

# WATER CONSERVATION

St. Johns River Water Management District (SJRWMD) strives to maximize water conservation within its jurisdiction to the extent economically, environmentally, and technically feasible, through regulatory and non-regulatory programs. Water conservation is defined as the process of efficient and effective use of water. Water conservation increases the benefits derived from water use and prevents the use of water for purposes that can be achieved reasonably through other means. Water conservation is typically practiced for the purpose of sustaining or extending existing water supplies and avoiding or reducing the need to develop new or alternative water supply sources. The following information includes long-term water conservation goals for water users, current water conservation programs, and proposed new water conservation programs.

Everyone is responsible for water conservation. Effective water conservation depends on the cooperation of local governments, water suppliers, and water users, and this combination of water conservation efforts can make the actions of others more effective. SJRWMD encourages the citizens of its jurisdiction to use water efficiently. Further, SJRWMD supports efforts by local governments and water supply utilities, to the extent of their authority, to encourage and require residents and customers to conserve our water resources.

## **Strategic Water Conservation Initiative**

SJRWMD has implemented the strategic water conservation initiative to improve water conservation programs. To accomplish this, SJRWMD regularly reviews key elements of its water conservation programs and modifies them as needed to optimize their effectiveness, avoid duplication of efforts, take advantage of opportunities to coordinate efforts, and add new actions that are targeted to achieve goal-based, measurable increases in water use efficiency. Efforts described below reflect implementation of the strategic water conservation initiative.

## **Offsetting Increased Water Use by Conservation**

SJRWMD has estimated that public supply water use will increase by 51% (297 million gallons per day [mgd]), from 2005 (585 mgd) to 2030 (882 mgd). That increase can be reduced by water conservation. Certainly, the degree to which water conservation can be accomplished varies locally and is dependent on current levels of water use efficiency, adoption rates of available technology, costs of implementation, and many other factors.

Table 1 shows examples of the districtwide gross per capita water use that would be required to offset various percentages of the projected water demand increase through conservation. This table represents an overall average for SJRWMD and does not apply to individual water supply systems. The amount of water conservation that is feasible for individual utilities varies greatly and must be determined by analysis of local data for each utility.

Table 1. Gross per capita water use required to offset projected 2030 water use increases through conservation

Percent of Water Use Increase (297 mgd) Offset by Conservation	Water Use Increase Offset by Conservation (mgd)	Alternative Water Supply Needed (mgd)	Gross Per Capita Water Use (gpcd) for 882 mgd Minus Conserved Amount <sup>1</sup>
0%	0	297	160
10%	30	267	155
20%	59	238	149
30%	89	208	144
40%	119	178	139
50%	149	149	133
60%	178	119	128
70%	208	89	122
80%	238	59	117
90%	267	30	112
100%	297	0	106

<sup>1</sup>Based on 2030-projected SJRWMD public supply population of 5,503,249  
mgd = million gallons per day

If the entire 2030-projected increase in public supply demand (297 mgd) were to be offset solely through conservation of potable quality water by public water supply utilities, the average gross per capita water use for SJRWMD would need to decrease districtwide by 34%, from 160 gallons per capita per day in 2005 to 106 gallons per capita per day in 2030. Even if such a decrease in gross per capita water use occurred, it would not necessarily ensure that the projected demands would be met in all places without unacceptable impacts to water resources and related natural systems. This is because reductions in groundwater withdrawals would not result in a spatially uniform magnitude of reduced impacts due to variability in hydrogeology and demand. Furthermore, although a high potential exists for improved water use efficiency and consequent reduction of projected water demand, the actual amount of reduction that would be attained would not be known until specific projects are implemented. Clearly, the success of water conservation programs is highly dependent upon aggressive implementation.

### **Measuring the Effectiveness of a Water Conservation Program**

Understanding the initial and ongoing quantity of water use reduction that can be achieved through a water conservation program is challenging because many water conservation actions are not directly measurable. However, water use can be quantified for some water conservation practices and cost-benefit ratios can be calculated for those practices and used to create effective, goal-based water conservation programs. Regulation and education are also considered important parts of a water conservation program, because they enhance the effectiveness of more direct actions. However, regulation and education do not directly reduce water use by themselves, and their effects on the implementation of water conservation practices can be difficult to measure. Also, the extent to which many practices will be adopted would not be known with certainty prior to implementation. The entity attempting to effect water conservation is not the end user of the water and can exert only indirect influence over water use, which is often the case

## **LONG-TERM WATER USE EFFICIENCY GOALS**

Water use efficiency goals and the rationales for selecting those goals are provided here for the following water users: public supply, commercial/industrial/institutional (whether from public supply or self-supply), and agricultural irrigation self-supply.

### **Public Supply Water Use Efficiency Goals**

SJRWMD has performed an analysis of the water conservation potential of each water supply utility within its boundaries. The analyses were used to develop estimates of the economically feasible water conservation potential for public water supply utilities, through the 2030 planning horizon.

Three levels of estimated potential reduction in future water demand through conservation were calculated based on different percentages of adoption for retrofit practices: low = 50%, medium = 75%, and high = 90% (Tables 2 through 4). The implementation of ordinances that require improved water efficiency for new construction was set at 100% for all three levels.

The costs of implementing water conservation practices necessary to accomplish the identified potential savings have been estimated by using information from the Conserve Florida Water guide ([www.conservefloridawater.org](http://www.conservefloridawater.org)) and the Alliance for Water Efficiency. Costs include initial capital investment, overhead, and operation and maintenance costs per 1,000 gallons of daily water use reduction. The average cost per thousand gallons of water use reduction varies among individual utilities and regionally, because differences in local conditions such as the age of a structure and the size of an area being irrigated affect the mix of applicable water conservation practices and their local cost-effectiveness.

The medium-level potential water conservation estimates shown in Table 3 are the public supply water use efficiency goals for 2030 for regional-scale SJRWMD water supply planning. More detailed analyses of local data are necessary to develop goals for individual utilities for local water supply planning. Estimates for the medium level indicate that districtwide 2030-projected increases in public supply water use could be reduced by approximately 82.8 mgd at an initial capital cost of approximately \$413 million plus annual overhead, operation, and maintenance costs of \$13.5 million. This would leave over 214 mgd of the projected 297 mgd to be supplied by other sources.

### **Commercial/Industrial/Institutional Water Use Efficiency Goals**

The goal for commercial/industrial/institutional water users, whether supplied by public supply or self-supply, is to ensure efficient water use by implementing best management practices (BMPs). The most common commercial/industrial/institutional water uses in SJRWMD are office buildings, retail stores, restaurants, hotels, schools, manufacturing facilities, and nursing homes. The following BMPs have been selected based on widespread applicability to the types of commercial/industrial/institutional water uses common in SJRWMD.

- Installing the following high-efficiency plumbing fixtures:
  - Showerheads having a maximum flow of 1.5 gallons of water per minute
  - Toilets using no more than 1.2 gallons of water per flush
  - Urinals using no more than 0.5 gallons of water per flush
  - Commercial kitchen prerinse valves having a maximum flow of 1.6 gallons per minute
- Commercial ice machines are federal ENERGY STAR-labeled or meet these performance specifications.
- Commercial clothes washers have a water factor of 8.0 gallons of water used per cubic foot of capacity or less and are ENERGY STAR-labeled.
- Cooling/heating systems use only a recirculating loop design, if water-cooled or heated.

### **Agricultural Irrigation Self-Supply Water Use Efficiency Goals**

Current agricultural irrigation self-supply water use efficiency standards for specific types of irrigation systems are specified in Section 12.5.2 of the SJRWMD *Applicant's Handbook: Consumptive Uses of Water*, contained in Chapter 40C-2, *Florida Administrative Code (F.A.C.)*. The required efficiencies for each type of irrigation system were reviewed and recommendations for updates, shown in Table 5, were developed based on existing scientific literature and interviews with staff from the University of Florida, Institute of Food and Agricultural Sciences (IFAS). The recommend updates are not currently proposed to be adopted into the *Applicant's Handbook* but are considered to be performance goals to be achieved by 2030.

Table 2. Estimated potential water use reductions and the costs of achieving reductions in public supply water use by planning area—low estimates

Planning Area	2005 Water Use (mgd)	Projected 2030 Water Use for Average Rainfall Year (mgd)	Projected Increase from 2005 Water Use (mgd) <sup>1</sup>	Potential Daily Water Use Reduction from Conservation (mgd) <sup>2</sup>	Remaining 2030 Increase in Daily Water Use (mgd)	Total Capital Cost of Water Use Reduction <sup>3</sup> (dollars)	Annualized Cost Per Kgal of Water Use Reduction over 20 Years (dollars)	Utility Overhead <sup>4</sup> (dollars)	Customer Operation and Maintenance (dollars) <sup>5</sup>
Northern	205.25	321.72	116.48	32.84	83.64	108,403,392	0.73	3,986,491	742,533
Central	356.26	519.81	163.55	39.31	124.24	150,552,406	0.84	4,674,956	1,856,267
Southern	24.02	40.66	16.64	3.17	13.46	16,209,054	1.12	589,423	211,200
District Total	585.53	882.19	296.67	75.32	221.35	275,164,853	0.80	9,250,870	2,810,000

Note: All water use is shown in million gallons per day (mgd).

1. Increase from 2005 Water Use.
2. Water use reduction based on the average reduction in water use from passive savings and the most cost-effective conservation measures.
3. Total capital costs are based on the average unit capital costs for implementing conservation multiplied by the potential daily water use reduction from conservation.
4. Utility overhead costs are based on an aggressive meter monitoring program and salary for a conservation coordinator.
5. Customer operations and maintenance costs reflect annual maintenance costs for an efficient nonturf irrigation system by a professional (\$200 per year per customer).
6. Passive savings result from replacing fixtures and appliances without a mandate or incentive from a utility or governmental entity, such as when remodeling or when a fixture or appliance wears out.

Table 3. Estimated potential water use reductions and the costs of achieving reductions in public supply water use by planning area—medium estimates

Planning Area	2005 Water Use (mgd)	Projected 2030 Water Use Average Rainfall Year (mgd)	Projected Increase from 2005 Water Use (mgd) <sup>1</sup>	Potential Daily Water Use Reduction from Conservation (mgd) <sup>2</sup>	Remaining 2030 Increase in Daily Water Use (mgd)	Total Capital Cost of Water Use Reduction <sup>3</sup> (dollars)	Annualized Cost per Kgal of Water Use Reduction over 20 Years (dollars)	Utility Overhead <sup>4</sup> (dollars)	Customer Operation and Maintenance (dollars) <sup>5</sup>
Northern	205.25	321.72	116.48	35.95	80.54	162,605,089	\$0.99	3,986,491	1,113,800
Central	356.26	519.81	163.55	43.43	120.12	225,828,609	\$1.14	4,674,956	2,784,400
Southern	24.02	40.66	16.64	3.43	13.21	24,313,582	\$1.56	589,423	316,800
District Total	585.53	882.19	296.67	82.81	213.86	412,747,279	1.10	9,250,870	4,215,000

Note: All water use is shown in million gallons per day (mgd).

1. Increase from 2005 Water Use.
2. Water use reduction based on the average reduction in water use from passive savings and the most cost-effective conservation measures
3. Total capital costs are based on the average unit capital costs for implementing conservation multiplied by the potential daily water use reduction from conservation.
4. Utility overhead costs are based on an aggressive meter monitoring program and salary for a conservation coordinator.
5. Customer operations and maintenance costs reflect annual maintenance costs for an efficient nonturf irrigation system by a professional (\$200 per year per customer).
6. Passive savings result from replacing fixtures and appliances without a mandate or incentive from a utility or governmental entity, such as when remodeling or when a fixture or appliance wears out.

Table 4. Estimated potential water use reductions and the costs of achieving reductions in public supply water use by planning area—high estimates

Planning Area	2005 Water Use (mgd)	Projected 2030 Water Use Average Rainfall Year (mgd)	Projected Increase from 2005 Water Use (mgd) <sup>1</sup>	Potential Daily Water Use Reduction from Conservation (mgd) <sup>2</sup>	Remaining 2030 Increase in Daily Water Use (mgd)	Total Capital Cost of Water Use Reduction <sup>3</sup> (dollars)	Annualized Cost Per Kgal of Water Use Reduction over 20 Years (dollars)	Utility Overhead <sup>4</sup> (dollars)	Customer Operation and Maintenance (dollars) <sup>5</sup>
Northern	205.25	321.72	116.48	37.81	78.67	195,126,106	\$1.13	3,986,491	1,336,560
Central	356.26	519.81	163.55	45.91	117.64	270,994,330	\$1.30	4,674,956	3,341,280
Southern	24.02	40.66	16.64	3.58	13.05	29,176,298	\$1.79	589,423	380,160
District Total	585.53	882.19	296.67	87.30	209.37	495,296,735	\$1.25	9,250,870	5,058,000

Note: All water use is shown in million gallons per day (mgd).

1. Increase from 2005 Water Use.
2. Water use reduction based on the average reduction in water use from passive savings<sup>6</sup> and the most cost-effective conservation measures.
3. Total capital costs are based on the average unit capital costs for implementing conservation multiplied by the potential daily water use reduction from conservation.
4. Utility overhead costs are based on an aggressive meter monitoring program and salary for a conservation coordinator.
5. Customer operations and maintenance costs reflect annual maintenance costs for an efficient nonturf irrigation system by a professional (\$200 per year per customer).
6. Passive savings result from replacing fixtures and appliances without a mandate or incentive from a utility or governmental entity, such as when remodeling or when a fixture or appliance wears out.

Table 5. Recommended adjustments to SJRWMD agricultural irrigation self-supply water use efficiency standards

Irrigation Type	Current Efficiency Standard (%)	Proposed Goal (%)
<b>(a) Low pressure–low volume systems (microirrigation)</b>		
1. Trickle/drip Irrigation	98	98
2. Drip irrigation	90	(combined with trickle)
3. Jet irrigation (microspray)	80	90
<b>(b) Sprinkle systems</b>		
1. Center pivot and linear move	80	85
2. Overhead sprinkler	70	80
3. Traveling gun	70	75
4. Texas sidewalker	70	80
<b>(c) Flood and seepage systems</b>		
1. Pipeline seepage	60	70
2. Ditch seepage	50	65
3. Crown flood	50	50

## CURRENT WATER CONSERVATION PROGRAM

SJRWMD maintains an existing program for water conservation, consisting of a regulatory component and a non-regulatory component that includes water supply planning assistance and public outreach programs. These water conservation efforts are described as follows.

### Consumptive Use Permit (CUP) Requirements

Chapter 40C-2, *F.A.C.*, requires the issuance of permits for large-volume water users based on reasonable-beneficial, interference, and public interest criteria. Water users are required to have an individual permit including permittees with average annual daily withdrawals that exceed 100,000 gallons, or with the capacity to withdraw water that exceeds a million gallons per day, or those having a well of 6 inches (in.) in diameter or greater.

Chapter 40C-2, *F.A.C.*, requires water conservation as a part of all CUPs and states, “All available water conservation measures must be implemented unless the applicant demonstrates that implementation is not economically, technically, and environmentally feasible...” (Rule 40C-2.301(4)(e), *F.A.C.*)

Public supply utilities are required to have programs designed to ensure utility operating efficiencies and achieve water conservation by individual customers. Section 12.2.5 of the *SJRWMD Consumptive Use Permit Handbook*, contained in Chapter 40C-2, *Florida Administrative Code (F.A.C.)*, specifies water conservation practices for public supply CUPs. These requirements are summarized as the following:

- Perform a system-wide audit of the amount of water used in the applicant's production and treatment facilities, transmission lines, and distribution system.
- Perform a meter survey, and correct the water audit to account for meter error if the initial water audit shows 10% or greater unaccounted for water use.
- Perform a leak detection evaluation or develop an alternative plan of corrective action if the system survey shows greater than 10% unaccounted for water use.
- Implement a meter replacement program if the system survey indicates that a group or type of meters is less than 95% accurate.
- Implement a customer and employee water conservation education program.
- Implement a rate structure that promotes water conservation or amend an existing conservation rate structure to improve its effectiveness unless the cost is not justified because it will have little or no effect on reducing water use.
- Submit a management plan designed to minimize the need for augmentation of a reclaimed water system if the permit includes a backup water source to meet peak demands.
- Additional water conservation measures may be required when an audit and/or other available information indicates there is a need.

In addition to the water conservation requirements for public supply systems, customers who use more than 100,000 gallons per day from a public supply system may be required to obtain a secondary use permit, which makes large water users directly responsible for implementing water conservation.

Other types of water users have a similar list of specific water conservation requirements. In the case of agriculture, emphasis is placed on upgrading irrigation systems to improve efficiencies, the capture and use of storm water for irrigation, and the use of reclaimed water from nearby utility providers. For self-supplied commercial/industrial/institutional users, emphasis is placed on water saving process improvements, recycling of water, and use of lower quality sources.

### **Landscape Irrigation Restrictions**

SJRWMD has stringent, districtwide, year-round watering restrictions as defined in Rule 40C-2.042, *F.A.C.* These restrictions are designed to ensure the efficient use of water for landscape irrigation. The mandatory restrictions specify the time of day that watering may occur, the amount of water that may be applied, and the days when watering may occur for residential and nonresidential locations. This rule also authorizes local governments to enforce these restrictions within their jurisdictions by adopting an ordinance that fully implements the rule.

What follows is a summary of the SJRWMD watering restrictions:

- Irrigation is prohibited between 10 a.m. and 4 p.m.

- During daylight saving time (second Sunday in March until the first Sunday in November), irrigation is limited to no more than two days per week on scheduled days.
  - Residential irrigation at odd-numbered addresses or no addresses is allowed on Wednesday and Saturday.
  - Residential irrigation at even-numbered addresses is allowed on Thursday and Sunday.
  - Nonresidential irrigation is allowed on Tuesday and Friday.
- During Eastern Standard Time (first Sunday in November until the second Sunday in March), irrigation is limited to no more than one day per week on scheduled days.
  - Residential irrigation at odd-numbered addresses or no addresses is allowed on Saturday.
  - Residential irrigation at even-numbered addresses is allowed on Sunday.
  - Nonresidential irrigation is allowed on Tuesday.
- Irrigation is limited to no more than  $\frac{3}{4}$  inch of water per zone per irrigation day.
- Irrigation is limited to no more than one hour per irrigation zone per irrigation day.
- Irrigation is limited to only that amount necessary to meet landscape needs.
- When reclaimed water is available for irrigation use, the use of private irrigation wells is not authorized by Rule 40C-2.042, *F.A.C.*
- Irrigation limitations apply to water withdrawn from ground- or surface water, from a private well or pump, or from a public or private utility.
- Irrigation limitations apply to all landscape irrigation not currently regulated by a CUP. Typically, this includes residential, commercial, and industrial establishments.
- Persons irrigating with an automatic lawn irrigation system installed after May 1, 1991, must install, maintain, and operate a rain sensor device or switch that overrides the system when adequate rainfall has occurred.

Limited exceptions apply for certain highly efficient microirrigation systems, hand watering with an automatic shutoff device, irrigation of newly planted landscape daily for the initial 30 days and then every second day for the next 30 days (for a total of one 60-day period), and use of reclaimed water or storm water.

### **Conserve Florida Project**

SJRWMD is a partner in the Conserve Florida Project, a statewide effort to assist public water supply utilities in the development of water conservation plans and programs. Partners in this project include Florida Department of Environmental Protection (DEP), the five water

management districts, the Florida Rural Water Association, Florida Section of the American water Works Association, Florida Water Environment Association, and the Florida Public Service Commission. The project partners consult with technical professionals when appropriate.

Conserve Florida is designed to provide assistance to public water supply utilities in the development of goal-based water conservation plans for the optimization of water conservation programs and to quantitatively measure the success of the practices utilities implement. Software, known as the Guide, assists public supply utilities with the development of goal-based water conservation plans as part of the project. The Guide is hosted on the Conserve Florida Water Clearinghouse (Clearinghouse) website (<http://www.conservefloridawater.org>). The Clearinghouse also includes the EZ Guide (a downloadable spreadsheet to conduct the analysis), a database of best management practices costs and effectiveness of water conservation practices, a library of water conservation information, and links to additional sources of information.

The Clearinghouse has assembled and searched the available literature concerning the measurable effectiveness and cost of water conservation practices, and provides access to this information. The user inserts utility-specific data into the Guide, which then produces an analysis on which to base a water conservation plan that would cost-effectively improve water use efficiency. The plan is based on Clearinghouse data and user inputs. Under a contract with DEP on behalf of the project partners, the University of Florida maintains the Clearinghouse website, provides information about the services that can be obtained there, and provides assistance for users of the Guide.

### **Florida Water Star<sup>SM</sup>**

Florida Water Star<sup>SM</sup> is a voluntary certification program for new and existing residential and commercial developments that encourages water efficiency in residential landscapes, irrigation systems, and indoor uses. The Florida Water Star<sup>SM</sup> program launched in 2006 with a Silver tier for conservation in new homes. The program expanded in August 2009 to begin offering a Gold tier, which provides a higher standard for water efficiency and includes water quality best management practices. In November 2009, a Bronze tier was added to the program to recognize the retrofitting of existing homes for water efficiency.

The Florida Water Star<sup>SM</sup> Commercial tier is designed to assist commercial water users with incorporating water conservation practices in office buildings, retail and service establishments, and other commercial buildings. Another tier, Florida Water Star<sup>SM</sup> Community, is designed to assist developers with incorporating water-conserving practices into master planned communities.

### **Water Conservation Project Cost-Share**

SJRWMD is working with local governments, water supply utilities, and other entities to cost-share innovative water conservation projects, with a focus on landscape irrigation and technologies that aid in tracking account-level water use such as automated meter reading and management information systems. The water conservation cost-share program targets projects that test and demonstrate the reliability and benefits of promising in-field technologies and

strategies such as soil moisture sensors, evapotranspiration-based controllers, real-time data collection and analysis, and account-level data collection.

Entities that receive cost-share funds from SJRWMD are required to meet certain minimum obligations including the collection and analysis of baseline and project data sufficient to document project benefits, and all local governments that receive funding must adopt and actively enforce a landscape irrigation ordinance that fully implements the landscape irrigation provisions in Rule 40C-2.042(2), *F.A.C.*

### **Local Government Assistance**

SJRWMD provides technical assistance to elected officials and local government staff concerning water conservation issues and practices. Activities include assisting with the development and adoption of local landscape and irrigation ordinances, training and technical guidance on low-impact development techniques, and review and assistance with water conservation components of comprehensive plans and plans for developments of regional impact.

SJRWMD has worked with DEP to develop statewide standard guidance and example language for the creation of local landscape water conservation ordinances that meet the requirements specified in Section 373.185, *Florida Statutes* (F.S.). Local governments are required by Sections 125.568 and 166.048, F.S., to consider adopting ordinances that will reduce the amount of water used to irrigate landscapes.

SJRWMD has also contributed technical expertise to the statewide effort, required by Section 373.228, F.S., to develop landscape irrigation and landscape design standards for new construction. These standards incorporate science-based guidelines for urban, commercial, and residential landscape irrigation including drip irrigation for plants, trees, sod, and other landscaping. Section 373.228, F.S., requires local governments to use these standards and guidelines when developing landscape irrigation and Florida-Friendly Landscaping<sup>TM</sup> ordinances. SJRWMD now promotes these statewide standards in place of a separate regional guidance document for local governments.

### **Outreach**

Increasing public awareness of the importance of water conservation and providing information on ways that the public can conserve water is a major focal point of the SJRWMD water conservation program. Water conservation messages are disseminated through a variety of communication strategies including the news media, public service announcements, presentations to business and community groups, participation in community events, and distribution of educational materials. The SJRWMD website provides extensive information about water conservation. SJRWMD also uses social media to engage the public in water conservation through blogs, Twitter, YouTube, and iTunes.

Reaching school-aged children is important in laying the foundation for a water conservation ethic for tomorrow's adults. The SJRWMD youth education program includes interactive in-

school presentations; science night events; and *The Great Water Odyssey<sup>SM</sup>*, an interactive, multidisciplinary educational tool for third-, fourth-, and fifth-graders.

### **Promotion of Florida-Friendly Landscaping<sup>TM</sup> Principles**

SJRWMD promotes Florida-Friendly Landscaping<sup>TM</sup> through a variety of approaches, including distribution of literature, information on the SJRWMD website, and presentations. The SJRWMD consumptive use permitting (CUP) program applies Florida-Friendly Landscaping<sup>TM</sup> principles, along with efficient irrigation practices, to calculate the amount of water that should be allocated for landscape irrigation.

### **Agricultural Mobile Irrigation Laboratories**

SJRWMD has expanded its support of mobile irrigation laboratories (MILs) to provide districtwide service. Mobile irrigation laboratories assist agricultural water users with improving irrigation efficiency. This service is provided at no cost to any agricultural water user that requests the service and is required for agricultural irrigation self-supply CUPs at the times of permit renewals and compliance reports. Recommendations for system improvements provided by mobile irrigation laboratories are required as CUP conditions to the extent economically, technically, and environmentally feasible.

## **EXPANDED WATER CONSERVATION PROGRAM**

In addition to the continued, existing water conservation efforts, SJRWMD proposes to implement the following new efforts to improve the effectiveness of its water conservation program.

### **Rule Revisions to Enhance Water Conservation**

SJRWMD is undertaking rulemaking to make water conservation requirements for permitting programs more effective at reducing water use. The anticipated rule revisions will address the water use efficiency of new land development through the environmental resource permitting (ERP) program and the efficiency of major water use types through CUPs.

### **The Associative Relationship of ERPs and CUPs**

SJRWMD is undertaking rulemaking to more closely associate the ERP and CUP permitting processes for projects with the landscape irrigation rules. Key concepts of this ERP/CUP linkage include the following:

- Requiring maximum feasible reuse of storm water for landscape irrigation
- Setting landscape design standards that reduce the need for irrigation (regardless of water source)

- Requiring covenants and restrictions for developments to include efficient landscaping/irrigation system design
- Prohibiting covenants and restrictions for developments from containing language that prevents use of landscape/irrigation system design standards adopted by SJRWMD

### **Assist Public Supply Utilities With Identifying and Targeting of Customers That Have Excessive Water Use**

SJRWMD intends to assist water supply utilities with developing procedures for processing account-level public supply utility water use data for the purpose of estimating the geographical distribution of inefficient water use. SJRWMD will develop and promote a method of compiling account-level data to make it readily accessible for routine analysis. Residential and multifamily water use data will become a primary focus of this effort. A companion geographic information system (GIS)-based component will be developed to process and analyze the data spatially, so that areas of high usage can be identified and targeted for education, enforcement, and for participation in water conservation best management practice demonstration projects.

### **Identification of Individual and Standard, General Nonpublic Supply CUPs With Excessive Water Use**

SJRWMD intends to develop procedures for identifying nonpublic supply CUPs with excessive water use. Permittees with excessive water use will be targeted for education, compliance, and participation in best management practice demonstration projects.

### **Compliance with Landscape Irrigation Restrictions**

SJRWMD intends to increase its efforts to obtain compliance with landscape irrigation restrictions and take specific actions that lead to increased adoption and enforcement of local government ordinances that are compatible with Rule 40C-2.042, *F.A.C.*, General Permit by Rule. Enforcement will be targeted in areas where analysis of account-level information indicates a relatively high percentage of users with excessive use of landscape irrigation. SJRWMD intends to continue its direct enforcement program and offer cost-share incentives to local governments to encourage the initiation of local enforcement programs.

### **Certification or Licensing of Landscape Irrigation Contractors**

SJRWMD intends to analyze the advantages and disadvantages of local and statewide certification or licensing of landscape contractors to improve the efficiency of landscape irrigation systems and to determine the appropriateness of agency support for either approach.

### **Optimization of Plumbing Efficiency in New Construction**

SJRWMD intends to support an amendment to the Florida State Building Code to require the most efficient, cost-effective technology currently available for all indoor and outdoor plumbing and landscape irrigation systems.