

FY2018 Water Conservation Summary Report

May 2019



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I. EXECUTIVE SUMMARY

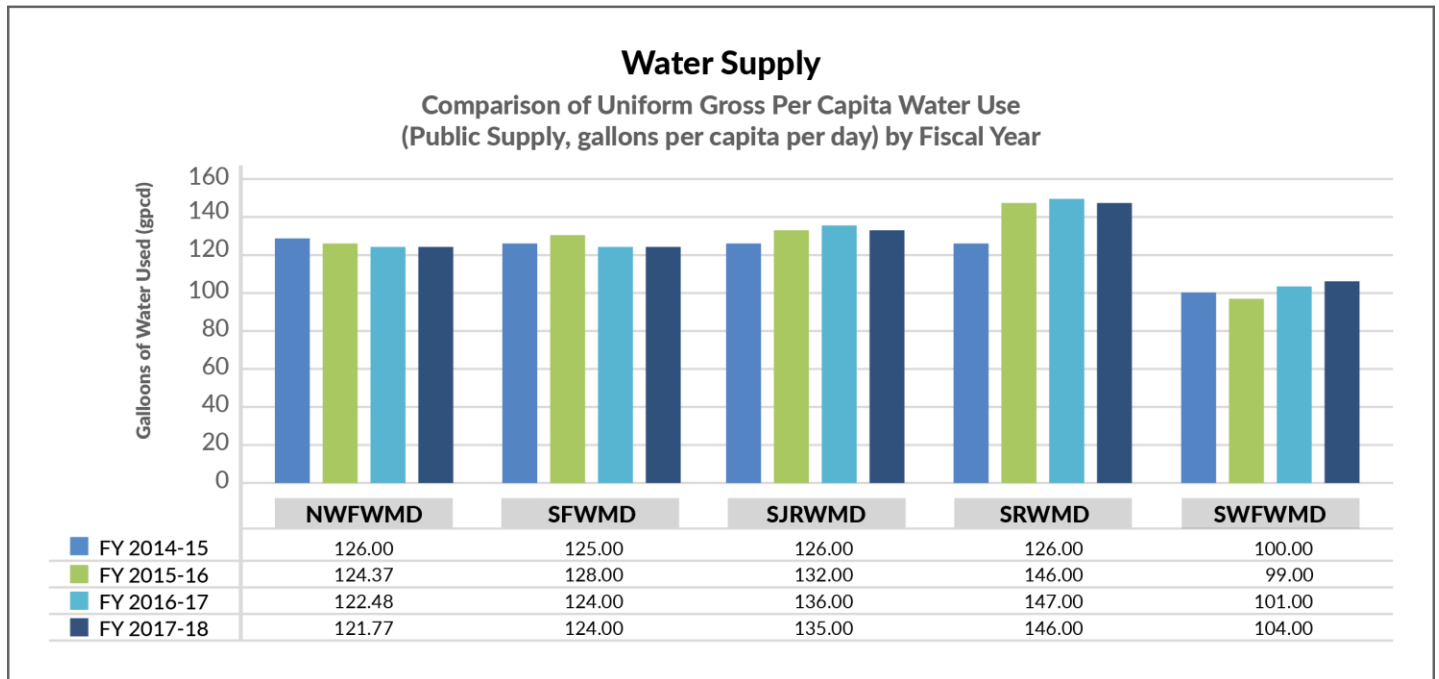
Water conservation is a key component of the District’s mission to ensure the public’s water needs are met and is one of the 11 Strategic Initiatives outlined in the District’s 2018-2022 Strategic Plan. Within the Conservation Strategic Initiative, the District’s goal is to enhance efficiencies in all water-use sectors to ensure beneficial use.

Water use data provides evidence of the District’s continued commitment to water conservation. For several years, the District has maintained the lowest public supply per capita rate in the state, currently at 104 gallons per day (see Figure 1). While the population in the District has grown 150 percent over a 40-year period from 1975-2015, total water use has remained essentially flat at about 1 billion gallons per day due to increased conservation and development of alternative water supplies. Conservation is generally one of the most cost-effective means of “generating water” for population growth, allowing the deferral of development of more expensive traditional or alternative water supply projects.

This report summarizes the District’s water conservation efforts, including annual accomplishments and measurable water savings, for Fiscal Year 2018 (Oct. 2017 – Sept. 2018). Information on reclaimed water or source substitution can be found in the District’s Annual Reuse Report.

The following report covers conservation efforts throughout the District, including cost-share funding, technical assistance, the Water Conservation Initiative, education and outreach, research and regulation.

Figure 1. Comparison of Uniform Gross Per Capita Water Use by Fiscal Year (Source: Water Management District Performance Metrics for the fourth quarter of FY2018 by the Florida Department of Environmental Protection)



NFWMD = Northwest Florida Water Management District

SFWMD = South Florida Water Management District

SJRWMD = St. Johns River Water Management District

SRWMD = Suwannee River Water Management District

SWFWMD = Southwest Florida Water Management District

II. COST-SHARE FUNDING

Cooperative Funding Initiative

The Cooperative Funding Initiative (CFI) is a key program for building partnerships with external stakeholders, including local governments and regional water supply authorities. The CFI covers up to 50 percent of the costs of projects that help create sustainable water resources, enhance conservation efforts, improve water quality, restore natural systems and provide flood protection.

The District has provided CFI funding assistance since 1988, with the first water conservation program funded in 1991. In recent years, District staff have actively worked to encourage more conservation programs, particularly retrofit programs and outdoor water conservation. Conservation projects are generally more cost effective in comparison to other types of CFI projects related to water supply.

Common indoor conservation programs include toilet rebates for converting to high-efficiency models and conservation kits that include low-flow showerheads and faucet aerators. Common outdoor water conservation programs include irrigation system evaluations, landscape and irrigation modifications and irrigation smart controllers. Additional program types eligible for CFI funding are line looping, advanced metering analytics, Florida Water StarSM builder rebates and industrial/commercial-related efficiency improvements.

Table 1. FY2018 CFI Conservation Projects by Planning Region

County	Project #	Cooperator	Title	Total Costs	District Costs	Estimated Savings (gpd*)
Polk	N846	Polk County	Landscape and Irrigation Evaluation	\$85,000	\$42,500	42,000
Citrus	N860	Citrus County	Water Sense Labeled Irrigation Controller Account Credit	\$33,750	\$16,875	16,658
Marion	N921	Bay Laurel (BLCCDD)	2018 Irrigation Controller/ET Sensor Upgrade Project	\$87,520	\$43,760	22,794
Marion	N922	Bay Laurel (BLCCDD)	Florida Water Star Rebate	\$52,500	\$26,250	9,900
Marion	N779	Marion County	Marion County Utilities Toilet Rebate Program – Phase 4	\$32,000	\$16,000	5,095
Sarasota	N840	City of Venice	Venice Advanced Metering Analytics Project	\$22,000	\$11,000	3,800
Manatee	N877	Manatee County	Manatee County Toilet Rebate Project, Phase XI	\$226,500	\$113,250	39,571
Pasco	N852	Pasco County	Pasco County ULV Toilet Rebate Program - Phase 11	\$100,000	\$50,000	13,640
Pasco	N876	City of New Port Richey	City of New Port Richey HET Toilet Rebate Program - Phase 4	\$14,940	\$7,470	1,014
Pinellas	N890	City of St. Petersburg	St. Pete Residential Clothes Washer Rebate Pilot Project	\$25,000	\$12,500	1,440
Pinellas	N909	City of St. Petersburg	Sensible Sprinkling Program Phase 8	\$100,000	\$50,000	56,400
Total				\$779,210	\$389,605	212,312

*gpd = gallons per day

FARMS Program

FARMS is an agricultural cost-share reimbursement program that reduces groundwater withdrawals from the Upper Floridan aquifer through conservation and alternative water supply best management practices (BMPs). The program is designed to serve as an incentive to the agricultural community to conserve groundwater use and promote resource sustainability. FARMS reimbursement can amount to 50-75 percent of total project costs for eligible BMPs.

FARMS is a public/private partnership developed by the District and the Florida Department of Agriculture and Consumer Services (FDACS). FARMS includes both conservation and alternative water supply projects. This report focuses on the program's water conservation projects. More information on the FARMS program can be found in the FARMS Biennial Report.

FARMS also incorporates the Mini-FARMS Program. Mini-FARMS provides cost-share funding for agricultural operations of 100 irrigated acres or less. The same principals of the FARMS program apply.

Table 2. FARMS Conservation Projects Approved in FY2018

Project Number/Name	County	District Share Reimbursement	Estimated Water Savings (gpd)
H763 Ocean Breeze - Phase 2	Hillsborough	\$79,030	15,000
H771 734 LMC Groves, LLC - Lily Grove	Hardee	\$74,184	26,900
H768 G & D Farms - Parrish Road Duette	Manatee	\$49,417	44,500
H774 University of Florida GCREC	Hillsborough	\$65,794	23,000
TOTAL		\$268,425	109,400

Table 3. Mini-FARMS Conservation Projects Approved in FY2018*

Project Number/Name	County	District Share Reimbursement
WMD 155 Bellamy Groves/Charles Bellamy	Citrus	\$2,009.06
WMD 156 Brookdale Farms	Hillsborough	\$5,288.42
WMD 154 Sweetlife	Hillsborough	\$7,513.24
WMD 153 Sizemore Farms, Inc	Hillsborough	\$7,542.45
WMD 152 Sizemore Farms, Inc.	Hillsborough	\$7,513.24
WMD 157 Camarillo Berry Farms	Hillsborough	\$7,542.45
WMD 151 Suncoast Nursery	Manatee	\$627.73
WMD 150 Frosty Blue Farms, Inc.	Hillsborough	\$8,000.00
WMD 158 Patrick Hulbert	Pasco	\$8,000.00
WMD 161 Womack Arthur S. Jr. Trust (Maxwell)	Hardee	\$5,576.25
WMD 160 Arthur S Womack Family LLC (Polk)	Hardee	\$8,000.00
WMD 159 Arthur S Womack Family LLC (College Hill)	Hardee	\$8,000.00
WMD 163 Jerry Mills	Levy	\$5,062.50
WMD 162 Jeff Phillips Trucking	Levy	\$3,375.00
WMD 164 Enza Zaden Research USA, Inc.	Manatee	\$5,062.50
WMD 165 Lone Oak Nursery, Inc.	Sumter	\$5,586.12
WMD 166 Hardeman Landscape Nursery, Inc.	Hillsborough	\$620.12
WMD 135 Sarasota Growers, Inc.	Sarasota	\$433.48
WMD 167 Keith Davis	Hardee	\$4,247.44
TOTAL		\$100,000

* The FY2018 Mini-FARMS projects are estimated to save between 100,000 gpd and 133,000 gpd.

III. TECHNICAL ASSISTANCE

Water Loss Reduction Program

The District's Water Loss Reduction Program is an ongoing conservation service that aids public water utilities to increase system efficiency and reduce system losses. It includes the following services:

- Comprehensive leak detection surveys
- Water audit guidance and evaluation

Since inception of the program in 1990, the leak detection team has conducted 141 comprehensive leak detection surveys throughout the District, locating 1,500 leaks of various sizes, with an estimated 6.8 mgd of water savings.

Table 4. FY2018 Water Loss Reduction Program Activity

Program	Quantity Conducted	Results
Leak Detection Surveys	12	Estimated 26,000 gpd water savings identified
Water Audits	30	Estimated 14 mgd water loss identified

Mobile Irrigation Laboratory

The Mobile Irrigation Laboratory (MIL) is a cooperative project that is funded and managed by the District and operated by the United States Department of Agriculture – Natural Resources Conservation Service. MILs evaluate agricultural irrigation system efficiencies on a voluntary and confidential basis and provide help with new technology awareness. The District uses the MIL program to assist growers in reducing water use which in turn provides cost savings to the grower. The water savings realized from the MIL evaluations can be significant per project and regionally benefits groundwater supply.

The MIL has evaluated more than 1,300 systems since the project began and the agricultural community has provided a great deal of positive feedback concerning its usefulness. The MIL project contract has been in place since the mid 1980s and is currently approved through 2019 with funding at \$50,000 per year. Contracts are approved for five-year terms and a renewal contract is anticipated through 2024.

Table 5. FY2018 Mobile Irrigation Laboratory Activity

Site Visits*	Total Acres Served	Potential Water Savings**
76	4,759	116.3 million gallons

**Site visits include, but are not limited to, system evaluations, catch can tests, pressure tests and new equipment install and training.*

***Potential Water Savings are savings that could be obtained if all improvements are implemented as recommended.*

Water Conservation Project Cost Model

The Water Conservation Project Cost Model is a calculator available on the District's website that illustrates the potential effectiveness of various water conservation programs. The model is designed to calculate estimated program costs and water savings benefits associated with different water users and conservation measures. As a result, it can assist utilities in choosing projects that will provide the greatest benefits. In addition to standard costs associated with implementing a conservation measure, the model provides an option to include the costs for research and development, and equipment or training, if applicable.

Water-Conserving Rate Structures

The District works with utilities to adopt water-conserving rate structures to reduce per capita water use. This assists utilities in achieving a compliance per capita rate of 150 gallons per capita per day (gpcd) or less by the end

of the calendar year 2019, as identified in the District's Strategic Plan and rule¹. As the pricing of water can signal that potable water is an increasingly scarce and valuable resource, rate structures are one way to motivate customers to conserve. To estimate the effectiveness of a water-conserving rate structure, the District provides utilities with a free water rate simulation model, WATERATE2008. WATERATE is a planning tool that simulates how changes in water and sewer rate structures impact water revenues and water demand. As part of the projection, the model allows a revenue neutral evaluation. This takes into account the decrease in water demand that results from an increase in price.

Local Government Comprehensive Plan Amendment Reviews

The District reviews local government comprehensive plan amendments pursuant to Chapter 163, Part II, F.S., and Section 373.711, F.S. Conservation is promoted through technical assistance comments and recommendations that focus on proposed policy language and updates to Ten-Year Water Supply Facilities Work Plans. In addition, consideration of Florida Water StarSM, Florida-Friendly LandscapingTM and other water conservation programs, methods and techniques are encouraged for land use changes that involve increases in residential density.

¹ Rule 40D-3.091(a) which references the Water Use Permit Applicant's Handbook Part B (Section 2.3.7.2)

IV. WATER CONSERVATION INITIATIVE

The Water Conservation Initiative (WCI) is an ongoing effort designed to maximize assistance to public suppliers and promote the implementation of best management practices to achieve conservation objectives within the District's Strategic Plan. Priority areas for the WCI are the Northern Region and Polk County. The four basic objectives for the WCI are to:

- Assist utilities within the District in achieving a compliance per capita rate of 150 gallons per capita per day (gpcd) or less by the end of calendar year 2019, as identified in the Strategic Plan and rule.
- Assist utilities in the District, to reduce regional per capita by 2020, as identified in the Strategic Plan.
- Identify public supply Water Use Permits (WUPs) expiring on a two-year basis, to ensure internal and external coordination occurs prior to and during permitting to comprehensively evaluate potential conservation measures.
- Take feedback received from utilities and develop recommendations to improve the District's conservation efforts.

Divisions within the District with representatives on the Water Conservation Initiative Team (WCIT) include Regulation, Resource Management, Employee and External Relations and the Office of General Counsel.

Table 6. Water Conservation Initiative Activities FY2018

County	Activity	Outcome
Citrus	Leak Detection Survey* outreach	Leak Detection survey to take place in FY2019
Hernando	Leak Detection Survey* completed	Located more than 40 leaks in one subdivision
Marion	Leak Detection Survey* completed	Located a total of three leaks
Districtwide	Developed Water Incentives Supporting Efficiency (WISE) program criteria and guidelines	Program to launch in FY2019
Inter-District	Finalized conservation plan review guidelines technical memorandum	Formalization and standardization of conservation plan review guidelines for Water Use Permit applications/compliance
Northern and Heartland Regions	Conducted targeted utility outreach to Citrus County and the Withlacoochee Regional Water Supply Authority, and the utilities of the Florida Four Lakes Golf Club	Provided information to assist in implementation of additional best management practices to achieve per capita compliance of less than 150 gpd

**Please refer to Technical Assistance section of report for additional information on leak detection surveys.*

V. Education and Outreach

Water Conservation Programs

Florida Water StarSM

The Florida Water Star (FWS) program is a voluntary water conservation certification program for new residential and commercial construction and existing home renovation. The program encourages water efficiency in appliances, plumbing fixtures, irrigation systems and landscapes, as well as water quality benefits from best management practices in landscapes. The program was developed by the St. Johns River Water Management District in 2006 and became a statewide program in 2012.

Through the CFI, the District currently offers FWS rebates in select communities in partnership with local utilities. New homes and commercial buildings receiving FWS certification are eligible for the rebates. The following rebates were offered to builders within the District in FY2018:

- Bay Laurel \$700 rebate - 75 available
- Polk County \$700 rebate - 500 available

An average FWS homeowner with outdoor irrigation can save up to 48,000 gallons of water each year and up to 6,560 gallons of water each year without irrigation. Since 2006, more than 1,750 properties have been certified by the District. In FY2018, the District certified more than 200 properties, as well as attended eight builder, landscape and irrigation meetings to promote the FWS program.

Table 7. FY2018 Florida Water Star Activities

County	Activity	Estimated Annual Water Savings (gallons) of Certified Homes
Citrus	Certified one property	48,301
Hillsborough	Certified 62 properties	406,720
Marion	Certified 120 properties	3,733,560
Pasco	Certified two properties (commercial)	N/A
Sarasota	Certified seven properties	45,920
Polk	Worked with the City of Mulberry to establish new ordinance that requires new homes to be built to FWS standards	N/A
TOTAL		4,234,501

Florida-Friendly LandscapingTM

Florida-Friendly Landscaping (FFL) is also part of the District's educational programs. It was created by the University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) to educate residents about landscape and irrigation principles that save water and protect water quality. The District promotes the use of FFL to members of the building industry, managers of community development districts and boards, homeowner associations, residents and landscape and irrigation professionals through development and distribution of program publications and materials, and staffing educational booths at FFL workshops and events. The District has supported this program since 2001.

Water CHAMPSM

The Water Conservation Hotel and Motel Program (CHAMP) is a free towel and linen reuse program that encourages hotel and motel guests to use their linens and towels more than once during their stay. Participating lodging facilities receive free publications and materials that explain the program to staff and guests. CHAMP was initiated in 2002 as a pilot project before being expanded Districtwide.

An audit of water use before and after hotels/motels joined the program showed that properties averaged a savings of 17 gallons of water per day per occupied room, as well as saving electricity and reducing detergent use.

Community Awareness Campaigns

The District has many community-wide outreach programs and awareness campaigns that focus on water conservation, watersheds and water quality. These include:

- **“Skip a Week” Campaign** – To encourage reduced irrigation during the winter months of January and February.
- **Water Conservation Month** – Throughout the month of April, the District works with local government partners to share the importance of water conservation and increase efforts to conserve water. In 2018 Water Conservation Month celebrated its 20th anniversary.
- **“Watch the Weather, Wait to Water”** – To encourage residents to watch the weather during the summer months of June, July, August and September to offset irrigation with rainfall.

Publications and Materials

Free publications are available to download or order via *WaterMatters.org* for residents within the District. These publications include posters, student worksheets, teacher guides, bookmarks, recreation guides, informational brochures, tip cards and more on a variety of topics related to the District’s mission, including conservation.

The District also supplies water-conserving items, such as leak detection tablets, sink aerators, low-flow showerheads and water-efficient spray nozzles, at public events, presentations, workshops and to partner organizations. Education materials are provided concurrently to reinforce water conservation.

Youth Education

The District provides funding to school districts within our region to help support water conservation education both in and out of the classroom. These programs allow students to gain the background knowledge to make informed decisions about water resources in the future. They include field trips, teacher trainings, classroom project supplies and Splash! school grants. Many free resources also are available to teachers, including free publications and materials, water education videos, virtual watershed excursions and the Classroom Conservation Challenge.

Social Media

The District uses social media to promote conservation through regular posts, including tips to residents on how to conserve water through infographics, videos and promotion of free publications and additional resources.

News Releases

The District issues news releases to inform the media and the public about District-initiated news and events, including those involving water conservation, such as water restrictions and conservation projects.

Speaking Engagements

Through the Speakers Bureau, District staff share their expertise with a wide variety of audiences. Frequently requested topics include water resources and water conservation. The latter focuses on the limitations of our water supply and how residents can help conserve water both in the home and in the yard. Learning about leak detection, rain sensors and other conservation measures helps to ensure that residents are well-informed and can act to conserve water.

Decision-Maker Water Schools

The District provides small grants for decision-maker water schools, which have a large focus on conservation. These programs provide elected officials, community leaders and other decision makers with factual information about their county's water resources and encourages improved public policy and decision making regarding water resource issues.

In FY2018 the District sponsored four water schools with a total of 445 attendees.

VI. RESEARCH

Water Conservation Research

The District provides annual funding to the University of Florida's Institute of Food and Agricultural Sciences (UF/IFAS) primarily for research projects involving agricultural best management practices, including those targeting water conservation. Additionally, funds have been awarded to research that relates to public supply conservation. UF/IFAS is a federal-state-county partnership that provides research and development for Florida's agricultural, human and natural resources, as well as related food industries.

From FY2005 through FY2018, the District has provided a total of \$9.46 million in funding toward 50 IFAS research projects. In FY2018, the District provided \$396,250 in support of research projects involving water conservation. This amounts to approximately 76 percent of total District funds that were used toward all research projects in FY2018.

Table 8. Current Governing Board-Approved Conservation Research Projects

Project Number/Name	Crop Type/ Use	Funding Years	Total Project Cost	FY18 Funding Allocation
B404 - New Practical Method for Managing Irrigation in Container Nurseries	Nursery	FY2016-2019	\$165,310	\$47,000
B405 - Eliminating Sprinkler Irrigation Use in Strawberry Transplant Establishment	Strawberry	FY2016-2019	\$167,000	\$31,000
B406 - Evaluating Fertigation with Center Pivot Irrigation for Water Conservation on Commercial Potato Production	Potatoes	FY2016-2020	\$400,000	\$110,500
B407 - Reduction of Water Use for Citrus Cold Protection	Citrus	FY2017-2019	\$21,000	\$7,750
B136 - Florida Automated Weather Network Data Dissemination and Education	General Ag	FY2018	\$100,000	100,000
B413 - Effect of Water Scheduling and Amounts on Growth of Young Citrus Trees in High Density Plantings	Citrus	FY2018-2021	\$168,623	\$70,000
P446 - Evaluation of Water Use & Water Quality Effects of Amending Soils & Lawns with Compost Material	Public Supply	FY2018-2019	\$60,000	\$30,000
TOTAL			\$1,081,933	\$396,250

VII. Regulation

Water Use Permit Conditions

A Water Use Permit (WUP) allows withdrawal of a specified amount of water, either from the ground or from a lake or river. Upon submittal of a WUP application, the District's WUP Bureau evaluation staff determine if the use of water is reasonable and beneficial, does not interfere with any presently existing legal use of water and is consistent with the public interest. WUPs issued by the District contain standard and special conditions that mandate efficient use of water and conservation measures. Requirements include use of best management practices, leak detection and repair, inspections, water audits, water-conserving rate structures, a compliance per capita rate no greater than 150 gpcd by year end 2019 and implementation of a Water Conservation Plan.

Water Conservation Plans

As part of the WUP process, all applicants are required to implement a Water Conservation Plan. The plan must demonstrate that environmentally, technically and economically feasible water conservation measures applicable to the proposed use have been or will be employed. Water conservation measures that have been approved by the Governing Board by rule or water shortage order must be implemented. Where specific water conservation elements have been developed for specific use types, such as public supply or agriculture, these elements are incorporated into the permit.

Year-Round Water Conservation Measures

Year-round water conservation measures are part of District rules (Chapter 40D-22, Florida Administrative Code). The rule primarily focuses on allowable irrigation practices, including lawn and landscape watering that are in place when there is no drought or other declared water shortage. The District generally uses the term "measures" instead of "restrictions" to distinguish the year-round practices from stricter watering limitations that can be imposed during a water shortage. These practices are meant to reduce wasteful irrigation habits and to help condition lawns for drought survival.

Water Shortage Plan/Orders

Water shortage orders are temporary water use restrictions and other requirements that are declared in accordance with a state-mandated water shortage plan. This plan is included in a District rule (Chapter 40D-21, Florida Administrative Code) that describes how the agency will monitor hydrologic conditions and make decisions to manage the impact of droughts and other water shortages. Management strategies include four phases of response and additional actions that can be implemented in emergency situations.