Chapter 5A: Five-Year Water Resource Development Work Program

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Introduction

Section 373.536(6)(a)4, Florida Statutes (F.S.), requires each water management district to prepare an annual Five-Year Water Resource Development Work Program. Accordingly, this report presents the South Florida Water Management District's (SFWMD or District) work program for Fiscal Year 2015-2016 (October 1, 2015–September 1, 2016) through Fiscal Year 2019-2020. This document describes the SFWMD's implementation strategy for the water resource development component of each approved regional water supply plan developed or updated under Section 373.709, F.S. Further information on the SFWMD's role in managing the region's water resources is available at www.sfwmd.gov/watersupply.

Florida water law identifies two categories of activities to meet water needs: water supply development and water resource development. Water supply development generally involve public or private facilities for water collection, treatment, and transmission and are the responsibility of local water users. Water resource development is defined in Section 373.019(24), F.S., as "the formulation and implementation of regional water resource management strategies, including the collection and evaluation of surface water and groundwater data; structural and non-structural programs to protect and manage water resources; development of regional water resource implementation programs; construction, operation, and maintenance of major public works facilities to provide for flood, surface, and underground water storage and groundwater recharge augmentation; and related technical assistance to local governments and to government owned and privately owned water utilities." These types of activities are regional in nature and are primarily the SFWMD's responsibility. Water resource development supports water supply development at the local level and are intended to ensure the availability of adequate water supplies for all uses deemed reasonable and beneficial and to maintain the function of natural systems.

WATER SUPPLY PLANNING

In accordance with Chapters 163 and 373, F.S., SFWMD 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.

Since 2011, SFWMD has been divided into five distinct planning areas: Upper East Coast (UEC), Upper Kissimmee Basin (UKB), Lower Kissimmee Basin (LKB), Lower West Coast (LWC), and Lower East Coast (LEC), as shown in **Figure 1**. Previously, the UKB and the LKB collectively made up the Kissimmee Basin planning area. The UKB is now part of the Central Florida Water Initiative (CFWI).

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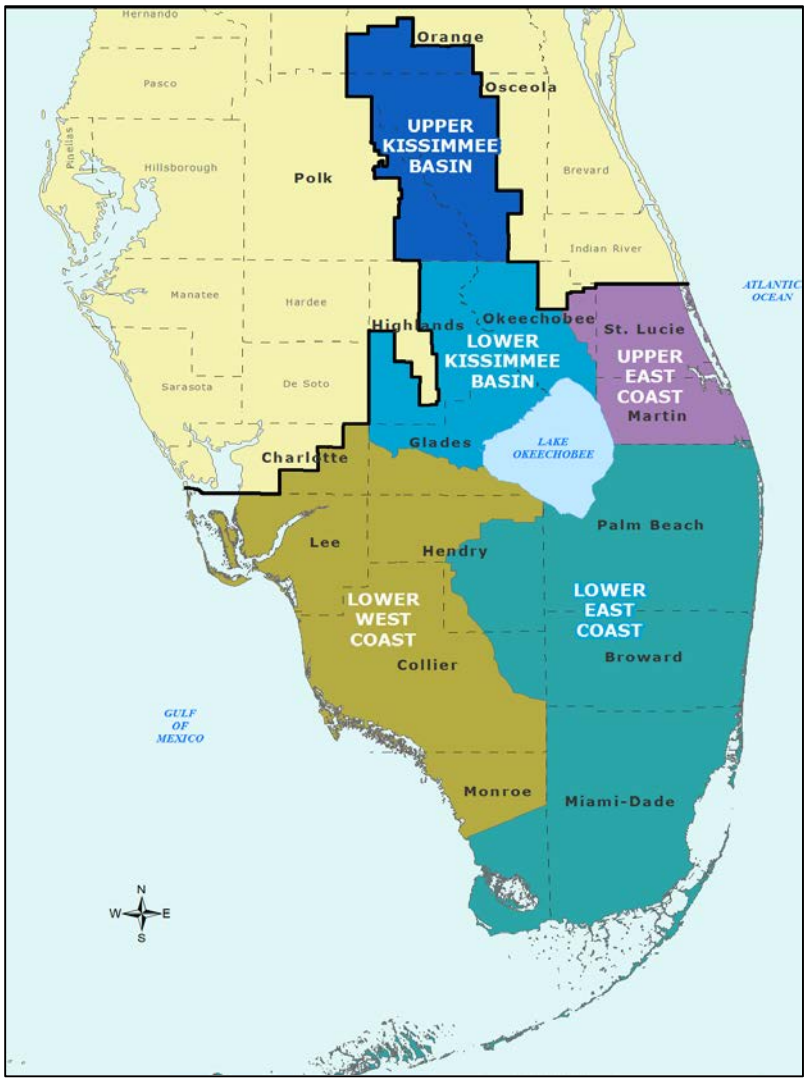
The counties or portions of counties within each planning area is as follows:



Upper Kissimmee Basin: Osceola County and portions of Orange and Polk counties

Lower Kissimmee Basin: Portions of Okeechobee, Highlands, and Glades counties

Upper East Coast: Martin and St. Lucie counties and a portion of eastern Okeechobee County

Lower East Coast: Palm Beach, Broward, and Miami-Dade counties, and portions of Monroe, Collier, and Hendry counties

Lower West Coast: Lee and Collier counties, and portions of Glades, Hendry, Monroe, and Charlotte counties

Figure 5A-1. Regional Planning Areas.

The CFWI water supply plan documents have been developed by three water management districts: SFWMD, Southwest Florida Water Management District (SWFWMD), and St. Johns River Water Management District (SJRWMD). A key component of the CFWI's mission is to implement a long-term approach to water resource management in Central Florida.

The latest UEC, LWC, and LEC water supply plan updates project water demands through 2030 (SFWMD 2011, 2012, 2013). They were approved by the SFWMD's Governing Board in March 2011, November 2012, and September 2013, respectively. The UEC water supply plan is currently being updated and is anticipated to be completed in 2016. Both the LKB (SFWMD 2014) and the CFWI water supply plans have a planning horizon of 2035. The Governing Board approved the LKB plan in September 2014. The CFWI Regional Water Supply Plan (RWSP) including the 2035 Water Resources Protection and Water Supply Strategies Plan are scheduled to be presented to the governing boards of the three water management districts in November 2015 for approval.

The District-wide population in 2015 is 8,156,677 with the 2030 population expected to increase to approximately 9.8 million with an estimated raw water demand of 4 billion gallons per

day. Information shows that the rate of population growth varies throughout SFWMD's boundaries with some counties experiencing more growth than others. Overall, water supply demand projections in current water supply plans/updates are significantly lower than previous plans due to slower population growth and improved water conservation.

Regional water supply plans identify water supply projects that public water supply utilities are proposing to meet their future increases in demand. The plans indicate public water supply demands are projected to increase by 358 million gallons per day (MGD) over the next 20 years (2010 demand versus projected 2030 demand) with 130 future water supply projects having an estimated cost of $7.2 billion anticipated to be constructed. While most of these projects will meet future demand increases, some will also support changes in water treatment processes or utilize other water sources. These projects include both potable and nonpotable water (i.e., reclaimed water and storm water). The capacity of these proposed projects exceeds the projected needs. Construction of these water supply development projects are primarily the responsibility of the utilities in the respective localities. SFWMD assisted and supported local utilities and other water users that construct alternative water supply (AWS) projects through its AWS Funding Program, now incorporated into the District-wide Cooperative Funding Program in 2016. The evaluation of increases in projected demand from 2010 to 2030 for individual utilities, compared to current allocations and water treatment capacity, indicates that allocations and treatment facilities are currently in place to meet 81 percent of the projected increase in demand.

WATER RESOURCE DEVELOPMENT

Most water resource development activities support and enhance water supply development but do not themselves yield specific quantities of water. For example, project-related hydrologic investigations and groundwater monitoring and modeling provide important information about aquifer characteristics (e.g., hydraulic properties and water quality), but do not increase water availability. Information derived from these water resource development activities supports water supply development activities (i.e., developing appropriate facility design, identifying safe aquifer yields, and evaluating the economic viability of projects). Water resource development activities in this report have been divided into District-wide and regional in scope. District-wide activities geographically benefit the entire SFWMD while regional activities are specific to a particular planning region or basin located within the planning region.

Water resource development is discussed in Chapter 5 of the 2011 UEC and 2012 LWC plan updates, Chapter 4 of the 2013 LEC plan update and 2014 LKB plan, and Chapter 8 of the draft 2014 CFWI RWSP document (SJRWMD et al. 2015a).

It should be noted that SFWMD projects that provide water supply primarily for the environment are presented in the South Florida Environmental Report (SFER) Consolidated Project Report Database, which is accessible at www.sfwmd.gov/sfer. Funding described in this report does not include projects associated with the Comprehensive Everglades Restoration Plan (CERP), restoration strategies, or other restoration projects; they are captured in other sections of the SFER.

DISTRICT-WIDE WATER RESOURCE DEVELOPMENT ACTIVITIES

As stated above, District-wide water resource development activities geographically benefit the entire SFWMD. With respect to these activities, a portion of the SFWMD's annual operation and maintenance budget for the Central and Southern Florida Flood Control Project (C&SF Project) is allocated to providing water supply to the region. SFWMD is responsible for managing and protecting the water resources of South Florida, which requires balancing and improving water quality, flood control, natural systems, and water supply. These activities are closely linked to water resource development activities such as hydrologic investigations and groundwater monitoring and

modeling. As an essential part of the agency's core mission, providing water supply for agriculture, urban uses, and natural resource needs and preventing saltwater intrusion are a routine part of SFWMD's operation and maintenance functions.

The District-wide water resource development activities described in this report include rulemaking for minimum flows and levels (MFLs), the Cooperative Funding Program, the Comprehensive Water Conservation Program, and resource evaluation. For more detail, refer to the *District-wide Water Resource Development Activities* section of this report. Implementation schedules and projected costs for Fiscal Year 2015-2016 through Fiscal Year 2019-2020 are summarized in **Table 1**.

REGIONAL WATER RESOURCE DEVELOPMENT ACTIVITIES

Regional water resource development activities are specific to a particular planning region or basin located within the planning region. There are three regional water resource development activities areas described in this report—Water Supply Planning, Central Florida Water Supply Planning and Water Supply Implementation. For more detailed information about these activities, see the *Regional Water Resource Development Activities* section of this report. Implementation schedules and projected costs for Fiscal Year 2015-2016 through Fiscal Year 2019-2020 are summarized in **Table 1**.

FUNDING

SFWMD's budget is approved annually in September. Approximately $18.7 million has been allocated to water resource development activities in the Fiscal Year 2015-2016 budget. In addition, the Fiscal Year 2015-2016 operations and maintenance budget is $216 million, of which approximately 50 percent ($108 million) is allocated to providing water supply to the region as shown in **Table 1**.

The budget is organized by elements. In this report, funding for each water resource development activity related element includes full-time equivalent (FTE) costs and contractual dollars, where applicable, to portray the actual program costs. The following six water resource development activity-related budgetary elements were allocated funding in Fiscal Year 2015-2016:

- **Planning (DA)** [Water Supply Planning (DA01), Central Florida Coordination (DA03)]
- **Implementation Activities** (**DB**) [Water Supply Plan Implementation (DB01)]
- **Rulemaking (DC)** [Water Reservations – Kissimmee (DC01), Water Reservations – Caloosahatchee MFL Update (DC09)]
- **Conservation (DD)** [Regulatory Initiatives, Water Savings Incentive Program (WaterSIP), Mobile Irrigation Laboratories (MILs), and Florida Automated Weather Network (FAWN) (DD01); Community Outreach (DD08)]
- **Alternative Water Supply (DE)** [Big Cypress Basin (DE02)]
- **Cooperative Funding Program (DE)** [Alternative Water Supply (DE01), Cooperative Activities (DE03)]
- **Resource Evaluation (DF)** [Hydrogeologic Data Gathering and Analysis (DF01), Groundwater Modeling (DF02), South Miami-Dade Hydrologic Analysis (DF06), Modeling (DF07)]

To align the budgeted activities to the actual budget spreadsheets, this report is organized to follow the Water Supply Program's elements with associated activities for each element. **Table 2** lists individual water resource development activities from the regional water supply plans (which

are encompassed within the activity categories in **Table 1**). **Table 3** shows the water resource development activities being funded in Fiscal Year 2015-2016.

Table 1. FY2016–FY2020 implementation schedule and projected expenditures (including FTE costs) for water resource development activities.

Regional Water Activities	Plan Implementation Costs ($ in thousands)					
	FY2016	FY2017	FY2018	FY2019	FY2020	Total
Water Supply Planning (DA01) Est. finish date: Ongoing	1,208	1,200	1,300	1,300	1,300	6,308
CFWI Water Supply Planning Project (DA03) Est. finish date: TBD	3,511	150	150	150	150	4,111
CFWI/ECFT Model (DA03) Est. finish date: 2016	72	0	0	0	0	72
Water Supply Implementation (DB01) Est. finish date: Ongoing	409	409	409	409	409	2,045
Subtotal	**5,200**	**1,759**	**1,859**	**1,859**	**1,859**	**12,536**
District-wide Water Activities						
MFL, Water Reservation Activities and Restricted Allocation Areas (DC01, DC09) Est. finish date: Ongoing	482	440	380	380	380	2,062
Comprehensive Water Conservation Program (DD01, DD08) Est. finish date: Ongoing	420	420	420	420	420	2,100
Alternative Water Supply (DE02) Est. finish date: Ongoing	1,090	0	0	0	0	1,090
Cooperative Funding Program (DE01, DE03)[a] Est. finish date: Ongoing	9,026	0	0	0	0	9,026
Groundwater Monitoring (DF01, DF06) Est. finish date: Ongoing	1,710	1,450	1,450	1,450	1,450	7,510
Groundwater Modeling (DF02, DF07) Est. finish date: Ongoing	814	775	775	775	775	3,914
Estimated Portion of C&SF Operation and Maintenance Budget Allocated to Water Supply[b]	108,000	108,000	108,000	108,000	108,000	540,000
Subtotal	**121,542**	**111,085**	**111,025**	**111,025**	**111,025**	**565,702**
Total	**126,742**	**112,844**	**112,884**	**112,884**	**112,884**	**578,238**

Key: C&SF – Central & South Florida Flood Control Project; CFWI – Central Florida Water Initiative; ECFT – East Central Florida Transient Model; Est. – estimated; MFL – Minimum Flows and Levels; and TBD – to be determined.

a. Program under development; implementation to be determined.

b. Approximated based on 50 percent of the FY2016 operation and maintenance budget.

Table 2. Crosswalk for water supply plans, water resource development activities, and sections of this report in which they can be found.

Recommended Water Resource Development Activities	Status	Report Section	Coverage Area	2011 UEC	2012 LWC	2013 LEC	2014 LKB	2014 UKB[a]
Alternative Water Supply Program	Ongoing	*District-wide Water Resource Development Activities*	District-wide	*	*	*	*	*
Comprehensive Water Conservation Program	Ongoing	*District-wide Water Resource Development Activities*	District-wide	*	*	*	*	*
Floridan Aquifer System Model and Database Development	Ongoing	*District-wide Water Resource Development Activities*	District-wide	*	*	*		*
Floridan Aquifer Exploratory Well Program	Ongoing	*District-wide Water Resource Development Activities*	District-wide	*	*	*	*	*
Groundwater Monitoring	Ongoing	*District-wide Water Resource Development Activities*	District-wide	*	*	*	*	*
ET Measurement Project	Complete	*District-wide Water Resource Development Activities*	District-wide		*			
USGS Water Quality Module	Complete	*District-wide Water Resource Development Activities*	District-wide		*			
MFL Activities	Ongoing	*District-wide Water Resource Development Activities*	District-wide		*			*
Water Reservation Activities	Ongoing	*District-wide Water Resource Development Activities*	District-wide		*		*	*
Saltwater Intrusion Monitoring & Mapping	Ongoing	*District-wide Water Resource Development Activities*	District-wide	*	*	*		
Surficial & Intermediate Aquifer System Model & Database Development	Ongoing	*District-wide Water Resource Development Activities*	Basin-specific		*			
Mobile Irrigation Labs	Ongoing	*District-wide Water Resource Development Activities*	District-wide		*			
Water Savings Incentive Program	Ongoing	*District-wide Water Resource Development Activities*	District-wide	*	*	*	*	*
Kissimmee Basin Modeling & Operations Study	On Hold	*Regional Water Resource Development Activities*	District-wide					*
Central Florida Water Cooperative	Complete	*Regional Water Resources Development Activities*	Basin-specific					*
Central Florida Water Initiative Water Supply Planning Project	Ongoing	*Regional Water Resources Development Activities*	Basin-specific					*
Central Florida Water Intitiative/East Central Florida Transient Model	Ongoing	*Regional Water Resources Development Activities*	Basin-specific					*

Key: ASR – aquifer storage and recovery; ET – evapotranspiration; LEC – Lower East Coast; LKB – Lower Kissimmee Basin; LWC – Lower West Coast; MFL – minimum flows and levels; UEC – Upper East Coast; UKB – Upper Kissimmee Basin; and USGS – United States Geological Survey

a. From the 2014 Draft CFWI RWSP (SJRWMD et al. 2014)

Table 3. Crosswalk for FY2016 budget (excluding FTE costs), water resource development activities, and sections of this report in which they can be found.

Budget Line Item	Program Element Name	Functional Area Name	Functional Area	State Activity	Amount	Activity	Report Section
19792 21247 21248 20100	Planning	CFWI	DA03	1.1.1	$3,073,000	CFWI Water Supply Planning Project	*Central Florida Water Supply Planning* (page 10)
21073	Planning	CFWI	DA03	1.1.1	$71,500	CFWI Modeling	*Central Florida Water Supply Planning* (page 11)
18761 18791	Rulemaking	MFL Water Reservation Rule Status	DC09	1.1.2	$22,500	Tape Grass Restoration Pilot Study	*Rulemaking* (page 14)
21235	Rulemaking	MFL Water Reservation Rule Status	DC09	1.1.2	$60,000	Caloosahatchee Peer Review	*Rulemaking* (page 14)
21257	Water Conservation	Regulatory Initiatives	DD01	2.4.1	$55,000	Mobile Irrigation Lab – BCB	*Conservation* (page 15)
16680	Water Conservation	Regulatory Initiatives	DD01	2.4.1	$75,000	FAWN	*Conservation* (page 15)
21223	Water Conservation	Education & Marketing Initiatives – Public Information & Outreach	DD08	5.2.1	$15,000	Great Water Odyssey	*Conservation* (page 15)
19584 21496	Local Agreements – AWS Projects	AWS – BCB	DE02	2.2.2	$1,080,000	AWS - BCB	*Alternative Water Supply* (page 17)
19791 19859	Cooperative Projects	Water Supply Development Projects	DE03	2.2.2	$9,000,000	Cooperatve Funding Program	*Cooperative Funding Program* (page 18)
16218	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$313,002	FTL USGS GW Core Network Monitoring	*Resource Evaluation – Groundwater Monitoring* (page 18)
16219	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$95,380	ORL USGS GW Core Network Monitoring	*Resource Evaluation – Groundwater Monitoring* (page 18)
16235	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$48,390	Groundwater RTU Maintenance/Repair	*Resource Evaluation – Groundwater Monitoring* (page 18)
15396	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$50,000	Emergency Wellhead Repairs	*Resource Evaluation – Groundwater Monitoring* (page 18)
15397	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$25,000	Parts & Supplies – Field Equipment	*Resource Evaluation – Groundwater Monitoring* (page 18)
15398	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$18,893	Geophysical Logging	*Resource Evaluation – Groundwater Monitoring* (page 18)
15399	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$15,000	Hydrogeologic Data Archiving	*Resource Evaluation – Groundwater Monitoring* (page 18)

Table 3. Continued.

Budget Line Item	Program Element Name	Functional Area Name	Functional Area	State Activity	Amount	Activity	Report Section
15400	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$14,400	Monthly Groundwater Level Measurements	*Resource Evaluation – Groundwater Monitoring* (page 18)
19764	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$20,000	Managing Forests – Increased Water Yield	*Resource Evaluation – Groundwater Monitoring* (page 18)
20984	Resource Evaluation	Hydrogeologic Data Gathering	DF01	1.1.1	$50,000	Well Abandonment & Replacement	*Resource Evaluation – Groundwater Monitoring* (page 18)
16200 16467	Resource Evaluation	South Miami-Dade Hydrologic Analysis	DF06	1.1.1	$46,682	Technical Review – FPL (Isotope Data Interpretation)	*Resource Evaluation – Groundwater Monitoring* (page 18)
15355	Resource Evaluation	Subregional Water Supply Modeling	DF02	1.1.1	$75,000	Groundwater Model Peer Reviews	*Resource Evaluation – Groundwater Modeling* (page 20)

Key: AWS – Alternative Water Supply; BCB – Big Cypress Basin; CFWI – Central Florida Water Initiative; FAWN – Florida Automated Weather Network; FPL – Florida Power & Light; FTL – Fort Lauderdale; GW – Groundwater; MFL – Minimum Flows and Levels; ORL – Orlando; RTU – Remote Terminal Units; and USGS – United States Geological Survey.

REGIONAL WATER RESOURCE DEVELOPMENT ACTIVITIES (DA, DB, FA)

WATER SUPPLY PLANNING (DA01)

Regional water supply plans are updated every five years with each plan on an individual cycle. Additionally, there is ongoing work during the year to support the updates (i.e., modeling, saltwater intrusion mapping, population and demand projections, receiving, reviewing and compiling annual utility status reports). The development of the regional plans are staggered and approved in varying years, requiring allocation of staff time annually. Water supply plans and updates describe proposed water supply projects, water resource activities, and implementation strategies for the planning period. CFWI planning efforts are captured in a combination of DA01 and DA03.

Implementing entity: SFWMD

Estimate of quantity of water produced by activity: Activity is not designed to make water directly available.

Activities completed for FY2015:

- Continued participation on the CFWI Solutions Planning Team including Regulatory Team and Technical Subteams.
- Completed draft CFWI Document Series [Draft CFWI RWSP: 2035 Water Resources Protection and Water Supply Strategies Plan (SJRWMD et al. 2015b) and the Draft CFWI RWSP (SJRWMD et al. 2015a)] and public review and comment period.
- Completed UEC Floridan aquifer modeling including the public participation process.
- Developed population and demand projections, held a public workshop and began drafting plan chapters in support of the 2016 UEC Water Supply Plan Update.
- Continued development of LWC Surficial Aquifer System and Intermediate Aquifer System Model.
- Initiated preparation of utility service area maps, population projections and data collection and evaluation for the 2017 LWC Water Supply Plan Update.

Activities proposed for FY2016:

- Approval of Final CFWI Document Series.
- Approval of 2016 UEC Water Supply Plan Update and completion of the public participation process.
- Continue development of LWC Surficial Aquifer System and Intermediate Aquifer System Model.
- Continue development of demand projections and data collection and evaluation for the 2017 LWC Water Supply Plan Update.
- Initiate work on the LWC Floridan Aquifer System Model for use in the 2017 LWC Water Supply Plan Update.
- Initiate data verification in preparation for using the East Coast Floridan Model for application in the LEC Planning Area.

Estimated completion date: Ongoing

Funding sources: SFWMD

Cost per thousand gallons: Activity is not designed to make water directly available.

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	1,208[a]	1,200[a]	1,300[a]	1,300[a]	1,300[a]	**6,308**

a. FTE costs

CENTRAL FLORIDA WATER SUPPLY PLANNING (UPPER KISSIMMEE BASIN PLANNING AREA) (DA03)

Water supply planning in Central Florida is continuing and includes two activities in this report: the CFWI Water Supply Planning Project and the CFWI/East Central Florida Transient Model. These activities were developed to address central Florida's current and long-term water supply needs.

Central Florida Water Initiative Water Supply Planning Project

This activity encompasses development and implementation of the CFWI Regional Water Supply Plan and the 2035 Water Resources Protection and Water Supply Strategies Plan in cooperation with SJRWMD, SWFWMD, the Florida Department of Environmental Protection (FDEP), Florida Department of Agriculture and Consumer Services (FDACS), regional public water supply utilities, and stakeholders.

Implementing entity: SFWMD, SJRWMD, SWFWMD, FDEP, and FDACS

Estimate of quantity of water produced by activity: Activity is not designed to make water directly available.

Activities completed in FY2015:

- Continued participation at the Steering Committee, Management Oversight Committee and Solutions Planning Team and Technical Subteam meetings.
- Simulated Solutions Planning project scenarios with East Central Florida Transient (ECFT) Model modeling.
- Drafted Solutions Planning Document.
- Participated in and provided support of public meetings to solicit stakeholder input to the CFWI Document Series.
- Completed Final Draft of CFWI Document Series.
- Facilitated CFWI meetings of the Steering Committee, Management Oversight Committee and Solutions Planning Team.
- Maintained and updated CFWI Guiding Document (SJRWMD et al. 2015c) and website (http://cfwiwater.com/).

Activities proposed for FY2016:

- Approval of CFWI Document Series by three water management district governing boards.
- Begin modifications to the ECFT groundwater model.
- Begin implementation of the CFWI RWSP and Solutions Plan recommendations.
- Track progress of implementation activities.
- Complete draft of annual CFWI Progress Report.
- Initiate implementation of Data, Monitoring and Investigations Team (DMIT) Five-year Work Plan.

- Continue facilitation of meetings of the Steering Committee, Management Oversight Committee, and Solutions Planning Team.

Estimated completion date: To be determined (TBD)

Funding sources: SFWMD (other water management districts provide matching funds)

Cost per thousand gallons: Activity is not designed to make water available.

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	3,511[a]	150[b]	150[b]	150[b]	150[b]	4,111

a. $3,073,000 contractual costs and $438,000 FTE costs
b. $150,000 FTE costs; future implementation contractual costs to be determined

Central Florida Water Initiative/East Central Florida Transient Model

SFWMD groundwater modeling staff is supporting the CFWI by assisting with an update to the ECFT Model. This model was applied in FY2015 to estimate groundwater availability in the CFWI while considering the effects of groundwater withdrawals on wetlands, springs, lakes, saltwater intrusion, and existing legal users of water. In FY2016, staff time and contractual funds are allocated to compile, analyze and update input data sets for the model (DA03; $71,500).

Implementing entity: SFWMD, SWFWMD, and SJRWMD

Estimate of quantity of water produced by activity: Activity is not designed to make water available, but to evaluate potential future sources of water.

Activities completed in FY2015:

- Completed documentation of additional model runs to support the CFWI Solutions Planning phase.
- Updated the Central Florida hydrogeologic model framework.
- Prepared a work plan for update to the ECFT Model including expanded model domain, rainfall-runoff partitioning via Hydrologic Simulation Program – Fortran (HSPF) Model, etc.

Activities proposed for FY2016: Staff will prepare updated model input data sets including water use and return flow and updated data from SWFWMD and SJRWMD and begin model calibration

Estimated completion date: FY2017

Funding source: SFWMD

Cost per thousand gallons: Activity is not designed to make water available.

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	72[a]	0	0	0	0	72

a. $72,000 contractual costs (FTEs for this effort are being reported under the CFWI Water Supply Planning Project)

WATER SUPPLY IMPLEMENTATION (DB01)

RWSPs include specific recommendations and implementation strategies to ensure availability of future water supplies. Coordination, execution, and facilitation of water resource development activities, operational changes, implementation of AWS development, consumptive use permitting, conservation programs, and rulemaking associated with the plans is a multi-year process that

involves working closely with other agencies, local governments, utilities, the agricultural industry, and environmental interests. SFWMD budgets annual staff time to be spent on these activities.

Implementing entity: SFWMD

Estimate of quantity of water produced by activity: Activity is not designed to make water directly available.

Activities completed in FY2015:

- Coordination of desalination activities within SFWMD's boundaries including updating the SFWMD's desalination facility inventory and map (this is an ongoing activity).
- Management of SFWMD water reuse activities including the following:
    - Facilitating and participating in meetings with each of the three FDEP districts within SFWMD's boundaries to discuss issues and status of water reuse at wastewater facilities, ongoing and upcoming water reuse projects, and related state legislation.
    - Continued coordination with WateReuse Florida and the Florida Water & Environment Association on statewide water reuse issues.
    - Coordinate with and provide support to the Regulation Division as needed on water reuse issues related to permits and SFWMD regulation procedures.
    - Gather pertinent information on water reuse including geographic information system (GIS) data on facility location, pipelines, users, mandatory reuse zones, and future planning.
- Oversight of SFWMD aquifer storage and recovery (ASR) activities, which involved maintaining inventory, coordinating with other water management districts, state, tribal and federal agencies, and work with the United States Army Corps of Engineers (USACE) to complete a 12-year CERP ASR Regional Study on the feasibility of constructing numerous ASR sites throughout South Florida in support of Everglades restoration.
- Facilitated and coordinated with over 100 water utilities for their online annual update of water supply development projects to SFWMD's Local Government and Water Supply Planning and Utility Project Database.
- Assisted FDEP in preparing a draft report on the beneficial use of reclaimed water, stormwater, and excess surface water in Florida as required by Senate Bill (SB) 536, approved during the 2014 legislative session.
- Provided hydrogeologic support to the following SFWMD activities:
    - **L-8 Flow Equalization Basin** – Construction support. Staff provided hydrogeologic interpretation and evaluation of water level responses during construction of the L-8 Flow Equalization Basin in Palm Beach County.
    - **Florida Power & Light (FPL)** – Permitting support. Provided project management and review of application submittals by FPL in support of continued operation of the Turkey Point power plant in Miami-Dade County. The applications requested included the temporary withdrawal of water from a SFWMD canal.
    - **Picayune Strand Restoration Project** – Permitting support. Hydrogeologic and geotechnical interpretation and evaluation of groundwater conditions to assist in the permitting and construction of a manatee mitigation/protection feature to be constructed in association with the project, which is located in Collier County.
    - **Loxahatchee River Watershed Restoration Project** – Planning support. Provided hydrogeologic interpretation and support of the planning process to determine flow-way designs for ecologic and hydrologic restoration of the Loxahatchee River.
    - **Injection Wells at the Seminole Tribe Hollywood Reservation** – Permitting support. Provided permit application review and hydrogeologic evaluation of a proposed deep injection well system by the Seminole Tribe. The permitting agency is the United

States Environmental Protection Agency although the construction and operation of the project will require incorporation and revision of the compact between the Seminole Tribe and SFWMD.

Activities proposed for FY2016:

- Continue coordination of desalination activities within the SFWMD boundaries.
- Continue management of SFWMD water reuse activities including regular coordination meetings with FDEP, updating reclaimed water GIS coverage, and maintaining SFWMD reclaimed water inventory.
- Continue oversight of SFWMD ASR activities. Specific activities include the following:
    - **City of West Palm Beach ASR System:** SFWMD staff is providing assistance with cycle testing, data collection, and evaluation. The city recently activated this ASR system and will be evaluating the testing results through 2015, including recent approval for the ability to test the system without disinfection prior to recharge.
    - **CERP ASR Program:** Staff will initiate development of a long-term ASR operational program for the pilot facilities and a project implementation report, consistent with the findings of the CERP ASR Regional Study. Support will also be provided to the Northern Everglades and Biscayne Bay Coastal Wetlands activities, which are currently considering the application of ASR technology.
    - **ASR Database:** Staff is compiling information on ASR projects throughout Florida and compiling an electronic database that will be available at www.sfwmd.gov. The database will include technical information, publications, and links to sources for a variety of topics related to the technology.
- Provide hydrogeologic support of SFWMD activities including the following:
    - **L-8 Flow Equalization Basin:** Staff will continue to provide hydrogeologic support.
    - **Picayune Strand Restoration Project:** Continue to provide hydrogeologic and geotechnical support during construction of the manatee mitigation/protection feature.
    - **Loxahatchee River Watershed Restoration Project** – Continue to provide hydrogeologic interpretation and support of the planning process to determine flow-way designs for ecologic and hydrologic restoration of the Loxahatchee River.
    - **Injection Wells at the Seminole Tribe Hollywood Reservation**: Continue to provide hydrogeologic evaluation of a deep injection well system proposed by the Seminole Tribe.
- Continue to assist FDEP in finalizing the Senate Bill 536 Water Report on the statewide expansion of reclaimed water, stormwater, and excess surface water use. The final report is anticipated to be completed by December 2015.
- Facilitate and coordinate with water utilities to update the status of their water supply development projects in the SFWMD's Water Supply Utilities Project (WaSUP) database.

Estimated completion date: Ongoing

Funding sources: SFWMD

Cost per thousand gallons: Activity is not designed to make water available

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	409[a]	409[a]	409[a]	409[a]	409[a]	2,045

a. $405,000 FTEs and $4,000 other

DISTRICT-WIDE WATER RESOURCE DEVELOPMENT ACTIVITIES (DC, DD, DE, DF)

This section provides activity descriptions by budget element for the District-wide water resource development efforts funded through the SFWMD's Water Supply Program for FY2016. Additional information, including the implementing entities, proposed FY2016 activities, estimated completion dates, and funding sources, is presented in each activity summary.

RULEMAKING (DC01, DC09)

Minimum Flows and Levels and Water Reservation Activities

MFLs are developed pursuant to Sections 373.042 and 373.0421, F.S., and are part of a comprehensive water resource management approach to assure the sustainability of Florida's water resources. An MFL is a minimum threshold below which further water withdrawals will cause significant harm to water resources or the ecology of the area. MFL implementation activities include conducting research to set scientifically-based criteria for defining significant harm, conducting voluntary independent scientific peer review of the associated science where needed, gaining stakeholder input in the process, and completing rulemaking. Prevention or recovery strategies are developed concurrently with MFLs to either maintain (prevention strategy) or achieve (recovery strategy) compliance with established MFLs.

The SFWMD Governing Board has the ability to authorize rule development to establish water reservations in accordance with Section 373.223(4), F.S. A water reservation is a legal mechanism to reserve water from consumptive uses that is needed to protect fish and wildlife or public health and safety. Water reservations help support Everglades restoration and aid in a recovery or prevention strategy for established MFLs. The creation of a water reservation is necessary for SFWMD and USACE to enter into a project partnership agreement, as required by the Water Resources Development Act of 2000 for construction of CERP project components such as reservoirs or stormwater treatment areas. Priority water bodies, which include both MFLs and water reservations, are required to be approved annually by the Governing Board and submitted to FDEP.

Implementing entity: SFWMD with federal and state government support

Estimate of quantity of water produced by activity: Activities are not designed to make water directly available.

Activities completed in FY2015:

- **Tape Grass Restoration Pilot Study:** The resurgence of tape grass in the Caloosahatchee River is not only limited by chronic high salinity in the dry season, but also by grazing pressure. This study is testing the hypothesis that protecting a donor population using cages will allow sufficient colonization of unprotected areas to withstand grazing pressure. This pilot study is being conducted over a two-year period during FY2015 and FY2016.
- **Caloosahatchee River Estuary MFL Reevaluation:** The science and research data for the tidal basin and its tributaries were analyzed and compiled into science summaries for the various ecological indicators. Two public workshops on these summary components were held during the year. Work continued on the technical analysis of the data and research conducted to date. This information supported modeling for the MFL update.
- **Kissimmee Basin Water Reservation:** Continued with the reservation rule development process, which included two public workshops. The proposed draft rule and draft technical document have been completed and public comments are being evaluated.

- **Kissimmee Basin Water Reservation – Statement of Estimated Regulatory Costs (SERC):** Work was completed toward the development of a draft statement of estimated regulatory cost.

Activities proposed for FY2016:

- **Tape Grass Restoration Pilot Study:** This will be the second and final year of the study that was initiated in FY2015 and described above (DC09, $22,500).
- **Caloosahatchee River Estuary MFL Reevaluation:** Continue technical analysis of the data and research conducted to date. This information will continue to support modeling for reevaluation of the MFL. If an update to the MFL criteria is determined to be necessary, it is anticipated to be completed in 2017.
- **Caloosahatchee River Estuary MFL Peer Review:** All scientific data, methodologies, models and modeling assumptions will undergo an independent scientific peer review, which will provide information necessary to complete a Caloosahatchee MFL technical document (DC09, $60,000).
- **Caloosahatchee River Estuary MFL – SERC:** If an update to the MFL is determined to be necessary, a draft SERC will be developed in FY2016. The statement will be finalized prior to rule adoption.
- **Kissimmee Basin Water Reservation:** Continue with the reservation rule development process to address public comments and finalize draft reservation rule. Complete rule adoption by December 2016.
- **Kissimmee Basin Water Reservation – SERC:** Complete a draft SERC based on any revisions to the draft reservation rule. The draft SERC will be finalized prior to rule adoption.

Estimated completion date: Various

Funding source: SFWMD

Cost per thousand gallons: Activity is not designed to make water available.

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	482[a]	440[b]	380[c]	380[c]	380[c]	2,062

a. $82,000 contractual costs and $400,000 FTEs (elements DC01, DC09)
b. $60,000 contractual costs and $380,000 FTEs (elements DC01, DC09)
c. 380,000 FTEs only (element DC09)

CONSERVATION (DD01, DD08)

Comprehensive Water Conservation Program

The SFWMD's overall water conservation goal is to prevent and reduce wasteful, uneconomical, impractical, or unreasonable uses of water resources as stated in the District's Water Conservation: A Comprehensive Program for South Florida (SFWMD 2008). Strategies have been implemented during FY2015 in all three initiative areas—regulatory, voluntary and incentive-based, and educational and marketing—with water saving benefits expected in the future. The program is a decade-long, comprehensive demand management effort aimed at reducing water use and creating an enduring conservation ethic. From a regulatory perspective, emphasis has been placed on water conservation requirements in the consumptive use permitting process that require municipalities to adopt and enforce effective conservation measures. From local landscape ordinances to year-round irrigation conservation measures, these regulatory measures advance water use efficiency and result in quantifiable water savings. Voluntary and incentive-based initiatives, including financial assistance, technical assistance, and recognition programs,

supplement regulations and build goodwill, leverage investments, and bring wider environmental benefits. Education, outreach, and social marketing complement and sustain these efforts by instilling a lasting conservation ethic in Florida businesses and communities. Further information is available at www.sfwmd.gov/watersupply, under the *Water Conservation* link.

Through WaterSIP, SFWMD provided reimbursement up to 50 percent or up to $50,000, whichever was less, to water providers and large users (i.e., cities, utilities, industrial groups, schools, hospitals, and homeowners/condominium associations) for installing water saving hardware and technologies. These technologies include high efficiency plumbing fixtures, advanced irrigation controllers, automatic line flushing devices, and other hardware. WaterSIP has been incorporated into the Cooperative Funding Program beginning in FY2016.

The University of Florida operates FAWN, a statewide research and data program that provides accurate and timely weather data to a wide variety of users.

Implementing entity:

- WaterSIP: SFWMD
- MIL Program: Big Cypress Basin (BCB), FDACS, and soil and water conservation districts
- FAWN: SFWMD, University of Florida (UF), FDACS, other water management districts, and other entities
- Orange County Conservation Study: SFWMD, Orange County Utilities, SJRWMD, and the Water Research Foundation
- The Great Water Odyssey: SFWMD
- Big Cypress Basin Conservation Outreach: SFWMD and BCB Service Center

Activities completed in FY2015:

- **WaterSIP:** Since program inception, 181 projects were funded District-wide with an estimated water savings of 7.79 MGD. In FY2015, 9 projects with an estimated water savings of 86 million gallons per year (MGY) were awarded funding totaling $250,000.
- **MIL Program:** Six MILs are operating within SFWMD boundaries: four agricultural and two urban. The four agricultural labs are located in Miami-Dade, Palm Beach, Broward and Martin/St. Lucie counties and the two urban MILs are located in Broward County and the BCB Service Area. The BCB lab was funded by the District while the remaining labs were funded by other sources.
- **FAWN:** SFWMD is in the third year of a 10-year memorandum of understanding for the installation, operation, and maintenance of two FAWN/FDACS-funded weather stations located on SFWMD property in the Village of Wellington and Okeechobee County. The two stations were installed in FY2014. The District also funded the maintenance of seven weather stations in our District, an update of the smartphone application, an educational workshop, and continued enhancement of the FAWN system.
- **The Great Water Odyssey (Online Teacher Training Program):** This web-based, interactive water resource teacher training is available to public elementary school teachers, home school teachers, private school elementary teachers, and others teaching within the SFWMD. The curriculum is offered free of charge to teachers located in within SFWMD boundaries. In FY2015, the training reached 106 teachers, resulting in the curriculum being taught to 2,332 third, fourth, and fifth grade students.
- **Orange County Utilities Irrigation Study:** Purchase and installation of equipment for residential properties was completed. Irrigation data has been collected to evaluate the water conservation potential of soil moisture sensors and evapotranspiration (ET) irrigation controllers on landscapes in Orange County. UF selected 167 residential participants and

1 commercial property in each of the residential clusters for the study. UF completed surveys and site evaluations for these properties. The final report will be submitted by November 2015.

Activities proposed for FY2016:

- **WaterSIP:** This program has been combined with the AWS and Stormwater funding programs into the District-wide Cooperative Funding Program.
- **MIL Program (BCB):** One urban MIL in the BCB will continue to be funded by SFWMD (DD01, $55,000). The remaining MILs will be funded by other entities.
- **FAWN:** Activities will include maintenance of weather stations, enhancement of the mobile application, and continued enhancement of the FAWN system (DD01, $75,000).
- **The Great Water Odyssey:** This web-based, interactive water resource teacher training will continue to be made available to elementary school teachers within SFWMD boundaries. The program is planned to reach 75 to 125 educators (DD08, $15,000).

Estimated completion date: Ongoing

Funding sources:

- Cooperative Funding Program (WaterSIP): SFWMD, utilities, homeowners associations, and other project partners
- MIL Program: SFWMD, BCB, and FDACS
- FAWN: SFWMD, UF, FDACS, and other water management districts
- Orange County Conservation Study: Orange County Utilities and other water management districts
- The Great Water Odyssey: SFWMD
- Big Cypress Basin Conservation Outreach: SFWMD and BCB Service Center

Cost per thousand gallons: Activity is not designed to make water available.

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	420[a]	420[a]	420[a]	420[a]	420[a]	2,100

a. $145,000 contractual costs and $275,000 FTEs

ALTERNATIVE WATER SUPPLY (DE02)

A full description of AWS-related activities and associated funding is contained in the SFWMD's Alternative Water Supply Annual Report in the SFER (Chapter 5B), prepared pursuant to Section 373.707(7), F.S.

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	1,090[a]	0[b]	0[b]	0[b]	0[b]	1,090

a. $1,080,000 contractual costs and $10,000 FTEs
b. $0 contractual costs and $0 FTEs

COOPERATIVE FUNDING PROGRAM (DE01, DE03)

In FY2016, one-time funding has been budgeted for cooperative funding for stormwater, AWS, and water conservation projects. Implementation strategies for the Cooperative Funding Program are under development.

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	9,026[a]	0[b]	0[b]	0[b]	0[b]	9,026

a. $9,000,000 contractual costs and $26,000 FTEs
b. $0 contractual costs and $0 FTEs

RESOURCE EVALUATION (DF01, DF02, DF06, DF07)

Groundwater Monitoring (DF01, DF06)

Water level and water quality monitoring and testing at existing wells provide critical information to aid SFWMD in developing groundwater models, assessing groundwater conditions, and managing these resources. SFWMD maintains extensive groundwater monitoring networks and partners with the United States Geological Survey (USGS) to provide additional support and funding for ongoing monitoring. Documentation (including location, well construction details, geophysical logging, aquifer test data, and water level and water quality data where available) is provided in SFWMD's technical publications and corporate environmental database, DBHYDRO (www.sfwmd.gov/dbhydro). Data from sites monitored by the USGS are archived in the USGS database and published annually.

Implementing entity: SFWMD and USGS

Estimate of quantity of water produced by activity: Activity is not designed to make water directly available.

Activities completed in FY2015:

- **Fort Lauderdale Office of the Florida Water Science Center (USGS) – Groundwater Core Network**. Continued ongoing District-wide (with exception of Kissimmee Basin) water level monitoring in the surficial, intermediate, and Floridan aquifer systems including recorder maintenance. This is an ongoing effort and all data are archived in the USGS database.
- **Orlando Office of the Florida Water Science Center (USGS) – Groundwater Monitoring:** Continued ongoing Kissimmee Basin water level monitoring in the surficial, intermediate, and Floridan aquifer systems as well as Kissimmee Basin Floridan water quality monitoring, data analysis, data validation, and archiving data in the USGS database.
- **Groundwater Level Monitoring:** Continued ongoing monitoring by SFWMD of groundwater levels in all planning areas of SFWMD within the surficial, intermediate, and Floridan aquifer systems and performed recorder maintenance at all locations. Data were collected, analyzed, quality-controlled, and archived in DBHYDRO.
- **Regional Floridan Groundwater Monitoring:** Continued ongoing water quality monitoring at 38 of 104 Floridan aquifer well sites throughout SFWMD boundaries, including data collection, analysis and validation, and archival in DBHYDRO.
- **Hydrogeologic Data Archiving:** Continued digitizing and uploading of hard copy hydrogeologic and geophysical data and conduct miscellaneous database corrections.
- **Monthly Groundwater Level Measurements:** Continued ongoing water level monitoring at select sites, including data collection, analysis, and validation for the Hydrologic Online Well Data Inventory wells. Data were archived in DBHYDRO.
- **Floridan Aquifer Well Monitoring Equipment Maintenance:** Continued ongoing water level monitoring and maintenance at select Floridan aquifer well sites, including data collection, analysis and validation, and archival in DBHYDRO, as well as data logger maintenance.

- **Emergency Wellhead Repairs:** Conducted wellhead repairs on SFWMD-owned monitoring wells that are under artesian pressure and were in danger of flowing unexpectedly onto land surface. One Floridan well located in BCB was repaired with these funds.
- **Parts and Supplies – Field Equipment:** Conducted maintenance of existing data loggers, sondes, pumps, and gauges.
- **Isotope Data Interpretation:** Retained university and consultant experts in isotope water quality and water budgets to evaluate the annual water quality report and a proposed remediation measure at the FPL Turkey Point Power Plant Cooling Canal System.
- **Lower Floridan Aquifer Evaluation in the Kissimmee Basin:** Prepared final draft report on isotope water quality in the Lower Floridan Aquifer in central Florida and finalized a report on the Nature Conservancy Aquifer Performance Test located at the Disney Wilderness Preserve Site, Polk County, Florida (Geddes 2015).
- **Geophysical Logging:** Conducted 27 geophysical logging runs on selected wells and boreholes throughout the SFWMD.
- **Managing Forests Increased Water Yield:** Multi-year research study to quantify the water yield benefits of land management to local and regional water resources through direct measurement of forest water use via groundwater and soil moisture monitoring (DF01; $20,000).

Activities proposed for FY2016:

- **Fort Lauderdale Office of the Florida Water Science Center (USGS) – Groundwater Core Network**. Continue ongoing District-wide (with exception of Kissimmee Basin) water level monitoring in the surficial, intermediate, and Floridan aquifer systems as well as recorder maintenance and archiving data in the USGS database (DF01; $313,002).
- **Orlando Office of the Florida Water Science Center (USGS) – Groundwater Monitoring:** Continue ongoing Kissimmee Basin water level monitoring in the surficial, intermediate, and Floridan aquifer systems as well as Kissimmee Basin Floridan water quality monitoring, data analysis, data validation, and data archival in the USGS database (DF01; $95,380).
- **Groundwater Level Monitoring:** Continue ongoing monitoring by SFWMD of groundwater levels in all planning areas of the SFWMD within the surficial, intermediate, and Floridan aquifer systems and perform recorder maintenance at all locations. Data will be collected, analyzed, quality-controlled, and archived in DBHYDRO (DF01; FTEs only).
- **Regional Floridan Groundwater Monitoring:** Continue ongoing water quality monitoring at 24 of 104 Floridan aquifer well sites throughout SFWMD, including data collection, analysis and validation, and archival in DBHYDRO (DF01; FTEs only).
- **Hydrogeologic Data Archiving:** Continue digitizing and uploading of hard copy hydrogeologic and geophysical data and conduct miscellaneous database corrections (DF01; $15,000 and staff resources).
- **Monthly Groundwater Level Measurements:** Continue ongoing water level monitoring at select sites, including data collection, analysis and validation for the Hydrologic Online Well Data Inventory wells, as well as archiving data in DBHYDRO (DF01; $14,400).
- **Floridan Aquifer Well Monitoring Equipment Maintenance:** Continue ongoing water level monitoring and maintenance at select Floridan aquifer well sites, including data collection, analysis, validation and archival in DBHYDRO, in addition to data logger maintenance (DF01; $48,390).
- **Emergency Wellhead Repairs:** These funds are provided for emergency wellhead repairs in case artesian wells begin flowing unexpectedly onto land surface (DF01; $50,000).

- **Parts and Supplies – Field Equipment:** These funds are allocated for the maintenance of existing data loggers, sondes, pumps, and gauges (DF01; $25,000).
- **Isotope Data Interpretation:** University and consultant experts in isotope water quality and water budgets will be retained to evaluate the annual water quality report at the FPL Turkey Point Power Plant Cooling Canal System (DF06; $46,682).
- **Hydrostratigraphic Mapping for East Central Florida Transient Model:** Update hydrostratigraphic maps based on a joint effort between SFWMD, SJRWMD, and SWFWMD (DF01; FTEs only).
- **Well Abandonment and Replacement:** Replace long-term monitoring wells C-948 (a 420-foot artesian Mid Hawthorn aquifer well), C-951 (a 170-foot Lower Tamiami aquifer well) and C-953 (a 40-foot surficial aquifer well) due to a road widening project on Golden Gate Boulevard in Collier County (DF01; $50,000).
- **Lower Floridan Aquifer Evaluation in the Kissimmee Basin:** Finalize report on isotope water quality in the Lower Floridan aquifer in central Florida (DF01; FTEs only).
- **Geophysical Logging:** Conduct geophysical logging on select wells and boreholes throughout the District (DF01; $18,893).
- **Managing Forests Increased Water Yield:** Multi-year research study to quantify the water yield benefits of land management to local and regional water resources through direct measurement of forest water use via groundwater and soil moisture monitoring (DF01; $20,000).

Estimated completion date: These are ongoing activities.

Funding sources: SFWMD and USGS

Cost per thousand gallons: Activity is not designed to make water directly available.

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	1,710[a]	1,450[b]	1,450[b]	1,450[b]	1,450[b]	7,510

a. $696,000 contractual costs and $1,014,000 FTEs
b. $630,000 contractual costs and $820,000 FTEs

Groundwater Modeling (DF02, DF07)

SFWMD's Water Supply Bureau is currently undertaking or has completed a number of groundwater modeling efforts that are described below. In FY2016, contractual funds are allocated to conduct peer review of a revised Lower West Coast Surficial/Intermediate Aquifer System Model (LWCSIM) (DF02; $75,000). All other modeling work is expected to be performed by SFWMD staff. There are three significant groundwater modeling initiatives underway or recently completed: Lower West Coast Floridan Aquifer Model, the previously mentioned LWCSIM, and the East Coast Floridan Aquifer System Model (ECFM).

Lower West Coast Floridan Aquifer Model

SFWMD's Lower West Coast Floridan Aquifer Model, which used the SEAWAT-2005 computer code, is now available for use. The Lower West Coast Floridan Aquifer Model will be used to support development of the updates to the LWC Water Supply Plan.

Implementing entity: SFWMD

Estimate of quantity of water produced by activity: Activity is not designed to make water available, but to evaluate potential future sources of water and their impacts.

Activities completed in FY2015: Additional data from FDEP's Underground Injection Control database was compiled. Additional peer review comments from the ECFM were considered and implemented in the Lower West Coast Floridan Model to ensure consistency.

Activities proposed for FY2016: Tasks to be completed are (1) completion of recalibration of model with additional data, and (2) peer review will be conducted and comments incorporated in FY2016 to allow for simulations in FY2016 and FY2017 in support of the LWC Water Supply Plan.

Estimated completion date: FY2017

Funding source: SFWMD

Cost per thousand gallons: Activity is not designed to make water directly available.

Lower West Coast Surficial/Intermediate Aquifer Systems Model (LWCSIM)

LWCSAS was completed in 2006 and has been used sparingly to evaluate specific consumptive use permits but has not been used for planning purposes. SFWMD intends to (1) develop an updated, calibrated model covering both the surficial and intermediate aquifer systems for the LWCSIM; (2) prepare model documentation of the updated model; (3) convene an independent peer review of the model and (4) incorporate peer review comments and finalize the model and documentation (DF02; $75,000).

Implementing entity: SFWMD

Estimate of quantity of water produced by activity: Activity is not designed to make water available, but to evaluate potential future sources of water and their impacts.

Activities completed in FY2015: The hydrostratigraphic surfaces and documentation prepared in 2014 was distributed for public review and comment, and finalized.

Activities proposed for FY2016: The updated LWCSIM will be developed, calibrated, documented and peer review will be completed to allow for simulations in FY2016 and FY2017 in support of the LWC Water Supply Plan.

Estimated completion date: FY2017

Funding source: SFWMD

Cost per thousand gallons: Activity is not designed to make water directly available.

East Coast Floridan Aquifer System Model (ECFM)

In June 2011, three independent groundwater modeling experts released their technical report reviewing SFWMD's Phase II ECFM (Jacobs et al. 2011), which used the USGS's SEAWAT-2005 computer code. SFWMD began incorporating the panel's recommendations in FY2012.

Implementing entity: SFWMD

Estimate of quantity of water produced by activity: Activity is not designed to make water available, but to evaluate potential future sources of water and their impacts.

Activities completed in FY2015: The ECFM, along with model documentation, was completed and applied to the UEC Planning Area in support of the 2016 Update to the UEC Water Supply Plan.

Activities proposed for FY2016: Begin preparing data sets to apply the model to the LEC Planning Area in support of the 2018 Update to the LEC Water Supply Plan.

Estimated completion date: Not applicable

Funding source: SFWMD

Cost per thousand gallons: Activity is not designed to make water directly available.

Proposed expenditures:

Cost	FY2016	FY2017	FY2018	FY2019	FY2020	Total
($ in thousands)	814[a]	775[b]	775[b]	775[b]	775[b]	3,914

a. $75,000 contractual costs and $522 FTEs (DF02), $217,000 FTEs (DF07)
b. $75,000 contractual costs and $700 FTEs

SUMMARY

The water resource development activities and related funding detailed in this document reflect the District's continuing commitment to ensure that adequate resources are available to meet both existing and future beneficial needs. The funding allocation for FY2016 is approximately $21.6 million more than the funding allocation for FY2015.

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