

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

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INTRODUCTION

This chapter presents the Five-Year Water Resource Development Work Program, as mandated by state law. Section 373.536(6)(a)4 of the Florida Statutes (F.S.) requires each water management district to prepare an annual Five-Year Water Resource Development Work Program. This document describes the agency's implementation strategy for the water resource development component of each approved regional water supply plan developed or revised under Section 373.709, F.S. In addition, Section 373.707, F.S., requires each water management district to submit an annual report to the Florida legislature and governor on Alternative Water Supply (AWS) funding, which is provided in Chapter 5B of this volume. Further information on the South Florida Water Management District's (SFWMD or District) role in managing the region's water resources is available at www.sfwmd.gov/watersupply.

Florida water law identifies two types of projects to meet water needs: Water Resource Development projects and Water Supply Development projects. Water resource development is defined in Section 373.019(22), 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 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, 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 projects are regional in nature and are primarily the SFWMD's responsibility. These projects support water supply development at the local level and are intended to assure the availability of adequate water supplies for all competing uses deemed reasonable and beneficial and to maintain the functions of natural systems. Water Supply Development projects generally involve public or private facilities for water collection, treatment, and transmission and are the responsibility of local water users. The Five-Year Water Resource Development Work Program provides an implementation update of the water resource development component of the District's regional water supply plans. Pursuant to Chapter 373, F.S., regional water supply plans encompass a 20-year planning horizon and are updated every five years.

PLANNING REGION OVERVIEW

The SFWMD consists of four planning areas: the Upper East Coast (UEC), the Kissimmee Basin (KB), the Lower West Coast (LWC), and the Lower East Coast (LEC). The goal of the regional water supply plans is to ensure an adequate supply of water to meet the needs of all existing and future reasonable-beneficial uses, and to protect natural systems from harm during a 1-in-10 year drought event. Water Supply Plan updates identify the Water Resource Development

and Water Supply Development projects expected to meet the needs of all reasonable-beneficial uses for the year 2030 during a 1-in-10 year drought event while sustaining water resources and related natural systems.

The *2011 Upper East Coast Water Supply Update* was approved by the District's Governing Board on March 10, 2011. It is anticipated that the *Lower West Coast Water Supply Update* will be approved in 2012 and the Kissimmee Basin and Lower East Coast updates will be approved in 2013.

As noted in last year's report, District-wide population was projected to reach 10.6 million by 2025. According to the 2010 Census, the District-wide population is currently approximately 7.6 million and the 2030 population is expected to be 9.4 million. The associated raw water demand in 2010 was 3.5 billion gallons per day (bgd), a slight increase from the 3.4 bgd in 2005. Demand in 2030 is projected to be 4.3 bgd. As noted in last year's report, during the process of updating the four regional water supply plans, results have shown that the rate of population growth and associated water supply demands have slowed significantly. These projections will be formalized in the Water Supply Plan updates and are expected to be included in the *2013 South Florida Environmental Report – Volume II*.

WATER RESOURCE DEVELOPMENT PROJECTS

The Water Resource Development projects described in this report – drilling and testing, groundwater and wetland monitoring, District-wide feasibility studies, comprehensive water conservation, and regional water resource development projects – are primarily District-wide projects. In addition, this report describes regional Water Resource Development projects that are specific to each planning area. Implementation schedules and costs are summarized in **Tables 5A-1** and **5A-2**.

Most Water Resource Development projects support and enhance Water Supply Development projects, but do not themselves yield specific quantities of water. For example, hydrologic investigations and groundwater monitoring and modeling provide important information about aquifer characteristics (such as hydraulic properties and water quality), but do not provide water. Information derived from these Water Resource Development projects supports Water Supply Development projects (i.e., in developing appropriate facility design, identifying safe aquifer yields, evaluating the economic viability of projects).

District-wide and region-specific Water Resource Development projects are identified in Chapter 6 (Water Resource Development Projects) of the 2005–2006 Plan updates for the Kissimmee Basin, Lower East Coast and Lower West Coast planning regions. Water Resource Development projects specific to the Upper East Coast Planning Area are discussed in Chapter 5: Water Resource Development Projects in the 2011 UEC Plan Update. In the 2012–2013 KB, LEC, and LWC Plan Updates, District-wide and region-specific Water Resource Development projects will also be addressed in the same chapter.

Projects that provide water supply primarily for the environment are excluded from this report and were not included in Chapter 6 of the 2005–2006 Plan updates or the 2011 UEC Plan Update.

Table 5A-1. Fiscal Year 2012–2016 (FY2012–FY2016)
(October 1, 2011–September 30, 2016) implementation schedule and
costs for District-wide Water Resource Development projects.

District-wide Water Resource Development Projects	Plan Implementation Costs (\$ in thousands)					Total
	FY2012	FY2013	FY2014	FY2015	FY2016	
Drilling and Testing Est. start date: 1990 Est. finish date: ongoing	2,004	2,000	1,000	0	0	5,004
Groundwater and ET Assessments Est. start date: 1954 and 2002, respectively Est. finish date: ongoing	0	0	0	0	0	0
Groundwater and Wetland Monitoring Est. start date: 2002 Est. finish date: ongoing	703	702	702	702	702	3,511
District-wide Feasibility Studies Est. start date: 2001 Est. finish date: ongoing	0	0	0	0	0	0
Modeling Est. start date: 1998 Est. finish date: ongoing	Staff Time	Staff Time	Staff Time	Staff Time	Staff Time	0
Comprehensive Water Conservation Program Est. start date: 1977 Est. finish date: ongoing	438	435	435	435	435	2,178
MFL, Water Reservation Activities and Restricted Allocation Areas Est. start date: 1995 Est. finish date: ongoing	Staff Time	Staff Time	Staff Time	Staff Time	Staff Time	0
Total	3,145	3,137	2,137	1,137	1,137	10,693

ET – Evapotranspiration

FY – Fiscal Year (for the District, October 1 through September 30)

MFL – Minimum Flows and Levels

Table 5A-2. FY2012–FY2016 Implementation Schedule and Costs for Regional Water Resource Development Projects.

Regional Water Resource Development Projects	Plan Implementation Costs (\$ in thousands)					Total
	FY2012	FY2013	FY2014	FY2015	FY2016	
STOPR/Orange County Settlement Agreement	500	0	0	0	0	500
Central Florida Water Initiative Project Facilitator	25	0	0	0	0	25
Central Florida Collaborative Water Supply Initiative	250	0	0	0	0	250
C-51 Reservoir Project	Staff Time	0	0	0	0	0
Kissimmee Chain of Lakes Long-Term Management Plan/KB Modeling & Operations Study (KB)¹ Est. start date: 2004 Est. finish date: 2013	0	0	0	0	0	0
Total	775	0	0	0	0	775

KB – Kissimmee Basin Planning Area

¹ FY2012 expenditures and future proposed expenditures are reflected in the Kissimmee Watershed Program

COMPREHENSIVE WATER CONSERVATION PROGRAM

The SFWMD's Comprehensive Water Conservation Program was approved in September 2008 and developed in conjunction with stakeholders through the District's Water Resources Advisory Commission. The Comprehensive Water Conservation Program is a series of implementation strategies designed to create a year-round conservation ethic and permanent reduction in individual water use. The program is organized into (1) regulatory, (2) voluntary and incentive-based, and (3) education and marketing initiatives. Water savings achieved through conservation measures are the most cost-efficient way to expand current water supplies. One of the primary efforts with budgeted funding beyond staffing identified in the Comprehensive Water Conservation Program is the Water Savings Incentive Program (WaterSIP). Big Cypress Basin (BCB) has also provided funding for the Mobile Irrigation Lab (MIL) Program. Implementation of the WaterSIP and BCB MIL programs are included in this report. For more detailed information about the Comprehensive Water Conservation Program, see the *Conservation (DD)* section of this chapter.

WATER MADE AVAILABLE

The Water Resource Development projects described in this report do not directly provide additional water for consumptive use. The District's Comprehensive Water Conservation Program is estimated to result in 1.12 million gallons per day (mgd) of additional available water in Fiscal Year 2012 (FY2012) (October 1, 2011–September 30, 2012) and 1.37 mgd of additional available water in FY2013. During FY2012–FY2016, the estimated additional water made available through this program is 6.60 mgd (**Table 5A-3**). Funding levels for WaterSIP were between \$250,000 and \$500,000 per year for the last several years, except for FY2009 when the program received over \$1 million. The FY2011 program funding was \$300,000. The FY2012 funding level is allocated at \$250,000. Projected water savings in **Table 5A-3** for WaterSIP assume future funding remains between \$250,000 and \$300,000.

Table 5A-3. Estimated additional water made available (million gallons per day, or mgd) during FY2012–FY2016 through the Comprehensive Water Conservation Program.

Conservation Program	FY2012	FY2013	FY2014	FY2015	FY2016	Total
WaterSIP	0.12 ¹	0.37 ²	0.37 ²	0.37 ²	0.37 ²	1.60
Mobile Irrigation Labs	1.00	1.00	1.00	1.00	1.00	5.0
Total (mgd)	1.12	1.37	1.37	1.37	1.37	6.60

¹Based on actual

²Based on MGD per \$1,000 of District approved funding for average of FY2010, FY2011, and FY2012

FUNDING

The SFWMD has allocated \$3.9 million in FY2012 for Water Resource Development projects. For FY2012–FY2016, the SFWMD anticipates spending \$11.5 million on Water Resource Development projects (the total amount of **Tables 5A-1** and **5A-2**). These allocations include \$438,000 for the Comprehensive Water Conservation Program during FY2012 and \$2.2 million for FY2012–FY2016.

The funding described in this report does not include projects associated with the Comprehensive Everglades Restoration Plan (CERP) or Expedited Everglades Restoration projects or costs associated with staff time.

The funding allocation for FY2012 is more than for FY2011, and the funding projected for FY2012–FY2016 is more than what was projected for FY2011–FY2015. Funding for primarily environmental projects, such as capital improvement projects in the Big Cypress Basin (BCB), Aquifer Storage and Recovery (ASR), and projects not identified in Chapter 6 of the 2005–2006 Plan updates and 2006 UEC Plan Amendment are not included in this report.

The District’s Water Supply Program, for budget purposes, is currently divided into seven elements. To better match the budgeted projects within this chapter to the actual budget spreadsheets, this report is organized to follow the Water Supply Program’s elements with associated projects for each element. **Tables 5A-4** and **5A-5** show the correspondence among water supply plans, Water Resource Development projects, and funding with internal order numbers, program elements, and sections of the *South Florida Environmental Report* (SFER). The Water Supply Program’s elements are as follows:

- **Planning (DA)** [Regional Coordination (DA01) and Local Coordination (DA02)].
- **Implementation Projects (DB)** [Implementation (DB01)].
- **Conservation (DD)** [Conservation (DD01), WaterSIP (DD02), and MILs (DD03)].
- **Alternative Water Supply (DE)** [Alternative Water Supply (DE01) and BCB Alternative Water Supply (DE02)].
- **Resource Evaluation (DF)** [Hydrogeology (DF01) and Modeling (DF02)].
- **Program Support (DZ)** [Program Support (DZ00)].

Table 5A-4 identifies all the Water Resource Development projects contained in the regional water supply plans, and **Table 5A-5** identifies specific projects funded by the District during the current fiscal year to implement the water resource development components of the regional water supply plans.

Table 5A-4. Crosswalk for Water Supply plans, Water Resource Development projects, and *2012 South Florida Environmental Report* (SFER) sections of this chapter.

Supply Plan	Recommended Projects	Status	SFER Section	Coverage Area
2011 UEC	Floridan Aquifer System Model & Database Development	Ongoing	Modeling (Completed peer review in FY2011)	District-wide
2011 UEC	Saltwater Intrusion Monitoring	Ongoing	Monitoring	District-wide
2011 UEC	MFL Activities	Ongoing	MFL and Reservation Activities	District-wide
2011 UEC	Comprehensive Water Conservation Program	Ongoing	Water Conservation Program	District-wide
2011 UEC	Water Savings Incentive Program	Ongoing	Water Conservation Program	District-wide
2011 UEC	Alternative Water Supply Program	Ongoing	Alternative Water Supply (Refer to SFER CH 5B)	District-wide
2011 UEC	Floridan Aquifer Exploratory Well Program	Ongoing	Drilling and Testing Program	District-wide
2011 UEC	Hydrogeologic Database Enhancements	Ongoing	Groundwater & Wetland Monitoring	District-wide
2011 UEC	Hydrogeologic Data Collection	Ongoing	Groundwater & Wetland Monitoring	District-wide
2006 KB	Floridan Aquifer Exploratory Well Program	Ongoing	Drilling and Testing Program	District-wide
2006 KB	Surficial Aquifer Well Pairing Network	Ongoing	Groundwater and Wetlands Monitoring (unfunded FY2012)	Regional
2006 KB	Wetlands Monitoring Network	Ongoing	Groundwater and Wetlands Monitoring	District-wide
2006 KB	USGS Water Quality Module	Complete	Groundwater and ET Assessments	District-wide
2006 KB	ET Measurement Project	Ongoing	Groundwater and ET Assessments	District-wide
2006 KB	Comprehensive Water Conservation Program	Ongoing	Water Conservation Program	District-wide
2006 KB	Water Savings Incentive Program	Ongoing	Water Conservation Program	District-wide
2006 KB	Mobile Irrigation Labs	Complete	Water Conservation Program (currently unfunded)	District-wide
2006 KB	Water User and Supply Cost Relationship Study	Complete	District-wide Feasibility Studies (completed in FY2007–FY2008)	District-wide
2006 KB	Lower Kissimmee Basin Model Upgrade	Ongoing	Modeling (anticipated completion FY2012)	Basin-specific
2006 KB	Upper Kissimmee Basin Transient Groundwater Model	Ongoing	Modeling [aka Central Florida Water Initiative (CFWI)]	Basin-specific
2006 KB	Floridan Aquifer System Groundwater Model and Database Development	On Hold	Modeling (currently unfunded)	District-wide

Table 5A-4. Continued.

Supply Plan	Recommended Projects	Status	SFER Section	Coverage Area
2006 LWC	Surficial, Intermediate, and Floridan Aquifer Model Development	Ongoing	Modeling (incorporating peer review comments in FY2012)	District-wide
2006 LWC	MFL Activities	Ongoing	MFL and Reservation Activities	District-wide
2006 LWC	Reservation Activities	Complete	MFL and Reservation Activities (Water Reservation for the Picayune Strand/ Fakahatchee Estuary effective July 2, 2009)	District-wide
2006 LWC	Reservation Activities	Ongoing	MFL and Reservation Activities for the Caloosahatchee Estuary	District-wide
2006 LWC	Comprehensive Water Conservation Program	Ongoing	Water Conservation Program	District-wide
2006 LWC	Water Savings Incentive Program	Ongoing	Water Conservation Program	District-wide
2006 LEC	Floridan Aquifer Exploratory Well Program	Ongoing	Drilling and Testing Program	District-wide
2006 LEC	Groundwater Monitoring	Ongoing	Groundwater and Wetlands Monitoring	District-wide
2006 LEC	Wetlands Monitoring Network	Ongoing	Groundwater and Wetlands Monitoring	District-wide
2006 LEC	USGS Water Quality Module	Complete	Groundwater and ET Assessments	District-wide
2006 LEC	ET Measurement Project	Complete	Groundwater and ET Assessments	District-wide
2006 LEC	Comprehensive Water Conservation Program	Ongoing	Water Conservation Program	District-wide
2006 LEC	Water Savings Incentive Program	Ongoing	Water Conservation Program	District-wide
2006 LEC	Mobile Irrigation Labs	Complete	Water Conservation Program	District-wide
2006 LEC	Water User and Supply Cost Relationships	Complete	District-wide Feasibility Studies (completed in FY2007-FY2008)	District-wide
2006 LEC	Reuse Feasibility Study	Complete	District-wide Feasibility Studies (completed in FY2008)	District-wide
2006 LEC	Groundwater Replenishment via Canal Recharge Augmentation Study	Complete	District-wide Feasibility Studies (completed in FY2007)	District-wide
2006 LEC	Modeling for MFLs	Ongoing	Modeling	District-wide
2006 LEC	Floridan Aquifer System Model and Database Development	Ongoing	Modeling (Peer review completed in FY2011)	District-wide

Table 5A-4. Continued.

Supply Plan	Recommended Projects	Status	SFER Section	Coverage Area
2006 LEC	Reservation Activities	Ongoing	MFL and Reservation Activities	District-wide
2006 LEC	MFL Activities	Complete	MFL and Reservation Activities (Everglades, NW Fork Loxahatchee River, Biscayne Bay)	District-wide

ET – Evapotranspiration
 KB – Kissimmee Basin
 LEC – Lower East Coast
 LWC – Lower West Coast
 MFL – Minimum Flows and Levels
 UEC – Upper East Coast
 USGS – U.S. Geological Survey

Table 5A-5. Crosswalk for FY2012 budget, Water Resource Development projects, and SFER sections of this chapter.

Budget Line Item	Internal Order/ Functional Area	Program Element	Sub-program Element	Amount	Project	SFER Section
28373	DA03100618	Planning	Planning	\$25,000	Central Florida Water Initiative Project Facilitator	Regional Water Resource Development Project
31125	DA03100618	Implementation	Implementation	\$500,000	STOPR/Orange County Settlement Agreement	Regional Water Resource Development Project
28660	DA03	Implementation	Implementation	\$250,000	Central Florida Collaborative Water Supply Initiative	Regional Water Resource Development Project
31290	DD02100727	Conservation	WaterSIP	\$250,000	Water Savings Incentive Program (WaterSIP)	Comprehensive Water Conservation
31244	DD03100513	Conservation	MIL	\$55,000	Mobile Irrigation Lab – BCB	Comprehensive Water Conservation
27841	DD07	Conservation	Conservation	\$30,000	Great Water Odyssey	Comprehensive Water Conservation
31161	DD04100721	Conservation	Conservation	\$75,000	Florida Automated Weather Network (FAWN)	Comprehensive Water Conservation
31249	DD07	Conservation	Conservation	\$15,000	FGCU Wings of Hope – BCB	Comprehensive Water Conservation
31250	DD10	Conservation	Conservation	\$5,000	Water Symposium	Comprehensive Water Conservation
31246	DD10	Conservation	Conservation	\$2,000	Collier Education Foundation	Comprehensive Water Conservation
28363	DF01	Resource Evaluation	Hydrogeology	\$6,000	Conferences/Fairs/ Exhibits	Comprehensive Water Conservation
28302	DF01	Resource Evaluation	Hydrogeology	\$750	Professional Licenses	Comprehensive Water Conservation
31189	DF01	Resource Evaluation	Hydrogeology	\$95,380	ORL USGS GW Core Network Monitoring	Groundwater and Wetland Monitoring ^{WQ}
31188	DF01	Resource Evaluation	Hydrogeology	\$313,002	FTL USGS GW Core Network Monitoring	Groundwater and Wetland Monitoring ^{GM}

Table 5A-5. Continued.

Budget Line Item	Internal Order/ Functional Area	Program Element	Sub-program Element	Amount	Project	SFER Section
28361	DF05100618	Resource Evaluation	Hydrogeology	\$178,472	Lower Floridan Aquifer Exploratory Wells (CFWI & LFA Investigation, Kissimmee)	Drilling and Testing
28393	DF05100618	Resource Evaluation	Hydrogeology	\$50,000	Lower Floridan Aquifer Exploratory Wells (CFWI & LFA Investigation, Kissimmee)	Groundwater and Wetland Monitoring ^{GM}
21926	DF01	Resource Evaluation	Hydrogeology	\$50,000	Emergency Wellhead Repairs	Groundwater and Wetland Monitoring ^{GM}
21927	DF01	Resource Evaluation	Hydrogeology	\$25,000	Parts & Supplies – Field Equipment	Groundwater and Wetland Monitoring ^{GM}
21928	DF01	Resource Evaluation	Hydrogeology	\$20,000	Geophysical Logging	Drilling and Testing
21929	DF01	Resource Evaluation	Hydrogeology	\$15,000	Hydrogeologic Database Improvements	Groundwater and Wetland Monitoring ^{GM}
21930	DF01	Resource Evaluation	Hydrogeology	\$49,800	Monthly Groundwater Level Measurements	Groundwater and Wetland Monitoring ^{GM}
31274	DF01	Resource Evaluation	Hydrogeology	\$104,090	Floridan Well Maintenance	Groundwater and Wetland Monitoring ^{GM}
28368	DF05	Resource Evaluation	Hydrogeology	\$1,755,665	Lower Floridan Aquifer Exploratory Wells	Drilling and Testing
28459*	DF01	Resource Evaluation	Hydrogeology	\$50,000	Technical Review – FPL	Drilling and Testing

* Project Funded for First Time
 BCB – Big Cypress Basin
 CFWI – Central Florida Water Initiative
 FGCU – Florida Gulf Coast University
 FTL – Fort Lauderdale
 FPL – Florida Power & Light
 GW – Groundwater

GM – Groundwater Monitoring
 LFA – Lower Floridan Aquifer
 MIL – Mobile Irrigation Lab
 ORL – Orlando
 USGS – U.S. Geological Survey
 WaterSIP – Water Savings Incentive Program

DISTRICT-WIDE WATER RESOURCE DEVELOPMENT PROJECTS

The following section provides project descriptions for the District-wide Water Resource Development efforts funded through the District's Water Supply Program by budget element for FY2012. Additional information, including the implementing entities, activities proposed for FY2012, estimated completion dates, and funding sources, is presented in each project summary.

PLANNING (DA)

There are no District-wide Water Resource Development projects currently planned or budgeted for the Water Supply Program's Planning element.

IMPLEMENTATION PROJECTS (DB)

There are no District-wide feasibility studies currently planned or budgeted for the Water Supply Program's Implementation Projects element.

RULEMAKING (DC)

Minimum Flows and Levels, Water Reservation Activities and Restricted Allocation Areas

Minimum Flows and Levels (MFLs), Water Reservations, and Restricted Allocation Area rules are three mechanisms the District uses to protect water supplies for natural systems. All three of these mechanisms are part of a comprehensive water resources management approach to assure the sustainability of South Florida's water resources.

MFLs are developed pursuant to the requirements contained in Sections 373.042 and 373.0421, F.S. MFLs provide technical criteria that are important management tools used by the District to protect major water bodies from significant harm due to reduction in water levels or flows. These criteria provide a basis for defining the point at which additional withdrawals will result in significant harm to water resources. If it is determined that water flows or levels are presently below the relevant MFL, or will fall below an established MFL within the next 20 years, then the District must develop and implement a recovery or prevention strategy. Activities include producing technical documents that set scientifically based criteria for defining significant harm, conducting independent external peer reviews of the science, and completing rulemaking.

The District's 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 that sets aside water for the protection of fish and wildlife or public health and safety. Water made available by federally funded restoration projects under the Water Resources Development Act (2000, as reauthorized 2007) requires the District to identify the amount of water to be reserved or allocated for the natural system and not be permitted for consumptive use.

Restricted Allocation Area rules are a regulatory mechanism for protecting natural systems from consumptive uses of water, as defined in Section 373.223(1), F.S.

Implementing entity: SFWMD.

Estimate of quantity of water produced by project:

- MFLs define the flow or level below which significant harm would occur to the water body, and which are used to identify regulatory criteria to prevent significant harm. MFL rules are not intended to make water available.
- Water Reservation rules reserve quantities of water for the protection of fish and wildlife and support CERP project implementation.
- Restricted Allocation Area rules protect water resources from consumptive uses and preserve water created by CERP projects.

Chapter 3 of this volume summarizes current rules in effect as of 2011 and the priorities and schedule for developing new rules planned from 2012 through 2017.

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	Staff Time ¹	Staff Time ¹	Staff Time ¹	Staff Time ¹	Staff Time ¹	0

¹Future budgets may contain separate line item(s) for contractual services not identified at this time

CONSERVATION (DD)

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. Since the Comprehensive Water Conservation Program was approved by the District’s Governing Board in September 2008, programs have been implemented during FY2011 in all three initiative areas: (1) regulatory, (2) voluntary and incentive-based, and (3) 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 to the lowest level feasible. From a regulatory perspective, a greater emphasis has been placed on water conservation requirements in the Consumptive Use Permitting process that will require municipalities to adopt and enforce effective conservation measures. From local landscape ordinances to year-round irrigation conservation measures, new regulatory measures will advance water use efficiency, promote water conservation as the least-cost source of new water, protect the natural environment, and result in quantifiable water savings. Voluntary and incentive-based initiatives, including financial assistance, technical assistance, and recognition programs, will supplement regulations and build goodwill, leverage investments, bring wider environmental benefits, and significantly improve the quality of life in the District’s communities. Education, outreach, and social marketing will complement and sustain these efforts by instilling a lasting conservation ethic in South Florida businesses and communities. Further information is available at www.sfwmd.gov/watersupply. Through WaterSIP, the SFWMD provides reimbursement up to 50 percent or up to \$50,000 to water providers and users (i.e., cities, utilities, industrial groups, schools, hospitals, and homeowners associations) for water-saving technologies. These technologies include low-flow plumbing fixtures, rain sensors, fire hydrant flushing devices, and other hardware. The MIL Program conducts efficiency audits of agricultural and urban irrigation systems. The MILs are operated by the Soil and Water Conservation Districts, a subdivision of the State of Florida created under Chapter 582, F.S.

In addition to the District’s Comprehensive Water Conservation Program, the statewide Conserve Florida Water Clearinghouse provides information and tools to improve water

conservation through the development of utility-specific, goal-based water conservation programs. Further information is available at www.conservefloridawater.org.

The Conserve Florida Water Clearinghouse is funded by the Florida Department of Environmental Protection (FDEP) and the state's largest water management districts. The clearinghouse is supported through the University of Florida (UF) and serves as a centralized information repository. It is equipped with tools to assist the efforts of utilities and other stakeholders to achieve their water conservation goals. The University of Florida also operates the Florida Automated Weather Network (FAWN), a statewide research and data program to provide accurate and timely weather data to a wide variety of users.

Implementing entity:

- WaterSIP: SFWMD.
- MIL Program: SFWMD, Florida Department of Agriculture and Consumer Services (FDACS), and the Soil and Water Conservation Districts.
- Conserve Florida Water Clearinghouse: SFWMD, FDEP, UF and other water management districts.
- FAWN: SFWMD, UF, FDACS, other water management districts and other entities.
- Florida Gulf Coast University (FGCU) Wings of Hope: SFWMD and Big Cypress Basin through FGCU.
- Orange County Conservation Study: SFWMD, Orange County Utilities, St. John's River Water Management District (SJRWMD) and the Water Research Foundation.
- The Great Water Odyssey: SFWMD.
- Big Cypress Basin Conservation Outreach: SFWMD and Big Cypress Basin Service Center.
- Water Symposium: SFWMD and Big Cypress Basin Service Center.

Estimate of quantity of water produced by project:

- **WaterSIP.** During FY2003–FY2011, 142 projects cumulatively saved 7.0 mgd of water, and in FY2011, 0.63 mgd of water was saved. For FY2012, nine proposed projects are anticipated to save 0.12 mgd of water, and 1.6 mgd is expected to be conserved between FY2012 and FY2016.
- **MIL Program.** The MIL Program was created in 1989. An estimated 4,196 million gallons (mg) of water have been accounted for as actual water savings between FY2003 and FY2011, which is equivalent to 1.28 mgd. In FY2011, approximately 365 mg of water was saved (1.0 mgd), and for FY2012, 1.0 mgd is estimated to be saved. The quantity of water anticipated to be saved during FY2012–FY2016 is 1,825 mg (an average of 1.0 mgd per year).
- **Comprehensive Water Conservation Program.** This program is organized into three initiatives: (1) regulatory, (2) voluntary and incentive-based, and (3) educational and marketing. Strategies have been implemented in all three categories during FY2011, with water saving benefits expected in the future.
- **FAWN.** UF calculates all estimates of water savings on a statewide basis.

Completed implementation activities:

- **WaterSIP.** Funded 142 projects District-wide from FY2003–FY2011.

- **MIL Program.** Four agricultural MILs are operating in Miami/Dade, Palm Beach, Broward, and Martin/St. Lucie counties and one District-funded agricultural MIL is serving the BCB service area.
- **FAWN.** Funded from FY2004–FY2011; activities included maintenance of weather stations, development of a mobile application, and continued enhancement of the FAWN network.
- **Orange County Conservation Study.** Irrigation data are collected to evaluate the water conservation potential of soil moisture sensors and evapotranspiration (ET) irrigation controllers on landscapes in Orange County compared to typical irrigation control methods. A report on this study was submitted in FY2011, which included an analysis of preliminary survey information.
- **FGCU Wings of Hope-Big Cypress Basin.** In FY2011, the program provided over 500 FGCU students with knowledge of Southwest Florida wildlife species, habitats, water conservation, and environmental sustainability using the Corkscrew Regional Ecosystem Watershed (CREW) as a natural laboratory. The students then taught what they learned to approximately 4,000 fourth- and fifth-grade pupils in Collier County at FGCU during the 2010/2011 school year. In turn, the elementary students returned to CREW with their parents to inform them of what was learned, thus the program touched approximately 8,000 additional people. The curriculum involved: (1) the Florida Panther Posse program which focused on the endangered Florida panther and other South Florida wildlife and habitats, water conservation and future careers; (2) a hiking adventure through CREW to learn about ecosystem habitats, plants, wildlife, invertebrates, prescribed fire and the importance of a watershed, and (3) a poster contest to raise awareness about the importance of Florida wildflowers, pollinators and the role of water in their survival. The display of posters traveled to Florida's Capitol Rotunda, Collier and Lee government buildings, Naples City Hall, Florida Gulf Coast University, and Collier County libraries and schools.
- **Big Cypress Basin Conservation Outreach.** During FY2011, FY2010 funds were re-allocated to install an updated display at Corkscrew Swamp Sanctuary portraying the District's efforts toward restoring the Everglades. This display is located at the main entrance of the facility and is viewed by over 100,000 visitors a year.
- **Water Symposium – Big Cypress Basin.** A water conservation workshop was held for homeowner and condo association board members to highlight ways to reduce indoor and outdoor water consumption. Representatives from 70 associations attended the event. In addition, a water essay contest was developed for Collier County high school students. Participants were required to write a 2,000–5,000 word essay summarizing water issues facing the region; the top three essays were recognized for their efforts.
- **Water Audit Leading by Example.** During FY2011 two progress reports were generated regarding District water use; one for indoor plumbing fixtures/water-using equipment and the other for outdoor irrigation systems. Both reports focused on improving the efficiency of each system.

Activities proposed for FY2012:

- **Conserve Florida Water Clearinghouse.** This program, which started receiving funding in FY2004, collects, analyzes, and provides research information and technical assistance to public water supply utilities and water managers for use in developing effective and efficient water conservation programs. This work is part of a multiyear, \$150,000 contract and was included in the FY2010 budget.
- **WaterSIP.** Nine projects will receive funding in FY2012 (DD02100727, \$250,000).

- **MIL Program (BCB).** One urban MIL in the BCB will continue to be funded (DD03100513, \$55,000).
- **FAWN.** Continued enhancement of the FAWN network will include site field tests, a half-day irrigation school, incorporating additional sources of data within the District from existing data or a new site installation, mobile device and other management tool enhancements, and continued development of the cold protection scheduling toolkit (DD04100721, \$75,000).
- **Orange County Conservation Study.** Irrigation data will continue to be collected during FY2012 to evaluate the water conservation potential of soil moisture sensors and ET irrigation controllers on landscapes in Orange County compared to typical irrigation control methods. A final report on equipment installations and status will be submitted along with quarterly financial reports. The contract was extended until February 15, 2015, to allow more time to collect data during the study period. The District will not provide additional funds during FY2012.
- **The Great Water Odyssey.** Continue to conduct online water resource training for more than 200 teachers to educate elementary school students (third, fourth, and fifth graders) throughout the SFWMD region. The students will use a computer-based interactive curriculum that focuses on water conservation, providing a multidisciplinary educational experience consistent with Florida's Sunshine State Standards. This program will assist students in the successful completion of the Florida Comprehensive Assessment Test (FCAT) (DD07, \$30,000).
- **FGCU Wings of Hope – Big Cypress Basin.** FGCU students will continue to be introduced to native Southwest Florida wildlife species, habitats, water conservation, and environmental sustainability. The students will share this knowledge with younger students in fourth and fifth grades through science-based environmental education programs at public and private schools in Collier County. Elementary school students are either transported to FGCU to participate in the programs or participate in the programs at their respective schools (DD07, \$15,000).
- **Big Cypress Basin Conservation Outreach.** During FY2012, Big Cypress Basin will provide grant funding through the Education Foundation of Collier County's "Connect with a Classroom." This is an online program that provides opportunities for teachers and community members to improve the quality of instruction in local schools. Grants will focus on projects related to water conservation (DD10, \$2,000).
- **Water Symposium – Big Cypress Basin.** Service center staff will partner with Water Symposium of Florida, Inc. (WSF) to hold outreach seminars on water supply/water conservation for homeowners associations, civic groups, and businesses. These seminars are among the BCB/District's ongoing efforts to create a year-round water conservation ethic that can help protect the area's water supply from regional weather extremes. Additionally, WSF will create a demonstration project showcasing water conservation/water quality for the community (DD10, \$5,000).

Estimated completion date: Ongoing.

Funding sources:

- WaterSIP: SFWMD, utilities, homeowners associations, and other project partners.
- MIL Program: SFWMD, Big Cypress Basin, and FDACS.
- FAWN: SFWMD, UF, FDACS, and other water management districts.
- FGCU Wings of Hope: SFWMD.

- Water Conservation Program: SFWMD.
- Big Cypress Basin Outreach: SFWMD.
- Conserve Florida Water Clearinghouse: SFWMD, FDEP, UF and other water management districts.
- Orange County Conservation Study: SFWMD, Orange County Utilities, and other water management districts.

Total spent to date: FY2003–FY2011 – \$10,517,729 (includes the Comprehensive Conservation Program, \$3,601,962; WaterSIP, \$2,753,994; and MIL Program, \$4,161,773).

Total project cost: Ongoing.

Proposed expenditures: Comprehensive Water Conservation Program including WaterSIP, MIL, FAWN, FGCU Wings of Hope, and Big Cypress Basin Outreach.

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	438	435	435	435	435	2,178

ALTERNATIVE WATER SUPPLY (DE)

A full description of Alternative Water Supply-related projects and associated funding is contained in the District’s Alternative Water Supply Annual Report, prepared pursuant to Section 373.707(7), F.S. (see Chapter 5B of this volume).

RESOURCE EVALUATION (DF)

Drilling and Testing Program (DF01)

The District’s understanding of South Florida hydrogeology is enhanced whenever exploratory/test wells are constructed as occurred in FY2011 and proposed in FY2012. Increased understanding has improved the accuracy of groundwater modeling and decision making regarding the approval of consumptive use permits. Full documentation of each well site (including location, well construction details, geophysical logging, and aquifer test data) is provided in SFWMD technical publications, and this information has been loaded into the District’s hydrometeorologic database, DBHYDRO.

Implementing entity: SFWMD.

Estimate of quantity of water produced by project: Project is not designed to make water available.

Completed implementation activities:

- **Aquifer Performance Test (APT) Support.** Completed final documentation of the Hydrogeologic Investigation of the Floridan Aquifer System S-65C Site Okeechobee County, Florida at well OKF-105.
- **Geophysical Log Analysis.** Optical imaging logging was conducted at the “Icehouse” monitoring well in West Palm Beach, FL and the Kissimmee ASR well near Okeechobee, FL.
- **Lithologic/Stratigraphic Formation Description Manual.** Completed documentation of this manual, describing various geologic formations, lithostratigraphic layers, and hydrogeologic units.

- **Lehigh Acres Sandstone Aquifer Well Drilling.** Completed documentation of the drilling and coring of two sandstone aquifer wells in the Lehigh Acres area adjacent to monitoring wells L-2186 and L-729 to better develop lithologic descriptions of the aquifer that will be used in defining the top of the aquifer. Top-of-aquifer elevations are used in determining the sandstone aquifer's associated Maximum Developable Limits (MDLs).
- **Saltwater Interface Mapping of Coastal Aquifers.** Using staff resources only, completed and published saltwater interface maps of coastal, surficial aquifers in St. Lucie, Martin, Palm Beach, Broward, Lee and Collier counties using data from April/May 2009 to document the current inland extent of the saltwater front within the aquifer for future comparison.
- **Lower Floridan Aquifer Evaluation in the Kissimmee River Basin.** The SFWMD constructed two test wells at Site B in FY2011. The first well (POF-27) was drilled to a depth of 1,400 ft below land surface (bls), then completed as a dual-zone monitor well of the uppermost production zone and Avon Park producing zone (APPZ) of the Floridan aquifer system (FAS). Drilling and testing (geophysical logging) of POF-27 was used to establish the exact depths of the monitoring intervals.

The second well (POF-28) was constructed less than 100 ft from POF-27. During initial construction, POF-28 served as a production well for an APT of the APPZ. Once testing was completed, the APPZ was cased off and exploratory drilling continued in this well to a depth of 2,700 ft bls to identify all discrete productive horizons to the base of the FAS. Testing at this well (including APT, geophysical logging, packer testing, and water quality sampling with depth), was used to identify potential productive horizons within the Lower Floridan aquifer. Based on testing results, POF-28 was completed as a tri-zone monitor well of the APPZ and the first two production zones of the Lower Floridan aquifer (LF1 and LF2).

Activities proposed for FY2012:

- **Lower Floridan Aquifer Evaluation in the Kissimmee River Basin.** In FY2012, well construction and testing activities will be completed at Site B and initiated at Sites C and D (DF05: \$1,805,665). Water quality (isotope) evaluation will be conducted at Site E (DF05: \$178,472) as follows:
 - **Site B:** The third well at Site B (POF-29) is planned to be constructed in three stages as a production well for discrete APT of the uppermost FAS producing zone (stage 1), and first (stage 2), and second (stage 3) producing zones of the Lower Floridan aquifer.
 - **Site C:** The first well (OSF-109) will be drilled to an approximate depth of 1,270 ft bls for use as a test production well for an APT of the APPZ of the FAS. The well will then be drilled to an approximate depth of 2,000 ft bls, packer testing and water quality sampling with depth conducted and a second APT conducted on LF1 using this well as the production well. The second well (OSF-105R) will first be used to conduct an APT on APPZ, followed by drilling to 1,700 ft bls and completing it as a dual-zone monitor well of the APPZ and LF1, followed by an APT of LF1.
 - **Site D:** Located just east of the SFWMD/SJRWMD border in Indian River County where few wells have penetrated lower portions of the FAS, an existing Upper Floridan Aquifer (UFA) well allows greater data collection for the available funding. One exploratory well will be drilled to a depth of 2,500 ft bls to determine the top of LF1, which will allow an APT of the APPZ to estimate aquifer parameters and develop a vertical profile of water levels and water quality with depth.

- **Site E:** Located along the border between the SFWMD and Southwest Florida Water Management District (SWFWMD), will conduct water quality sampling and analysis of geochemical tracers and isotopes from 40 new and existing FAS wells in the recharge area of the FAS and conduct preliminary interpretation of the data.
- **Geophysical Logging.** Conduct geophysical logging on selected wells and boreholes throughout the District (DF01; \$20,000).
- **Aquifer Performance Test Support.** District staff time will be utilized to document and analyze one full-scale APT at the Avon Park Bombing Range site and complete documentation of two APTs at the R.D. Keene site in Orange County, FL (DF01; Staff Time Only).

Estimated completion date: Ongoing.

Funding source: SFWMD.

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

Total spent to date: FY2000–FY2011 – \$14,680,500

Total project cost: Ongoing.

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	2,004	2,000	1,000	0	0	5,004

Groundwater and Evapotranspiration Assessments (DF01)

A number of specialized hydrogeologic studies have been completed by the U.S. Geological Survey (USGS) in cooperation with the SFWMD over the years to address specific District needs. The information provided from these studies is required to enhance the understanding of aquifers, ET rates in various wetland and upland plant communities, and similar issues within the District. Some projects include additional water management districts or other governmental agencies. The USGS reports, maps, and data are peer-reviewed and highly regarded in the industry, making these resources valuable references for groundwater modeling, planning, and environmental assessments as well as policy and decision making.

Implementing entity: SFWMD and USGS.

Estimate of quantity of water produced by project: Project is not designed to make water available.

Completed implementation activities:

- **USGS Evapotranspiration Study.** Data validation, data uploading to the District’s DBHYDRO database, and final report preparation and publishing as a USGS Scientific Investigations Report were completed in FY2011.

Activities proposed for FY2012: None

Estimated completion date: NA.

Funding sources: SFWMD and USGS.

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

Total spent to date: FY2000–FY2011 – \$2,754,181.

Total project cost: \$2,754,181

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	0	0	0	0	0	0

Groundwater and Wetland Monitoring (DF01)

Water level and water quality monitoring at existing wells provide critical information to aid the SFWMD in the development of groundwater models, assessing groundwater conditions, and management of these resources. The District maintains extensive groundwater monitoring networks and partners with the USGS to provide additional support and funding for ongoing monitoring. Data are archived in the District's DBHYDRO database. Data from sites monitored by the USGS are archived in the USGS database and published annually by the USGS.

Implementing entity: SFWMD and USGS.

Estimate of quantity of water produced by project: Project is not designed to make water available.

Completed implementation activities:

- **Fort Lauderdale Office of the Florida Water Science Center (USGS).** Collected data from groundwater level monitoring in the surficial aquifer and continued recorder maintenance. The groundwater monitoring network was reduced in FY2011 due to budgetary constraints, loss of sites, well destruction, and equipment damage. This is an ongoing effort. All data are archived in the USGS database.
- **Orlando Office of the Florida Water Science Center (USGS) – Kissimmee Basin Floridan.** Monitored water level at select sites, including data collection, data analysis and validation, and archived data in the USGS database. This is an ongoing effort.
- **Orlando Office of the Florida Water Science Center (USGS) – Groundwater Monitoring: Potentiometric Surface Mapping Project.** Continued water-level monitoring at select sites, including data collection, data analysis and validation, and archived data in the USGS database. Regional wet and dry season Floridan water level maps were not created this year due to budgetary shortfalls. Data collection is ongoing.
- **Groundwater Monitoring.** Monitored groundwater in all planning areas of the District within the surficial aquifer system, the intermediate aquifer system, and the Floridan aquifer system, and performed recorder maintenance at all locations. Data were collected, analyzed, quality-controlled, and archived in the District's DBHYDRO database. All data are available through www.sfwmd.gov/dbhydro.

Activities proposed for FY2012:

- **Orlando Office of the Florida Water Science Center (USGS) – Groundwater Monitoring.** Continue water level monitoring in the surficial aquifer system, the intermediate aquifer system, and the Floridan aquifer system; Kissimmee Basin Floridan water quality monitoring, data analysis, data validation, and potentiometric surface mapping, and archiving data in the USGS database and preparation of potentiometric surface maps. This is an ongoing effort (DF01; \$95,380).
- **Fort Lauderdale Office of the Florida Water Science Center (USGS) – Groundwater Core Network.** Continue water-level monitoring in the surficial aquifer system, the

intermediate aquifer system, and the Floridan aquifer system, recorder maintenance, and archiving data in the USGS database (DF01; \$313,002).

- **Regional Floridan Groundwater Monitoring.** Continue water quality monitoring at select Floridan aquifer well sites throughout the SFWMD, including data collection, data analysis and validation, and archiving data in the District’s DBHYDRO database. This is an ongoing effort (DF01; Staff Resources Only).
- **Hydrogeologic Database Improvements.** Continue uploading of backlogged data and conduct miscellaneous database corrections (DF01; \$15,000).
- **Monthly Groundwater Level Measurements.** Continue water level monitoring at select sites, including data collection, data analysis and validation for the Hydrologic Online Well Data Inventory (HOWDI) wells, and archiving data in the District’s DBHYDRO database. This is an ongoing effort (DF01; \$49,800).
- **Floridan Aquifer Well Maintenance.** Continue water level monitoring and maintenance at select Floridan aquifer well sites, including data collection, data analysis and validation, archiving data in the District’s DBHYDRO database, and data logger maintenance. This is an ongoing effort (DF01; \$104,090).
- **Emergency Wellhead Repairs.** This fund is provided for emergency wellhead repairs in case artesian wells begin flowing unexpectedly onto land surface (DF01; \$50,000).
- **Parts and Supplies – Field Equipment.** This fund is allocated for the maintenance of existing data loggers, sondes, pumps, and gauges (DF01; \$25,000).
- **Isotope Data Interpretation.** These funds are allocated to retain experts to interpret isotope water quality data for age-dating and characterization of fluid movement into groundwater resources (DF01; \$50,000).

Estimated completion date: These projects, which monitor water levels and stages, are an ongoing effort in cooperation with the USGS.

Funding sources: SFWMD and USGS.

Total cost: Ongoing.

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

Total spent to date: FY2000–FY2011 – \$7,957,550.

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	703	702	702	702	702	3,511

Modeling (DF02)

The Water Supply Program is currently undertaking three modeling efforts, which are described below. No contract monies were designated in the FY2012 budget for these activities, and all work will be performed by District staff.

Lower West Coast Floridan Aquifer Model, Incorporation of Peer-Review Comments

During FY2008, the District retained three independent groundwater modeling experts to conduct a technical peer review of its draft Lower West Coast Floridan Aquifer Model, which used the SEAWAT-2005 code. Independent peer reviews are conducted per policy direction to

ensure that models are developed under established groundwater modeling procedures and meet industry standards. The peer review panel completed its report in August 2008, and the District began the process of incorporating the panel's recommendations, which will extend into FY2012.

Implementing entity: SFWMD.

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

Activities completed in FY2011: Completed calibration of Lower West Coast Floridan Aquifer transient model, implementing peer review recommendations based on previously developed steady state model.

Activities proposed for FY2012: Finalize the documentation of the transient calibration effort completed in FY2011, publish a technical manuscript summarizing the model, and place the completed model in the District's Library of Models for future application.

Funding source: SFWMD.

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

Total spent to date: FY2006 – \$170,000 [Florida Atlantic University (FAU)]; FY2007 – \$150,000 (FAU); FY2008 – \$200,000 [full-time employees (FTEs) and includes \$80,000 for peer reviewers]; FY2009 – \$40,000 (FTEs); FY2010 – \$60,000 (FTEs and consultants); FY2011 – \$245,000 (FTEs and consultants).

Total project cost: \$865,000.

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	Staff Time	0	0	0	0	0

Lower East Coast Subregional Model, Model Calibration

The Lower East Coast Subregional (LECsR) Model was developed by the SFWMD based on the USGS's MODFLOW code. This model simulates groundwater flow in the SFWMD's Lower East Coast region and is used for planning and regulatory purposes. A peer review was conducted on the LECsR Model and a report prepared by the peer review panel in June 2006. Since then, the model has been updated to reflect the majority of the primary peer review comments. The tool and variations of the tool are presently being used to address a number of site-specific issues including water use, permitting, and several CERP projects. A final version of the tool is not anticipated this coming fiscal year due to staffing restrictions.

Implementing entity: SFWMD.

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

Activities completed for FY2011: Addressing some of the peer review comments which include calibration of flows at C-51, C-15, C-16, C-17, C-18 and L-40 eastern discharges.

Activities proposed for FY2012: Address remaining peer review comments (which primarily address canal flows in northern Broward County) and combine all completed work into a single tool.

Funding source: SFWMD.

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

Total spent to date: FY2006 – \$300,000 (FTEs and peer review panel); FY2007 – \$150,000 (FTEs); FY2008 – \$150,000 (FTEs); FY2011 – \$115,000 (FTEs)

Total project cost: \$715,000.

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	Staff Time	Staff Time	0	0	0	0

Central Florida Water Initiative (CFWI)/East Central Florida Transient (ECFT) Model Runs

Predictive simulations (i.e., model runs) will be conducted in FY2012 that estimate water demands and the effects of these water withdrawals on wetlands, springs, lakes, saltwater intrusion, and existing legal users of water for the Central Florida Water Initiative [formerly referred to as the Central Florida Coordination Area (CFCA)]. The USGS will revise the ECFT model and District staff will conduct six scenario runs with the USGS ECFT model to estimate groundwater availability. Once an estimate of groundwater availability is made, solutions development model runs will be conducted in FY2012 and FY2013 in an attempt to meet water demands in Central Florida. Peer review of these model runs will be conducted by staff from the SWFWMD and SJRWMD.

Implementing entity: SFWMD.

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

Completed implementation activities:

- Four of six predictive scenarios were completed during FY2011 prior to the USGS ECFT initiative. The remaining two scenarios were placed on hold.
- The models were updated and were recalibrated to incorporate new data from recently completed APTs including the Southeast Polk APT.
- Presented completed work at workshops during the year for public comment and met with potential users of model.
- Performed runs and analyses for anticipated withdrawals for Kissimmee Basin consumptive use permit renewals.

Activities proposed for FY2012:

- Complete six scenario runs with the USGS ECFT model to estimate groundwater availability.
- Complete additional runs as requested by the CFWI Steering Group.
- Provide assistance to water use as needed.

Estimated completion date: FY2012.

Funding source: SFWMD.

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

Total spent to date: FY2006 – \$170,000 (consultant); FY2007 – \$150,000 (consultant); FY2008 – \$300,000 (FTEs and peer-review panel); FY2009 – \$200,000 (FTEs for model recalibration);

\$35,000 for stage recorder installation; FY2010 – \$200,000 (FTEs for modeling the six predictive scenarios); FY2011 – \$265,000 (FTEs for modeling four of the six predictive scenarios).

Total project cost: \$1,320,000.

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	Staff Time	Staff Time	Staff Time	Staff Time	Staff Time	0

PROGRAM SUPPORT (DZ)

There are no District-wide water resource development efforts currently planned for the program support element.

REGIONAL WATER RESOURCE DEVELOPMENT PROJECTS

The following are project descriptions of region-specific water resource development efforts funded by the District's Water Supply Program for FY2012. Additional information, such as the implementing entities, activities proposed for FY2012, estimated completion dates, and funding sources, are included in each project summary.

CENTRAL FLORIDA WATER SUPPLY PLANNING (KISSIMMEE BASIN PLANNING AREA)

STOPR/Orange County Settlement Agreement

The intent of the St Cloud, Toho, Orange County, Polk, Reedy Creek (STOPR) Study is to complete a comprehensive water supply plan for those portions of Central Florida within the SFWMD and surrounding areas. The study and plan is the result of a settlement agreement with Orange County and the City of St. Cloud. The proposed plan will identify water supply projects and a strategy for developing and permitting these projects such that the water needs of Orange County and the City of St. Cloud are timely met (DA03100618, \$500,000).

Implementing entity: SFWMD.

Estimate of quantity of water produced by project: Project is not designed to produce water.

Activities completed for FY2011: The identification of short- and long-term water supply projects was to occur during FY2011, but no agreement was reached with utilities during this period to complete this task.

Activities proposed for FY2012: If an agreement can be reached with the utilities involved during FY2012, then the identification of short- and long-term water supply projects will occur.

Estimated completion date: FY2013.

Funding sources: SFWMD and cost share with local utilities.

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

Total spent to date: \$0.

Total project cost: \$500,000.

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	500	0	0	0	0	500

CENTRAL FLORIDA WATER INITIATIVE PROJECT FACILITATOR

The District will continue to provide funding for a facilitator to coordinate with the SJRWMD, SWFWMD, and FDEP to develop a regional water strategy that crosses all three water management district lines. The facilitator will schedule meetings, provide documentation of meetings, develop presentations, and provide additional similar services (DA03100618, \$25,000).

Implementing entity: SFWMD, SWFWMD, and SJRWMD.

Estimate of quantity of water produced by project: Project is not designed to make water directly available.

Completed implementation activities: This project was reformulated in FY11; a monthly steering committee was established consisting of representatives of the three water management districts, FDACS, FDEP and central Florida public water supply utilities. Similarly, four technical teams were formed, consisting of staff representatives from the three water management districts. An action plan and project schedule is currently under development.

Activities proposed for FY2012: Continue regular meetings of the steering committee and technical teams. A calibrated groundwater model will be developed by USGS (refer to the *Modeling* section above for more detail) and planning level simulations will be conducted.

Estimated completion date: FY2013 (subject to change when project schedule finalized).

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

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

Total spent to date: \$40,000.

Total project cost: \$105,000.

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	25	0	0	0	0	\$25

CENTRAL FLORIDA WATER INITIATIVE PROJECT

The District, along with the SJRWMD and SWFWMD, will provide funding to cost share groundwater model development. It is a joint effort by the District, SJRWMD, SWFWMD, FDEP, FDACS, and regional public water supply utilities (DA03, \$250,000).

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

Estimate of quantity of water produced by project: Project is not designed to make water directly available.

Completed implementation activities:

- Established a Steering Committee composed of representatives from the water management districts, FDEP, FDACS, and public water supply utilities.
- New model under development by USGS (refer to the *Modeling* section above for more detail).

- Continued facilitator contract and initiated stakeholder workshops.

Activities proposed for FY2012:

- Continue Steering Committee meetings.
- Accept calibrated groundwater model from USGS.
- Determine groundwater availability.
- Initiate solution development activities.
- Continue facilitator contract.
- Initiate stakeholder workshops.

Estimated completion date: FY2013.

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

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

Total spent to date: N/A – initial year.

Total project cost: \$250,000. In addition, District staff time (linkage to FY2012 planning, implementation, MFL, hydrogeology, and modeling projects).

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	250	0	0	0	0	\$250

C-51 RESERVOIR PROJECT FACILITATOR (LOWER EAST COAST PLANNING AREA)

The facilitator will promote dialogue and explore potential for a partnership to oversee evaluation of a water storage facility in the Palm Beach County L-8 Basin. The facility would potentially have the capacity to meet environmental restoration, water quality, and regional water supply needs. The facilitator will provide monthly status reports, arrange meetings with the executive director to discuss reports and findings, produce an initial partnership concept report, and offer recommendations for project partnership structure.

Implementing entity: SFWMD.

Estimate of quantity of water produced by project: Preliminary analysis indicate 180 mgd could potentially be made available.

Completed implementation activities: Completed the facilitator procurement process in FY2010 and initial discussions with utilities and other interested parties. During FY2011, conducted a water availability analysis, identified project beneficiaries and developed models for conveyance analysis.

Activities proposed for FY2012: Final recommendation report for project partnership structure.

Estimated completion date: FY2012.

Funding sources: SFWMD.

Cost per thousand gallons: TBD.

Total spent to date: \$50,000.

Total project cost: \$50,000.

Proposed expenditures:

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	0	0	0	0	0	\$0

KISSIMMEE CHAIN OF LAKES LONG-TERM MANAGEMENT PLAN/ KISSIMMEE BASIN MODELING AND OPERATIONS STUDY

A recommendation in the 2005–2006 Kissimmee Basin Water Supply Plan Update directed water supply planning efforts to support work within the District to develop a plan for improving the health and sustainability of the Kissimmee Chain of Lakes (KCOL). The Kissimmee Basin Modeling and Operations Study (KBMOS), initiated as a spin-off from the KCOL Long-Term Management Plan (LTMP), is a District initiative to identify alternative water control structure operating criteria for the Kissimmee Basin and its associated water resource projects. The KBMOS is independent of, but closely related to the KCOL LTMP. The KBMOS will define the required water control structure operations needed to meet the hydrologic requirements of the Kissimmee River Restoration Project, while also achieving a more acceptable balance between water resource management objectives associated with flood control, water supply, aquatic plant management, and the natural resource requirements of the KCOL. A set of modeling tools, including an advanced hydrologic/hydraulic model, has been developed as part of the study. Model construction was completed in 2008. The study is constrained to evaluating operating criteria modifications of the existing water control infrastructure and lands. This effort is being managed through the District’s Water Resources Division.

Implementing entity: SFWMD with federal, state, and local government support.

Estimate of quantity of water produced by project: Project is not designed to make water available.

Completed implementation activities:

- Completed recalibration and base conditions simulations using improved ET data in FY2009.
- Completed screening of proposed operating criteria and initiated MIKE 11 hydraulic evaluations of top alternative plans in FY2009.
- Applied recalibrated model and base condition to identify water required for the protection of fish and wildlife as part of the Kissimmee Basin Water Reservation rule development effort in FY2009.
- Completed preliminary calibration of a flood routing model requested by the USACE and SFWMD for use in verifying and refining flood control performance of top performing alternative plans.
- Completed calibration of flood routing model.

Activities proposed for FY2012:

- Complete USACE flood analyses of top performing alternative plans.
- Initiate final evaluation, promotion, and reporting on alternative plan performance.

Estimated completion date: FY2013.

Funding sources: SFWMD and USACE through Kissimmee River Restoration Project Cooperation Agreement.

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

Total spent to date: FY2003–FY20011 – \$7,338,550.

Total project cost: \$8,000,000.

Proposed expenditures (reflected in the Kissimmee Watershed Program budget):

Cost	FY2012	FY2013	FY2014	FY2015	FY2016	Total
Dollars (\$1,000)	514	258	0	0	0	772