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2020 Five-Year Water Resource Development Work Program

St. Johns River Water Management District
Palatka, Florida
October 2019

1. 2020 Five-Year Water Resource Development Work Program

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I. Introduction

Water management districts are required by Section 373.709, *Florida Statutes* (F.S.), to develop a regional water supply plan (RWSP) if they determine the existing sources of water are 1) inadequate to supply water for all existing and future reasonable-beneficial uses, and/or 2) may not sustain water resources and related natural systems for a 20-year planning period. Regional Water Supply Plans (RWSPs) include analysis of current and future water demands, evaluation of available water sources, and identification of water resource and water supply development projects to meet demands.

The St. Johns River Water Management District (District) is also required to prepare a Five-Year Water Resource Development Work Program (Work Program) as a part of its annual budget reporting process, pursuant to Subsection 373.536(6)(a)4., F.S. The Work Program must describe the District's implementation strategy relating to its water resource development and water supply development (including alternative water supply development) components over the next five years. Further, the Work Program must:

- Address all the elements of the water resource development component in the District's approved RWSPs, as well as the water supply projects proposed for District funding and assistance;
- Identify both anticipated available District funding and additional funding needs for the second through fifth years of the funding plan;
- Identify projects in the Work Program which will provide water;
- Explain how each water resource and water supply project will produce additional water available for consumptive uses;
- Estimate the quantity of water to be produced by each project;
- Provide an assessment of the contribution of the District's RWSPs in supporting the implementation of minimum flows and levels (MFLs) and water reservations; and
- Ensure sufficient water is available to timely meet the water supply needs of existing and future reasonable-beneficial uses for a 1-in-10-year drought event and to avoid the adverse effects of competition for water supplies.

This Work Program covers the period from fiscal year (FY) 2019–20 through FY 2023–24 and is consistent with the planning strategies of the District's RWSPs. Over the last three years, the District has amended the 2005 District Water Supply Plan (DWSP) and developed two RWSPs. A third RWSP is under development. The RWSP's are briefly summarized below in Section II and depicted in Figure 1: Water supply planning regions. For additional information about the District's RWSPs, please see *www.sjrwmd.com/watersupply*.

II. Regional Water Supply Planning

In accordance with Chapters 163 and 373, F.S., the District is required to update regional water supply plans every five years for at least a 20-year planning horizon to ensure the availability of water to meet all existing and future reasonable-beneficial water needs and to protect natural systems from harm up to and during a 1-in-10-year drought event.

The District is divided into three planning regions and is working with other water management districts on water supply planning in most regions. The three planning regions are Central Florida, Central Springs / East Coast (CSEC), and North Florida.

In the Central Florida planning region, the District has been working in partnership with the South Florida Water Management District (SFWMD), Southwest Florida Water Management District (SWFWMD), Florida Department of Environmental Protection (DEP) and other stakeholders through the Central Florida Water Initiative (CFWI). A joint RWSP was approved in 2015 by the three water management districts for the CFWI planning area of Orange, Osceola, Seminole and Polk counties and southern Lake County. The draft 2020 RWSP should be completed by November 2020.

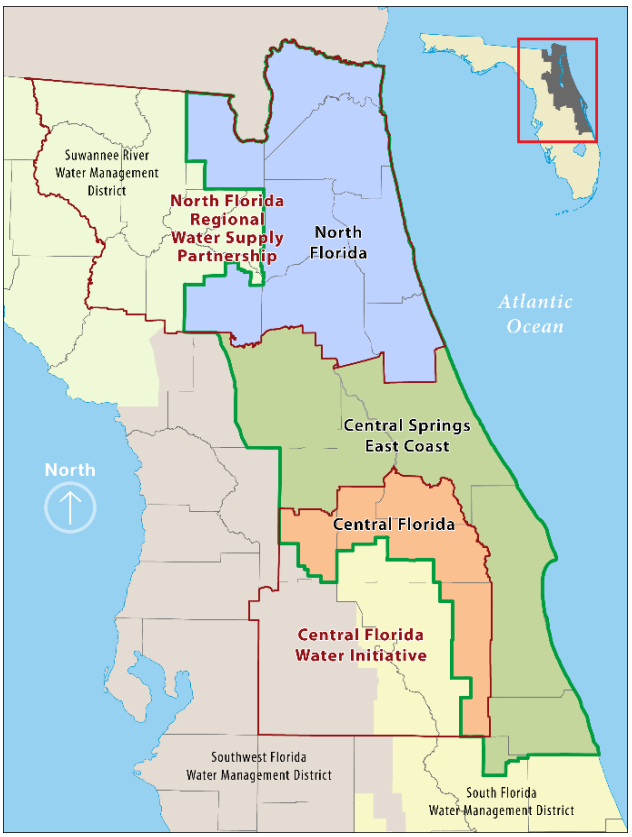

Figure 1: Water supply planning regions

In the CSEC planning region, the District has been coordinating with the SFWMD, SWFWMD and other stakeholders in advance of development of the CSEC RWSP. The planning region encompasses three sub-regions that include Marion and northern Lake counties, Volusia County and Brevard, Indian River and Okeechobee counties. The District anticipates completing a draft RWSP by late 2019 or early 2020.

In the North Florida planning region, the District continues to work in partnership with the Suwannee River Water Management District, DEP, and other stakeholders through the North Florida Regional Water Supply Partnership (NFRWSP) to develop the 2022 plan update. A joint RWSP was approved in January 2017 by the District and SRWMD for the NFRWSP planning area of Alachua, Baker, Bradford, Clay, Columbia, Duval, Flagler, Gilchrist, Hamilton, Nassau, Putnam, St. Johns, Suwannee and Union counties.

Table 1. Regional water supply plan approval and five-year updates.

Planning Region	Current Water Supply Plan	Next Update
North Florida	January 2017	January 2022
Central Florida	November 2015	November 2020
Central Springs / East Coast	2005 DWSP 5th Addendum, 2017	March/April 2020

The 2020 Central Springs / East Cost RWSP Update is scheduled for Governing Board approval in early to mid-2020.

The District updates the following on an annual basis to keep RWSPs for each of the three water supply planning regions current:

- Population and water demand projections through a 20-year planning horizon
- Groundwater modeling to assess environmental constraints
- Water conservation (WC) potential
- Water supply, alternative water supply (AWS), and water resource development (WRD) project options
- MFL prevention and recovery strategies

III. Work Program Summary

The Work Program presented herein identifies sufficient water sources to meet the water supply needs of existing and future reasonable-beneficial uses for a 1-in-10-year drought event and to avoid the adverse effects of competition for water supplies. Over the next five years, this Work Program outlines the District's commitment to identifying projects that provide adequate water supplies for all reasonable-beneficial uses and to maintain the function of natural systems. It additionally illustrates the contributions of the District in support of MFLs and water reservations.

In total, this Work Program outlines projects that, upon completion, will make available approximately 84 million gallons per day (mgd) of water, including reuse and non-reuse water. These benefits are associated with approximately $21 million budgeted for FY 2019–20. The proposed funding for the five-year Work Program is approximately $86 million through FY 2023–24.

In addition, these projects set forth a commitment to develop projects associated with implementation of MFLs, recovery or prevention strategies and water reservations. The projects benefitting MFLs are anticipated to make available nearly 29 mgd of reuse and non-reuse water upon completion. Of that, approximately 24 mgd of reuse and non-reuse water upon completion benefits a water body with an approved recovery or prevention strategy.

IV. Water Resource and Water Supply Development

Water resource development components are those that involve the *"…formulation and implementation of regional water resource management strategies, including the collection and evaluation of surface water and groundwater data; structural and nonstructural programs to protect and manage water resources; the development of regional water resource implementation programs; the construction, operation, and maintenance of major public works facilities to provide for flood control, surface and underground water storage, and groundwater recharge augmentation; and related technical assistance to local governments, government-owned and privately owned water utilities, and self-suppliers to the extent assistance to self-suppliers promotes the policies as set forth in s. 373.016."*[1]

[1] Section 373.019(24), F.S.

Water supply development (WSD) components are those that involve: *"… 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."*[2]

The District addresses funding needs and identifies possible sources of funding for WRD, WC and/or AWS projects. Florida water law identifies two types of projects used to help provide the state with adequate water supply or those that ensure natural systems are protected. Water resource development projects are generally the responsibility of the District while WSD projects (AWS and WC) are generally the responsibility of the local entities and/or water suppliers. Currently, the District provides funding for both WRD and WSD projects. In addition, the District provides funding for WC projects and strategies. To support the core mission areas, the District currently procures four cost-share programs on an annual basis:

1. The Districtwide program
2. The Rural Economic Development Initiative (REDI) Communities / Innovative Projects program
3. The Districtwide Agricultural program
4. Tri-County Agricultural Water Management Partnership Cost-Share Program

A list of projects meeting these statutory definitions is provided in Tables 2 through 4. Programmatic efforts such as abandoned artesian well plugging and hydrologic and water quality data collection, monitoring and analysis programs are also included as described below.

Abandoned artesian well plugging program:

- The purpose of this program is to protect groundwater resources by identifying, evaluating and controlling abandoned artesian wells. Uncontrolled or improperly constructed artesian wells reduce groundwater levels and contribute to the potential contamination of both ground and surface waters. Since the program was established in 1983, the District has plugged or repaired approximately 100 abandoned artesian wells per year.

Hydrologic and water quality data collection, monitoring and analysis program:

- Data collection and analysis activities are a critical part of the water resource development component implemented by the District. Northeast and east-central Florida rely on groundwater to meet more than 90 percent of the region's water supply needs. Accurate water level, water quality, and hydrogeologic data and information are required to characterize and evaluate groundwater resources.

- The District's hydrologic data collection program collects data and information that support the regulatory and scientific programs (including data and information for the RWSPs and Work Program). The District operates and maintains nearly 1,200 hydrologic surface and groundwater monitoring stations, and processes data from more than 200 additional sites collected by other agencies. More than 16 million measurements are collected, verified, processed and stored each year, including an intensive radar rainfall database, composed of hourly data for more than 21,000 gridded locations.

[2] Section 373.019(26), F.S.

- The District's water quality monitoring network is comprised of more than 400 surface water sampling stations located on rivers, streams and lakes throughout the District's 18-county service area. The accurate and timely processing of monitoring data enables the District to make sound resource protection and enhancement decisions.

- The groundwater resource assessment program identifies and resolves gaps in groundwater knowledge, through well drilling and hydrogeologic investigations. The program provides hydrogeologic evaluations and data, which enable groundwater modeling, the primary tool for predicting the effects of hydrologic changes on the Floridan aquifer systems.

MFLs under development and included within this Work Program:

- The District is currently re-evaluating MFLs for Lakes Brooklyn and Geneva scheduled for adoption in 2020. Water resource development funding has been approved for the Black Creek Water Resource Development Project that is currently in engineering and design. This project will provide additional recharge water to the Upper Floridan aquifer that will help to achieve the MFLs for these two lakes.

A complete list of all MFL and Water Reservation development activities may be found on the District's website at: *www.sjrwmd.com/minimumflowsandlevels*.

Please refer to the subsequent series of tables for identification of the WRD and WSD (WC and AWS) projects currently underway or anticipated to begin within the five-year planning horizon. For each project, the tables delineate RWSP region supported, primary MFL supported, the quantity of water produced, funding and project descriptions.

Table 2: Project, RWSP Region and MFL Supported, and Quantity of Water Made Available

Project Name	Project Type	RWSP Region Supported	Primary MFL Supported	Quantity of Water Made Available upon Completion (MGD)	Reuse Flow Made Available upon Project Completion (MGD)	Storage Capacity Created (MG)
Black Creek Water Resource Development Project	Groundwater Recharge	SJR NFRWSP	Lakes Brooklyn and Geneva, Lower Santa Fe Ichetucknee	7.00		
Bunnell SR 100 West RCW Extension	Reclaimed Water (for potable offset)	SJR NFRWSP			0.29	
C-10 Water Management Area	Surface Water Storage	SJR CSEC				212
CCUA Stormwater Harvesting Project	Stormwater	SJR NFRWSP	Lakes Brooklyn and Geneva, Lower Santa Fe Ichetucknee	0.70		
CCUA Tynes Reclaimed Water Storage	Reclaimed Water (for potable offset)	SJR NFRWSP	Lakes Brooklyn and Geneva, Lower Santa Fe Ichetucknee		0.10	
Crane Creek M-1 Canal Flow Restoration	Surface Water	SJR CSEC		8.80		
Daytona Beach Williamson Boulevard Reuse	Reclaimed Water (for potable offset)	SJR CSEC	Blue Springs		0.65	
DeLand St. Johns River Intake and Surface Water Filtration System Upgrades	Surface Water	SJR CSEC		1.50		
Deltona Reclaimed Water Retrofits	Reclaimed Water (for potable offset)	SJR CSEC	Blue Springs		0.16	
Deltona West Volusia Water Suppliers Aquifer Recharge Phase 1	Reclaimed Water (for groundwater recharge or natural system restoration)	SJR CSEC	Blue Springs	0.23		
Dispersed Water Storage Project — Fellsmere	Surface Water Storage	SJR CSEC		18.00		1,372
Dispersed Water Storage Project — Graves Brothers	Surface Water Storage	SJR CSEC		5.00		182
Edgewater Reclaimed Water Quality Reservoir	Reclaimed Water (for potable offset)	SJR CSEC			0.20	

Project Name	Project Type	RWSP Region Supported	Primary MFL Supported	Quantity of Water Made Available upon Completion (MGD)	Reuse Flow Made Available upon Project Completion (MGD)	Storage Capacity Created (MG)
Fellsmere Water Management Area	Surface Water Storage	SJR CSEC				2,139
Flagler County Plantation Bay WWTF Modifications	Reclaimed Water (for potable offset)	SJR NFRWSP			0.50	
JEA Gate Pkwy. Kernan to T-Line RCW Main	Reclaimed Water (for potable offset)	SJR NFRWSP	Lakes Brooklyn, Geneva		1.02	
JEA Low Income Toilet Exchange	PS and CII Conservation	SJR NFRWSP		0.012		
JEA Twin Creeks RCW Storage and Delivery	Reclaimed Water (for potable offset)	SJR NFRWSP	Lakes Brooklyn, Geneva		1.88	
Kenneth MacKay Round 3 Silver Springs BMP	Agricultural Conservation	SJR CSEC	Silver Springs	0.001		
Lake Apopka North Shore Recharge Project	Groundwater Recharge	SJR CFWI	Wekiwa and Rock Springs	1.00		
Little Orange Creek Aquifer Recharge Project	Groundwater Recharge	SJR CSEC	Silver Springs	0.50		
Longwood Septic Tank Abatement Program Transmission Main	Reclaimed Water (for potable offset)	SJR CFWI			0.70	
Marion County SE108 Water Main Interconnect	Other Project Type	SJR CSEC	Silver Springs	0.03		
Marion County Silver Springs Shores Regional Capacity Improvements	Other Project Type	SJR CSEC	Silver Springs	0.01		
Mascotte SR50 Water Main Replacement-Ph2	Other Project Type	SJR CFWI		0.05		
Minneola Septic-to-Sewer	Reclaimed Water (for potable offset)	SJR CFWI	Lakes Minneola, Louisa, Apshawa North and South, Rock and Wekiwa Springs		0.40	

Project Name	Project Type	RWSP Region Supported	Primary MFL Supported	Quantity of Water Made Available upon Completion (MGD)	Reuse Flow Made Available upon Project Completion (MGD)	Storage Capacity Created (MG)
Mount Dora RCW Interconnect with Apopka	Reclaimed Water (for potable offset)	SJR CFWI	Lake Apshawa North		3.0	
Ocala LFA Conversion — Phase 1	Other Non-Traditional Source	SJR CSEC	Silver Springs	8.90		
Ocala LFA Supply Wells Phase 2	Other Non-Traditional Source	SJR CSEC	Silver Springs	0.38		
Ocala Wetland Recharge - Pine Oaks	Groundwater Recharge	SJR CSEC	Silver Springs	5.00		
Orange County Utilities Waterwise Neighbor Program Year 3	PS and CII Conservation	SJR CFWI	Wekiwa and Rock Springs	0.11		
Ormond Beach Breakaway Trails RCW	Reclaimed Water (for potable offset)	SJR CSEC			0.35	2.0
OUC Irrigation Conservation Phase 2	PS and CII Conservation	SJR CFWI	Wekiwa and Rock Springs	0.06		
Seminole County Conservation Tool	PS and CII Conservation	SJR CFWI		0.30		
St. Johns County Marsh Landing RCW Main	Reclaimed Water (for potable offset)	SJR NFRWSP			0.06	
Taylor Creek Reservoir Improvement Project	Surface Water Storage	SJR CFWI		17.0		

Table 3: Five-Year Work Program / Funding Projections

Project Name	FY2019-2020	FY2020-2021	FY2021-2022	FY2022-2023	FY2023-2024	Subtotal
Black Creek Water Resource Development Project	$ 500,000	$ 200,000	$ 1,900,000	$ 24,000,000	$ 10,488,124	$ 37,088,124
Bunnell SR 100 West RCW Extension	$ 98,635	$ 394,541				$ 493,176
C-10 Water Management Area	$ 10,000					$ 10,000
CCUA Stormwater Harvesting Project	$ 228,450	$ 76,140				$ 304,590
CCUA Tynes Reclaimed Water Storage	$ 1,485,000					$ 1,485,000
Crane Creek M-1 Canal Flow Restoration	$ 3,885,000	$ 3,990,698				$ 7,875,698
Daytona Beach Williamson Blvd. Reuse	$ 66,000					$ 66,000
DeLand St. Johns River Intake and Surface Water Filtration System Upgrades	$ 59,403					$ 59,403
Deltona Reclaimed Water Retrofits	$ 704,488					$ 704,488
Deltona West Volusia Water Suppliers Aquifer Recharge Phase 1	$ 332,434	$ 221,622				$ 554,056
Dispersed Water Storage Project — Fellsmere	$ 730,500	$ 730,500	$ 730,500	$ 730,500	$ 730,500	$ 3,652,500
Dispersed Water Storage Project — Graves Brothers	$ 203,000	$ 203,000	$ 203,000	$ 203,000	$ 203,000	$ 1,015,000
Edgewater Reclaimed Water Quality Reservoir	$ 350,000	$ 717,680	$ 350,000			$ 1,417,680
Fellsmere Water Management Area	$ 1,422,000	$ 1,096,800				$ 2,518,800
Flagler County Plantation Bay WWTF Modifications	$ 6,128					$ 6,128
JEA Gate Pkwy. Kernan to T-Line RCW Main	$ 930,745	$ 569,255				$ 1,500,000
JEA Low Income Toilet Exchange	$ 75,000					$ 75,000
JEA Twin Creeks RCW Storage and Delivery	$ 120,000	$ 1,305,000				$ 1,425,000
Kenneth MacKay Round 3 Silver Springs BMP	$ 15,215					$ 15,215

Project Name	FY2019-2020	FY2020-2021	FY2021-2022	FY2022-2023	FY2023-2024	Subtotal
Lake Apopka North Shore Recharge Project	$ 226,500	$ 500,000				$ 726,500
Little Orange Creek Aquifer Recharge Project	$ 500,000					$ 500,000
Longwood Septic Tank Abatement Program Transmission Main	$ 1,941,849					$ 1,941,849
Marion County SE108 Water Main Interconnect	$ 301,064					$ 301,064
Marion County Silver Springs Shores Regional Capacity Improv	$ 1,743,519	$ 1,743,519				$ 3,487,038
Mascotte SR50 Water Main Replacement-Ph2	$ 450,000	$ 50,000				$ 500,000
Minneola Septic-to-Sewer	$ 349,578					$ 349,578
Mount Dora RCW Interconnect with Apopka	$ 258,275					$ 258,275
Ocala LFA Conversion — Phase 1	$ 904,218					$ 904,218
Ocala LFA Supply Wells Phase 2	$ 240,000					$ 240,000
Ocala Wetland Recharge — Pine Oaks	$ 1,500,000					$ 1,500,000
Orange County Utilities Waterwise Neighbor Program Year 3	$ 50,000					$ 50,000
Ormond Beach Breakaway Trails RCW	$ 441,514					$ 441,514
OUC Irrigation Conservation Phase 2	$ 177,740					$ 177,740
Seminole County Conservation Tool	$ 5,614					$ 5,614
St. Johns County Marsh Landing RCW Main	$ 542,685					$ 542,685
Taylor Creek Reservoir Improvement Project						$ -
Cost-Share Program Placeholder		$ 3,500,000	$ 3,500,000	$ 3,500,000	$ 3,500,000	$ 14,000,000
Totals:	**$ 20,854,554**	**$ 15,298,755**	**$ 6,683,500**	**$ 28,433,500**	**$ 14,921,624**	**$ 86,193,933**

Table 4: Project Descriptions

Project Name	Project Description	Project Status	Construction Beginning Date	Construction Completion Date
Black Creek Water Resource Development Project	The project scope includes the design and construction of an intake structure on the South Fork section of Black Creek to capture water during periods of higher flows; convey the captured water through a 19,000 LF transmission system; and discharge into the Keystone aquifer recharge area. The objective of the Black Creek WRD project is to capture up to 10 mgd of excess water from the south fork of Black Creek and convey the water to critical recharge areas located on the southernmost portion of the Camp Blanding property.	Design	09/06/22	09/10/24
Bunnell SR 100 West RCW Extension	Extension of reclaimed distribution main from Grand Reserve Boulevard west along SR 100 to N. Palmetto Street (approximately 1.1 miles).	Design	10/01/19	11/30/19
C-10 Water Management Area	The C-10 Reservoir includes a 1,300-acre reservoir with a pump station and outlet structure to the Upper St. Johns River Basin.	Design	04/01/21	02/14/23
CCUA Stormwater Harvesting Project	Installation of approximately 1,000 to 1,200 linear feet of horizontal well and a wet well with a submersible pump adjacent to FDOT's wet detention stormwater ponds.	Design	10/01/19	03/30/20
CCUA Tynes Reclaimed Water Storage	Construction of two 750,000 gallon reclaimed water storage tanks and a distribution facility to provide reclaimed water to over 772 new customers within the Two Creeks, Pine Ridge, Linda Lakes, and Azalea Ridge subdivisions.	Construction/Underway	06/06/19	09/30/20
Crane Creek M-1 Canal Flow Restoration	This project will reduce nutrient and sediment loading to the Indian River Lagoon (IRL) by treating and restoring diverted baseflows back to the St. Johns River. The project will involve construction of an operable control structure, pump station, force main, and a stormwater treatment area.	Design	05/01/20	04/21/22
Daytona Beach Williamson Blvd. Reuse	The project will construct approximately 2,200 feet of reclaimed water main along Williamson Boulevard between Dunn Avenue and Mason Avenue. The project consists of two sections of 24-inch HDPE and 20-inch PVC piping of approximately 1,300 feet and 900 feet, respectively.	Construction/Underway	01/15/19	12/30/19
DeLand St. Johns River Intake and Surface Water Filtration System Upgrades	The project involves upgrading the existing pump station at the St. Johns River. Additionally, one automatic backwash filter will be upgraded.	Construction/Underway	09/04/18	12/30/19
Deltona Reclaimed Water Retrofits	The project includes the retrofit of three existing residential neighborhoods (421 units) and one sports complex to replace potable water for irrigation with reclaimed water distribution mains.	Construction/Underway	03/11/19	06/30/20
Deltona West Volusia Water Suppliers Aquifer Recharge Phase 1	This project provides aquifer recharge to the Upper Floridan aquifer (UFA) through construction of a 20-acre Rapid Infiltration Basin (RIB).	Design	10/21/19	12/31/20

Project Name	Project Description	Project Status	Construction Beginning Date	Construction Completion Date
Dispersed Water Storage Project — Fellsmere	The District is evaluating environmental benefits from using groves and other private lands for retention of stormwater to reduce excess freshwater and nutrients being released to the IRL. The Fellsmere project will create a ~2,000-acre reservoir that should store about 18 MGD on an annual basis. Nutrient reductions should be approximately 24 metric tons (MT) nitrogen and 3 MT phosphorus annually.	Design	10/01/19	09/30/21
Dispersed Water Storage Project — Graves Brothers	The District is evaluating environmental benefits from using groves and other private lands for retention of stormwater to reduce excess freshwater and nutrients being released to the IRL. The Graves Brothers project will create a ~200-acre reservoir that should store about 5 MGD on an annual basis. Nutrient reductions should be approximately 3 MT nitrogen and 1 MT phosphorus annually.	Design	10/01/19	09/30/20
Edgewater Reclaimed Water Quality Reservoir	Construction of reclaimed water main extensions, a new reuse storage reservoir and wetland outfall intended to eliminate effluent discharges into the IRL.	Construction/Underway	02/28/19	03/31/21
Fellsmere Water Management Area	The Fellsmere Water Management Area is a component of the Upper St. Johns River Basin Project and involves construction of a 10,000-acre reservoir to treat agricultural discharges prior to entering the St. Johns Water Management Area. The project provides potential for additional water supply and improved wildlife habitat. This is one of the final components of the Upper St. Johns River Basin Project, collectively restoring more than 160,000 acres of the St. Johns River headwaters.	Construction/Underway	10/01/07	04/16/21
Flagler County Plantation Bay WWTF Modifications	This project includes modifications to the water reclamation facility (WRF) to improve process and effluent reliability to provide additional irrigation.	Construction/Underway	04/30/18	03/28/20
JEA Gate Pkwy. Kernan to T-Line RCW Main	This project includes construction of 6,600 LF of 30-inch diameter and 8,700 LF of 16-inch diameter reclaimed water pipe to serve current and future reclaimed water demands with JEA's southeast reclaimed water grid.	Construction/Underway	05/31/19	06/30/20
JEA Low Income Toilet Exchange	The program will provide eligible low-income customers up to two high-efficient toilets in exchange for older, inefficient toilets in JEA’s service area. JEA will offer toilet replacements to approximately 200 homes per year, replacing up to 400 toilets.	Design	10/01/19	09/30/20
JEA Twin Creeks RCW Storage and Delivery	Construction of two 1.5-million-gallon storage tanks, five pumps, pump house, and connector pipes from the existing reclaimed water system to the tanks. The upgrades will serve the Twin Creeks development.	Design	05/28/20	08/20/21
Kenneth MacKay Round 3 Silver Springs BMP	Upgrading of an existing less efficient micro-jet irrigation system to include purchase and installation of soil moisture and climate sensor telemetry, and the purchase and installation of precision agriculture equipment on approximately 65 acres.	Construction/Underway	02/13/19	12/31/19

Project Name	Project Description	Project Status	Construction Beginning Date	Construction Completion Date
Lake Apopka North Shore Recharge Project	This project involves construction of an aquifer recharge well and infrastructure. Surface water from the Lake Apopka North Shore will be the source water for recharge into the UFA.	Design	10/01/19	09/30/22
Little Orange Creek Aquifer Recharge Project	This project involves construction of an aquifer recharge well, pump, and intake structure. Surface water from Little Orange Creek will be the source water for recharge into the UFA.	Design	01/13/20	04/23/20
Longwood Septic Tank Abatement Program Transmission Main	The project involves the construction of a 4-mile sewer transmission pipe connecting the city of Longwood with the Altamonte Springs Regional Water Reclamation Facility.	Construction/Underway	12/01/17	12/30/19
Marion County SE108 Water Main Interconnect	This project includes the construction of a water main interconnect for two existing potable water systems. It will relocate the withdrawals approximately 6.5 miles farther from Silver Springs.	Construction/Underway	05/15/19	01/30/20
Marion County Silver Springs Shores Regional Capacity Improvements	The project consists of improvements to the Silver Springs Shores (SSS) Wastewater Treatment Facility (WWTF) to meet Advanced Wastewater Treatment standards and to expand the capacity by 0.5 mgd for future package plant and septic-to-sewer connections. The project also includes the construction of infrastructure to connect two package WWTFs and one church septic system to the SSS WWTF. This includes construction of three new lift stations, rebuilding two existing lift stations and installation of three new force mains. The two package plants will also be decommissioned and demolished.	Construction/Underway	11/05/18	06/30/21
Mascotte SR50 Water Main Replacement-Phase 2	The project involves the replacement of approximately 5,500 linear feet of water main along SR50 from west of Sunset Avenue to west of Palmwood Avenue. The project is expected to provide a water supply benefit of 0.05 MGD by reducing the number of line breaks.	Design	11/29/19	12/30/20
Minneola Septic-to-Sewer	This project is the first phase of a three-phase project to install infrastructure consisting of transmission lines, force mains, and a lift station. This will allow the connection of 22 parcels to the sewer system and abandon 22 septic tanks. The 22 parcels consist of seven commercial and 15 residential properties. Once all three phases of the project are completed, the WWTF will be able to start providing reclaimed water to offset potable use.	Construction/Underway	06/01/18	12/31/19
Mount Dora RCW Interconnect with Apopka	This project includes the construction of a reclaimed water interconnect between the city of Mount Dora and city of Apopka systems.	Construction/Underway	12/15/18	12/31/19
Ocala LFA Conversion - Phase 1	This project includes the construction of three, 24-inch diameter Lower Floridan aquifer (LFA) production wells, each with a capacity of 5 MGD. This non-traditional LFA water supply source will support flow improvements to Silver Springs by replacing current permitted withdrawals from the UFA that are now located 4-miles closer to Silver Springs.	Construction/Underway	06/03/19	09/30/20

Project Name	Project Description	Project Status	Construction Beginning Date	Construction Completion Date
Ocala LFA Supply Wells - Phase 2	This is the second phase of a multi-year project. Phase 2 includes the installation of three 150 HP Pumps, three motors, and three controllers to operate three 24-inch LFA wells at Ocala's water treatment plant No. 2.	Design	01/04/20	01/04/22
Ocala Wetland Recharge - Pine Oaks	The project involves construction of a 33-acre groundwater recharge wetland that will receive advanced treated wastewater from the city's WRF #2, #3, and stormwater from the Old City Yard Drainage Retention Area.	Construction/Underway	05/28/18	07/31/20
Orange County Utilities Waterwise Neighbor Program Year 3	The project involves the continuation (year 3) of the county's comprehensive water conservation program to about 300 new construction and 300 existing homes.	Construction/Underway	12/11/18	06/30/20
Ormond Beach Breakaway Trails RCW	The project includes construction of a 2 MG ground storage tank and a high service pump station with three variable frequency drive-controlled high service pumps. This will allow expansion of reclaimed water service to new developments that were required to install dry lines for reclaimed water.	Construction/Underway	03/15/19	09/30/20
OUC Irrigation Conservation Phase 2	This is the second phase of OUC's Conservation Project with enhancements designed to increase customer participation rates. Customers are informed of reduced prices for other services, including irrigation repairs, evapotranspiration controllers, soil moisture sensors, and Florida Friendly Landscaping. OUC is also including an ongoing low-flow toilet rebate program for residential and commercial customers as part of the Phase 2 program. In addition, OUC will procure online water survey software to encourage additional water conservation.	Construction/Underway	10/01/17	03/30/20
Seminole County Conservation Tool	The project involves the purchase of the University of Florida's Program for Efficient Communities (UF/PREC) GeoViz tool and integration with the county's existing conservation program. Utilization of this tool will provide information that allows the County to inform higher-water use customers of their conservation potential and conservation programs or educational sessions that could help them reduce water consumption.	Construction/Underway	01/01/19	09/30/20
St. Johns County Marsh Landing RCW Main	This project includes the construction of a pump station and approximately 7,200 linear feet of reclaimed water main from the Marsh Landing WWTF to the Oak Bridge Golf Course.	Design	11/01/19	05/30/20
Taylor Creek Reservoir Improvement Project	This project is intended to restore the levee to its original design characteristics and to incorporate two overflow spillways and a levee toe drainage system. The District is pursuing a project to change the current reservoir operating schedule and corresponding water levels, which range from 41 to 43 feet National Geodetic Vertical Datum (NGVD), to an operating schedule that would bring the water level in the reservoir to 46 feet NGVD. Raising the water level would increase the water supply yield from the reservoir without any supplemental diversions from the St. Johns River. The improvements proposed for this project support the increased water level in the reservoir.	On Hold		

V. Basin Management Action Plan Appendix

Basin Management Action Plans (BMAPs) are the "blueprint" for restoring impaired waters by reducing pollutant loadings to meet the allowable loadings established in a Total Maximum Daily Load. In 2016, the Florida Legislature amended Section 373.036, F.S., to require the identification of all specific projects that implement a BMAP or a recovery or prevention strategy in the Work Program. The District's Work Program has historically identified water resource development projects that support MFL recovery and prevention but has not included specific descriptions of projects primarily intended to implement BMAPs. Consistent with section 373.036, F.S., and in a manner that has been coordinated with the DEP and all five water management districts, the District makes available as part of this Work Program a five-year funding outlook for projects specifically identified in an adopted BMAP.

BMAP Appendix Table

Project Name	Project Description	Project Type	Project Status	Construction Completion Date	BMAP	Lead Entity	DEP Project Number	TN Reduction (lbs/yr)	TP Reduction (lbs/yr)	Location	Acres Treated
Atlantic Bch MS4 FLS000012	Phasing out existing septic tanks.	Septic Tank Phase Out	Planned	3/27/2020	LSJR Mainstem	City of Atlantic Beach	AB-11	145	N/A	Marine	N/A
South Regional Lake	Created wetland flow through system.	BMP Treatment Train	Underway	3/21/2020	IRL- Central	City of Fellsmere	F-10	479	139	SEB/Estuarine	450
Septic Removal — NIRL —MIRA	Abandonment of ~ 75 septic tanks as well as construction of stormwater infrastructure. (SOIRLP-44.)	Septic Tank Phase Out	Underway	9/30/2020	IRL-North	Brevard County	BC-88	2,501	822	Estuarine	unknown/not provided
Indian River County Moorhen Marsh LEAPS	This is a managed aquatic plant system that will remove sediment and suspended solids through settling and filtration by aquatic plant roots. The aquatic plants will be harvested on a regular basis.	Floating Islands/ Managed Aquatic Plant Systems (MAPS)	Planned	12/31/2020	IRL-Central	Indian River County	CIRL-IRC-07	7,614	1251	Estuarine	6,300
Rockledge Gus Hipp Ditch Denitrification	Add BAM for denitrification to major canal in the city.	BMP Treatment Train	Planned	02/28/2020	IRL-North	City of Rockledge	Rock-28	5,500	800	Estuarine	1,500
Volusia County Wastewater Infrastructure for Protection of Blue Spring	Decommissioning of Del North WWTF and construction of a master lift station with 3 miles of 12" force main to connect to the Southwest Regional WRF.	WWTF Nutrient Reduction	Planned	12/31/2020	Volusia Blue	Volusia County	WU-1	6,390	2,065	Spring/ Riverine	NA

BMAP Appendix Table Continued

Project Name	FY2019 - 2020	FY2020 - 2021	FY2021 - 2022	FY2022 - 2023	FY2023 - 2024	Subtotal	Total State Funding	Total District Funding	Lead Entity Match	Project Total
Atlantic Bch MS4 FLS000012	$ 132,323					$ 132,323		$ 132,323	$ 268,657	$ 400,980
South Regional Lake	$ 150,000					$ 150,000		$ 500,000	$ 287,187	$ 787,187
Septic Removal — NIRL —MIRA	$ 306,127	$ 568,695				$ 874,822		$ 912,255	$ 1,852,155	$ 2,764,410
Indian River County Moorhen Marsh LEAPS	$ 750,000	$ 750,000				$ 1,500,000		$ 1,500,000	$ 7,305,000	$ 8,805,000
Rockledge Gus Hipp Ditch Denitrification	$ 66,000					$ 66,000		$ 66,000	$ 147,000	$ 213,900
Volusia County Wastewater Infrastructure for Protection of Blue Spring	$ 2,193,750	$ 731,250				$ 2,925,000	$ 1,500,000	$ 1,425,000	$ 2,919,175	$ 6,173,500
Totals	**$ 3,598,200**	**$ 2,049,945**	**$ -**	**$ -**	**$ -**	**$ 5,648,145**				