Appendix A, page A3-31, the following statement is presented: *Although SJRWMD has only received one complaint regarding the loss of artesian flow in this region, which has been mitigated by the responsible party, increased water demand resulting from growth in northern Indian River County has the potential to impact additional wells.* The CSEC presents no data or information to support the latter portion of this statement, in that increased water demand resulting from growth in northern Indian River County has the potential to impact additional wells. In other words, the CSEC has no data or information indicating how much increased demand must occur before wells are impacted, no data or information on the location of these potentially impacted additional wells, and no groundwater modeling or other information to support this statement. It is also unclear as to why this statement is relevant to determining the CSEC is a Water Resource Caution Area (WRCA). A WRCA is a geographic area the District identifies as having existing water resource problems, or an area in which water resource problems are projected to develop during the next twenty years. (See rule 62-40.210(43), F.A.C.) Moreover, the State Water Resource Implementation Rule provides the following: *Districtwide water supply assessments shall be developed in accordance with the provisions of Section 373.036(2)(b)4., F.S. The assessment shall determine whether sources of water are adequate to supply water for all existing and projected reasonable-beneficial uses and to sustain the water resources and related natural systems. If it is determined that sources of water are not adequate, the affected area shall have a regional water supply plan developed in accordance with Section 373.0361, F.S. and Rule 62-40.531, F.A.C. The determinations shall be updated at least every 5 years. Within one year of the determination that a regional water supply plan is needed for a water supply planning region, the region shall also be designated as a water resource caution area. Domestic wastewater treatment facilities which are located within, or serve a population located within, or discharge within water resource caution areas shall be subject to the reuse requirements of Section 403.064, F.S. (See rule 62-40.520(2), F.A.C.)* As can be seen from this language, the decision of whether to declare an area a WRCA turns on a comparison of the needs of existing and projected reasonable-beneficial uses and the ability of those uses to be met while sustaining the water resources and related natural systems. Whether increased water demand resulting from growth could potentially impact unknown wells is not a part of the WRCA determination analysis according to this DEP rule. IRCDUS does not object to the declaration of the CSEC being a WRCA based on a proper analysis pursuant to rule 62-40.520(3), F.A.C. If the above referenced statement must remain in the CSEC, IRCDUS would suggest revising it to read as follows: *Since the adoption of the District-wide 2005 Regional Water Supply Plan, the SJRWMD has only received one complaint regarding the loss of artesian flow in this region, which has been mitigated by the responsible party. As is the case with any groundwater source anywhere within the SJRWMD shared by multiple users, an increase in withdrawals by one user may affect another. In such case, the SJRWMD's consumptive use permitting requirements to protect against interference with existing legal users would address this issue.*	Reduction or loss of artesian flow in free-flowing UFA wells has been and continues to be a concern for agricultural uses in Indian River County and is a concern documented by the SFWMD in neighboring St. Lucie County. Inclusion of these concerns in the CSEC RWSP was meant to only support the WRCA designation, as they were not quantified in the water resource assessment. The text within the CSEC RWSP was clarified to indicate that the reduction or loss of artesian flow is an additional water resource concern in this sub-region that is separate from the designation of the WRCA. The Brevard, Indian River, and Okeechobee sub-region was proposed for inclusion in the CSEC WRCA based on water quality constraints identified in the water resource assessment.

[1]Comments received in writing have been stated as provided by the commenter. Comments received orally in the public workshops may be paraphrased.

M2: Written Public Comment

From:	Angel Martin
To:	Central Springs/East Coast Regional WSP Comments
Subject:	Comments--Central Springs/East Coast Regional Water Supply Plan
Date:	Tuesday, August 10, 2021 8:05:19 PM

Below are comments concerning the draft Central Springs/East Coast Regional Water Supply Plan. Please contact me if any additional information or clarifications are needed concerning the subject comments. Thank you for the opportunity to comment on the water-supply plan.

1. More information is needed regarding the Central Springs Model besides the areal extent as shown on figure 16 in the plan. Some information should be provided concerning the model layering. Will model layers be similar to the other groundwater-flow models within the CSEC RWSP area? Assume that the USGS MODFLOW model code will be used and not another code, such as a hybrid model where fractures are accounted for? Also, some discussion of boundary conditions should be included. Will data and information from the three models within the area be used for the Central Springs Model? Why is a new model needed? Is it expected that the Central Springs Model will better simulate the groundwater-flow system and improve predictions to 2040? Will the periods of simulated calibration and projections be similar for the Central Springs Model as for the Northern District, East-Central Florida Transient, and Volusia Models? Some consideration should be given to developing a saltwater-intrusion model, such as SEAWAT, for simulation in areas prone to saltwater intrusion. Also, there should be some discussion on the effects of climate change on 2040 predictions.
2. Besides the predicted changes in water-level maps from 2015 to 2040 for the three available models within the CSEC RWSP area, suggest adding an accompanying table for each predicted change illustration showing the change in fluxes for the model area from 2015 to 2040. The table should show the predicted changes in spring flows, flows across model boundaries, and other flow features.
3. Appendix C should not be titled as the simulated change in the potentiometric surface within the CSEC flow model domains. What the illustrations are showing in this appendix are not changes in potentiometric surfaces but the differences in model-simulated drawdowns by model cell. No potentiometric surfaces are shown on the illustrations. Better if the counties were labeled on these illustrations along with a base map showing the position in Florida. Some discussion should be added explaining why there are areas with increasing water levels. On figure C-5, there doesn't seem to be any areas on the map with increasing water levels? There should be no areas defined in the Legend that are not present on the illustration. This also applies to figure C-3 and possible other figures.
4. Why are there no water-supply development project options (Appendix I) concerning further use of the Lower Floridan aquifer even if the water quality in Lower Floridan may be of lower quality than the Upper Floridan aquifer? What is the difference in the tables concerning the terms reuse and reclaimed? Do these terms mean the same? What is the difference in the Status column between Feasibility and Planning? These terms should be defined.
5. Concerning the water-supply development projects, there should be follow-up and reporting on what each project is actually producing. The capacities ae reported but the actual project totals should be reported on an annual basis.

____

Angel Martin
813-767-6944

Clean Water Coalition
CWC
of Indian River County, Inc.

August 16, 2021

Douglas Burnett, Chairman
Governing Board
St. Johns River Water Management District
P.O. Box 1429
Palatka, FL 32178-1429
also via email to: csecrwspocomments@sjrwmd.com

Re: Central Springs/East Coast Regional Water Supply Plan (2020-2040)

Dear Honorable Members of the District Governing Board:

This letter is to provide additional comments regarding the referenced DRAFT Water Supply Plan. Please note the following:

Overview: As identified at the District's July 28th Public Workshop in Indian River County, the Clean Water Coalition:

- Supports the District's development of a comprehensive regional water resources plan that addresses and restores the health of all water resources – including groundwater, springs, surface water bodies, and wetlands – to support all water uses in the public interest.
- Encourages the District's Plan to maximize recycling of waters (domestic and agricultural) – consistent and in close collaboration with FDEP's *One Water Florida Campaign* – to (a) "inform Floridians on the use of recycled water in the state to meet the growing demand for water", and (b) implement effective measures to meet this "growing demand".

Demand Assumptions: x
Page 31 of the DRAFT Plan cites: "It is important to note that reductions in water use resulting from current and historical water conservation efforts are reflected in the 2040 water demand projections …in part, because of the effects of existing water conservation." Page 58 of the DRAFT Plan cites: "However, SJRWMD anticipates that a conservation only strategy will not offset the predicted shortfall in fresh groundwater supplies." Page 59 Cites: "savings can also be gained by improving agricultural irrigation efficiency". These questionable conservation assumptions warrant the District to both:

- identify alternative sources to reliably meet future water demands; and
- provide District funding to support implementation of conservation measures.

Scope: Chapter 3 of the DRAFT Plan indicates a Purpose to "determine the potential for unacceptable impacts to groundwater quality, springs, and surface water bodies". However, assessment of water quality impacts is based upon the sourced water versus the ultimate fate of the water uses. For example:

- Domestic water uses result in significant discharge of nutrient rich wastewater either via (a) inadequate wastewater treatment plants which discharge effluent to receiving waters, or (b) via septic tanks which directly affect the surficial aquifer.
- Agricultural water uses commonly result in discharge of waters with excessive nutrients due to fertilizer use or ranch wastes.

As part of the Plan, the District should assess water uses and their ultimate "impacts to groundwater quality, springs, and surface water bodies".

Model: Page 39 of the DRAFT Plan cites: “Increases in groundwater withdrawals and sea level rise may accelerate degrading water quality trends over time. SJRWMD is developing additional tools that will predict water quality changes based on various withdrawal and sea level scenarios”. These tools should include a hydrologic and water quality model that should be immediately funded and expanded to include all water sources, their uses, and resulting “impacts to groundwater quality, springs, and surface water bodies”. An assessment of existing conditions should be developed ASAP based on available water quality and consumptive use data and used to establish initial conditions of the model, which should be calibrated and verified periodically based on future monitoring data obtained via expansion of the District’s Work Plan for “hydrologic and water quality data collection, monitoring, and analysis”.

Plan Limitations: These plans are not working to preserve the natural systems through conservation and growth management. As a result, water quality will suffer as natural systems are disrupted. Subsection 373.223(4), F.S., authorizes the Districts and FDEP to reserve water from use by permit applicants for the protection of fish and wildlife or public health or safety; the District should exercise this authority.

There appears to be a glaring disconnect between goals of District’s consumptive use permitting program and the District’s Bureau of Water Supply Planning efforts. As an example: Since 2017, the District has developed a *Black Creek Water Resource Development Project* – now estimated to cost “between $63.8 and $82.9 million.” – intended “to increase recharge to the Upper Floridan aquifer” in Clay County where lakes at Keystone Heights have dried-up due to excessive water withdrawals; the need for this project reflects an absence of planning in the District’s issuance of CUPs. A similar plan is under discussion within the Suwannee River Water Management District to pipe water from the Suwannee River to replenish the Ichetucknee Springs watershed; again, this project reflects an absence of planning in the District’s issuance of CUPs.

The proposed Plan for our region of the State indicates (a) a water shortfall in groundwater resources is expected by 2040 to meet the anticipated population growth and water demand within the region, and (b) potential measures to meet the demand. The issuance or denial of proposed Consumptive Use Permits (CUPs) should be consistent with the Plan to avoid shortfalls and to preserve/restore water quality of all regional waters – consistent with Subsection 373.223(4), F.S.

As an additional note, the Plan is based on a deficient model using 2014 data and insufficient sampling. There is a need for current information from additional well monitoring sites, spatially spread throughout the region, that monitor nutrients, chloride levels and potentiometric flow.

Additional Recommendations: The CWC recommends that the District:

- Allocate additional funding for well (a) monitoring and (b) plugging – where warranted “for the protection of fish and wildlife or public health or safety”.
- Fund a Mobile Irrigation Lab to support water conservation associated with irrigation on golf courses and at Homeowner’s Associations (HOAs)
- Only support increased use of reclaimed water where the reclaimed water meets AWT standards for direct discharge into the Lagoon.
- Establish a small grants program to pay homeowner’s to remove sod and replace with native vegetation.
- Support increased matching State funding to local governments to identify and rectify all water sources contributing nutrients and pollutants into the Indian River Lagoon.

Thank you for your ongoing and future efforts to restore our Indian River County waters!

If you have any questions regarding this letter, please contact me.

Michael Walther

Michael Walther
772-559-2493
Clean Water Coalition of Indian River County

cc: SJRWMD Governing Board – via Ann B. Shortelle, Ph.D.
Senator Debbie Mayfield
Representative Erin Grall
Indian River County Commission – via Jason Brown
IRC Soil and Water Conservation District - via Linda Caggiano
CWC Board

From:	Sarah Whitaker
To:	Joy Kokjohn
Cc:	Migdalia Hernandez
Subject:	FW: Link to CSEC RWSP Appendix J - Orange City"s proposed projects
Date:	Tuesday, August 24, 2021 4:25:03 PM
Attachments:	image001.png image002.png Draft CSEC RWSP Proposed Water Supply Development Project City of Orange City.xlsx

Good afternoon Joy,

Please see the attached projects for consideration in the updated CSEC RWSP. May we set up a time to review and finalize them for inclusion in the RWSP to be approved?

I am available anytime tomorrow morning.

Thank you.

Sarah M. Whitaker, P.G.
President

SMW GeoSciences, Inc.
1028 W. New Hampshire Street
Orlando, FL 32804

P 407.426.2836 M 407.234.4675
swhitaker@smwgeosciences.com
www.smwgeosciences.com
http://www.linkedin.com/in/smwhitaker

From: Joy Kokjohn <JKokjohn@sjrwmd.com>
Sent: Monday, August 23, 2021 9:18 AM
To: Sarah Whitaker <swhitaker@smwgeosciences.com>
Subject: Link to CSEC RWSP Appendix J

https://www.sjrwmd.com/static/plans/csec/Appendix-J_071221_ada.pdf

Let me know if you need anything else. -Joy

Joy Kokjohn
Regional Water Supply Planning Coordinator
Bureau of Water Supply Planning
St. Johns River Water Management District
P.O. Box 1429 ● Palatka, FL 32178-1429
Office: (386) 329-4223
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Connect with us: Newsletter, Facebook, Twitter, Instagram, YouTube, Pinterest

www.sjrwmd.com/ePermit

We value your opinion. Please take a few minutes to share your comments on the service you received from the District by clicking this link

Notices

• Emails to and from the St. Johns River Water Management District are archived and, unless exempt or confidential by law, are subject to being made available to the public upon request. Users should not have an expectation of confidentiality or privacy.

• Individuals lobbying the District must be registered as lobbyists (§112.3261, Florida Statutes). Details, applicability and the registration form are available at http://www.sjrwmd.com/lobbyist/

County	Project Name	Implementing Entit	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Status	Antipated Completion (Year)
Volusia	Kentucky Road Reclaimed Expansion	City of Orange City	Ground Storage Tank for Alternative Water Sources	AWS	Surface (Deltona/DeLand) and Reclaimed	1 MGD	$2		Planning	2026
Volusia	City of Orange City Brackish Water Project	City of Orange City	Construction of a Lower Floridan aquifer well to develop a brackish water source , raw water transmission line, and treatment	AWS	Lower Floridan aquifer	2 MGD	$30		Planning	2027
Volusia	City of Orange City Well field Optimization	City of Orange City	Implementation of stratiegies to relocate withdrawls in the Upper Floridan aquifer further from Blue Springs	Upper Floridan aquifer	Upper Floridan aquifer	3 MGD	$6		Planning	2027

From:	Joy Kokjohn
To:	Sarah Whitaker
Cc:	Migdalia Hernandez
Subject:	RE: Link to CSEC RWSP Appendix J - Orange City''s proposed projects
Date:	Wednesday, August 25, 2021 8:17:00 AM
Attachments:	image003.png image004.png

Sarah,
The projects look fine. I just need estimates of annual O&M costs. Can you get me these by Friday?

Joy

From: Sarah Whitaker <swhitaker@smwgeosciences.com>
Sent: Tuesday, August 24, 2021 4:25 PM
To: Joy Kokjohn <JKokjohn@sjrwmd.com>
Cc: Migdalia Hernandez <mhernandez@ourorangecity.com>
Subject: FW: Link to CSEC RWSP Appendix J - Orange City's proposed projects

Good afternoon Joy,

Please see the attached projects for consideration in the updated CSEC RWSP. May we set up a time to review and finalize them for inclusion in the RWSP to be approved?

I am available anytime tomorrow morning.

Thank you.

Sarah M. Whitaker, P.G.
President

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http://www.linkedin.com/in/smwhitaker

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Let me know if you need anything else. -Joy

Joy Kokjohn
Regional Water Supply Planning Coordinator
Bureau of Water Supply Planning
St. Johns River Water Management District
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Email: jkokjohn@sjrwmd.com
Website: www.sjrwmd.com
Connect with us: Newsletter, Facebook, Twitter, Instagram, YouTube, Pinterest

www.sjrwmd.com/ePermit

We value your opinion. Please take a few minutes to share your comments on the service you received from the District by clicking this link

From:	Sarah Whitaker
To:	Joy Kokjohn
Cc:	Migdalia Hernandez; Krista Hurd; Elizabeth Thomas (ethomaspe@gmail.com)
Subject:	CSEC RWSP - projects for Orange City
Date:	Friday, August 27, 2021 9:45:09 AM
Attachments:	image001.png CSEC RWSP Proposed Water Supply Development Project City of Orange City.xlsx

Good morning Joy,

Please see the attached spreadsheet. If you have questions or need anything else, please let me know.

Thank you,

Sarah M. Whitaker, P.G.
President

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County	Project Name	Implementing Entity	Project Description	Project Type	Water Source	Project Capacity (MGD)	Total Capital ($M)	Estimated Annual O&M ($/Year)	Status	Anticipated Completion (Year)
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Volusia	City of Orange City Brackish Water Project	City of Orange City	Construction of a Lower Floridan aquifer well to develop a brackish water source, raw water transmission line, and treatment	AWS	Lower Floridan aquifer	2 MGD	$30	unknown/TBD	Planning	2027
Volusia	City of Orange City Well field Optimization	City of Orange City	Implementation of strategies to relocate withdrawals in the Upper Floridan aquifer further from Blue Springs	Upper Floridan aquifer	Upper Floridan aquifer	3 MGD	$6	unknown/TBD	Planning	2027
Volusia	CRA Septic to Sewer	City of Orange City	Collection of septic tank wastewater and transfer it for treatment to County-owned Southwest Regional Wastewater Reclamation Facility. Project develops an AWS and increases water supply with additional reclaimed water available to customers.	AWS	Reclaimed	0.5 MGD	$10	$40,000	Phase 1 under Construction	2030

Indian River Soil and Water
CONSERVATION DISTRICT

1800 27th Street, Building B (2nd Floor) Vero Beach, Florida 32960
Phones: (772) 226-4397 FAX: (772) 226-1740

Sent via email to: csecrwspcomments@sjrwmd.com
August 26, 2021

Joy Kokjohn
Regional Water Supply Coordinator
St. Johns River Water Management District (SJRWMD)
P.O. Box 1429
Palatka, FL 32178-1429

Re: Public Comments on the Draft Central Springs/East Coast Regional Water Supply Plan (RWSP) by the Indian River Soil and Water Conservation District's (IRSWCD) Board of Supervisors.

Dear Ms. Kokjohn:

The IRSWCD Board of Supervisors are duty-bound to express the following comments on the District's draft RWSP (2020–2040):

1) The RWSP estimates for the potential availability of groundwater are not current.
   a) The agriculture projections in CSEC RWSP are taken from the Florida Department of Agriculture and Consumer Services' (FDACS) Florida Statewide Agricultural Irrigation Demand (FSAID) Geodatabase FSAID IV (2017) while the newest FSAID VII (2020) was published June 30, 2020 . This makes the statement in the executive summary that the RWSP "is based on the best data available" dubious.

2) Groundwater withdrawals from the Upper Florida aquifer have been reported to produce adverse impacts to CUP users East of I-95 in Indian River County. These adverse impacts include:
   a) diminished flow e.g. potentiometric drawdown. This is a critical concern in that both agricultural and domestic self-supply wells are dependent on artesian flow to supply surface pumps. Without surface flow, both domestic supply and agricultural CUP users are immediately out of water. In light of the three actively pumped (with submersible pumps) well fields in Indian River County, namely the following:
      i) Indian River County's North & South well fields permitted to withdraw a combined total of 12.84 MGD and
      ii) FPL's Okeechobee Clean Energy Center permitted in 2017 to withdraw 9 MGD

      -the decision not to perform a modeling scenario for the Brevard, Indian River, and Okeechobee sub-region and to use the older 2014 reference condition is in our estimate a mistake because of the significant increase in withdrawals occurring more than 3-5 years later than the 2014 reference condition.

Joy Kokjohn
August 26, 2021
Page Two

b) Water quality as increasing salinity especially chlorides are increasing as reported to the SWCD by growers. In view of this, we suggest that both the number and spatial distribution of water well sampling sites be increased in Indian River County (only 5 DOWN wells in IRC, Fig. A3-12) and located East of I-95. Similarly the number of agricultural wells should be increase and spatially diverse (e.g. only one farming operation in IRC, page A3-24). The IRSWCD would be willing to assist the District in locating agricultural operations that would provide access to such wells.

3) Surficial water system is being degraded by leaking artesian well casings that are 50-70 years old. What is missing in the CSEC RWSP is:
   a) a calculated estimate as to the number of leaking artesian wells and the associated water losses due to leaking well heads and casings.
   b) adequate funding for the Abandoned Artesian Well Plugging Program
   c) a funded well logging program for CUP wells to determine the condition of the well and consideration for possible cost share funding to repair leaking wells

4) Landscape irrigation using public water supply (PWS) sourced water needs significantly more funding to convert to a pressurized reclaimed water source. Furthermore, reuse water should not be supplied to on site retention ponds for storm water retention that are not equipped to handle the associated nutrients loads."

5) And our final and most important comment is that the IRSWCD would like to invite the appropriate representatives from the District to attend our meetings to discuss and assess future water supply and management strategies. We are eager to work together with the District to participate in collaborative water supply planning and to develop processes to assess the long-term effectiveness of water management strategies.

Thank you for your time and consideration in these constructive comments.

Sincerely,

David E. Gunter

David E. Gunter
Chairman, Indian River SWCD

City of Daytona Beach
UTILITIES DEPARTMENT
125 Basin Street, Suite 130
Daytona Beach, Florida 32114
(386) 671 8800

August 27, 2021

**RE: Central Springs/East Coast Regional Water Supply Plan
Stakeholder Comments – City of Daytona Beach**

To whom it may concern,

The City of Daytona Beach Utilities Department has reviewed the Central Springs/East Coast Regional Water Supply Plan covering 2020 thru 2040. As part of our review process, we developed the following questions/comments related to the plan and associated appendices.

- Pages A1-29 thru A1-30 of Appendix A (Supplemental Regional Water Supply Plan Components for the CSEC RWSP Sub-Regions) makes note of future surface water and groundwater modeling for Indian Lake. The write-up discusses additional modeling being done by 2023 in to potentially show benefits to Indian Lake from the Tiger Bay Weir and Bennett Swamp rehydration project. Who is doing/paying for the anticipated 2023 water model?

- The population projections presented in Appendix B (Population and Water Demand Projections) are low for Daytona Beach based on our data. The projections appear to be based on the City limits rather than the service area, which includes unincorporated Volusia County and portions of Daytona Beach Shores. Additionally, South Daytona is a wholesale customer to Daytona Beach. As such, that population needs to be included in the calculation. As a condition of a previous version of CUP #8834, the City of Daytona Beach has provided Annual Water reports to the District for years 2015-2019, which included population numbers. The report for 2020 was not submitted, as the City obtained a new CUP which no longer required the information to be submitted. However, the population for 2020 was estimated at 93,823 which already exceeds the 2040 population projection of 92,559 outlined in Appendix B.

- Pages 28 and 29 of Appendix G (SJRWMD Approved Prevention and Recovery Strategies Within the CSEC RWSP Area) outline the Reclaimed Water Expansion in Eastern Volusia County project. Within that project description, it is noted that the City of Daytona Beach will "likely" move forward with a full-scale DPR facility. The City has NO INTENTION of implementing a full-scale direct potable reuse project in the foreseeable future. If this project is not done, how will the Reclaimed Water Expansion in Easter Volusia County project, valued at $45.2M, be affected?

We appreciate the opportunity to submit these comments/questions to you and look forward to your response as Appendix M (Stakeholder Comments and SJRWMD Responses) is developed.

Eric A. Smith, PE
Deputy Utilities Director
City of Daytona Beach

Cc:

Shannon Ponitz, City of Daytona Beach – Utilities Director
Robin Cook, City of Daytona Beach – Regulatory Compliance Manager

INDIAN RIVER COUNTY
BOARD OF COUNTY COMMISSIONERS
1801 27th Street, Vero Beach, FL 32960-3388

August 27, 2021

Joy Kokjohn
Regional Water Supply Planning Coordinator
St. Johns River Water Management District
P.O. Box 1429
Palatka, FL 32178-1429

Via email: csecrwspcomments@sjrwmd.com

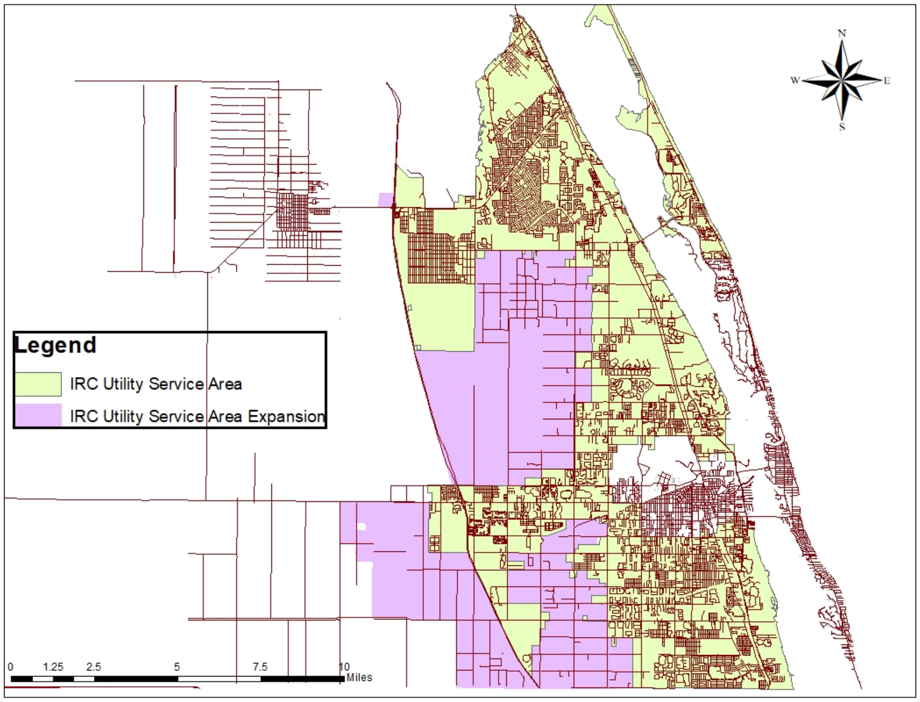
RE: Indian River County Department of Utility Services Comments on Draft Central Springs/ East Coast Regional Water Supply Plan

Dear Ms. Kokjohn:

Indian River County Department of Utility Services (IRCDUS) provides the following comments on the St. Johns River Water Management District's (District) draft Central Springs/East Coast Regional Water Supply Plan (CSEC). As brief background, IRCDUS is a public water supply utility serving a population of approximately 129,643, covering most of Indian River County. The District issued a consumptive use permit to IRCDUS authorizing the withdrawal of brackish groundwater from the Upper Floridan Aquifer for this water supply. Due to IRCDUS' use of brackish groundwater, IRCDUS uses an entirely alternative water supply to meet its needs.

1. **IRCDUS Water Need Demand Projections** – In Table B-5 of Appendix B of the CSEC, IRCDUS' water demand projections for the year 2040 are listed to be 14.76 mgd. We believe this number to be too low, largely because it does not reflect projected expansion in IRCDUS' service area over time to accommodate future development in areas so designated under Indian River County's comprehensive plan.

   Here is a map showing IRCDUS' existing and projected service area through the year 2040:



The annualized population growth rate for Indian River County from the years 1999 through 2018 is 1.97%. We believe this reflects a good estimate of a long-term population growth rate for the County. We also believe that, based on historical IRCDUS' usage rates, and current and projected IRCDUS water conservation measures, a gross per capita usage rate of 101 gpd is appropriate. If this 2% per year growth rate is applied to the BEBR Indian River County population located within the above referenced expanded service area starting in the year 2018 and extended through the year 2040, the resulting projected IRCDUS water demand is 19.01 mgd.

This IRCDUS projected 2040 water demand of 19.01 mgd is a more accurate estimation of IRCDUS' water supply needs through the CSEC's planning horizon. IRCDUS requests that the water demand information for IRCDUS shown on Table B-5 of Appendix B be revised accordingly.

2. **WRCA Justification** – On Appendix A, page A3-31, the following statement is presented:

    Although SJRWMD has only received one complaint regarding the loss of artesian flow in this region, which has been mitigated by the responsible party, increased water demand resulting from growth in northern Indian River County has the potential to impact additional wells.

The CSEC presents no data or information to support the latter portion of this statement, in that increased water demand resulting from growth in northern Indian River County has the potential to impact additional wells. In other words, the CSEC has no data or information indicating how much increased demand must occur before wells are impacted, no data or information on the location of these potentially impacted additional wells, and no groundwater modeling or other information to support this statement.

It is also unclear as to why this statement is relevant to determining the CSEC is a Water Resource Caution Area (WRCA). A WRCA is a geographic area the District identifies as having existing water resource problems, or an area in which water resource problems are projected to develop during the next twenty years. (See rule 62-40.210(43), F.A.C.) Moreover, the State Water Resource Implementation Rule provides the following:

> *Districtwide water supply assessments shall be developed in accordance with the provisions of Section 373.036(2)(b)4., F.S. The assessment shall determine whether sources of water are adequate to supply water for all existing and projected reasonable-beneficial uses and to sustain the water resources and related natural systems. If it is determined that sources of water are not adequate, the affected area shall have a regional water supply plan developed in accordance with Section 373.0361, F.S. and Rule 62-40.531, F.A.C. The determinations shall be updated at least every 5 years. Within one year of the determination that a regional water supply plan is needed for a water supply planning region, the region shall also be designated as a water resource caution area. Domestic wastewater treatment facilities which are located within, or serve a population located within, or discharge within water resource caution areas shall be subject to the reuse requirements of Section 403.064, F.S.* (See rule 62-40.520(2), F.A.C.)

As can be seen from this language, the decision of whether to declare an area a WRCA turns on a comparison of the needs of existing and projected reasonable-beneficial uses and the ability of those uses to be met while sustaining the water resources and related natural systems. Whether increased water demand resulting from growth could potentially impact unknown wells is not a part of the WRCA determination analysis according to this DEP rule.

IRCDUS does not object to the declaration of the CSEC being a WRCA based on a proper analysis pursuant to rule 62-40.520(3), F.A.C. If the above referenced statement must remain in the CSEC, IRCDUS would suggest revising it to read as follows:

> *Since the adoption of the District-wide 2005 Regional Water Supply Plan, the SJRWMD has only received one complaint regarding the loss of artesian flow in this region, which has been mitigated by the responsible party. As is the case with any groundwater source anywhere within the SJRWMD shared by multiple users, an increase in withdrawals by one user may affect another. In such case, the SJRWMD's consumptive use permitting requirements to protect against interference with existing legal users would address this issue.*

If you have questions about the content of this letter, please contact me.

Sincerely,

Matt Jordan
Interim Director of Utility Services

Attachments:
- Appendix A – WRCA Excerpt
- Appendix B – Demand Projection Insert
- Table J-3 – IRCDUS Water Supply Development Project Options