SOUTH FLORIDA WATER MANAGEMENT DISTRICT

District Water Management Plan

2002 Annual Report

December 2002

sfwmd.gov

TABLE OF CONTENTS

LIST OF ACRONYMS

ASR	aquifer storage and recovery
BMP	best management practice
C&SF	Central and Southern Florida
CARL	Conservation and Recreational Lands
CERP	Comprehensive Everglades Restoration Plan
CM	core measure
CREW	Corkscrew Regional Ecosystem Watershed
CUP	Consumptive Use Permitting
District	South Florida Water Management District
DWMP	District Water Management Plan
EAA	Everglades Agriculture Area
ECP	Everglades Construction Project
ENR	Everglades Nutrient Removal
ERP	Environmental Resource Permitting
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FP	flood protection
F.S.	Florida Statutes
FWC	Florida Fish and Wildlife Conservation Commission
FY	Fiscal Year
LEC	Lower East Coast
LWC	Lower West Coast
MFLs	minimum flows and levels

mgd	million gallons per day
mgy	million gallons per year
NS	natural systems
PATS	Permit Application Tracking System
PLRG	pollution load reduction goal
RECOVER	Restoration Coordination and Verification
Restudy	Central and Southern Florida Project Comprehensive Review Study
SCADA	supervisory control and data acquisition
SFWMD	South Florida Water Management District
SOR	Save Our Rivers
STA	stormwater treatment area
SWIM	Surface Water Improvement and Management
TMDL	total maximum daily load
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
WCA	water conservation area
WMA	wildlife management area
WQ	water quality
WRDA	Water Resources Development Act
WS	water supply
WSE	Water Supply and Environmental
WWTF	wastewater treatment facility

INTRODUCTION

The South Florida Water Management District (SFWMD or District) Governing Board approved the *District Water Management Plan* (DWMP) in August 2000 (SFWMD, 2000a). The DWMP incorporated a comprehensive examination of resource management in the 16-county South Florida region. The policies, programs and activities of the District described in the DWMP reflected the multi-functional nature of water resource management in the region. The interrelated nature of areas of responsibility was considered in the development of the DWMP. The effects of activities identified under one area of responsibility on the other areas of responsibility continue to be considered in the implementation of the DWMP.

The DWMP was developed consistent with the requirements of Section 373.036, Florida Statutes (F.S.) and Section 62-40.520, Florida Administrative Code (F.A.C.). The Florida Department of Environmental Protection (FDEP) in conjunction with the five water management districts developed additional criteria for the DWMP.

The DWMP is intended to provide comprehensive long-range guidance for the actions of the District in implementing its responsibilities under state and federal laws. The DWMP must be updated at least once every five years and the District has committed to the development of the next comprehensive DWMP update in 2004, unless that date is modified by the FDEP.

Given the long-range nature of the DWMP, it is important to periodically evaluate the progress of the District toward accomplishing the goals established in the plan. The necessity for the regular review and evaluation of progress in achieving planning goals is explicitly recognized in the State Water Resource Implementation Rule, which requires regular review of the DWMP, pursuant to Chapter 62-40.520, F.A.C. The water management districts are required to report annually to the FDEP regarding their progress in implementing their respective plans. The DWMP annual reports are intended to serve as status reports on the activities undertaken by the District, as well as on the performance measures contained within the DWMP, between updates of the plan.

In an effort to facilitate comparison of the plans of each of the water management districts, the DWMP was organized to reflect the four areas of responsibility of the water management districts: water supply, flood protection and floodplain management, water quality and natural systems. This common format is also used for the DWMP annual reports to help track the progress each district has made in implementing its respective district water management plans.

This annual report covers progress made by the District during Fiscal Year (FY) 2002. This fiscal year began on October 1, 2001 and ended on September 30, 2002.

CHAPTER I

SUMMARY OF ACTIVITIES

The District established an ambitious schedule of activities in its 2000 update of the DWMP. This schedule called for activities in each of the areas of responsibility in the years following the plan's acceptance. The District has, for the most part, adhered to the schedule of activities described in the DWMP.

The 2000 update of the DWMP described 153 major activities on which the District would be working on starting in FY 2001. Of these, 92 are described as ongoing activities with no fixed end date. Of the remaining 61 activities, 6 are complete, 35 are on schedule, 5 have been discontinued and 15 are behind the schedule that is described in the 2000 update of the DWMP.

The tables that follow summarize the progress the District has made on the activities described in the DWMP. Unless otherwise stated, activity summaries cover the period from October 1, 2001 through September 30, 2002, along with any significant accomplishments. The tables are organized by the four areas of responsibility:

A. Water Supply
B. Flood Protection and Flood Plain Management
C. Water Quality
D. Natural Systems Management

Each program has been described in the DWMP and in this report within the area of responsibility that is the primary function of the respective program. In both philosophy and practice, however, the District recognizes the multi-functional, multi-disciplinary nature of water management in South Florida. The four areas of responsibility are highly interrelated and the complex interactions are carefully considered within each program and activity. Accordingly, activities may focus on one area of responsibility but have implications in multiple areas of responsibility.

Part A. Water Supply

The water supply portion of the DWMP addresses two core water supply objectives:

Core Objective WS 1: Increase available water supplies and maximize overall water use efficiency to meet identified existing and future needs

Core Objective WS 2: Prevent contamination of water supplies

Table 1. The FY 2002 Status of the DWMP Water Supply Activities

Activity	Status	Comments
Core Objective WS 1: Increase available water supplies and maximize overall water use efficiency to meet identified existing and future needs		
Planning		
Lower East Coast (LEC) Water Supply Plan Development and Coordination District Contact: Jim Jackson	Complete (Plan was completed in FY 2000)	The *Lower East Coast Regional Water Supply Plan* (SFWMD, 2000b) is a long-range strategy for dealing with the future water supply needs of a growing population, as well as the local environment in the LEC Planning Area. The planning area consists of Palm Beach, Broward and Miami-Dade Counties, as well as portions of Hendry, Collier and Monroe Counties. The plan projects future water demands for urban areas and agriculture for 2020 and develops strategies to meet those demands while also meeting the needs of the environment. The plan's strategies and recommendations incorporate regional responsibilities (water resource development) and local responsibilities (water supply development), and identify potential funding sources.
Lower West Coast (LWC) Water Supply Plan Development and Coordination District Contact: Bonnie Kranzer	Complete (Plan was completed in FY 2000)	The *Lower West Coast Water Supply Plan* (SFWMD, 2000c) is a long-range strategy for dealing with the future water supply needs of a growing population, as well as the local environment in the LWC Planning Area. The planning area consists of Lee County, most of Collier and Hendry Counties, and portions of Charlotte, Glades and Monroe Counties. The plan projects future water demands for urban areas and agriculture for 2020 and develops strategies to meet those demands while also meeting the needs of the environment. The plan's strategies and recommendations incorporate regional responsibilities (water resource development) and local responsibilities (water supply development), and identify potential funding sources.
Caloosahatchee Water Management Plan (CWMP) District Contact: Akintunde Owosina	Ongoing	This activity coordinates implementation projects from the *Caloosahatchee Water Management Plan* (SFWMD, 2000d) approved by the Governing Board in April 2000. The projects are related to the Caloosahatchee River and Estuary, and the river's tributary basins. Per plan recommendations, the issues identified by the CWMP, as well as the models and analyses tools used, are being incorporated into the Southwest Florida Feasibility Study, which is ongoing. The Caloosahatchee River ASR Pilot Project and the C-43 Regional Storage Projects, recommendations 1.1.1 and 1.1.2 of the CWMP are ongoing. Minimum Flows and Levels have been established for the Caloosahatchee Estuary per CWMP recommendation 3.1 and will be incorporated into subsequent water supply plan updates.
Kissimmee Basin Water Supply Plan Development and Coordination District Contact: Chris Sweazy	Complete (Plan was completed in FY 2000)	The *Kissimmee Basin Water Supply Plan* (SFWMD, 2000e) is a long-range strategy for dealing with the future water supply needs of a growing population, as well as the local environment in the Kissimmee Basin Planning Area. The planning area consists of portions of Orange, Osceola, Polk, Highlands, Glades and Okeechobee Counties. The plan projects future water demands for urban areas and agriculture for 2020 and develops strategies to meet these demands while also meeting the needs of the environment. The plan's strategies and recommendations incorporate regional responsibilities (water resource development) and local responsibilities (water supply development), and identify potential funding sources.

Activity	Status	Comments
Northern Palm Beach County Comprehensive Water Resources Management Plan District Contact: Patricia Walker	Complete (Plan was completed in May 2002)	The *Northern Palm Beach County Comprehensive Water Resources Management Plan* (SFWMD 2002a) is a sub-regional plan, which focuses on the Southern L-8 Basin, the City of West Palm Beach Water Catchment Area/water supply lake system and the C-18 Basin, which includes the Loxahatchee Slough and the Loxahatchee River, especially the Northwest Fork of the Loxahatchee River. The plan projects future water demands for environmental, agricultural and urban for 2020, and identifies projects that, if built, will bring supplemental water into the area. The plan's strategies and recommendations incorporate regional responsibilities (water resource development) and local responsibilities (water supply development), and identify potential funding sources. The Plan was accepted by the Governing Board in May 2002.
Upper East Coast (UEC) Water Supply Plan Development and Coordination District Contact: Sharon Fowler	Complete (Plan was completed in FY 1998)	The *Upper East Coast Water Supply Plan* (SFWMD 1998a) is a long-range strategy for dealing with the future water supply needs of a growing population, as well as the local environment in the Upper East Coast Planning Area. The planning area consists of Martin and St. Lucie Counties and eastern Okeechobee County. The plan projects future water demands for urban areas and agriculture for 2020 and develops strategies to meet these demands while also meeting the needs of the environment. The plan's strategies and recommendations incorporate regional responsibilities (water resource development) and local responsibilities (water supply development), and identify potential funding sources. This plan was the first water supply plan completed by the District. It is scheduled to be updated in 2004.
Public Works Construction		
Ten Mile Creek Critical Project District Contact: Denise Arrieta	Behind schedule	Land acquisition for the Ten Mile Creek Critical Project has been completed. Plans and specifications were completed in May 2002. This project is behind schedule due to archaeological issues. Construction is now scheduled to begin in June 2003 (FY 2003) and be complete in November 2005 (FY 2006).
Hillsboro ASR Pilot Project (formerly, Western Hillsboro [Site 1] Aquifer Storage and Recovery [ASR] Pilot Project) District Contact: Rick Nevulis	Behind schedule	Since completion of the Project Management Plan (PMP) in March 2001, source water characterization was out-sourced, initiated and experienced schedule delays. Initial data gathering tasks should be concluded at the end of the second quarter of FY 2003. The Pilot Project Design Report (PPDR) and ASR system design, both on the critical path, will be initiated during FY2003.
L-31N Seepage Management Pilot Project District Contact: Dewey Worth	Behind schedule	The District's Governing Board approved early work on a data collection contract during FY 2001. The PMP received final approval in April 2002. The PDDR was initiated in April 2002 (FY 2002) and is scheduled to be complete in December 2005 (FY 2006).
Caloosahatchee River (C-43) Basin ASR Pilot Project (formerly, Caloosahatchee ASR Pilot Project) District Contact: Robert Verrastro	Behind schedule	The PMP was completed in February 2002. The PPDR was initiated in February 2002 and is scheduled for completion in January 2005.
Water Conservation Area (WCA)-3A and WCA-3B Seepage Management District Contact: Max Day	On schedule-	PMP development is underway with a revised strategy and schedule. The draft feasibility report was completed in October 2001. In June 2002 a revised strategy was formulated to close out the feasibility study and move forward with nine individual Project Implementation Reports (PIRs) for the 14 WPA components. The WCA 3A/3B Seepage Management component is now part of the Broward County Water Preserve Areas project and the PMP has been initiated on an expedited basis. Completion is expected in April 2003. The PIR will be initiated immediately upon completion of the PMP in accordance with the PMP schedule. The project schedule must be revised accordingly to adhere to the revised strategy.
Broward County Secondary Canal System District Contact: Jose Lopez	Behind schedule	The project schedule will require revision, as the scope of work will change to accommodate Broward County modeling and requested changes. The project has not yet started; however, PMP development will be now be initiated in 2003.
C-23, C-24 RASTAs (formerly, C-23 and C-24 Basins Water Preserve Area) District Contact: Beth Kacvinsky	On schedule – not yet started	These Regional Attenuation Stormwater Treatment Areas (RASTAs) are part of the Indian River Lagoon Project. Work is scheduled to begin in FY 2003.

Activity	Status	Comments
Lake Belt In-Ground Reservoir Technology Pilot Project (formerly, Lake Belt Technology Pilot Project) District Contact: Paul Linton	Behind schedule	A contract for early data collection was solicited during FY 2001. The PMP was completed in March 2002. The PPDR was initiated in April 2002 and is expected to be complete in January 2006. This project is behind schedule due to data collection, the geo-technical contract, federal funding and finalization of the siting memorandum due to lack of candidate sites.
Southern L-8 In-Ground Reservoir District Contact: Michael Voich	On schedule	This is part of the North Palm Beach County - Part 1 Project. Work is in progress to complete the PMP in January 2003. Approval was granted to move forward with work on the L-8 test reservoir prior to approval of the PMP in order to capture and store water for the 2002 dry season and to gather data necessary for the PIR. The project schedule is under revision.
WCA 3A &3B Flows to CLBSA (formerly, Flows From WCA-3 to the Central Lake Belt Area) District Contact: Max Day	On schedule-	The PMP is under development and is scheduled for completion by March 2003. This project is ahead of the schedule described in the Master Implementation Schedule (Version1) for the Comprehensive Everglades Restoration Plan (CERP – SFWMD and USACE, 1999).
Flows From Central Lake Belt Storage Area to WCA-3B District Contact: Dewey Worth	On schedule – not yet started	This is part of the Diverting WCAs Flows to Central Lake Belt Storage to Downstream Natural Areas Project. It is scheduled to begin in Fiscal Year 2009.
Eastern Hillsboro ASR Project District Contact: Pete Kwiatkowski	On a revised schedule	This project, cooperatively funded with the Palm Beach County Water Utilities Department, includes the installation of one 5.0-million gallon per day (mgd) ASR well, one upper Floridan aquifer monitoring well, five surficial aquifer supply wells and raw water piping to convey water from the surficial wells to the ASR well.
LEC Water Supply Development Implementation District Contact: Jim Jackson	Ongoing	The *Lower East Coast Regional Water Supply Plan* (SFWMD, 2000b) will be implemented by using regional and local water supply planning efforts to predict when alternative sources will be needed and to provide guidance as to which source may be most appropriate for meeting the particular needs of each user.
Miami-Dade County ASR District Contact: Jim Jackson	On a revised schedule	The Miami-Dade County ASR Project will use excess wellfield capacity available from existing wellfields in the surficial aquifer during the wet season to provide water for storage in the Upper Floridan Aquifer System. This water will later be recovered during the dry season to reduce the demands of the utility wellfields on the surficial aquifer. This project is under a revised schedule, to be carried out in FY 2003 – FY 2005
Capital Program District Contact: Vince Loehrlein and Zan Kuglar	Ongoing	The Capital Program includes capital improvements, modifications, or repairs to District water control and conveyance facilities. The S-7 and S-8 Projects were carried over from FY 2001 to FY 2002 due to the size of the projects.
Kissimmee Basin Water Resource Development Implementation District Contact: Chris Sweazy	Ongoing	This activity is for the implementation of the regional water resource development projects recommended in the ***Kissimmee Basin Water Supply Plan*** (SFWMD, 2000e). Among the projects being completed under this activity are: reclaimed injection pilot project, aquifer recharge enhancement project, development of a management plan for the Lake Istokpoga/Indian Prairie Basin, and numerous hydrologic, geologic, and ground water modeling studies
LWC Water Resource Development Implementation District Contact: Bonnie Kranzer	Ongoing	This activity is for the implementation of regional water resource development projects recommended in the *Lower West Coast Water Supply Plan* (SFWMD, 2000c). Significant milestones to date include: adoption of MFLs for the Caloosahatchee River and Estuary and LWC aquifers (except for the water table and Floridan); addition of one mobile irrigation lab in Collier County; near completion of the initial study of the Regional Irrigation Distribution Study; addition of 19 monitoring wells in the surficial and intermediate aquifer system; nearing completion on the project for potentiometric mapping of the aquifer; completion of the Reverse Osmosis feasibility study , which resulted in Florida Power and Light (FP&L) Company and Lee County pursuing a joint agreement for a facility on the Caloosahatchee River); and completion of initial studies and drafts affecting numerous CERP projects.
UEC Water Resource Development Implementation District Contact: Sharon Fowler	Ongoing	This activity is for the implementation of regional water resource development projects recommended in the *Upper East Coast Water Supply Plan* (SFWMD, 1998).

Activity	Status	Comments
Comprehensive Everglades Restoration Plan (CERP) Reserves District Contact: Steve Reel	Ongoing	This activity is for the management of the cash reserves for the implementation of the CERP.
Operations and Maintenance		
Lake Istokpoga Regulation Schedule District Contact: Lewis Hornung	On schedule	The PMP is being developed and is scheduled for completion in December 2002.
Structure Operations District Contact: Tommy Strowd	Ongoing	Structure operations include the movement of water, pumping operations activities, and automation for the Central and Southern Florida (C&SF) Project canal system.
Water Control Structure Maintenance District Contact: Lindel Williams	Ongoing	This activity is for water control structure maintenance, including District pump stations, structures, project culverts and special construction projects as determined.
Canal/Levee Maintenance District Contact: Lindel Williams	Ongoing	This activity is for the maintenance of canals and levees, including replacement of project culverts, bank stabilization, revegetation, mowing, tree removal and shoal removal.
Equipment Maintenance District Contact: John Adams	Ongoing	Equipment maintenance consists of preventive and cyclic maintenance and restoration of a variety of equipment.
Electronics, Communications, and Control Device District Contact: Nancy Little	Ongoing	District communication, electronics, monitoring and control devices must be developed, installed, supported, and maintained. These are categorized as supervisory control and data acquisition (SCADA) system devices, and include data loggers / remote terminal units, sensors, radio frequency (rf) devices which utilize the microwave network backbone for transfer of data or control functions. This provides the required functional control of water resources and historical data for water supply planning and implementation.
Exotic Plant Control District Contact: Dan Thayer	Ongoing	Invasive exotic aquatic and terrestrial vegetation within District canals, canal banks, lakes, rights-of-way and preserve lands must be controlled. This control is accomplished through in-house and contracted herbicidal, mechanical and biological control methods. This program works primarily to ensure conveyance capacity within canals and water bodies.
General Maintenance District Contact: Frank Ferrano	Ongoing	This activity provides preventative maintenance and repairs to District fixed and mobile equipment to ensure operation of the District water control system and provides maintenance and repairs to District field facilities.
Central and Southern Florida (C&SF) Project Operational Planning District Contact: Luis Cadavid	Ongoing	This activity includes, but is not limited to: regional modeling support for the District and the United States Army Corp of Engineers (USACE) to develop and implement short-term and/or routine operational procedures (e.g., implementation of the Water Supply and Environment [WSE] schedule for Lake Okeechobee); development of rain-driven operating rules recommended for the Everglades by the *Lower East Coast Regional Water Supply Plan* and the CERP; development of operational modifications recommended in *the Lower East Coast Regional Water Supply Plan* (SFWMD, 2000b) (e.g., supply-side management modifications, rain-driven operations); and development of operational plans for components of the *Lower East Coast Regional Water Supply Plan* and the CERP.
Regulation		
Water Use Permitting District Contact: Scott Burns	Ongoing	This program involves the review of water use permit applications. The objective is to ensure safe, efficient, equitable, and reliable development of the state's water resources. The major components are to: review and prepare recommendations for permit applications for all consumptive uses of water within the District boundaries; provide post-permit compliance checks on priority projects based on staffing resources; and review and issue well construction permits for specific water wells within the District boundaries. Water use permitting also includes permit planning, permit issuance, dispute resolution, mitigation support, technical support for enforcement, communication with the water supply planning activities of this agency, and criteria and rule development.

Activity	Status	Comments
Revise Consumptive Use Permitting (CUP) Rules District Contact: Scott Burns	Ongoing	The last time District water use rules were substantially modified was in 1993, when the water conservation rules were updated. Since that time, numerous changes in legislation, District policy, and the development of the regional water supply planning process have caused District staff to reexamine the agency's water use rules. Some of the proposed changes will consist of administrative updates, while others involve technical criteria changes that relate to the implementation objectives of the District's regional water supply plans.
Outreach		
Hillsboro ASR Pilot Project (formerly, Hillsboro [East] ASR Pilot) District Contact: Pete Kwiatkowski	Behind Schedule	Since completion of the PMP in March 2001, the water quality characterization of the source water characterization was out-sourced, initiated and experienced schedule delays. Initial data gathering tasks should be concluded at the end of the second quarter of FY 2003. The PPDR and ASR system design, both on the critical path, will be initiated during FY 2003.
LEC Water Supply Development Implementation District Contact: Jim Jackson	Ongoing	The *Lower East Coast Regional Water Supply Plan* (SFWMD, 2000b) will be implemented by using regional and local water supply planning efforts to predict when alternative sources will be needed, and to provide guidance as to which source may be most appropriate for meeting the particular needs of each user.
Miami-Dade County ASR District Contact: Jim Jackson	On a revised schedule	The Miami-Dade County ASR Project will use excess wellfield capacity available from existing wellfields in the surficial aquifer during the wet season to provide water for storage in the Upper Floridan Aquifer System. This water will later be recovered during the dry season to reduce the demands of the utility wellfields on the surficial aquifer. This project is under a revised schedule, to be carried out in FY 2003 – FY 2005
LWC Water Supply Development Implementation District Contact: Bonnie Kranzer	Ongoing	This activity will evaluate Lower West Coast alternative water supply sources, or a combination of alternatives, with local water users to find the combination that best suits local requirements and conditions. Rule development public workshops completed for mandatory year-round water conservation measures and technical assistance workshop for the Evaluation and Appraisal Report (including water supply facilities workplan session) were held for the Lower West Coast.
Alternative Water Supply (AWS) Cooperative Projects District Contact: Jane Bucca	Ongoing	AWS Cooperative Projects annually provide for the following: the receipt of AWS project applications; the review, ranking and Governing Board approval of proposed contract awards; execution of the contractual agreements; and the development of annual reports to the Florida Legislature. The SFWMD provided funding totaling $3.9 million for 14 projects in FY 2002.
Water Conservation District Contact: Bruce Adams	On a revised schedule	The District's water conservation efforts, or demand management, refer to water use practices and technologies that provide the services desired by the users while using less water. The District's Demand Management Program incorporates water supply planning, regulation and supplemental measures in order to cultivate a conservation ethic in cooperation with water users. The District initiated a water demand conservation cooperative funding program that provided $250,000 for five projects, and increased funding for outreach and public education.
Monitoring and Evaluation		
Hydrologic Modeling and Analysis – Water Resource Development District Contact: Scott Burns	Ongoing	This activity provides for regional and sub-regional modeling to support the implementation of recommendations from the *Lower East Coast Regional Water Supply Plan* (SFWMD, 2000b) and associated regulatory/rulemaking activities. These regulatory/rulemaking activities include reservations of water for natural systems and minimum flows and levels (MFLs). Efforts will also include pre-regulatory modeling for water users.
Hydrologic Management – Hydrologic Studies District Contact: John Lukasiewicz	Ongoing	The fundamental hydrogeologic support projects are all on schedule and ongoing. The well inventory application (WILMA) has been integrated with the District's corporate database (DBHydro) and is now available through the Web Browser. Twelve USGS projects continue to come in on schedule, but are now reduced to seven projects due to budget cuts.
Water Supply Program Controls District Contact: David Gilpin-Hudson and Linda Hoppes	Ongoing (Previously discontinued, but now reactivated)	The activity provides for the status of each water supply plan recommendation (119 total) to be reported on quarterly. Additionally, project controls for the development and implementation of regional water supply plans will be implemented in FY 2003.

Core Objective WS 2: Prevent contamination of water supplies		
Regulation		
Water Use, Application, Compliance, and Criteria Development District Contact: Scott Burns	Ongoing	Water use permitting (consumptive use permitting) is a state-mandated program assigned exclusively to the water management districts. The objective is to ensure safe, efficient, equitable and reliable development of the state's water resources. The major components are to: review and prepare recommendations for permit applications for all consumptive uses of water within the District boundaries; provide post-permit compliance checks on priority projects based on staffing resources (approximately 300 projects per year); review and issue well construction permits for specific water wells within District boundaries; and perform water conservation rulemaking analysis and make recommendations. This activity also includes pre-permit planning, permit issuance, dispute resolution, litigation support, technical support, enforcement, communication with water supply planning activities of this agency, and criteria and rule development.
Outreach		
Local Plan Review District Contact: P.K. Sharma	Ongoing	Pursuant to the requirements of Chapters 373 and 163, F.S., the District reviews local government comprehensive plans and amendments, and provides water resources-related technical assistance to local governments on efforts to prepare Evaluation and Appraisal reports (EARs). Efforts to support this activity were significantly upgraded during FY 2002 in support of linking land and water planning.
Local Liaison District Contact: John Higgins	Ongoing	This activity provides for a liaison with county and Chapter 298 Districts, and enables the coordination of agency review of Water Control District plans.
Water Shortage Management District Contact: Bruce Adams	Ongoing	Because of favorable water resource conditions, water shortage orders were rescinded on October 11, 2001, for all areas of the District, except for certain portions of Orange County. The District is currently under rule development for Chapter 40-E21, the Water Shortage rule. Staff has conducted two rounds of public workshops throughout the District on proposed revisions to the rule.
Wellhead Protection Programs District Contact: *Assigned as needed by the Water Supply Department*	As needed	The FDEP is the agency responsible for this activity. The District will provide assistance to the FDEP and local governments as needed. The FDEP has a number of regulations under the Florida Administrative Code that function to regulate hazardous and solid waste, stormwater discharges, storage tank systems, etc. The primary goal of these legislative policies is to prevent problems before they occur, as contrasted to correcting or providing remedial action for preexisting problems. The intent of these ordinances is to protect and safeguard the health, safety, and welfare of the public by providing criteria for regulating and prohibiting the use, handling, production, and storage of certain deleterious substances that may impair present and future public water supply wells and wellfields. The District has and will continue to provide assistance to local governments in the preparation of their wellfield protection ordinances. No wellhead protection activity has occurred since the last update of the DWMP.
Recharge Mapping District Contact: *Assigned as needed by the Water Supply Department*	As needed	As directed by Chapter 373, F.S., the District provides ground water recharge information to local governments to assist them with the development and implementation of appropriate water resource policies. In order to accomplish this, the District undertook a project to map recharge areas within its four planning regions. This effort was completed in 1995. The maps delineate precipitation recharge and leakage rates for all the primary public water supply aquifers utilized throughout South Florida. The District has and will provide assistance to local governments in the delineation of prime recharge areas in order to implement voluntary tax assessment programs (under the Bluebelt Act) that protect the state's prime recharge areas. No recharge mapping was performed since the last update of the DWMP.
Monitoring and Evaluation		
Wetland Criteria Development and Support District Contact: Deborah Goss	Ongoing	This activity supports the Regulation Program in developing a scientific basis for wetland protection criteria used in water use permitting. The activity was originated at the direction of the Governing Board and Executive Office to develop a research and monitoring program to investigate impacts to wetlands caused by water table drawdown and to develop specific recommendations for drawdown criteria that prevent adverse impacts. This information is needed to support rulemaking for District and is a critical element in the implementation of the water supply plans.

Part B. Flood Protection and Floodplain Management

Historically, flood protection has been at the core of the District's activities. The District was originally established in 1949 as the Central and Southern Florida Flood Control District. The Flood Protection and Floodplain Management portion of the DWMP is divided into two core objectives:

Core Objective FP 1: Minimize damage from flooding

Core Objective FP 2: Promote nonstructural approaches to achieve flood protection, and to protect and restore the natural features and functions of the 100-year floodplain

Table 2. The FY 2002 Status of the DWMP Flood Protection and Floodplain Management Activities

Activity	Status	Comments
Core Objective FP 1: Minimize damage from flooding		
Planning		
Big Cypress Basin Watershed Project (Big Cypress Watershed Management Plan) District Contact: Ananta Nath	Ongoing	The Big Cypress Basin Watershed Management Plan includes development of a set of calibrated hydrologic-hydraulic models and ecologic assessment of an approximately 1,200-square mile area of western Collier watershed and incorporation of engineering, economic, and environmental analyses of alternative water management strategies to formulate continuing plans and road maps for capital projects in the Big Cypress Basin. During 2001, a comprehensive evaluation of surface and groundwater elements of the Basin was incorporated by an integrated SW/GW model.
South Lee County Watershed Plan District Contact: Akintunde Owosina	Ongoing	Severe flooding in 1995 raised the issue of water flows in southern Lee County. The South Lee County Watershed Plan addressed this issue. The work in this project involved three phases. Phase I focused on collection and analyses of background data and hydrologic and hydraulic model development for the study area. During Phase II, the ecological value of the study area was assessed and the target hydrologic parameters for restored conditions were identified. During Phase III, models were applied to evaluate the performance of existing water management facilities in the study area, cxisting problems were identified and alternative facilities and systems recommended. The plan was completed in July 1999 and several of the recommendations have been implemented. River and creek systems restoration involving removal of exotic vegetation and debris has been completed on major creeks in the study area. A maintenance schedule that keeps these systems clean is ongoing. Acquisition of flood plain in the east Bonita Springs area as recommended in the plan is ongoing. Finally, a Regional Flow way concept recommended by the plan is being implemented through the Regulatory process.
Public Works Construction		
Capital Program District Contact: Vince Loehrlein and Zan Kugler	Ongoing	The Capital Program includes capital improvements, modifications, or repairs to District water control and conveyance facilities. The S-7 and S-8 Projects were carried over to FY 2002 due to the size of the projects.
Modified Water Delivery Project District Contact: Paul Linton	On schedule	The Modified Water Deliveries Project is designed to restore the hydrologic balance between western Shark River Slough and northeastern Shark River Slough, to benefit Everglades National Park flora and fauna. The detail design of the recommended plan has been initiated.
C-111 Project Implementation District Contact: Paul Linton	On schedule	The C-111 Project consists of both structural and nonstructural modifications to the existing works within the C-111 Basin to promote more natural hydroperiods in Taylor Slough and the eastern panhandle ecosystems of Everglades National Park. Flood protection within the C-111 Basin east of the L-31N and C-111 canals will be maintained. In FY 2001, 90% of the land acquisition was completed. The general reevaluation report supplement is under development.
Kissimmee River Restoration Engineering Design and Implementation District Contact: Sally Kennedy	Ongoing	The Kissimmee River Restoration Project is a partnership with the USACE. Included are analyses, design and implementation of construction features that will continue to provide existing level of flood protection when ecosystem restoration features are fully constructed as part of this project. The project should be completed in 2012.

Activity	Status	Comments
Operations and Maintenance		
Structure Operations District Contact: Tommy Strowd	Ongoing	Structure operations include the movement of water, pumping operations activities and automation for the C&SF Project canal system.
Water Control Structure Maintenance District Contact: Lindel Williams	Ongoing	Water control structure maintenance includes District pump stations, structures, project culverts and special construction projects.
Canal/Levee Maintenance District Contact: Lindel Williams	Ongoing	Canals and levees must be maintained. Maintenance includes replacement of project culverts, bank stabilization, revegetation, mowing, tree removal and shoal removal.
Equipment Maintenance District Contact: John Adams	Ongoing	Equipment maintenance consists of preventive and cyclic maintenance and restoration of a variety of equipment for the regional flood control systems.
Electronics, Communications, and Control Devices District Contact: Nancy Little	Ongoing	District communication, electronics, monitoring and control devices must be developed, installed, supported and maintained. These are categorized as supervisory control and data acquisistion (SCADA) system devices, and include dataloggers / remote terminal units, sensors, radio frequency (rf) devices which utilize the microwave network backbone for transfer of data or control functions. This provides the required functional real-time control and monitoring of the District's C&SF system canals and water control structures for operatinal decisions, data archive and hydrologic-hydraulic modeling.
Exotic Plant Control District Contact: Dan Thayer	Ongoing	Invasive exotic aquatic and terrestrial vegetation within District canals, canal banks, lakes, rights-of-way and preserve lands must be controlled. This control is accomplished through in-house and contracted herbicidal, mechanical and biological control methods. This program works primarily to ensure conveyance capacity within canals and water bodies.
Right-of-Way Management District Contact: Tom Fratz	Ongoing	Right-of-Way Management involves the management of uses of District rights-of-way by means of permitting and enforcement initiatives designed to minimize outside impacts on the District's ability to operate and maintain the canal and levee system.
Emergency Management District Contact: Olivia McLean	As needed	The mission of the District's Emergency Management Program is to prevent or minimize, prepare for, respond to and recover from emergencies or disasters that threaten life or property within the boundaries of the District. These activities ensure that the District can accomplish its mission during adverse conditions. The District works closely with, and offers support to, local and state emergency managers to prepare for and assist with man-made hazards, dam failures, nuclear power plant failures, fires, storms and a number of other types of emergencies within Florida.
Regulation		
Environmental Resource Permitting (ERP) District Contact: Terrie Bates	Ongoing	This ongoing activity involves the review of environmental resource permit applications. It includes the following: • Technical engineering and environmental review and evaluation of construction and conceptual plans for proposed development activities • Recommendations for project design changes to ensure proposed activities meet District criteria for flood, water quality, and environmental protection • Negotiations with permit applicants • Field inspections of project sites requesting permits or wetland determinations • Review of wetland mitigation plans • Preparation of requests for additional information • Preparation of technical staff reports • Compliance review of permitted sites • Compliance review of submitted documents required by permit special conditions • Administrative and automation support critical to the ERP Program

Outreach		
Local Plan Review District Contact: P.K. Sharma	Ongoing	Pursuant to the requirements of Chapters 373 and 163, F.S., the District reviews local government comprehensive plans and amendments, and provides water resources related technical assistance to local governments on their efforts to prepare Evaluation and Appraisal reports (EARs). Efforts to support this activity were significantly upgraded during FY 2002 in support of linking land and water planning.
Monitoring and Evaluation		
Flood Control Level of Service	Discontinued	Funding was not available for this activity.
Basin Flood Studies District Contact: Ken Konyha	Ongoing	This activity consists of basin flood studies in the C-17 and C-51 Basins. The C-17 Basin Study will investigate increasing flood mitigation and conveyance capacity of the C-17 Canal and the S-44 Structure without adversely affecting the receiving water body (Lake Worth Lagoon). The C-51 Basin Study will reevaluate the C-51 Basin Rule (surface water management permitting criteria). The C-11 and C-4 Basins are also being studied. The C-4 forward pumping station has been constructed and was operational for the 2002 wet season.
Core Objective FP 2: Promote nonstructural approaches to achieve flood protection, and to protect and restore the natural features and functions of the 100-year floodplain		
Land Acquisition		
Stewardship Save Our River (SOR) Lands District Contact: Fred Davis	Ongoing	SOR stewardship activities include planning and implementing a stewardship work plan, administering a land acquisition plan, administering a public use rule and administering mitigation banks/projects.
General Land Acquisition District Contact: Fred Davis	Ongoing	This activity involves the acquisition of lands in support of District programs for water management, water supply, and the conservation and protection of water resources.
Regulation		
Environmental Resource Permitting (ERP) District Contact: Terrie Bates	Ongoing	This ongoing activity involves the review of environmental resource permit applications. It includes the following: • Technical engineering and environmental review and evaluation of construction and conceptual plans for proposed development activities • Recommendations for project design changes to ensure proposed activities meet District criteria for flood, water quality, and environmental protection • Negotiations with permit applicants • Field inspections of project sites requesting permits or wetland determinations • Review of wetland mitigation plans • Preparation of requests for additional information • Preparation of technical staff reports • Compliance review of permitted sites • Compliance review of submitted documents required by permit special conditions • Administrative and automation support critical to the ERP Program

Part C. Water Quality

The water quality section of the DWMP addresses efforts to ensure that water quality standards are met throughout the District. The DWMP utilizes two core water quality objectives:

Core Objective WQ 1: Protect and improve surface water quality

Core Objective WQ 2: Protect and improve ground water quality

Table 3. The FY 2002 Status of the DWMP Water Quality Activities

Activity	Status	Comments
Core Objective WQ 1: Protect and improve surface water quality		
Planning		
Kissimmee Basin Plan Development	Discontinued	This activity was eliminated due to budget constraints.
Florida Bay and Florida Keys Feasibility Study (formerly, Florida Bay Feasibility Study) District Contact: Dewey Worth	Behind schedule	The Florida Bay and Florida Keys Feasibility Study will determine the types of modifications that are needed to successfully restore and protect the water quality and ecological conditions of the Florida Bay and the Florida Keys' reef tract. The study will evaluate the quantity, timing, distribution and quality of fresh water that should flow to Florida Bay and provide recommendations for any modification of water deliveries that are expected as a result of the implementation of Everglades restoration programs. The PMP was finalized in February 2002. The feasibility study was initiated in March 2002. Performance measures and evaluation models are being developed. The final feasibility report is scheduled for completion in December 2006.
Comprehensive Integrated Water Quality Plan	Not a District project	The Comprehensive Integrated Water Quality Plan is being developed and implemented by the FDEP.
Florida Keys Water Quality Plan District Contact: Cecelia Weaver	Ongoing	The strategies identified in the Florida Keys Water Quallty Plan focus on eliminating water quality problems that are related to land-based activities in the Florida Keys. These problems may be caused by inadequate or nonexistent treatment of storm water runoff and wastewater. The plan builds upon several other plans, notably the Water Quality Protection Program and the Management Plan for the Florida Keys National Marine Sanctuary, and focuses on restoration strategies and projects that could be initiated or assisted by the District.
Indian River Lagoon Surface Water Improvement and Management (SWIM) Plan Documentation District Contact: Pat Gostel	Ongoing	This activity involves an update of the *Indian River Lagoon Surface Water Improvement and Management Plan* (SFWMD and SJRWMD, 1994). The Indian River Lagoon SWIM Project, a joint program administered with the St. Johns River Water Management District (SJRWMD), is designed to develop and execute a combination of research and practical implementation projects to protect or restore the environmental resources of the St. Lucie Estuary and the Indian River Lagoon. This update is currently under development with the SJRWMD. The update is scheduled to be submitted for approval of the SFWMD Governing Board in December 2002.
Lake Okeechobee SWIM Plan Implementation District Contact: Kim O'Dell	Ongoing	This activity includes work required to ensure that the *Surface Water Improvement and Management (SWIM) Plan – Update for Lake Okeechobee* (SFWMD, 1997) is being implemented as intended. A plan update was completed in 2002,
Public Works Construction		
Lake Okeechobee Water Retention/ Phosphorus Removal District Contact: Jose Otero	Revised schedule	Plans and specifications for the Taylor Creek and Nubbin Slough stormwater treatment areas were finalized. Value engineering options will be incorporated into the plans and specifications in FY 2003. Construction is scheduled to begin in FY 2003 and will be completed in FY 2005. One isolated wetland site, the Byrd site, was completed. The remaining isolated wetlands are under design and are scheduled for completion in FY 2005.

Activity	Status	Comments
Western C-11 Water Quality Improvement Critical Project (formerly, Western C-11 [S-9] Water Quality Treatment Project) District Contact: Susan Ray	Behind schedule	Phase 1 was the construction of pump station S-9A, which includes four new seepage return pumps, located adjacent to pump station S-9. The station was handed over to SFWMD in September 2002. The water control plan for the project was completed June 2002. Construction was initiated November 2001 on the new divide structure, Phase 2, but was halted in April 2002 in order to change the divide structure design in response to concerns about potential flooding impacts. The new design incorporates an Obermeyer inflatable air bladder gate system and is planned to be complete by January 2003. Construction is anticipated to be complete by April 2004.
Lake Okeechobee Tributary Sediment Dredging District Contact: Lewis Hornung	On schedule	This is part of the Lake Okeechobee Watershed Project. The PMP was completed in July 2001. A watershed assessment will be a first step in the PIR. A contract was awarded in January 2002 for technical support for the planning process, and work is underway.
Everglades Construction Project (ECP) District Contact: Gary Goforth	On schedule	The District and the FDEP have set in motion a program that forms a comprehensive and consistent set of strategies to carry out the requirements of the Everglades Forever Act. Note that STA-1E, which is being constructed by the USACE, is approximately two years behind schedule.
Pineland and Hardwood Hammock Restoration (C-111 Basin)	Discontinued	This is not a District project. Miami-Dade County is the local sponsor of this CERP project.
Taylor Creek/Nubbin Slough Reservoir and STA District Contact: Lewis Hornung	On schedule	This is part of the Lake Okeechobee Watershed Project. The PMP was completed in July 2001. A watershed assessment will be a first step in the PIR. A contract was awarded in January 2002 for technical support for the planning process and work is underway.
Operations and Maintenance		
Operations and Maintenance of ECP District Contact: Gary Goforth	Ongoing	The operations and maintenance of the ECP is mandated by the Everglades Forever Act. This includes costs associated with the operations and maintenance of canals, levees, pipes, culverts, pump stations and monitoring test cells within the ECP.
Regulation		
Everglades Works of the District Permitting District Contact: Bob Howard	Ongoing	The Federal Settlement Agreement and the Everglades Forever Act mandate the implementation of the Everglades Best Management Practice (BMP) Program for the Everglades Agricultural Area (EAA) to control phosphorus. In addition, the Everglades Forever Act mandates additional regulatory programs to include other water quality parameters and to include additional basins. The implemention of BMPs through this program has resulted in a 55 percent reduction in phosphorus loads in 2002. The three-year rolling average indicates a 59 percent reduction in phosphorus loads. Additionally, the BMP Program Rule was amended to include the C-139 Basin. The first year of compliance determination for the C-139 Basin will be Water Year 2003.
Everglades Storm Water Program District Contact: Damon Meiers	Ongoing	The Everglades Storm Water Program (formerly known as the Non-ECP Initiative) was mandated by the Everglades Forever Act. The purpose of this program is to ensure that water quality standards are met at all structures that the District controls that pump water into, through, or from the Everglades Protection Area. This will be achieved through implementing the Non-ECP Permit, a combination of regulatory analysis, water quality monitoring, water quality improvement strategies, and solutions such as BMPs, or construction projects. Other components of the program include an education campaign, and developing a method for reimbursement of expenditures through a special assessment.
Monitoring and Evaluation		
Lake Okeechobee Works of the District Permitting District Contact: Gary Ritter	Ongoing	The purpose of this activity is to inventory and permit all nondairy land uses in the priority basins of the northern Lake Okeechobee watershed. High phosphorus areas will be identified through water quality surveys, monitoring will be performed to ensure compliance with SWIM phosphorus discharge concentration limits, and corrective actions will be required on parcels that are out of compliance. The Lake Okeechobee Works of the District regulatory program is an integral component of the Lake Okeechobee Protection Plan. Efforts are underway to amend portions of the Works of the District Program to better support the intent of the Lake Okeechobee Protection Plan.
Kissimmee Basin Data Collection and Evaluation District Contact: Joe Koebel	On schedule	The 2000 Lake Okeechobee Bill requires an assessment of the sources of phosphorus from the Upper Kissimmee Chain of Lakes and their relative contribution to the water quality of Lake Okeechobee. In addition, data evaluation and assessment efforts need to be conducted to meet the total maximum daily load (TMDL) and MFL requirements.

Activity	Status	Comments
ECP Research and Data Collection District Contact: Jennifer Jorge	Ongoing	This activity represents the ongoing research and data collection efforts on behalf of the ECP. The Everglades Forever Act and Federal Everglades Settlement Agreement, as well as permits and other legislation mandates require the District to conduct research, monitoring, and modeling activities.
Everglades BMP Effectiveness Research District Contact: Pamela Sievers	Ongoing	BMP research provides information on how to efficiently control pollutant releases from agricultural and other developed areas. The particular focus of this activity is on the prevention of phosphorus releases. Projects include research on understanding phosphorus releases from the EAA soils to optimize fertilizer application rates, development of a baseline of water quality data for the C-139 Basin, and evaluation of pesticide releases and toxicity. This activity also developed a chapter on BMPs for the ***2001 Everglades Consolidated Report*** (ECR - SFWMD, 2001a), as required by statute. A summary of SFWMD and IFAS supported work was provided for the ECR report in 2002 (SFWMD, 2002b). District research work is complete; local and university research work is ongoing; District regulatory program will be ongoing
404 Permit Research, Monitoring, and Modeling – Receiving Waters District Contact: Carlos Coronado	Ongoing	This activity assesses impacts of effluents from STAs on water quality (nutrients and toxins), soils, periphyton, and macrophytes. Predischarge (baseline) monitoring is complete. Postdischarge monitoring has been initiated. Research on hydrologic/nutrient effects on vegetation and soils is continuing.
Water Quality Monitoring – Florida Bay District Contact: Dave Rudnick	Ongoing	This activity supports monitoring of water quality throughout the Florida Bay region and monitoring of sea grass community in northeastern Florida Bay, Manatee Bay, and Barnes Sound. Impacts of changing freshwater flow and releases from the C-111 Canal are being assessed.
St. Lucie Estuary / Indian River Lagoon District Contact: Dan Haunert	Ongoing	This activity consists of monitoring, research, and implementation projects in support of the Indian River Lagoon SWIM Plan (SFWMD and SJRWMD, 1994) and the Indian River Lagoon Restoration Feasibility Study. The Indian River Lagoon Restoration Feasibility Study Plan was completed in 2002. USACE Army Corps Division Engineers provided revisions to the document in September 2002 and final authorization by the U.S. Congress is forthcoming. Monitoring, research and implementation activities continue with ad valorem and St. Lucie River Issue Team funding.
Lake Okeechobee Research and Data Collection District Contact: Karl Havens	Ongoing	This element includes the research- and monitoring-related activities being conducted in Lake Okeechobee and its watershed. This information is then fed to the planning and implementation projects to ensure that the District's restoration-related activities are based on sound and defensible science. The key activities include in-lake research devoted toward determining the impacts of water level, nutrients, and invasive plants; watershed research dealing with the fate and transport of phosphorus; modeling activities associated with the impacts of phosphorus in the watershed and the lake; BMPs associated with beef cattle operations; water management practices assessment; Lake Istokpoga and Upper Kissimmee Chain-of-Lakes phosphorus source identification; feasibility study and natural resources economic evaluation of alternative nutrient reduction technologies; reservoir STA optimization; residuals and manure land application study;and monitoring activities to assess the effectiveness of the District's restoration efforts.
Water Quality Monitoring District Contact: Bahram Charkhian	Ongoing	The Water Quality Monitoring Program generates high quality chemical and physical data for assessing the status of South Florida's water resources, utilizing standardardized sampling and analytical procedures. The activities under this element provide data for evaluating water quality conditions and trends, assessing permit compliance and support other District programs. Data reporting provides summaries and written reports on water quality and hydologic conditions for planning and operaions, as well as to meet permit and legally mandated requirements.
Lower West Coast Water Quality Monitoring District District Contact: Patricia Burke	Ongoing	This activity encompasses water quality monitoring for LWC estuaries from Cape Romano to the Caloosahatchee River (Florida International University) and the inland water quality monitoring for the Big Cypress Basin (Collier County).

Core Objective WQ 2: Protect and improve ground water quality		
Planning		
Water Preserve Area Feasibility Study District Contact: Max Day	Discontinued	The Water Preserve Areas (WPAs) are intended to provide regional storage to assist in meeting the future water supply needs of all types of users – agricultural, urban and environmental. The Water Preserve Area Feasibility Study investigated and further developed conceptual designs developed under the C&SF Project Comprehensive Review Study (Restudy). The draft feasibility report was completd in October 2001. In June 2002, a revised strategy was formulated to close out the feasibility study and move forward with nine individual Project Implementatin Reports (PIRs) for the 14 WPA components. Individual PMPs will be initiated on an expedited basis between August 2002 and April 2003 for each of these projects. PIRs will be initiated immediately upon completion of the PMPs according to the PMP schedules.
Regulation		
Water Use, Application, Compliance, and Criteria Development District Contact: Scott Burns	Ongoing	Water use permitting (consumptive use permitting) is a state mandated program assigned exclusively to the water management districts. The objective is to ensure safe, efficient, equitable, and reliable development of the state's water resources. The major components are 1) review and prepare recommendations for permit applications for all consumptive uses of water within the District boundaries; 2) provide postpermit compliance checks on priority projects based on staffing resources (approximately 300 projects per year); 3) review and issue well construction permits for specific water wells within District boundaries; and 4) perform water conservation rulemaking analysis and make recommendations. This activity also includes prepermit planning, permit issuance, dispute resolution, litigation support, technical support, enforcement, communication with water supply planning activities of this agency, and criteria and rule development.
Outreach		
Local Plan Review District Contact: P.K. Sharma	Ongoing	Pursuant to the requirements of Chapters 373 and 163, F.S., the District reviews local government comprehensive plans and amendments, and provides water resources related technical assistance to local governments on their efforts to prepare Evaluation and Appraisal Reports. Efforts to support this activity were significantly upgraded during FY 2002 in support of linking land and water planning.
Water Shortage Management District Contact: Bruce Adams	Ongoing	Because of favorable water resource conditions, water shortage orders were rescinded on October 11, 2001, for all areas of the District, except for certain portions of Orange County. The District is currently under rule development for Chapter 40-E21, the Water Shortage rule. Staff has conducted two rounds of public workshops throughout the District on proposed revisions to the rule.
Wellhead Protection Programs District Contact: *Assigned as Needed by the Water Supply Department*	As needed	The FDEP is the agency responsible for this activity. The District will provide assistance to the FDEP and local governments as needed. The FDEP has a number of regulations under the Florida Administrative Code that function to regulate hazardous and solid waste, stormwater discharges, storage tank systems, etc. The primary goal of these legislative policies is to prevent problems before they occur, as contrasted to correcting or providing remedial action for preexisting problems. The intent of these ordinances is to protect and safeguard the health, safety, and welfare of the public by providing criteria for regulating and prohibiting the use, handling, production, and storage of certain deleterious substances that may impair present and future public water supply wells and wellfields. The District has and will continue to provide assistance to local governments in the preparation of their wellfield protection ordinances. No wellhead protection activity has occurred since the last update of the DWMP.
Recharge Mapping District Contact: *Assigned as Needed by the Water Supply Department*	As needed	As directed by Chapter 373, F.S., the District provides ground water recharge information to local governments to assist them with the development and implementation of appropriate water resource policies. In order to accomplish this, the District undertook a project to map recharge areas within its four planning regions. This effort was completed in 1995. The maps delineate precipitation recharge and leakage rates for all the primary public water supply aquifers utilized throughout South Florida. The District has and will provide assistance to local governments in the delineation of prime recharge areas in order to implement voluntary tax assessment programs (under the Bluebelt Act) that protect the state's prime recharge areas. No recharge mapping was performed since the last update of the DWMP.

Monitoring and Evaluation		
Wetland Criteria Development and Support District Contact: Deborah Goss	Ongoing	This activity supports the Regulation Program in developing a scientific basis for wetland protection criteria used in water permitting. The activity was originated at the direction of the Governing Board and Executive Office to develop a research and monitoring program to investigate impacts to wetlands caused by water table drawdown and to develop specific recommendations for drawdown criteria that prevent adverse impacts. This information is needed to support rulemaking for District and is a critical element in the implementation of the water supply plans.
Lake Okeechobee ASR Pilot Project District Contact: Pete Kwiatkowski	Behind schedule	The Lake Okeechobee ASR Pilot Project Management Plan was approved in March 2001. Test wells have been constructed and hydrogeologic analyses of the wells are scheduled to be completed in FY 2003.

Part D. Natural Systems Management

The importance of natural systems management at the District has increased since the 1970s as a result of greater awareness of environmental issues. The land planning and environmental resource protection legislation enacted by the State of Florida over the past 30 years has required the District to place greater emphasis on regional ecosystem management. This portion of the DWMP describes the activities of the District in meeting the requirements of natural systems management. It is comprised of two core natural systems objectives:

Core Objective NS 1: Maintain the integrity and functions of water resources and related natural systems

Core Objective NS 2: Restore degraded water resources and related natural systems to a naturally functioning condition

Table 4. The FY 2002 Status of the DWMP Natural Systems Management Activities

Activity	Status	Comments
Objective NS 1: Maintain the integrity and functions of water resources and related natural systems		
Planning		
LEC MFLs District Contact: Joel Van Arman	Completed	MFLs have been established for Everglades National Park, the Water Conservation Areas (WCAs), Lake Okeechobee and the Northern Biscayne aquifer (except that portion of the aquifer located in southern Miami-Dade County). This effort was required by Chapter 373, F.S.
Rain-Driven Schedules for the Everglades District Contact: Murray Miller	On schedule	The objective of this project is to develop rainfall-based delivery plans for the WCAs and the Rotenberger Wildlife Management Area (WMA) as part of the LEC regional water supply planning process. This activity has both water supply and natural systems components. The relationship between target stages and rainfall is being evaluated statistically for the purpose of developing a rainfall formula (i.e., prediction tool). When completed in 2003, operational testing will begin. Achievement of target stages may be limited based on existing storage and conveyance capacities or legal constraints.
Indian River Lagoon Restoration Feasibility Study District Contact: David Unsell	Complete	The final feasibility report was issued through the Division Engineer's Notice in September 2002. The Chief of Engineer's Report should be complete in January 2003. The final feasibility report and the Chief's report will be forwarded to Congress for authorization in 2003.
Florida Bay MFLs District Contact: Dave Rudnick	On schedule	This activity is evaluating the hydrologic needs of Florida Bay, leading to the establishment of MFLs for the Bay. This is being accomplished by determining the relationships between the flow of fresh water through the Everglades and salinity in the Bay, and then the effects of high salinity on habitat (seagrass species, distribution, survival and production) and critical animal species. This includes both the collection of new data and the synthesis of existing information from Florida Bay and other estuaries.
Southwest Florida Feasibility Study District Contact: Janet Starnes	On schedule	The feasibility study was initiated in August 2001. The PMP was completed and approved in August 2001. Hydrologic models are under development as are performance measures and targets for assessing proposed alternatives. The final feasibility report is scheduled for completion in March 2005.
Kissimmee Basin MFL Development District Contact: Jose Valdes	Ongoing	This activity is for the development of MFLs for the Kissimmee Basin. By 2006, MFLs will be developed for the Kissimmee River and the following lakes: Kissimmee, Tohopekaliga, Alligator, Jackson, Rosalie, Cypress, Hatchineha, Pierce, Marian, Fish and Istokpoga. MFLs will be developed by 2008 for the Lake Butler Chain of Lakes.
In-Lake Research on Water Level Impacts District Contact: Karl Havens	Ongoing	Research is being conducted to determine operations that will minimize harm to the natural ecosystem of Lake Okeechobee. This research involves controlled experiments, field observations and model development to identify how lake stage affects growth and survival of submerged aquatic vegetation.

Activity	Status	Comments
Minimum / Maximum Flow Targets District Contact: Marion Hedgepeth	Behind schedule	This project is a joint venture between the District and Palm Beach County Environmental Resources Management. A new hydrodynamic circulation model will be developed to provide a greater understanding of the circulation pattern within the Lake Worth Lagoon. This project will utilize sea grass communities within Lake Worth Lagoon as key indicators of the health and sustainability of ecosystems within the lagoon. A final report was scheduled by June 2002, but the report now is expected from the contractor in November 2002. Public presentations of the results are planned for the Lake Worth Lagoon Steering Committee and the Northern Palm Beach County CERP Project Delivery Team in December 2002 and January 2003. The County is conducting a more detailed bathymetric survey of the lagoon, which will increase the accuracy of the grid; this data set should be available to input into the model by December 2002.
Big Cypress Basin Watershed Management Plan District Contact: Ananta Nath	Ongoing	The Big Cypress Basin Watershed Management Plan provides a road map for development of capital projects for the construction and improvement of the facilities presently operated and maintained by the Big Cypress Board that incorporates the natural systems enhancement element in addition to other mission functions of flood control, water supply, water quality and protection.
Land Acquisition		
Wetlands Mitigation – K-Mart District Contact: Karen Smith	Ongoing	In lieu of on-site wetland mitigation, the K-Mart mitigation funds are being used to restore freshwater inflows to Pond Apple Slough. Pond Apple Slough is a tidally-influenced, reminant wetland in Broward County with significant habitat value. The project is currently under final design, with construction of the freshwater conveyance system anticipated in 2004.
General Land Acquisition District Contact: Fred Davis	Ongoing	This activity will monitor District non-specific land acquisition and disposal projects for other programs throughout the District and for external entities.
Stewardship Save Our Rivers (SOR) Lands District Contact: Fred Davis	Ongoing	SOR stewardship will ensure that SOR lands are managed in a manner that is conducive to the maintenance of the integrity and functions of water resources and related natural systems. The activity includes operations and maintenance, development of public use facilities and some mitigation.
Wetland Mitigation – Corkscrew Regional Ecosystem Watershed (CREW) District Contact: Marjorie Moore	Ongoing	The 60,000-acre CREW project spans Lee and Collier Counties and is the largest undisturbed watershed in southwestern Florida. CREW wetlands will be acquired and restored through payments from permit applicants who contribute funds to the District in lieu of performing mitigation themselves or purchasing credits from a mitigation bank.
Wetlands Mitigation – DuPuis Reserve District Contact: Marjorie Moore	Ongoing	The Dupuis Reserve is a 21,875-acre SOR partnership project located between the J.W. Corbett WMA and Lake Okeechobee. The reserve is actively managed by the District and the Florida Fish and Wildlife Conservation Commission (FWC). The DuPuis wetlands will be restored through payments from permit applicants who contributed funds to the District in lieu of performing mitigation themselves.
Wetlands Mitigation – Pennsuco District Contact: Marjorie Moore	Ongoing	The 13,000 acre Pennsuco Wetlands are being acquired and restored through payments from permit applicants who contributed funds to the District in lieu of performing mitigation themselves or purchasing credits from a mitigation bank.
Wetlands Mitigation – Shingle Creek District Contact: Marjorie Moore	Ongoing	The Shingle Creek wetlands in southern Orange and northern Osceola Counties are being acquired and restored as mitigation for the Orlando Beltway Southern Connector, its extension and the Western Beltway Part C. To date, 1,600 acres of the 7,655-acre project have been acquired.
Wetlands Mitigation – Upper Lakes Basin District Contact: Marjorie Moore	Ongoing	The Upper Lakes Basin wetlands are being managed through payments from permit applicants who contributed funds to the District in lieu of performing mitigation.

Regulation		
Environmental Resource Permitting (ERP) District Contact: Terrie Bates	Ongoing	This ongoing activity involves the review of environmental resource permit applications. It includes the following: • Technical engineering and environmental review and evaluation of construction and conceptual plans for proposed development activities • Recommendations for project design changes to ensure proposed activities meet District criteria for flood, water quality, and environmental protection • Negotiations with permit applicants • Field inspections of project sites requesting permits or wetland determinations • Review of wetland mitigation plans • Preparation of requests for additional information • Preparation of technical staff reports • Compliance review of permitted sites • Compliance review of submitted documents required by permit special conditions • Administrative and automation support critical to the ERP Program
Wetland Criteria Development And Support District Contact: Deborah Goss	Ongoing	This activity supports the Regulation Program in developing a scientific basis for wetland protection criteria used in water permitting. The activity was originated at the direction of the Governing Board and Executive Office to develop a research and monitoring program to investigate impacts to wetlands caused by water table drawdown and to develop specific recommendations for drawdown criteria that prevent adverse impacts. This information is needed to support rulemaking for the District and is a critical element in the implementation of the water supply plans.
Regulation Model Technology Development/Application District Contact: Jason Yan	Ongoing	This activity supports the Regulation Program in developing computer applications and technology for use in the water use permitting process.
Environmental Operations Protocol District Contact: Peter Doering	Ongoing	Rules for low-level releases of water from Lake Okeechobee to the St. Lucie and Caloosahatchee Estuaries are being developed through this activity. Recently developed hydrodynamic models are being used to predict outcomes of different rule senarios.
Lake Okeechobee Research And Data Collection District Contact: Karl Havens	Ongoing	This element includes the research- and monitoring-related activities being conducted in Lake Okeechobee and its watershed. This information is then used when projects are planned and implemented to ensure the District's restoration-related activities are based on sound and defensible science. The key activities include in-lake research on the impacts of water level, nutrients, and invasive plants; watershed research on the fate and transport of phosphorus; modeling activities associated with the impacts of phosphorus in the watershed and the lake; BMPs associated with beef cattle operations; water management practices assessment; Lake Istokpoga and Upper Kissimmee Chain-of-Lakes phosphorus source identification; feasibility study and natural resources economic evaluation of alternative nutrient reduction technologies; reservoir STA optimization; resifuals and manure land application study; and monitoring activities to assess the effectiveness of restoration efforts.
Monitoring and Evaluation		
Indian River Lagoon Sea Grass Monitoring District Contact: Becky Robbins	Ongoing	Sea grasses have been identified as a valued ecosystem component for the Indian River Lagoon. This effort will obtain a current inventory of sea grass resources, identify healthy areas that may deserve special protection efforts, and identify potential problem areas that require further investigation.
Objective NS 2: Restore degraded water resources and related natural systems to a naturally functioning condition		
Planning		
Lake Okeechobee SWIM Plan Implementation District Contact: Kim O'Dell	Ongoing	This activity includes work required to insure that *the Surface Water Improvement and Management (SWIM) Plan – Update for Lake Okeechobee* (SFWMD, 1997) is implemented. A plan update was completed in 2002.
Rain-Driven Schedules for the Everglades District Contact: Murray Miller	On schedule	The objective of this project is to develop rainfall-based delivery plans for the WCAs and the Rotenberger WMA as part of the LEC regional water supply planning process. This activity has both water supply and natural systems components. Work plan assessment tools and a rainfall formula are being developed and water supply alternatives are being modeled. Implementation of the plan is targeted for FY 2003.

Establish Ecological and Hydrologic Needs for the Everglades Protection Area District Contact: Fred Sklar	On schedule	The effects of water level, flow, and water quality on key performance measures of sloughs and wet prairies will be determined through this activity. Plant community structure and productivity will be measured and recommendations for the restoration of these communities will be made. RECOVER (Restoration Coordination and Verification) conceptual models will be assessed through measurements of baseline status, history, and development of ridge and slough landscape.
South Miami-Dade County Integrated Water Resource Strategy	Discontinued	This activity was eliminated due to budget constraints.
Biscayne Bay SWIM Plan Update District Contact: Trisha Stone	Ongoing	The last update of the Biscayne Bay SWIM Plan was published in 1995 (SFWMD, 1995). State and local policies and funding changes implemented over the past five years have affected the District's SWIM program. As a result, the District is presently relying on efforts other than SWIM to lead protection and restoration efforts on priority water bodies and for identifying District priority projects. In 2000, a process called the Biscayne Bay Partnership Initiative (BBPI) was initiated. Various BBPI committees made recommendations for the protection, improvement and enhancement of the Bay's resources and its social, economic and natural values, with its ecological health as a priority. In 2001 and 2002, the Florida Legislature appropriated $6 million and $11.5 million respectively to be administered by the District for the improvement of Biscayne Bay based on these recommendations.
Land Acquisition		
Kissimmee River Restoration Land Acquisition District Contact: Bob Schaeffer	Ongoing	This activity will enable the District to acquire the remaining approximately 15,000 acres of fee ownerships and flowage easements (as applicable) for the Kissimmee River Restoration Project by the specified deadline. This element includes costs for specified infrastructure relocations (e.g., highways).
Public Works Construction		
C-4 Water Control Structure Critical Project (formerly, Western C-4 Structure Critical Project) District Contact: Jorge Marban	Behind schedule (revised schedule)	Plans and specifications were completed in July 2000. Construction began in November 2000 and is expected to be completed in February 2003.
Western Tamiami Trail Culverts Critical Project (formerly, Tamiami Trail Culverts (West) Critical Project) District Contact: Clarence Tears	On schedule (revised schedule)	Pre-final submittal of design, plans and specifications are complete. Water quality certification and Right-of-Way permits are in process. The construction contract is expected to be awarded in July 2003 and completed in October 2005.
Lake Trafford Restoration Critical Project (formerly, Lake Trafford Restoration) District Contact: Clarence Tears	Behind schedule / On Hold	The construction bid amounts were significantly higher than the estimated cost. Additional sediment testing and dredging methods are being completed in 2002 to explore the feasibility of achieving lake restoration benefits with a lesser volume of dredging.
C-111 Project Implementation District Contact: Paul Linton	On schedule	The C-111 Project consists of both structural and nonstructural modifications to the existing works within the C-111 Basin to promote more natural hydroperiods in Taylor Slough and the eastern panhandle ecosystems of Everglades National Park. Flood protection within the C-111 Basin east of the L-31N and C-111 Canals will be maintained. The land acquisition is 90% complete. The general reevaluation report supplement is under development.
Modified Water Deliveries District Contact: Paul Linton	On schedule	This activity will implement the Modified Water Deliveries Project, which is designed to restore hydrologic balance between western Shark River Slough and northeastern Shark River Slough. This will benefit Everglades National Park flora. The detailed design of the recommended plan has been initiated.
Florida Keys Tidal Restoration District Contact: Dewey Worth	Behind schedule	The PMP was completed and the PIR process was initiated in April 2002. Performance measures are being developed. The PIR process is expected to be completed in September 2004.

S-356 Structures (Miami-Dade County) District Contact: Dewey Worth	On schedule - not yet started	This activity is part of the Everglades National Park Seepage Management Project. The project is scheduled to begin in FY 2006.
Additional S-345 Structures District Contact: Dewey Worth	On schedule - not yet started	This is part of the WCA-3 Decompartmentalization and Sheetflow Enhancement - Part 2 Project. It is scheduled to begin in FY 2006.
G-404 Pump Station Modifications District Contact: Dewey Worth	On schedule - not yet started	This is part of the Flow to Northwest and Central WCA-3A Project. It is scheduled to begin in FY 2003.
Southern Golden Gate Estates Hydrologic Restoration District Contact: Ananta Nath	Behind schedule	A conceptual restoration plan was developed in 1996 and submitted to the Governor's Office. The PMP was approved in March 2001. The PIR is scheduled for completion in July 2003.
Lake Worth Lagoon Restoration District Contact: Michael Voich	On schedule (Revised schedule)	This is part of the North Palm Beach County - Part 1 Project. Work is in progress to complete the project management plan. Approval was granted to move forward with work on the PIR prior to approval of the project management plan.
Kissimmee River Restoration Design	Combined with the project below	
Kissimmee River Restoration Engineering Designs and Implementation District Contact: Sally Kennedy	Ongoing	The Kissimmee River Restoration Project is a partnership effort with the USACE. Phase II/III and IV canal backfilling in C-38 will occur after all flood mitigation, road and bridge retrofits and relocations are designed and constructed to maintain existing level of flood protection. Project completion is scheduled for 2012.
Operations and Maintenance		
Everglades Exotic Species Control District Contact: Dan Thayer	Ongoing	This activity provides for the elimination and monitoring of exotic plants within the Everglades. The biannual survey showed that melaleuca is decreasing, Australian pine and Brazilian pepper are stable, and lygodium is increasing.
Holey Land WMA Regulation Schedule District Contact: Lewis Hornung	Revised schedule	This project consists of a modification to the current operating plan for the Holey Land WMA. The project is scheduled to begin in FY 2004.
Rotenberger Regulation Schedule District Contact: Lewis Hornung	Revised schedule	This project consists of a modification to the current operating plan for the Rotenberger WMA. This project is scheduled to begin in FY 2004.
Lake Okeechobee Exotic Control District Contact: Dan Thayer	Ongoing	This activity is for control of exotics within Lake Okeechobee. Control of melaleuca and torpedograss, along with other exotic plants, is critical for the preservation and restoration of Lake Okeechobee. If not managed, plants like torpedo grass form dense monocultures, displacing all other plant communities.
Monitoring and Evaluation		
STA / Everglades Nutrient Removal (ENR) Project Optimization, Research, and Modeling District Contact: Jennifer Jorge	On schedule	This activity includes: field collection and laboratory analysis of water quality, vegetation, and sediment samples associated with research and monitoring efforts of the ENR Project; development and implementation of the Wetland Water Quality Model; analysis of nutrient removal performance data from other South Florida wetlands; and optimization experiments that will be conducted in the ENR test cells. This work is a part of the District's STA Optimization Research Program. The District is mandated by the Everglades Forever Act to conduct research on optimizing performance of the STAs.
Florida Bay Research – Sea Grass Mortality and Algal Blooms District Contact: Dave Rudnick	On schedule	This research activity will measure the effects changes in timing and the amount of freshwater flow to Florida Bay has on sea grass habitat viability and restoration. This activity will also measure algal bloom response, including spatial extent, persistence, occurrence of harmful blooms, and impacts on other living resources (benthos, sea grasses, and fisheries). This activity will also provide recommendations on water management operations that will achieve the restoration of habitat and water quality within Florida Bay.

Florida Bay – Ecological Response to Restoration Activities District Contact: Dave Rudnick	On schedule	This activity is assessing the hydrologic needs of nothern Florida Bay and the southeastern Everglades (including the mangrove dominated salinity transition zone) and determining the ecological response of the region to ongoing restoration projects, including the C-111 Project, Modified Water Deliveries to Everglades National Park, and changing operational plans (IOP, CSOP). Ecological, water quality and hydrologic parameters are measured in the region to evaluate their relationships and trends. Research includes the measurement of nutrient inputs from the C&SF Project; determination of nutrient cycles (transport, transformation, retention and release) in the wetlands, the salinity tranisition zone, and in the Bay; and the determination of nutrient loading to Florida Bay. In the C-111 Basin and Taylor Slough, plant community composition and productivity and soil accretion or loss are being measured. Spatial and temporal changes in periphyton and water quality conditions in response to hydrologic estoration in the southern Everglades are also being monitored.
Kissimmee Basin Restoration and Assessment District Contact: Lou Toth	Ongoing	Research and evaluation data will be used to evaluate the success of the Kissimmee River Restoration Project, fine tune reconstruction phases, and provide for adaptive management of the restored ecosystem. Outputs include publications, technical reports, and presentations. Preconstruction baseline monitoring and evaluation has been completed and post Phase I reconstruction monitoring has been initiated. An independent scientific advisory panel has met to review the baseline information and has provided a peer review. The panel was generally complimentary on the progress to date.
Everglades Food Web/Wading Birds Hydrologic Effect District Contact: Dale Gawlik	Ongoing	This effort will generate a series of scientific publications including: analysis of systematic reconnaissance flight wading bird surveys from former contracts and other agencies to determine wading bird distributions and identify depth thresholds that preclude wading birds from feeding successfully; scientific publication examining the amount of movement various species of wading birds exhibit as an indication of how likely they are to be affected by local restoration projects; reports and scientific publications that define fish and aquatic macroinvertebrate populations in the WCAs; scientific publications containing recommendations for water depths and durations that promote the existence of healthy tree islands and associated wildlife; annual reports on the numbers of nesting wading birds in South Florida (*South Florida Wading Bird Report)*; and scientific publications of test cell experiments to identify the optimum and minimum water depths necessary for successful foraging.
Hydrologic Monitoring District Contact: Robb Startzman	Ongoing	This effort includes long-term hydrometeorologic data collection, database management, routine data reporting and data evaluation actvities. Features of these actvities include installation of new sites, maintenence of existing sites, data collection, processing and archiving and maintenence of the environmental corporate database for storage and acess to these data. These data document the operation of the C&SF Project, provide data for the CERP, for Kissimmee River, Everglades, Florida Bay and Lake Okeechobee restoration, and for water supply planning and implementation.
Monitoring and Evaluation (RECOVER) District Contact: John Ogden	Ongoing	The program management plan for RECOVER was completed in May 2001, and will be updated by the second quarter of FY 2003. A revised draft of the Systemwide Monitoring and Assessment Plan was completed in October 2002. An annual report card is scheduled to be issued in January 2003. Habitat suitability indices used to define the quality of the habitat for various fish and other wildlife species are being developed and should be published in early 2003. A standardized project evaluation methodology is being developed in consultation with outside technical experts. A report on a recommended set of indicators for CERP interim goals will be issued by January 2003. RECOVER is hosting a set of workshops to develop an Adaptive Assessment Methodology as a basis for developing an Adaptive Management Program (to be documented in a CERP Guidance Memorandum) by June 2003.
Lake Okeechobee Research And Data Collection District Contact: Karl Havens	Ongoing	This element includes the research- and monitoring-related activities being conducted in Lake Okeechobee and its watershed. This information is then used when projects are planned and implemented to ensure the District's restoration-related activities are based on sound and defensible science. The key activities include in-lake research on the impacts of water level, nutrients, and invasive plants; watershed research on the fate and transport of phosphorus; modeling activities associated with the impacts of phosphorus in the watershed and the lake; BMPs associated with beef cattle operations; water management practices assessment; Lake Istokpoga and Upper Kissimmee Chain-of-Lakes phosphorus source identification; feasibility study and natural resources economic evaluation of alternative nutrient reduction technologies; reservoir STA optimization; residuals andmanure land application study; and monitoring activities to assess the effectiveness of restoration efforts.

CHAPTER II
SFWMD PERFORMANCE MEASURE VALUES

At least once every five years, the District must conduct an evaluation of its success in realizing the desired goals established in the DWMP. Such an evaluation cannot be accomplished using the activity-based information described in the previous chapter. It requires a performance-based assessment of the effectiveness of the various efforts undertaken by the District toward meeting long-term goals. To assist in the development of this annual report, the water management districts have committed to incorporate a series of performance measures that will provide an indication of their success in achieving the goals described in their respective DWMPs. In an effort to facilitate comparison of the five districts throughout the state, all of the districts have committed to using similar performance measures.

Different measures have been agreed upon to assess the impact of activities within each of the areas of responsibility identified in the DWMP: water supply, flood protection and floodplain management, water quality, and natural systems management. In some cases, however, a single performance measure may provide information in more than one area of responsibility. Some performance measures are common to all areas of responsibility. These are discussed separately. This chapter is organized into the following sections:

A. Performance Measures Common to All Areas of Responsibility
B. Performance Measures for Water Supply
C. Performance Measures for Flood Protection and Floodplain Management
D. Performance Measures for Water Quality
E. Performance Measures of Natural Systems Management

Part A. Performance Measures Common to All Areas of Responsibility

Core CM(a): Acres in managed conservation areas acquired by the District

The District acquired 14,185 acres of conservation lands in FY 2002, bringing the total conservation lands controlled by the District to 346,425 acres (Florida Forever Work Plans - SFWMD, 2001b and 2002c). This includes only natural areas; not lands purchased for stormwater treatment areas (STAs), the East Coast Buffer and other water resource projects.

Core CM(b): For District-owned lands: 1) number of management plans required; 2) number of management plans completed; and 3) percentage of management plans completed on schedule

Nearly half the District-owned Save Our Rivers lands are managed by other agencies and preparation of management plans are those agencies' responsibilities. The District manages approximately 164,000 acres in 10 different projects. Each project requires a management plan. Five management plans have been completed.

Most Save Our Rivers projects contain multiple parcels that may be acquired over a period of years before enough contiguous tracts are put together to warrant a management plan. The District does not, therefore, develop specific timelines for management plan preparation. Further, some projects are being considered as wildlife and environmental areas and will be under Florida Fish and Wildlife Conservation Commission management. Prior to opening these areas to hunting, wildlife inventories must be prepared. The preparation of these inventories can further delay the development of management plans.

Core CM(c): Number and percent of land management plan activities being implemented according to plan schedules

In FY 2002, the District was the lead manager on ten land management projects. This includes Allapattah Flats, a large project acquired in late 2002, for which management plan development is underway. These projects are listed in **Table 5**. Five-year management plans must be developed for each project. At the end of the five-year period, these plans are updated. Projects needing management plans are:

- Allapattah Flats
- Kissimmee Chain of Lakes
- Biscayne Coastal Wetlands (2002 purchase)
- Loxahatchee Slough (management lease to Palm Beach County underway)
- Model Lands (highly discontinuous ownership).

Management activities that must be implemented for all of these projects are: prescribed burning, exotic plant treatment, resource protection (security), public use, and resource inventories (natural and cultural). The five-year management plans do not contain time schedules for these management activities. Instead, annual work plans specify what activities will be undertaken on each management area during each fiscal year. Burning, exotic plant control, resource protection, and public use are ongoing actions that are repeated annually. Inventories are prepared after sizable tracts have been acquired and are updated only to document a restoration activity or significant disturbance.

Table 5 indicates what management activities were implemented for each project during FY 2002 (SFWMD, 2000f).

Table 5. Management Activities Being Implemented for SFWMD Land Management Projects

Project Name	Prescribed Burning	Exotic Plant Treatment	Resource Protection (security)	Public Use	Resource Inventories (natural and cultural)
Allapattah Flats		✓	✓		✓
Corkscrew Regional Ecosystem Watershed (CREW)	✓	✓	✓	✓	✓
DuPuis	✓	✓	✓	✓	✓
Kissimmee Chain of Lakes	✓	✓	✓	✓	✓
Kissimmee River	✓	✓	✓	✓	✓
Lake Marion Creek	✓	✓	✓	✓	✓
Loxahatchee Slough		✓	✓		
Model Lands		✓			
Reedy Creek	✓	✓	✓	✓	✓
Shingle Creek	✓	✓	✓	✓	✓

Core CM(d): Acres of land acquired through less-than-fee ownership, on an annual and cumulative basis

The District has acquired 14,953 acres in less-than-fee ownership since implementation of the Save Our Rivers Program in 1981. **Table 6** breaks down the acreage acquired by year.

Table 6. The Acres Acquired in Less-than-Fee Title by the SFWMD Each Year

Year	Acreage
Pre-1990	7,428
1990	1,253
1991	1,214
1992	0
1993	1,868
1994	415
1995	99
1996	1,655
1997	649
1998	144
1999	33
2000	98
2001	97
2002	0
Total	14,953

Core CM(e): Percentage of Environmental Resource Permitting (ERP) for which compliance inspections were conducted, and of those inspected, percentage found to be in compliance

To determine the number of environmental resource permit compliance inspections conducted during FY 2002 and the percentage of these in compliance, data was gathered from the District's Environmental Resource Compliance Oracle and Access Databases and paper form checklists. The results are as follows:

- Engineering and Environmental Inspections
  - Total engineering and environmental inspections for FY 2002: 8,212
  - Total inspections in compliance for FY 2001: 6,969
  - Percentage found to be in compliance: 85 percent
- Environmental Inspections
  - Total environmental inspections: 1,821
  - Environmental inspections in compliance: 992
  - Percentage environmental inspections found to be in compliance: 71 percent
- Engineering Inspections
  - Total engineering inspections: 6,391
  - Engineering inspections in compliance: 5,673
  - Percentage engineering inspections found to be in compliance: 89 percent

Part B. Performance Measures for Water Supply

The SFWMD is broken up into four water supply planning areas: Lower East Coast, Lower West Coast, Kissimmee Basin, and Upper East Coast. Figure 1 shows the boundaries of these planning areas. The performance measures utilized to evaluate the effectiveness of water supply provide indications of changes in water demand rates, changes in reused water quantities, as well as activities designed to protect water sources, such as potable water wellfields.

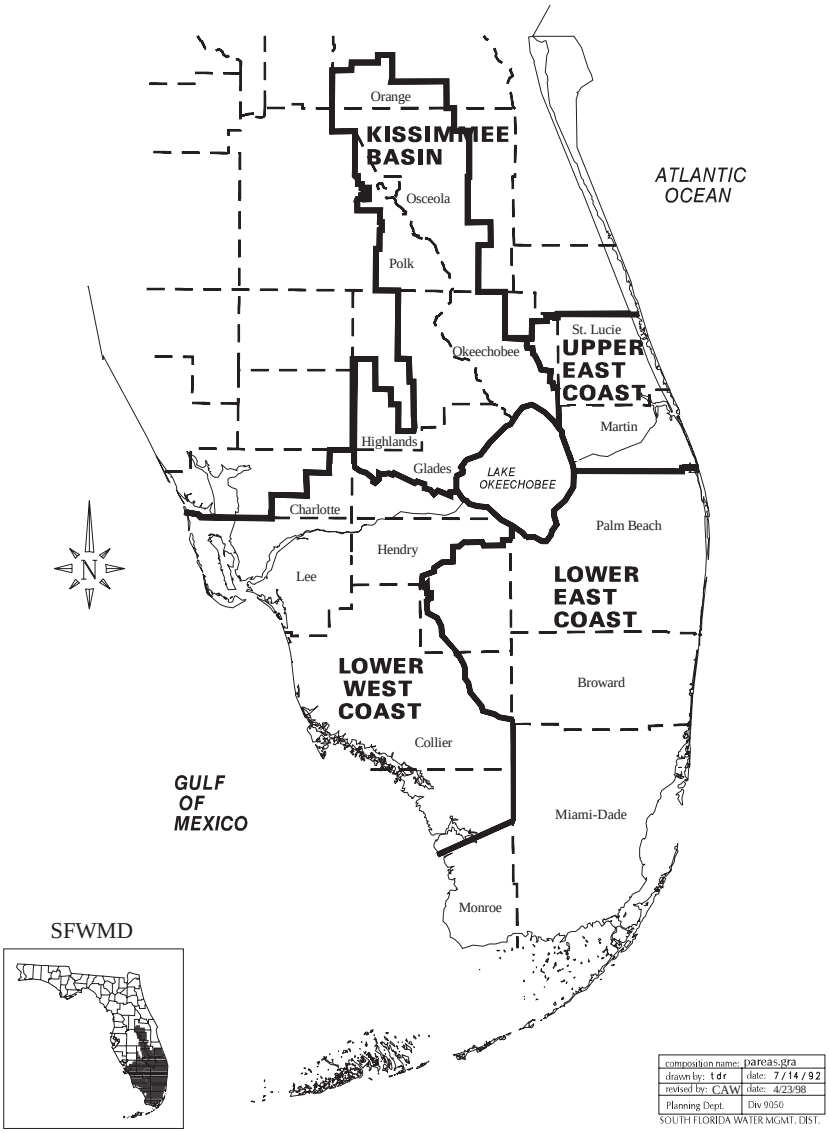

Figure 1. Water Supply Planning Areas within the SFWMD

Core Objective WS 1: Increase available water supplies and maximize overall water use efficiency to meet identified and existing future needs

Core WS 1(a): Percentage of domestic reuse

The percentage of domestic reuse for FYs 1999 through 2001 for the entire District is presented in **Table 7**. This data is from the *2001 Reuse Inventory* and *2002 Reuse Inventory* published by FDEP (FDEP, 2001a and 2002a). The 1999 data were adjusted from the 2000 update of the DWMP to account

for duplication. Figure 2 presents the SFWMD's Reuse History.

Table 7. Percentage of Water Reuse in the SFWMD

	1999	2000	2001	Comments
Number of treatment plants	122	116	117	Total Numbers
Number of reuse systems	118	111	111	Total Numbers
Wastewater treatment facility capacity (mgd)	1,014	1,012	1,013	
Wastewater treatment facility flow (mgd)	762	761	769	
Reuse capacity (mgd)	326	317	335	
Reuse flow (mgd)	180	190	197	
Percent Reuse SFWMD	24%	25%	26%	Reuse Flow / WWTF Flow
Percent Reuse Lower East Coast	8%	9%	9%	Reuse Flow / WWTF Flow
Percent Reuse Lower West Coast	84%	93%	89%	Reuse Flow / WWTF Flow
Percent Reuse Kissimmee Basin	99%	99%	100%	Reuse Flow / WWTF Flow
Percent Reuse Upper East Coast	44%	40%	48%	Reuse Flow / WWTF Flow

Figure 2. The Reuse History for the Entire SFWMD for 1994 to 2001.

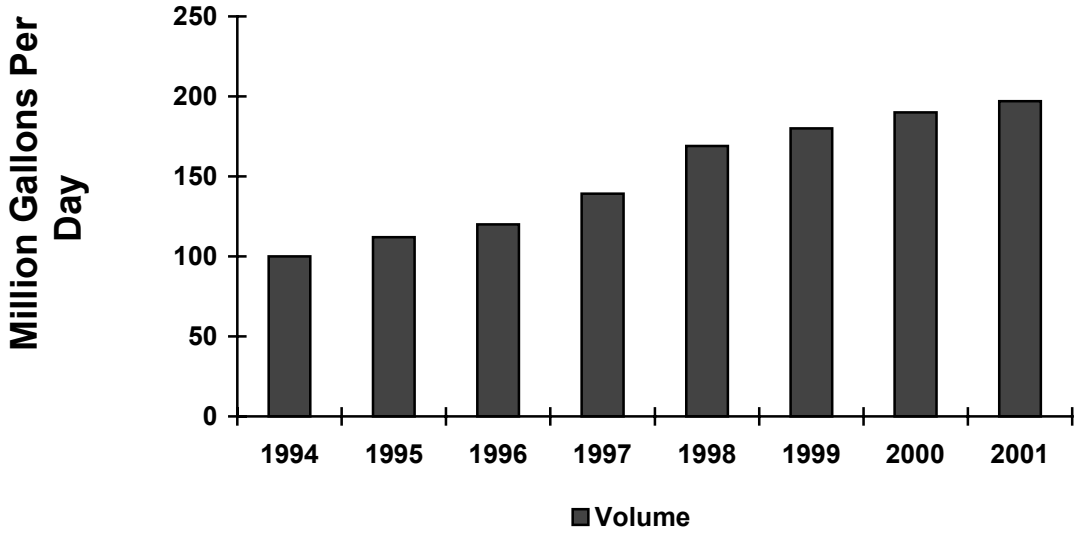

Table 8 presents the capacities and reuse ratios for the District by water supply planning area for 2001 (FDEP, 2001a). The Wastewater Treatment Facility (WWTF) Capacity is the combined FDEP permitted treatment capacity for all facilities with a capacity of 0.10 MGD or greater. The combined volume of wastewater these facilities treated during FY 2001 is stated in the WWTF Flow column. The Reuse Capacity is the combined permitted reuse capacity of these facilities while the Reuse Flow is the combined volume of reclaimed water that was reused during FY 2001. The Capacity Ratio is the fraction of the treatment capacity that is permitted for reuse while the Flow Ratio indicates the fraction of wastewater treated that was reused during 2001. In 2001, only 26 percent of the wastewater treated was reused, compared to a capacity to reuse in the District, which was 33 percent.

Table 8. Capacity and Reuse Ratios for the SFWMD by Planning Area for 2001

Planning Area	WWTF Capacity (mgd)	WWTF Flow (mgd)	Reuse Capacity (mgd)	Reuse Flow (mgd)	Capacity Ratio[a]	Flow Ratio[b]
Lower East Coast	771	611	94	57	0.12	0.09
Lower West Coast	102	71	92	63	0.90	0.89
Kissimmee Basin	109	69	130	68	1.19	1.00
Upper East Coast	31	18	19	8	0.61	0.48
SFWMD	1,013	769	335	196	0.33	0.26

a. Capacity Ratio = Reuse Capacity / WWTF Capacity
b. Flow Ratio = Reuse Flow / WWTF Flow

Core WS 1(b): Gross per capita water use (public supply) by District and water supply planning area

An estimate of public water supply per capita used in the District during 2000 is presented in Table 9. Based on 439,736 mgd of water withdrawn for public supply and a population served of 6.135 million people, the total public water supply per capita for the SFWMD is 196 gallons per day. For some systems, monthly pumpage and population served were not available, but the resulting difference in the total per capita usage is very minor and the omission of this data from the calculation does not impact the total usage. The 20 mgd of water used by the Reedy Creek Improvement District is not included in the Kissimmee Basin or SFWMD totals, as the USGS classified this water as commercial.

Table 9. Gross per Capita Public Water Supply for 2000 for the SFWMD and its Planning Areas

Planning Area/County	Per Capita	Population Served	Raw Water Pumpage (mgy)
Lower East Coast			
Broward County	161.0	1,603,081	100,718
Dade County	170.9	2,207.800	140,775
Monroe County	215.8	78,855	6,227
Palm Beach County	221.9	1,035,732	86,440
Lower East Coast Total	185.0	4,925,468	334,160
Lower West Coast			
Lee County	128.5	357,289	30,128
Collier County	231.3	226,175	20,540
Hendry County	211.5	20,457	1,802
Glades County	115.0	4,782	150
Charlotte County	0	1,669	39
Lower West Coast Total	235.0	610,372	52,659
Kissimmee Basin			
Highlands County	104.3	4,700	134
Okeechobee County	103.2	21,600	808
Polk County	231.8	10,116	186
Osceola County	232.7	128,932	10,878
Orange County *	381.1	224,086	27,989
Kissimmee Total	279.0	389,434	39,995

Upper East Coast			
Martin County	211.8	87,100	6,553
St. Lucie County	146.0	122,960	6,369
Upper East Coast Total	166.0	210,060	12,922
District Total	196.0	6,135,334	439,736

* The population figure for Orange County comes from the DWMP 2001 Annual Report.

Core WS 1(c): Within each water supply planning region: 1) the estimated amount of water supply to be made available through the water resource development component of the regional water supply plan; 2) percent of estimated amount under development; and 3) percent of estimated amount of water actually made available

Table 10 presents the amount of water that was estimated to be made available through the water resource development components of the regional water supply plans (SFWMD, 1998, 2000b, 2000c, 2000e Source of 1,145 mgd number: LECRWSP May 2000, Table 54 "Average Annual Amounts of Water Provided by CERP Components" (during drought years) and SFWMD Proposed Five Year Water Resource Development Work Program, November 7, 2002, SFWMD, 2002d), the percent of this estimated water that has been made available, and the estimated amount that was under development as of September 30, 2002.

Table 10. Amount of Estimated Water Made Available and Under Development

Water Supply Planning Region	Water to Be Made Available (mgd)	Percent of Estimated Water Under Development as of September 30, 2002	Percent of Estimated Water Actually Made Available as of September 30, 2002
Lower East Coast	1,145	100%	3%
Lower West Coast	422	52%	22%
Upper East Coast	85	18.68%	23.74%
Kissimmee Basin	390	81%	0.40%
Total Quantity Made Available	2,043		

Core WS 1(d): Within each water supply planning region, the estimated additional quantities of water supply made available through District water supply development assistance

Table 11 presents the estimated additional quantities of water supply that was made available through District water supply development assistance from 2000 through 2002. It also presents the estimated amount to be made available in 2003. This data was obtained from Alternative Water Supply Applications filed in 2000, 2001 and 2002, and from Applications proposed for 2003. Note that the Kissimmee Basin was not eligible for the Water Supply Grant program.

Table 11. Amount of Additional Water Made Available in 2000, 2001 and 2002 and Estimated to be Made Available in 2003 through District Water Supply Development Assistance

Planning Area	Water Made Available (mgd)			Water Estimated to be Made Available (mgd)
	2000	2001	2002	2003
Lower East Coast	17.96	10.35	26.38	35.71
Lower West Coast	23.80	38.74	19.00	8.20
Upper East Coast	9.11	0.00	2.17	1.25
Kissimmee Basin	0.00	0.00	0.00	0.00
Total	50.87	49.09	47.55	45.16

Core Objective WS 2: Prevent contamination of water supplies

Core WS 2(a): Percentage of surface water supply sources for which water quality attains the designated use

There are 66 total surface water supply sources located within the SFWMD. According to the ***2000 305(b) Report*** published by the FDEP in 2001 (FDEP, 2001b), 57 percent of these sources have good water quality ratings, 33 percent have fair water quality ratings, and 2 percent have poor water quality ratings. Five of the sources, the Marco Lakes, are not in the FDEP database and, therefore, were not taken into consideration.

Table 12. Percentage of Good, Fair and Poor Water Quality Ratios for Surface Water Supply Sources

Water Quality Rating	Number of Sources	Percentage of Total
Good	38	57%
Fair	22	33%
Poor	1	2%
Not in FDEP database (Marco Lakes)	5	8%
Total	**66**	

SFWMD WS 2(b): Percentage of public water supply wellheads subject to wellhead protection ordinances

Table 13 indicates which counties had wellhead protection ordinances and the number of public water supply wells within each county during 2000, 2001 and 2002. Local government authorities in Monroe, Glades, Osceola and Okeechobee Counties verified that wellhead protection ordinances did not currently exist as of December 12, 2001. The number of public water supply wells in each county was obtained from District service centers and the District's permit database. The percentage of public water supply wellheads subject to wellhead protection ordinances is calculated from this information.

In 2000, the District had 2,752 public water supply wells within its boundaries. Of these 92 percent (2,528) are within counties that have wellhead protection ordinances, and 8 percent (224) are in counties that do not.

In 2001, the District had 2,885 public water supply wells within its boundaries. Of these 91 percent (2,641) are within counties that have wellhead protection ordinances, and 9 percent (244) are in counties that do not have wellhead protection ordinances.

In 2002, the District had 2,433 public water supply wells within its boundaries. Of these, 80 percent are within counties that have wellhead protection ordinances, and 20 percent are in counties that do not have wellhead protection ordinances

Table 13. Number of Public Water Supply Wellheads Subject to Wellhead Protection Ordinances

County	2000		2001		2002	
	Wellhead Protection Ordinances	Number of Public Water Supply Wells	Wellhead Protection Ordinances	Number of Public Water Supply Wells	Wellhead Protection Ordinances	Number of Public Water Supply Wells
Palm Beach	yes	605	yes	626	yes	588
Broward	yes	394	yes	424	yes	440
Miami-Dade	yes	255	yes	281	yes	177
Monroe	no	0	no	0	no	0
Glades	no	20	no	20	no	12
Hendry	yes	40	yes	41	no	34
Lee	yes	393	yes	362	yes	414
Collier	yes	165	yes	201	yes	176
Charlotte	yes	24	yes	24	no	18
St. Lucie	yes	234	yes	210	no	157
Martin	yes	246	yes	297	yes	162
Orange	yes	131	yes	129	no	116
Osceola	no	136	no	156	no	105
Polk	Yes	19	yes	23	no	10
Highlands	Yes	22	yes	23	no	7
Okeechobee	No	68	no	68	no	17
Total		2,752		2,885		2,433

Part C. Performance Measures for Flood Protection and Floodplain Management

Flood protection within the District is provided through both the facilities of the C&SF Project and by limiting land uses within identified flood prone areas. Floodplain management is achieved by protecting and restoring natural features of floodplains.

Core Objective FP 1: Minimize damage from flooding

Core FP 1(a): Percentage of District works maintained on schedule

According to the District's Water Resources Operations Industrial Engineering Unit quarterly reports, 85,599 District work order tasks were planned for FY 2002, and 66,343 tasks were completed. The percentage of District works that were maintained on schedule is 77.5 percent. This information was found in the District's Computerized Maintenance Management System.

SFWMD FP 1(b): Number and cost of stormwater retrofit projects carried out by the District

Table 14 presents the number and cost of stormwater retrofit projects carried out by the District in FY 2002. This information was obtained from the SFWMD service centers.

Table 14. Number and cost of SFWMD Stormwater Retrofit Projects in FY 2002

Service Center	Ad Valorem Funds		Pass Through Funds	
	Number of Projects	Cost	Number of Projects	Cost
Broward	0	$0	0	$0
Keys	0	$0	1	$200,000
Fort Myers	0	$0	0	$0
Martin/St. Lucie	0	$0	0	$0
Miami	0	$0	17	$13,724,000
Okeechobee	3	$2,357,202	3	$405,170
Orlando	7	$2,275,000	0	$0
Palm Beach	0	$0	0	$0
Total	10	$4,632,202	21	$14,329,170

SFWMD FP 1(c): Average number of days to complete environmental resource permit review and issue a permit once the application is complete

The average number of days to complete a review of an application and issue a permit in FY 2002 once the application was complete was 63.9 days for individual permits and 40.40 days for general permits. These numbers do not include projects that are on extended waiver by the applicants. This information was obtained from the District's Permit Application Tracking System (PATS).

SFWMD FP 1(d): Number of permit applications received

The number of environmental resource permit and surface water permit applications received in FY 2002 was 2,409. This information was obtained from the PATS.

SFWMD FP 1(e): Number of preapplication inspections

The number of environmental resource permit preapplication reviews conducted in FY 2002 was 220. This information was obtained from the PATS.

SFWMD FP 1(f): Number of permits issued

The number of environmental resource permits and surface water permits that were issued in FY 2002 was 2,242. This information was obtained from the PATS, and includes Individual Permits, General Permits and all others.

Core Objective FP 2: Promote nonstructural approaches to achieve flood protection, and to protect and restore the natural features and functions of the 100-year floodplain

Core FP 2(a): Number of acres identified for acquisition to minimize damage from flooding and the percentage of those acres acquired

Table 15 presents the Save Our Rivers projects that have been identified by the District to minimize flooding. The total project size is presented along with the number and percentage of total acres acquired by the end of FY 2002. This data was obtained from the *Save Our Rivers Land Acquisition and Management Plan* (SFWMD, 2000f) and the ATLAS database.

Table 15. Save Our River Projects Identified to Minimize Flooding

Project	Project Size (acres)	Total Acres Acquired	Percent Acquired
Corkscrew Regional Ecosystem Watershed (CREW)	**58,528**	**24,965**	**43 %**
East Coast Buffer	**66,809**	**28,923**	**43 %**
Kissimmee Chain of Lakes	**33,919**	**27,844**	**82 %**
Lake Marion Creek	**17,300**	**10,500**	**60 %**
Loxahatchee Slough	**1,425**	**1,425**	**100 %**
Nicodemus Slough	**2,219**	**2,219**	**100 %**
Reedy Creek	**30,000**	**5,900**	**20 %**
Shingle Creek	**7,655**	**1,500**	**20 %**
Water Conservation Area (WCAs)	**855,680**	**789,394**	**92 %** [a]
Total	1,073,535	892,670	83 %

a. 100% of the flowage easements has been acquired for the WCAs

Part D. Performance Measures for Water Quality

The District has many programs that monitor and improve surface and ground water quality within its boundaries. Several of these are coordinated with other agencies.

Core Objective WQ 1: Protect and improve surface water quality

Core WQ 1(a): Percentage of water segments that fully meet, partially meet, and do not meet their designated uses

Table 16 presents the percentage of water segments within the SFWMD boundaries that fully meet, partially meet, or do not meet their designated uses. These percentages were obtained from the ***2000 305b Report*** (FDEP, 2000b).

Table 16. Percentage of Water Segments in the SFWMD that Fully Meet, Partially Meet, and Do Not Meet Their Designated Uses

Status	Estuary	Lake	Stream
Meets	80%	3%	43%
Partially meets	15%	97%	52%
Does not meet	5%	0%	5%

Core WQ 1(b): Number of and percentage of SWIM and SFWMD priority water bodies for which pollutant load reduction goals (PLRGs) have been established (SWIM water bodies must have an approved SWIM plan)

Pursuant to Section 373.453, F.S. and Section 62-43.030, F.A.C., SFWMD staff reviewed the approved SWIM Priority List for South Florida to determine whether it needed to be updated. It became clear that the adopted list was no longer reflective of current funding and policy conditions as demonstrated by the following facts:

- SWIM Plans have been approved and adopted for Lake Okeechobee, Biscayne Bay, and the Indian River Lagoon.
- The Everglades Forever Act and the CERP will address the Everglades and associated regions.
- The Lake Okeechobee Protection Bill identifies the Kissimmee Upper Chain of Lakes as an area for surface water improvements.
- Sufficient resources are not available to develop new SWIM plans.
- Little funding is being provided for SWIM projects.
- The current legislative specific appropriation process does not require an approved SWIM plan to allocate funds for surface water restoration projects.

An update of the prioritization effort was needed to incorporate three additional important aspects of the status of a water body: the readiness of local governments to participate financially in implementing restoration projects; the emergence of significant restoration and preservation programs (i.e., CERP, Preservation 2000 and Florida Forever); and the presence of non-governmental organizations which have developed a broad public support for restoration of a particular waterbody.

District staff developed a ranking process that used the original SWIM criteria and three additional

criteria to address the factors above. The process resulted in a new "SFWMD Water Body List" that is presented in **Table 17**. The list will be used to guide District endorsement of locally-sponsored restoration projects seeking a legislative appropriation and District projects funded with ad valorem dollars. Within each tier, each water body is considered of equal priority.

Table 17. SFWMD Priority Water Body List as of September 2001

Tier 1
- Biscayne Bay
- Florida Keys
- Lake Istokpoga
- Lake Okeechobee
- Loxahatchee River
- St. Lucie Estuary

Tier 2
- Caloosahatchee Estuary
- Estero Bay
- Florida Bay
- Indian River Lagoon
- Lake Worth Lagoon
- Naples Bay / Gordon River
- Rookery Bay / Marco

Tier 3
- Lake Arbuckle
- Lake Butler
- Lake Weohyakapka
- Pine Island Sound / Matlacha / Ding Darling
- Upper Kissimmee Chain of Lakes

Core WQ 1(c): Percentage of total stream miles and lake and estuary area in the District assessed for ambient water quality

Table 18 presents the total stream miles and the total lake and estuary area within the District boundaries, along with the miles or square miles and percentage assessed. This information was obtained from the ***2000 305b Report*** (FDEP, 2001b).

Table 18. Total Stream Miles and Lake and Estuary Area in the District Accessed for Ambient Water Quality

System Type	SFWMD Miles	SFWMD Square Miles	Assessed Miles	Assessed Square Miles	Percentage Assessed
Estuary	929.3		928.2		99.9%
Lake		677.3		676.3	99.9%
Stream		1,724.3		1,590.6	92.2%

SFWMD WQ 1(d): Number of SWIM plans being implemented according to SWIM plan schedules

Three SWIM Plans have been approved:

- Indian River Lagoon
- Lake Okeechobee
- Biscayne Bay.

According to the District's SWIM plan project managers, all three SWIM Plans are being implemented on schedule (SFWMD and SJRWMD, 1994; SFWMD, 1997; and SFWMD 1995).

SFWMD WQ 1(e): Number and percentage of permitted systems inspected through the Environmental Resource Permitting (ERP) Program, and percentage of those inspected found in compliance with permit conditions

The number and percentage of permitted systems inspected through the ERP Program, and the percentage of those inspected found in compliance with permit conditions is discussed in Part A of this chapter, under the performance measure Core CM(e).

Core Objective WQ 2: Protect and improve ground water quality

Core WQ 2(a): Improving, degrading, and stable trends in ground water quality

The FDEP did not include data on improving, degrading, and stable trends in ground water quality in the *2001 305(b) Report* (FDEP 2001b).

Core WQ 2(b): Improving, degrading, and stable trends in nitrate concentrations in springs

The SFWMD has no springs within its boundaries.

Part E: Performance Measures for Natural Systems Management

The District is preserving, enhancing, and restoring the water resource-related natural systems within its boundaries. Native ecosystems, along with their water resource-related functions, are being preserved. Altered ecosystems are being restored, where appropriate, along with their resource-related functions.

Core Objective NS 1: Maintain the integrity and functions of water resources and related natural systems

Core NS 1(a): Number and percentage of established minimum flows and levels (MFLs) being maintained, consistent with established recovery or prevention strategies

The District established MFLs for the Everglades, Lake Okeechobee, the Biscayne Aquifer, Lower West Coast aquifer systems, and the Caloosahatchee Estuary in September 2001. The St. Lucie Estuary MFL was established in September 2002; and the Loxahatchee River MFL is proposed for December 2002, for a total of seven MFLs. Data to determine how well these MFLs are being met have not yet been compiled or analyzed. In most cases, five to ten years worth of data will be needed to determine how well the MFLs are being maintained.

Core NS 1(b): Number of MFLs, by water body type, established annually and cumulatively

The SFWMD established five MFLs in September 2001. These included one wetland (the Everglades), one lake (Lake Okeechobee), one estuary (the Caloosahatchee Estuary) and two aquifers (the Biscayne Aquifer and the Lower West Coast Aquifer System). In September 2002, MFLs were established for the St. Lucie Estuary. The Loxahatchee River MFLs are proposed for completion in December 2002.

Core NS 1(c): Percentage of MFLs established in accordance with the previous year's schedule

The schedule for establishing MFLs is presented in **Table 19**. This list is published pursuant to Section 373.042(2), F.S. "Establishment" of a minimum flow or level, as provided in this list, is the publication of the notice of intended rule adoption in the Florida Administrative Weekly pursuant to Section 120.54(3)(a), F.S. The District will voluntarily conduct independent scientific peer reviews of MFL criteria for all water bodies on the above list, pursuant to Section 373.042(4), F.S. Several new water bodies from 2001 are included in the list: the Southern Coastal Biscayne Aquifer, Estero Bay, the Water Table Aquifer and the Lake Butler Chain of Lakes.

Table 19 also indicates whether the MFLs were completed on schedule and what year they were established. The MFL criteria for five water bodies were scheduled for establishment in 2000. These water bodies were Lake Okeechobee, the Everglades, the Caloosahatchee River and Estuary, the Biscayne Aquifer, and the Lower West Coast Aquifer System. None were established by the scheduled completion date. The establishment of MFLs was delayed until September 2001 to provide adequate consideration for other ongoing management planning activities in these systems and to address concerns expressed by the Governing Board, other agencies, and affected parties.

In accordance with the 2001 schedule, MFLs were to be established for the Loxahatchee River and

Estuary and the St. Lucie River and Estuary during 2001. Technical documentation to support these MFLs was developed and rule development was initiated during 2001. The final rule for the St. Lucie Estuary MFLs was completed in September 2002 and the rule for the Loxahatchee Estuary is pending for December 2002. MFLs for Florida Bay are scheduled for 2003.

Lake Istokpoga currently operates on a regulation schedule based on minimum levels. The District will revisit these existing minimum levels upon completion of the USACE's regulation schedule study due in 2004.

Table 19. Schedule for the Establishment of MFLs

Priority Water Bodies	Year Scheduled for Establishment	Year Established		
		2000	2001	2002
Lake Okeechobee	2000	no	yes	
Everglades	2000	no	yes	
St. Lucie River and Estuary	2001		no	yes
Biscayne Bay	2004			
Biscayne Aquifer	2000	no	yes	
Florida Bay	2003			
Loxahatchee River and Estuary	2001		no	yes
Southern Coastal Biscayne Aquifer	2004			
Caloosahatchee River and Estuary	2000	No	yes	
Estero Bay	2006			
Water Table Aquifer	2004			
Lower West Coast Aquifer	2000	No	yes	
Kissimmee River	2006			
Lake Kissimmee	2006			
Lake Tohopekaliga	2006			
East Lake Tohopekaliga	2006			
Alligator Lake	2006			
Lake Jackson	2006			
Lake Rosalie	2006			
Cypress Lake	2006			
Lake Hatchineha	2006			
Lake Pierce	2006			
Lake Marian	2006			
Fish Lake	2006			
Lake Istokpoga	2004			
Lake Butler Chain of Lakes	2008			
Floridan Aquifer	2004			

Core NS 1(d): Total acres of wetlands or other surface water authorized by Environmental Resource Permit to be impacted and acres required to be created, enhanced, restored, and preserved

The status of wetlands authorized to be impacted by an environmental resource permit is as follows for FY 2002:

- Existing ERP wetlands: 11,765 acres:
- Impacted: 3,112 acres
- Preserved/Enhanced: 6,171 acres
- Created/Restored: 2,038 acres
- Upland Compensation: 1,035 acres
- Total Preserved/Created/Uplands: 9,244 acres

The data source for the above is the PATS, and the number for Preserved/Enhanced does not reflect acres of "undisturbed" wetlands.

SFWMD NS 1(e): Acres of wetlands preserved as a percent of wetland acres reviewed through ERP applications; acres of wetlands reviewed; acres of wetlands impacted; acres of wetlands preserved; and acres of wetlands mitigated (may include wetlands preserved on-site)

Using the numbers presented under SFWMD NS 1(d), the following percentages for FY 2002 were calculated:

- Preserved/created as a percent of wetland acres reviewed: 70%
- Impacted as a percent of wetland acres reviewed: 26%
- Total acres of mitigation as a percent of wetlands impacted: 297%

Core Objective NS 2: Restore degraded water resources and related natural systems to a naturally functioning condition

Core NS 2(a): Acres of invasive nonnative aquatic plants in inventoried public

The FDEP's regional aquatic biologists last inventoried acres of invasive non-native aquatic plants in public waters in FY 2001. It was found that these plants covered a total of 25,082 acres within the District's boundaries. The survey data is collected every other year, so the following, as previously reported, is the most recent data regarding acreage covered by each species:

- Hydrilla: 24,442 acres
- Water Hyacinths: 303 acres
- Water Lettuce: 132 acres
- Hygrophila: 205 acres

Core NS 2(b): Acres of District managed lands infested with invasive nonnative upland plants by degree of land coverage

The data for this performance measure is generated from a bi-annual aerial survey. The next survey

will be initiated during the winter of 2003, and will likely be available for the FY 2003 DWMP.

Table 20 presents the status of exotic plant control on SOR lands managed by the District as of April 2002. There were 21,300 acres of lands managed by the District that were infested with invasive nonnative upland plants. The District manages 80,184 acres which require low maintenance to control exotics; 23,500 acres which require medium maintenance for control; and 19,300 acres which require high maintenance to control exotic plant species.

Table 20. Status of Exotic Plant Control as of April 2002

Area	Total Acres	Infested Acres	Low Maintenace	Medium Maintenance	High Maintenance
West Coast Region					
CREW	25,000	500	20,000	3,500	1,000
East Coast Region [a]					
DuPuis	21,875	0	12,975	8,500	400
Everglades					
Model Lands	13,000	800	6,150	4,150	1,900
Kissimmee/Okeechobee Region					
Kissimmee River	43,000	20,000	3,000	5,000	15,000
Upper Lakes Region					
Lake Marion Creek	10,223	0	10,223	0	0
Lower Reedy Creek	5,500	0	4,500	1,000	0
Upper Reedy Creek	5,000	0	4,950	50	0
Shingle Creek	1,600	0	1,300	300	0
Upper Chain	19,086	0	17,086	1,000	1,000
TOTAL	144,284	21,300	80,184	23,500	19,300

a. West Jupiter Wetlands and South Fork are now managed by other agencies.

Core NS 2(c): Acres of District-owned lands identified in land management plans as needing restoration, acres undergoing restoration, and acres with restoration activities completed

The status of Save Our Rivers restoration projects as of the end of 2002 is presented in Table 21.

Table 21. Save Our Rivers Restoration Projects as of the End of 2002

Needing Restoration		Undergoing Restoration		Restoration Complete	
Area	**Acres**	**Area**	**Acres**	**Area**	**Acres**
East Coast Buffer	77,259	Indian River Lagoon	397	DuPuis Reserve	21,875
New Palm Dairy	1,900	Loxahatchee Slough	1,425	Rattlesnake Hammock	500
Shingle Creek	950	Kissimmee River	**17,000**	Johnson Island	1,735
		SGWEA	120	Kissimmee River	**10,000**
		East Coast Buffer	5,000		
		Loxahatchee River	515		
		Corkscrew Regional Ecosystem Watershed (CREW)	4,670		
Totals	80,109		**29,127**		**34,110**

SFWMD NS 2(d): Acres of land infested with invasive nonnative upland plants, by species inventoried

The most recent survey of land infested with invasive nonnative upland plants was conducted in 1999. The results were as follows:

- Melaleuca: 359,000 acres
- Brazilian Pepper: 1,024,000 acres
- Australian Pine: 385,000 acres
- Old World Climbing Fern: 107,000 acres
- Lather Leaf: 6,500 acres
- Burma Reed: 15,000 acres

SFWMD NS 2(e): Acres of cattail coverage relative to District 1995 aerial photo maps

The last available survey of acreage of cattail coverage was performed in 1995 (Rutchey and Vilchek, 1995). The results for 1991 and 1995 are presented in **Table 22**.

Table 22. Cattail coverage in Water Conservation Area 2A

Year	Cattail (acres)	Cattail Dominant Mix (acres)	Cattail Sparse Mix (acres)
1991	1,041	5,650	6,819
1995	4,066	9,742	9,193

SFWMD NS 2(f): Percent increase in wading bird populations as measured by systematic reconnaissance flights

Table 23 presents the number of nesting birds documented in the Everglades during systematic reconnaissance flights for five characteristic species. These species are the Great Egret, the Snowy Egret, the Tricolored Heron, the White Ibis, and the Wood Stork. A 39% increase in the three-year running average of nesting pairs was documented in 2001 over the three-year running average for 2000 (Ogden, 2001).

Table 23. The Number of Nesting Birds in the Everglades Basin for Five Characteristic Species

Species	1997 – 1999	1998 – 2000	1999 - 2001	Target
Great Eagret	5,084	5,544	5,996	4,000
Snowy Egret and Tricolored Heron	1,862	2,788	4,270	10,000 - 20,000
White Ibis	5,100	11,270	16,555	10,000 - 25,000
Wood Stork	279	863	1,538	1,500 - 2,500

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