WITHLACOOCHEE REGIONAL WATER SUPPLY AUTHORITY

Board Meeting Package

November 8, 2023
3:30 p.m.

Meeting Location:

Lecanto Government Building
Room 166
3600 W. Sovereign Path
Lecanto, Florida 34461

Withlacoochee Regional Water Supply Authority

Board of Directors

Effective May 2023

Office	***Board Members***
Chair	The Honorable Jeff Kinnard
Vice Chair	The Honorable Eliza-BETH Narverud
Treasurer	The Honorable Craig Estep

Jurisdiction	***Board Members***
Citrus County	The Honorable Rebecca Bays
	The Honorable Jeff Kinnard
Hernando County	The Honorable Jerry Campbell
	The Honorable Eliza-BETH Narverud
Marion County	The Honorable Kathy Bryant
	The Honorable Michelle Stone
	The Honorable Carl Zalak
Sumter County	The Honorable Craig Estep
	The Honorable Don Wiley
City of Belleview	The Honorable Robert “Bo” Smith
City of Brooksville	The Honorable David Bailey
City of Bushnell	The Honorable Dale Swain
City of Crystal River	The Honorable Ken Brown

Meeting Dates

The schedule of meetings for the 2023-2024 fiscal year are as follows:

November 8, 2023
January 24, 2024
March 20, 2024
May 15, 2024
July 24, 2024
September 18, 2024

WITHLACOOCHEE REGIONAL WATER SUPPLY AUTHORITY

October 30, 2023

MEMORANDUM

To: Water Supply Authority Board of Directors and Interested Parties

From: Suzannah J. Folsom, Executive Director

Subject: Withlacoochee Regional Water Supply Authority Board of Directors Meeting

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The Withlacoochee Regional Water Supply Authority will hold a regular business meeting on **Wednesday, November 8, 2023 3:30 p.m., at the Lecanto Government Center Building, Room 166, 3600 Sovereign Path, Lecanto, FL 34461.**

Enclosed for your review are the following items:

- Agenda
- Minutes of September 20, 2023
- Board Package*

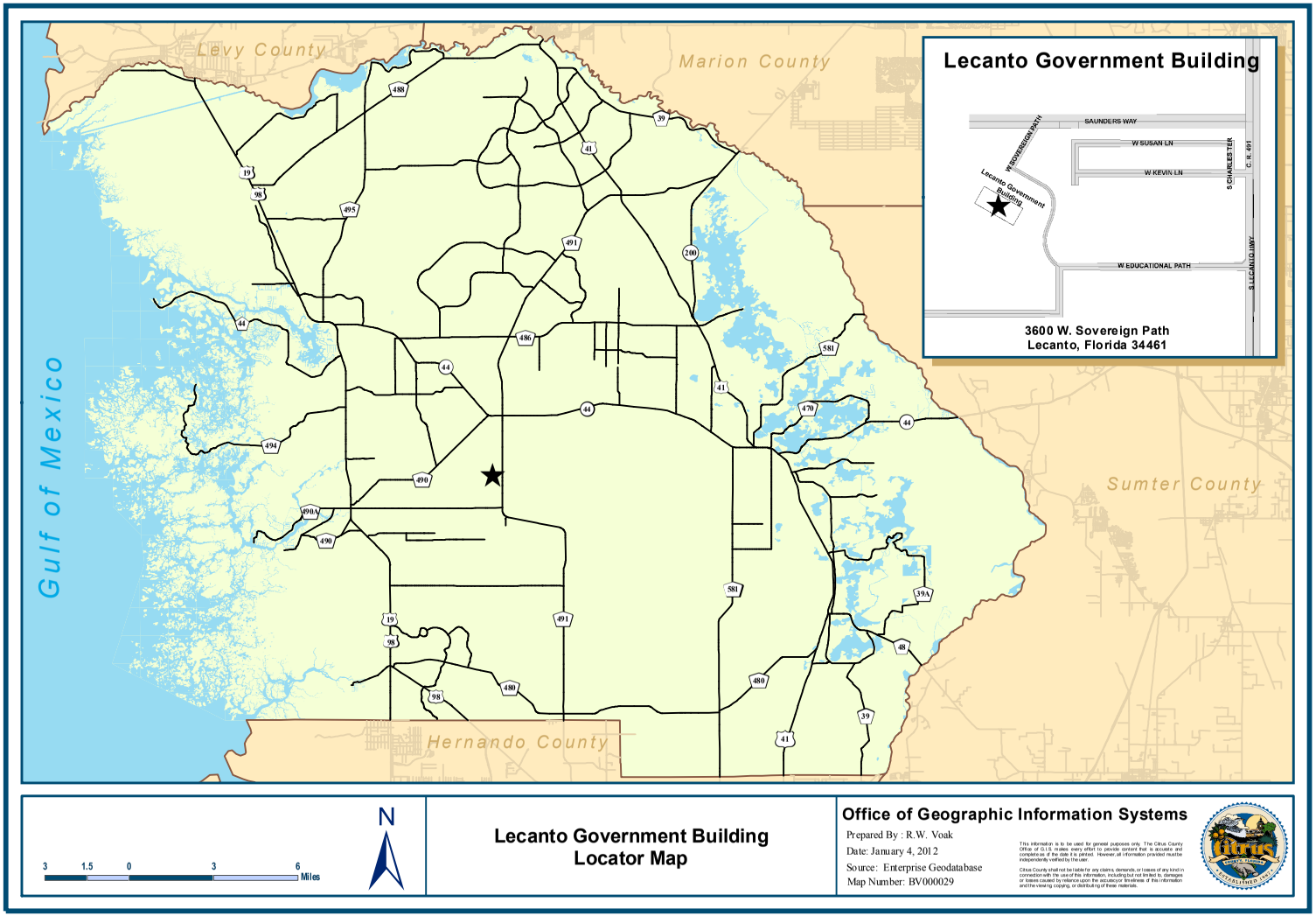
Please note that if a party decides to appeal any decision made by the Board with respect to any matter considered at the above cited meeting, that party will need a record of the proceedings, and for such purpose, that party may need to ensure that a verbatim record of the proceedings is made, which record includes that testimony and evidence upon which the appeal is to be based.

Enclosures

* Copies of the Board Package are available through the Internet. Log on to www.wrwsa.org.
  - On the Authority's Home Page go to the left side of the page and click on "Meetings."
  - On the slide out menu is a button for the current Board Package.
  - Click on the Board Package to download and/or print.

Lecanto Government Building
3600 W. Sovereign Path, Suite 228
Lecanto, FL 34461

(352) 527-5795
Fax: (352) 527-5797
wrwsa@wrwsa.org



Driving Directions to 3600 W. Sovereign Path, Lecanto Government Building

From Brooksville:

- Go North on N. Main St. toward S. Broad St./E. Jefferson St.
- Take the 1st Left onto S. Broad St./W. Jefferson St.
- Turn Right onto US 98/Ponce De Leon Blvd.
- Turn Right onto CR 491 toward Lecanto (about 13.5 miles)
- Turn Left on W. Educational Path (traffic signal)
- Turn right at the Park onto W. Sovereign Path; continue to the right to the Lecanto Government Building

From Ocala

- Go southwest on SR 200 into Citrus County
- Turn Right onto CR 491 (stay on 491 through Beverly Hills, crossing Hwy. 486 and SR 44)
- Turn Right on Saunders Way
- Turn Left onto W. Sovereign Path; follow to Lecanto Government Building

From Bushnell

- In Bushnell, Go West on FL-48W
- Turn Right onto US 41; continue to follow US 41 N
- Continue straight onto FL 44 W/W Main St.; continue straight on SR 44
- Turn Left onto CR 491
- Turn Right onto Saunders Way
- Turn Left onto W. Sovereign Path; follow to Lecanto Government Building

From Wildwood

- Go West on SR 44W; continue on SR 44 through Inverness
- Turn Left onto CR 491
- Turn Right onto Saunders Way
- Turn Left onto W. Sovereign Path; follow to Lecanto Government Building.

LGB

WITHLACOOCHEE REGIONAL WATER SUPPLY AUTHORITY
BOARD OF DIRECTORS MEETING

A G E N D A

November 8, 2023 -- 3:30 p.m.
LECANTO GOVERNMENT BUILDING -- ROOM 166
3600 W. Sovereign Path, Lecanto, Florida 34461

At the discretion of the Board, items may be taken out of order to accommodate the needs of the Board and the public.

Please note that if a party decides to appeal any decision made by the Board with respect to any matter considered at the above cited meeting, that party will need a record of the proceedings, and for such purpose, that party may need to ensure that a verbatim record of the proceedings is made, which record includes that testimony and evidence upon which the appeal is to be based.

Item 6.a.

Consent Agenda

Approval of Minutes

D R A F T

WITHLACOOCHEE REGIONAL WATER SUPPLY AUTHORITY
BOARD OF DIRECTORS

Minutes of the Meeting
September 20, 2023

TIME: 3:31 p.m.
PLACE: Lecanto Government Building
ADDRESS: 3600 W. Sovereign Path, Room 280, Lecanto, Florida 34461

The numbers preceding the items listed below correspond with the published agenda.

1. **Call to Order**
   Mr. Swain as the Board's most senior member called the Withlacoochee Regional Water Supply Authority (WRWSA) Board of Directors meeting to order at 3:31 p.m. and requested a roll call.

4. **Pledge of Allegiance** – Mr. Swain led those present in reciting the Pledge of Allegiance.

2. **Roll Call**
   Ms. Suzannah Folsom, WRWSA Executive Director, called the roll and a quorum was declared present.

BOARD MEMBER PRESENT
David Bailey, Brooksville City Councilor
Rebecca Bays, Citrus County Commissioner
Ken Brown, Crystal River City Councilor
Jerry Campbell, Hernando County Commissioner
Robert "Bo" Smith, Belleview City Commissioner
Dale Swain, Bushnell City Councilor
Don Wiley, Sumter County Commissioner

BOARD MEMBER(S) ABSENT
Jeff Kinnard, *Chair*, Citrus Co Commissioner
Beth Narverud, *Vice Chair*, Hernando County Commissioner
Craig Estep, *Treasurer*, Sumter County Commissioner
Kathy Bryant, Marion County Commissioner
Michelle Stone, Marion County Commissioner
Carl Zalak, Marion County Commissioner

BOARD ALTERNATE(S) PRESENT
Jody Kirkman, Marion County Utilities Dir

3. **Introductions and Announcements**

WRWSA STAFF PRESENT
Suzannah J. Folsom, PE, PMP, Executive Dir
Robert W. Batsel, Jr., General Counsel
LuAnne Stout, Administrative Asst.

WRWSA STAFF ABSENT – None

OTHERS PRESENT
Debra Burden, Citrus Co Water Conservation Mgr
Trevor Knight, Marion Co Water Resources Liaison
Liza Kreutz, Hazen and Sawyer
Ron Patel, Hernando County
Joseph Quinn, SWFWMD Water Supply Project Mgr
Sharon Simington, Hazen and Sawyer

- Ms. Folsom requested approval for consideration of two additional items. **Mr. Kirkman moved, seconded by Mr. Brown, for the Board to consideration the following two items. Motion carried unanimously.**
  (a) Marion County requested that $3,168.75 of WRWSA reimbursement be shifted from the Landscape & Irrigation Rebate Program line item to the Water Conservation Billboards line item. **Ms. Bays moved, seconded by Mr. Smith, to approve this item. Motion carried unanimously.**
  (b) Staff requested approval to sign the new Website Services Contract ($1,000 website design and $200 monthly maintenance). M**r. Swain moved, seconded by Mr. Kirkman, to approve this item. Motion carried unanimously.**

5. **Public Comment** – There being no members of the audience requesting to address the Board, Mr. Swain closed public comment.

6. **Consent Agenda**
   - **a. Approval of Minutes** – The July 26, 2023, draft minutes were provided in the Board's meeting materials and recommended for approval as presented.
   - **b. Public Officials Liability Insurance Policy** – Staff recommended approval of the renewal policy.
   - **c. Bills to be Paid** – Staff recommended ratification of August ($22,492.6) and approval for September ($89,750.34).
   - **d. Third Quarter Financial Report** – Staff recommended acceptance of the report.
   - **e. Fiscal Year 2023-24 Calendar of Board Meeting Dates** – Staff recommended approval of the following dates: November 8, 2023; January 24, 2024; March 20, 2024; May 15, 2024, July 24, 2024; and September 18, 2024. Meetings will be held at 3:30 p.m. in the Lecanto Government Building, Room 166, 3600 West Sovereign Path, Lecanto, Florida 34461.

Mr. Swain moved, seconded by Mr. Smith, to approve the Consent Agenda Items 6.a., 6.b., 6.c., 6.d. and 6.e., as presented. Motion carried unanimously.

7. **As-Needed Technical and Engineering Services – Authorization to Issue** . . .
Ms. Suzannah Folsom, WRWSA Executive Director, presented this item. Staff recommends issuance of the following Work Orders for the General Engineering and Technical Services:

> Applied Sciences Consulting, Inc. – The purpose of this Work Order is to provide general engineering and technical support services to the Authority Board and Executive Director on an as-needed basis. The Work Order amount is $10,000.
>
> Kimley-Horn and Associates, Inc. – The purpose of this Work Order is to continue ongoing representation of the Authority on the Springs Coast Technical Advisory Board. The Work Order amount is $10,000.

A copy of each proposed Work Order was included as Exhibits to this item in the Board's meeting materials.

Mr. Swain moved, seconded by Mr. Kirkman, to authorize the Executive Director to issue (1) Work Order 2024-01 to Applied Sciences Consulting, Inc. in an amount not to exceed $10,000 for the period through September 30, 2024; and (2) Work Order 2024-02 to Kimley-Horn and Associates, Inc. in an amount not to exceed $10,000 for the period through September 30, 2024. Motion unanimously approved.

8. **Legislative Report – Information of the Expanded State of Florida Water Quality Funding Program**
Ms.Suzannah Folsom, Executive Director, introduced this item. In the 2023 legislative session, HB 1379 / SB 1632 Environmental Protection passed. It included and expansion of the Wastewater Grant Funding program, renaming it as the Water Quality Grant Funding Program, with a larger funding budget to help municipalities address many of the new environmental protection requirements in the Bill.

Ms. Sharon Simington, Southeast Regional Funding Program Leader at Hazen and Sawyer, presented on this expanded funding program and how it can be utilized. She addressed questions raised by the Board.

This item was for the Board's information only and no action was required.

9. **Regional Water Supply Plan Update – Status Report**
Ms. Lisa Krentz with Hazen and Sawyer presented this status report. The Authority entered into a cooperative funding agreement with the Southwest Florida Water Management District (SWFWMD) in December 2022 (23CF0004079) for Regional Water Supply Plan Update project. The Authority entered into a contract with Hazen and Sawyer in January 2023 to undertake the project.

With the assistance of the SWFWMD, St. Johns River Water Management District, and a Technical Advisory Committee comprised of representatives from member governments and public supply utilities in the four-county region, the Plan Update is being coordinated. A kickoff meeting for the project was held on March 2, 2023. The consultant has been working on population and demand projections, and conservation reuse evaluations.

Task	Description	Schedule	% Complete
1	Project Management and Stakeholders Engagement	February 2023 – September 2024	25
2	Data Collection and Processing	February 2023 – January 2024	75
3	Population and Demand Estimates	February 2023 – July 2023	20
4	Water Conservation and Reuse Evaluation	February 2023 – August 2023	10
5	Water Sources Evaluation	February 2023 – September 2023	0
6	Water Supply Project Options	October 2023 – January 2024	0
7	Organization, Funding and Governance Requirements	February 2024 – April 2024	0
8	Recommendations	February 2024 – September 2024	0

Ms. Krentz presented the Population and Demand projections at the September Board of Directors meeting and addressed the Board's questions.

This item was for information only and no action was required.

10. **Attorney's Report** – Mr. Batsel had no report to provide.

11. **Executive Director's Report** – Ms. Folsom presented the following items which required no action.

    a. **Charles A. Black Water Use Permit Renewal** – The Wellfield WUP number 7121.006 was approved and issued for the quantity and duration requested.
    b. **Water Use Permit Demand Summary -** A summary was in the Board's meeting materials. .
    c. **Water Management Information System Water Use Permit Notifications –** A list of notifications was included in the Board's meeting materials.
    d. **Irrigation Audit Program – Status Report** – A progress update on the three residential irrigation evaluation programs that WRWSA is currently ongoing:
        (1) Phase 6 Residential Irrigation Evaluation Program – SWFWMD (final report will be completed by December 2023),
        (2) Phase 7 Residential Irrigation Evaluation Program – SWFWMD (26 percent of the planned evaluation have been completed to date and program to be completed in December 2025); and
        (3) Residential Irrigation Evaluation Program Pilot – SJRWMD – WRWSA has received approval for the program from the SJRWMD and is preparing to start in October 2023. WRWSA will be working with Marion County (40 participants) and the City of Belleview (20 participants) to identify the highest residential users to be a part of this program.
    e. **Correspondence** – Several items were included in meeting materials.
    f. **News Articles** – Several articles were included in meeting materials.

12. **Other Business** – Ms. Folsom informed the Board that the FS/AWWA Region IV Best Tasting Drinking Water contest and barbecue is scheduled for Friday, October 27 at the FWC Crystal River National Wildlife Center. Judges are needed if anyone would like to volunteer.

13. **Next Meeting Time and Location**
    - Next Regular Board Meeting – November 8, 2023, at 3:30 p.m. at the Lecanto Government Building, Room 166. (*Meeting moved one week earlier due to Florida Association of Counties Legislative Conference being held November 15- 17.)*

14. **Adjournment** – Mr. Swain moved, seconded by Mr. Campbell, to adjourn and it carried unanimously. Meeting adjourned at 4:42 p.m.

_____
Jeff Kinnard, Chair

_____
Suzannah J. Folsom, Executive Director

Item 6.b.

Consent Agenda

Bills to be Paid

October bills in the meeting materials;
November bills to be provided at meeting.

Withlacoochee Regional Water Supply Authority
3600 W. Sovereign Path, Suite 228, Lecanto, Florida 34461

Bills For Payment
10/18/2023

Administrative Invoices	Invoice Number(s)	Invoice Date	Amount
Suzannah J. Folsom, PE, Executive Director	1277	10/2/2023	**$7,581.68**
Rob Batsel, General Counsel	7258	9/30/2023	**$540.50**
C. LuAnne Stout, Admin Asst (Admin Services)	9-Sep-23	10/2/2023	**$3,315.00**
David Bailey (Sept Bd Travel)		9/20/2023	**$19.58**
Robert "Bo" Smith (Sept Bd Travel)		9/20/2023	**$36.49**
Dale Swain (Sept Bd Travel)		9/20/2023	**$27.59**
Don Wiley (Sept Bd Travel)		9/20/2023	**$27.59**
FL Dept of Economic Opportunity (Special District Fee)	88556	10/2/2023	**$175.00**
Nature Coast Web Design & Marketing (Contract/Monthly)	17477/17511	9/7,25/2023	**$1,200.00**
Citrus Chronicle (Yearly Cal Bd Mtgs)	199DDC1	10/1/2023	**$67.55**
Tampa Bay Times (Yearly Cal Bd Mtgs)	309562	10/1/2023	**$78.00**
Truist Bank Business Card Statement	10.2.2023	10/2/2023	**$580.80**
Total Administrative Invoices			**$13,649.78**

Water Supply Studies and Facilities	Contract/ Budget	Balance Remaining	Current	
2023 General Services Contract	$20,000.00			
Work Order 2023-01 INTERA Incorporated	$10,000.00	$10,000.00		
Work Order 2023-02 Hazen and Sawyer	$10,000.00	$1,850.00		
FY22-23 Water Conservation Grants Program	$140,000.00			
Citrus County	$35,075.00	$35,075.00		
Hernando County	$49,750.00	$49,750.00		
Marion County	$14,081.25	$5,739.17		
Sumter County	$23,000.00	$23,000.00		
Regional Water Supply Plan Update (Q324)	$350,000.00	$243,081.40		
Phase 7 Irrigation Program (Q306)	$102,000.00	$62,396.25	**$7,105.00**	(1)
FY22-23 Total Project Invoices	$612,000.00	$430,891.82	**$7,105.00**	

Total Bills to be Paid	**$20,754.78**

State Board of Administration	**Transfer from SBA2 to SBA1**	**$13,649.78**
Deposit to Truist (Citrus BOCC Q306 Coop Match)	**Subtract from SBA1 Transfer**	**$1,630.50**
State Board of Administration	**Transfer from SBA1 to Truist Bank**	**$19,124.28**

Notes:

(1) Phase 7 (Q306) - Irrigation Audits

Jack Overdorff, ECO Land Design	$6,255.00	Invoice 577
C. LuAnne Stout, Admin Services	$850.00	Invoice 9-Sep-Q306-2023
	$7,105.00	

Regional Irrigation System Evaluation Project Phase VI - Draft Report

Mrs. Suzannah Folsom, WRWSA, will present this item.

Phase VI of the Authority's Regional Irrigation System Evaluation Program began in December 2020 as part of the Authority's ongoing water conservation initiative. Phase VI of the Irrigation Audit Program was funded by and completed in cooperation with the Southwest Florida Water Management District (SWFWMD), Citrus, Hernando, and Marion counties and the North Sumter County Utility Dependent District (NSCUDD) and the Villages Community Center Development District (VCCDD).

The draft report details the number of evaluations completed, the estimated water saved, and the cost effectiveness of this phase of the program. Phase VI is on time and within budget. A summary of the major findings of the Phase VI effort will be presented at the meeting. The Phase VI draft report is provided as an exhibit for review and comment. It has also been provided to the cooperating utilities and SWFWMD for review

See Exhibit – Draft Report

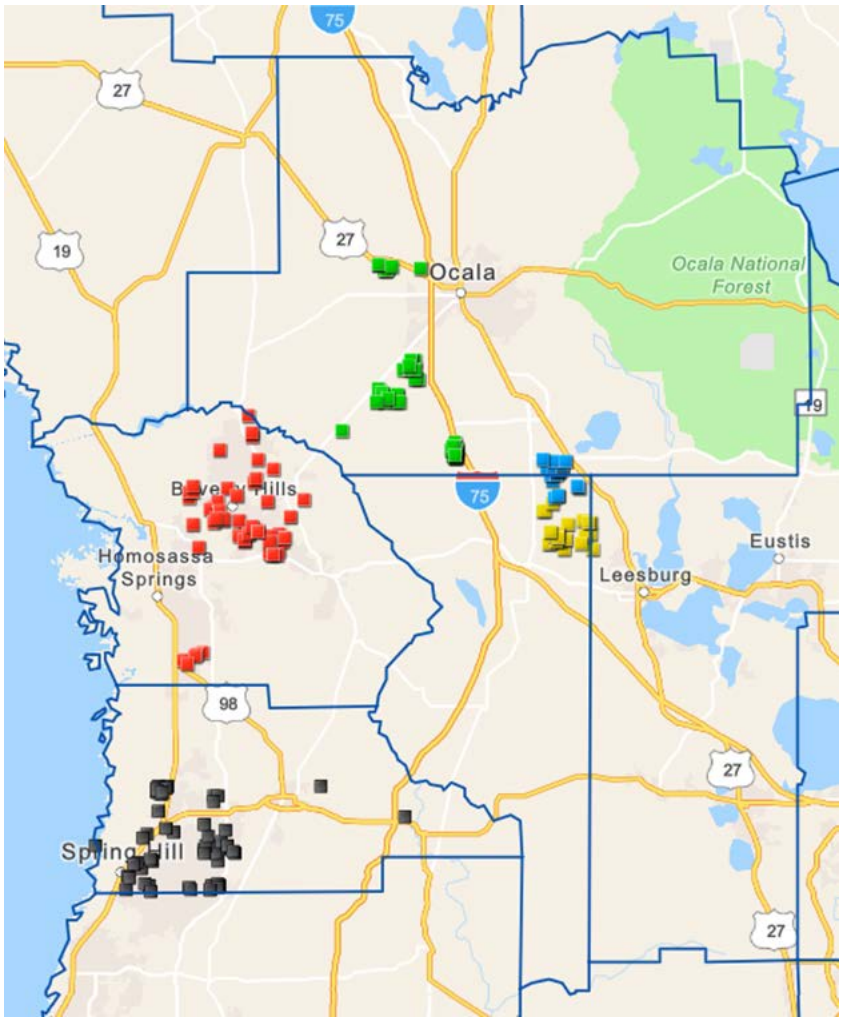
Staff Recommendation:

Staff will incorporate any comments received by the Board, the cooperating utilities, and SWFWMD into a final report. Staff is requesting authorization to incorporate comments on this draft report into a final report and submit it to SWFWMD by December 31, 2023.

DRAFT

PHASE VI

IRRIGATION SYSTEM AUDIT PROGRAM (Q138)



Cooperative Funding Initiative Q138

between the

Southwest Florida Water Management District

and the

Withlacoochee Regional Water Supply Authority

Acknowledgements Page

Cooperative Funding Initiative Q138
between the

Southwest Florida Water Management District
and the

Withlacoochee Regional Water Supply Authority

With funding by:

Southwest Florida Water Management District

WITHLACOOCHEE REGIONAL WATER SUPPLY AUTHORITY

and

Citrus County Water Resources

Hernando County Utilities

Marion County Board of County Commissioners

North Sumter County Utility Dependent District

Villages Community Center Development District

Withlacoochee Regional Water Supply Authority

Irrigation System Audit and Education Phase VI Project (Q138)

Table of Contents

Withlacoochee Regional Water Supply Authority
Irrigation System Evaluation and Education Program Phase VI (Q138)
A Cooperative Funding Initiative

1. Introduction

The Withlacoochee Regional Water Supply Authority (Authority) and several local water utilities partnered with the Southwest Florida Water Management District (District or SWFWMD) to provide a water conservation program for single-family residential customers of the water utilities. Under the District's Cooperative Funding Initiative (Initiative), the Authority applied for matching funds to conduct the water conservation program. Single-family residential customers of the water utilities were eligible to apply for and receive a free irrigation system evaluation. Citrus, Hernando, and Marion County utilities, as well as the North Sumter County Utility Dependent District (NSCUDD) and the Villages Community Center Development District (VCCDD) participated in the program. The utilities identified those single-family residential customers with the highest water use for potential participation. The evaluations were designed to assess residential irrigation systems and to provide recommendations for conserving water. Recommendations included the use of Florida-friendly™ landscaping techniques, appropriate rainy season or dry season scheduling, efficient irrigation application systems, and improvements to the irrigation system. A professionally certified irrigation contractor developed these recommendations. In numerous cases the Authority's contractor, at the direction of the participating local utility, completed "Enhanced" evaluations.

2. Program Description

This project targeted existing high usage, fully operational single-family residential irrigation systems to increase water savings and water quality protection.

Participating utilities had the option of having "Core" or "Enhanced" evaluations performed. Core evaluations included an in-depth inspection of each participant's irrigation system, by zone, followed by a written report to the resident that included efficiency measures per zone, recommendations for optimizing the use of water outdoors through Florida-Friendly Landscaping™ practices, and other efficient irrigation best management practices. The timing and run cycles for each zone were analyzed and changes either recommended or made with the homeowners' permission. A new rain sensor was installed or the existing one repaired if the existing sensor was non-functional. Each participant also received information and brochures on measures to conserve outdoor water use as part of the educational component designed to maintain the water savings over time (see Appendix C).

Enhanced evaluations involved not only the core services described above, but also in some cases installation of an advanced Water Sense labeled evapotranspiration (ET) controller. In Citrus County the enhanced improvements were limited to just additional ET controllers, per Citrus County staff reference; however, in Hernando and Marion County enhanced evaluations also included performing additional irrigation system modifications such as installing an ET sensor device (instead of a standard rain sensor), replacing broken or mixed sprinkler heads, capping unnecessary heads, raising low irrigation heads, and straightening crooked irrigation.

Approximately one year after the initial evaluation, a sample of 25% of the Core evaluation participants were offered a follow-up inspection. For core evaluations, the reinspection determined how many changes were made by the homeowner. The contractor provided an estimate of changes made based on the original recommendations. For enhanced evaluations, the reinspection evaluated subsequent changes by the homeowner and recommendations not implemented by the contractor during the original evaluation. Each residential account was tracked by the utility to show the actual amount of water used one year prior to the evaluation and for one year following the evaluation. The utility water use data is the primary method used to measure the water savings. While the program was designed to measure water use for one year before and after the evaluation, the utilities have the ability to further track the water use over time. The Authority administered the program and prepared this report.

2.1 Objectives

The District's *Regional Water Supply Plan* states that lawn and landscape irrigation can comprise 35 to 60 percent of the residential water used in the Public Supply sector in some of the larger utility services areas in the WRWSA area. This component of the public supply demand represents a significant opportunity for water savings. The water conservation specialists at each of the participating utilities also identify residential outdoor water use as an

area with the greatest opportunity for water savings. The regional irrigation evaluation program was initiated to assist participating utilities to reach, maintain and surpass the District's maximum compliance water use rate of 150 gallons of water per capita per day (gpcd), to allow existing sources of water to meet the needs of a growing customer base, and to reduce current and future water demands.

The Phase VI Project Plan called for 136 core and 80 enhanced evaluations to be conducted, for a total of 216, with approximately 25% or 54 receiving a follow-up inspection. The actual results were 75 core evaluations, 157 enhanced evaluations, for a total of 232, with 20 follow-ups. These results are further explained below.

2.2 Methodology

The Phase VI program consisted of four major components:

a. Onsite investigations: 75 core irrigation evaluations and 157 enhanced evaluations.
b. Follow-up evaluations for up to 25 percent of the core evaluation participants: 20 follow-ups were completed for core evaluation sites.
c. Recommendations and educational materials provided to each participant to achieve more efficient irrigation.
d. Analysis of water use from the utilities' data for each participant for one year prior to the on-site evaluation and one year after the evaluation.

The program Agreement was signed on October 28, 2020. The following paragraphs describe the implementation of the Phase VI Program.

Initiation. The Authority's Board selected Eco Land Design, Jack Overdorff, as the irrigation system contractor and entered into a contract with Eco Land Design on September 16, 2020, in anticipation of entering into the Cooperative Funding Agreement with the District. The contractor was responsible for conducting the onsite evaluations, preparing a written report for each homeowner that contained a summary of the evaluation, recommendations for improving irrigation efficiency and providing follow-up inspections to approximately 25 percent of the core evaluation participants. Phase VI evaluations began in December 2020.

Process. Each participating utility, including Citrus, Hernando and Marion county utilities, the VCCDD and NSCUDD assigned a staff person to manage their participation in the project and coordinate with the Authority's staff. The local utility personnel directed their efforts to target the highest water users in each utility. In Marion County, only single-family residential customers located in the SWFWMD, or west of Interstate 75, were eligible to participate since the District was co-funding the program and required participants to be located within the District's boundaries. Directing the program toward the highest users was determined to be the most effective way to reduce overall water use and to achieve the highest return for the money spent. The local utility staff provided the Authority with a list of names and addresses for direct contact, as well as their average monthly water use and the water rates for that utility. The Authority created mail merge files specific to each utility, including potential savings in dollars

per month for each customer by participation in the program. Invitation letters, associated application forms, a program description and a postage paid return envelope were mailed by the Authority with assistance from SWFWMD (see Appendix A for sample materials). Table 2.1 summarizes the response rate for each utility:

Table 2.1 Response Rates by Utility

Utility	Response Rate
Citrus	N/A*
Hernando	10%
Marion	9%
VCCDD (LSSA)	23%
NSCUDD (VWCA)	20%

*Citrus County staff handled the outreach for the participants

Response rates to these mailings ranged from a low of 9% in Marion County to a high of 23% in the VCCDD. Citrus County elected to use their own staff to complete all of the outreach to engage participants.

Because of the decision to focus on the highest water users, the Phase VI project was not generally advertised, and no press releases were issued.

3. Program Summary

3.1 Overall Summary of Irrigation System Evaluations

The first on-site evaluation was conducted on December 17, 2020. The on-site portion of the program extended through April 25, 2022, lasting a total of 16 months. A total of 232 irrigation system evaluations were completed within the five utilities out of a program goal of 216, or 107%. Table 3.1 summarizes the irrigation system evaluations completed by participating utility. Citrus, Hernando, and Marion County utilities elected to have both core and enhanced audits conducted. As the project progressed, significantly more audits were performed as enhanced audits and fewer as core audits within these counties than was originally planned. In the VCCDD and NSCUDD only core audits were budgeted.

Table 3.1 Irrigation System Evaluation Summary

Participating Utility	Core Audits		Enhanced Audits		Total Audits	
	Target Number of Evaluations	Completed Evaluations	Target Number of Evaluations	Completed Evaluations	Target Number of Evaluations	Completed Evaluations
Citrus	28	29	25	28	53	57
Hernando	24	1	20	59	44	60
Marion	36	1	35	69	71	70
VCCDD (LSSA)	16	20	0	0	16	20
NSCUDD (VWCA)	32	24	0	1	32	25
Total	**136**	**75**	**80**	**157**	**216**	**232**

3.2 Rain Sensors Installed

A total of 185 rain sensors were installed, repaired, or replaced. 79.7% of all on-site evaluations needed to have the rain sensor installed, repaired, or replaced. Table 3.2 shows the breakout of rain sensor installation by utility. Only 20.3% of the irrigation evaluation locations had existing functional rain sensors. Installation of a new rain sensor was counted if the sensor had to be replaced entirely or in part. If the sensor was re-set or moved to a new location, it was counted as an operational sensor.

Table 3.2 Rain Sensor Installation per Utility

Utility	Total Evaluations	Sensors Installed or Repaired/Replaced		Functional Sensors	
		Number	Percent	Number	Percent
Citrus	57	50	87.7%	7	12.3%
Hernando	60	47	78.3%	13	21.7%
Marion	70	54	77.1%	16	22.9%
VCCDD (LSSA)	20	15	75.0%	5	25.0%
NSCUDD (VWCA)	25	19	77.0%	6	24.0%
TOTALS	**232**	**185**	**79.7%**	**47**	**20.3%**

3.3 Follow-up Evaluations

The Agreement between the Authority and the District, as amended, stated that follow-up evaluations be conducted on approximately 25 percent of the core irrigation evaluation sites. This 25% target was applied at the utility level, resulting in a total of 20 follow-up evaluations at core evaluation sites. The follow-up inspections were designed to occur approximately 12 months following the initial evaluation. Over the course of a year, customers had the opportunity to implement some or all of the recommendations and to establish more efficient irrigation practices. During the follow-up inspection, the contractor reviewed each of the sites based on the initial evaluation. He determined how many changes were made and provided a percentage of recommendations followed. These items were noted on the original inspection form and provided to the homeowner, to the Authority, and to each utility. The follow-up evaluations ended in September 2022.

Table 3.3 summarizes the total number of completed follow-up evaluations by utility.

Table 3.3 Follow-up Evaluations by Utility

Utility	Number of Core Evaluations Completed	Target Number of Follow-Ups Based on Core Evaluations Completed	Actual Follow-Ups
Citrus	29	8	8
Hernando	1	1	1
Marion	1	1	0
VCCDD	20	5	5
NSCUDD	24	6	6
Totals	**75**	**21**	**20**

3.4. Total Water Savings

For this Phase VI program, 232 single-family residential irrigation systems were evaluated. For each of these participants, monthly water use data was collected by the utility for one year prior to the month in which the evaluation was performed and one year after the evaluation. This data is shown in Appendix E. These data show a number of participants had zero or near zero values for one or more months. These zero or near zero values were sometimes associated with a customer moving or having their water turned off while away.

Since the purpose of the pre- and post-audit water use analysis is to evaluate the impact the audit and associated educational program have had on the customer's water use, the monthly water use of some customers was adjusted to reflect these other factors that would otherwise distort the analysis. Accounts with 6 months or more of zero or near zero monthly water use values in either the pre- or post-evaluation period were excluded from the analysis. For those accounts with five months or less of missing, zero or near zero monthly values in either the pre-

or post-evaluation period, the missing or low monthly values were adjusted. These data were adjusted by calculating the average of the remaining monthly values within the pre- or post-evaluation period and applying that average to the missing, zero or near zero monthly values. In addition, 3 customers had one month of abnormally high water use, which was adjusted in a similar manner whereby the average monthly value of the remaining months in that period was applied to that month(s) of abnormal high use. 21 customers were removed from the analysis due to 6 or more months of zero or missing water usage data. The adjusted data is shown in Appendix E.

Table 3.4 shows total amount of water used in the pre-evaluation and post-evaluation periods by these accounts and the water saved. The data is shown first for core audits and then enhanced audits, and finally for the total program.

The types of evaluations completed varied throughout the WRWSA service area based on the preferences of the participating utilities. Enhanced evaluations in Hernando County and Marion County included replacing broken or mixed sprinkler heads, capping unnecessary heads, raising low irrigation heads, and straightening crooked irrigation heads where appropriate. In Citrus County the Enhanced evaluation only included the core audit components plus a Water Sense Controller and did not include additional repairs and adjustments to the irrigation system. In the VCCDD LSSA and NSCUDD VWCA only core evaluations were planned.

Water savings for the 69 core evaluations was approximately 5.68 million gallons for the year, or 25%. This represents 15,555 gallons per day and 225 gallons per account per day. Water savings for the 28 enhanced evaluations in Citrus County was approximately 2.39 million gallons for the year, or 31%. This represents 6,560 gallons per day and 234 gallons per account per day. Water savings for the 112 enhanced evaluations in Marion and Hernando Counties was approximately 5.94 million gallons for the year, or 18%. This represents 16,279 gallons per day and 145 gallons per account per day. Total annual water savings for all 211 accounts was approximately 13.9 million gallons, or 38,085 gallons of water per day and 180 gallons per account per day, representing a 22% reduction in water use.

Table 3.4 Water Savings by Utility

Utility	Evaluations with Pre/Post Use	One Year Pre-Evaluation Water Use (in millions of gallons)	One Year Post-Evaluation Water Use (in millions of gallons)	One Year Water Saved (in millions of gallons)	Percent Water Saved	Gallons Per Day Saved	Gallons Per Account Per Day Saved
Core Evaluations:							
Citrus	29	9.19	6.80	2.39	26%	6,549	226
Hernando[1]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Marion[1]	N/A	N/A	N/A	N/A	N/A	N/A	N/A
VCCDD	19	6.11	4.36	1.75	29%	4,794	252
NSCUDD	21	7.17	5.64	1.54	21%	4,212	201
Subtotal	**69**	**22.5**	**16.8**	**5.68**	**25%**	**15,555**	**225**
Enhanced Evaluations with Water Sense Controller only (Citrus County) Subtotal:							
Citrus	28	7.69	5.30	2.39	31%	6,560	234
Subtotal	**28**	**7.69**	**5.30**	**2.39**	**31%**	**6,560**	**234**
Enhanced Evaluations with additional enhancements (Marion and Hernando County) Subtotal:							
Hernando	50	17.1	13.2	3.89	23%	10,649	213
Marion	62	15.6	13.5	2.06	13%	5,630	91
Subtotal	**112**	**32.6**	**26.7**	**5.94**	**18%**	**16,279**	**145**
Core and Enhanced Evaluations Total:							
Citrus	57	16.9	12.1	4.78	28%	13,109	230
Hernando	51	17.5	13.6	3.83	22%	10,491	206
Marion	63	15.8	13.8	2.00	13%	5,479	88
VCCDD	19	6.11	4.36	1.75	29%	4,794	252
NSCUDD	21	7.17	5.64	1.54	21%	4,212	201
Total	**211**	**63.5**	**49.6**	**13.9**	**22%**	**38,085**	**180**

[1] The data for the 1 core evaluation Marion County and 1 core evaluation in Hernando County were not able to be used as they had missing months of data.

3.5 Water Use Variables.

The total amount of water used for irrigation will vary over time for a variety of reasons. While this program did not attempt to control for changes in pre- and post- water use caused by factors other than implementation of the audit recommendations, it is important to recognize some of the other possible causal factors. Other factors include when homeowners make seasonal time adjustments or periodically turn the irrigation system off. Actual rainfall amounts varying over time and place is also a significant factor influencing water use. Rainfall amounts were examined for the pre and post periods for the four-county region (Marion County only within the SWFWMD) and are summarized in Table 3.5.

As can be seen, there is less rainfall in the post-audit period when compared to the pre-audit period. This would tend to cause outdoor water use to increase slightly for the post evaluation period. In addition, changes in watering restrictions within the local government may affect the amount and frequency of lawn irrigation, for example Citrus County implemented an ordinance for once a week watering in June 2020.

Table 3.5 Pre and Post Period Rainfall

Time Periods	Cumulative Rainfall (in)
Pre: December 2019 – April 2021	72.37
Post: December 2021 – April 2023	59.56
Difference	12.81

Data obtained from the SWFWMD Inverness Pool Station

3.6 Per Capita Water Savings

This water conservation program was initiated between the District and the Authority to assist utilities to meet, maintain, or surpass the SWFWMD's maximum compliance per capita rate of 150 gpcd required by the District. As shown in Table 3.6, the program resulted in a savings range of 47 to 106 gallons per capita per day, and a range of 13% to 31% reduction in per capita water use.

Table 3.6 Water Saved Per Capita

Utilities	Number of Accounts	Persons Per Household [1]	Pre-Evaluation Per Capita Use	Post-Evaluation Per Capita Use	Water Saved Per Capita Per Day	Per Capita % Reduction
Core Evaluations						
Citrus County	29	2.2	395	292	103	26%
Hernando County[2]	N/A	2.38	N/A	N/A	N/A	N/A
Marion County[2]	N/A	2.35	N/A	N/A	N/A	N/A
VCCDD	19	1.9	463	331	133	29%
NSCUDD	21	1.9	493	387	106	21%
Total	**69**	**2.10**	**425**	**317**	**107**	**25%**
Enhanced Evaluations – Citrus County						
Citrus County	28	2.2	342	236	106	31%
Total	**28**	**2.2**	**342**	**236**	**106**	**31%**
Enhanced Evaluations – Marion and Hernando Counties						
Hernando County	50	2.38	393	303	89	23%
Marion County	62	2.35	358	311	47	13%
Total	**112**	**2.36**	**338**	**277**	**62**	**18%**

[1] For Citrus, Hernando, and Marion Counties, 2010 Census. American Fact Finder, "Community Facts." *Table DP-1. Profile of General Population and Housing Characteristics: 2010: Average household size*. Retrieved from www.factfinder2.census/gov on 1/22/2014. The average household size for Hernando and Marion counties is calculated for the entire county. The average household size for Citrus County is for the zip code area, retrieved from the zip code tabulation provided by the US Census Bureau. For VCCDD and NSCUDD provided by Arnett Environmental, 2019.

[2] The data for the 1 core evaluation Marion County and 1 core evaluation in Hernando County were not able to be used as they had missing months of data.

3.7 Program Costs

The total program costs were budgeted for $121,200 pursuant to the Agreement. Total program expenditures were $117,277 or 97% of the original budget. The on-site evaluation expenses averaged $316 per core evaluation with a total cost of $23,706, and $506 per enhanced evaluation with a total cost of $79,471. The project included an administrative fee of $50 per evaluation, for a total cost of $11,600. Marketing and outreach costs were $0 because SWFWMD performed the mailings. The cost for the follow-up inspections was $2,500.

Pursuant to the Agreement, the District provided 50 percent of the total funding, not to exceed $60,500. The Authority and the participating utilities shared the other half. The Authority was responsible for 25 percent with each utility contributing 25 percent of the total cost for their respective portion of the program. In addition, the participating utilities provided critical support by identifying high water users as potential participants, contacting customers, and assisting with analyzing the data.

Table 3.7 shows the cost of the program among the various funding entities for each major component of the program. Costs are shown for the District, the total amount for each utility (Authority and utility combined), and the total cost per component. The actual direct cost to each utility is shown on the last row of the table. This is the program cost to each utility after subtracting the funds provided by the Authority. The Authority's total final cost is $29,319.

Table 3.7 Expenditures Per Utility

Irrigation Evaluation Program Costs								
		WRWSA						
Item	SWFWMD	Citrus	Hernando	Marion	VCCDD	NSCUDD	Subtotal	Total
Irrigation Evaluations	$51,588	$28,689	$27,742	$33,492	$5,640	$7,614	$51,588	$103,177
Administration	$5,800	$2,850	$3,000	$3,500	$1,000	$1,250	$5,800	$11,600
Marketing	$0*	$0	$0	$0	$0	$0	$0	$0
Follow-up Inspections	$1,250	$1,000	$125	$0	$625	$750	$1,250	$2,500
Total	$58,638	$32,539	$30,867	$36,992	$7,265	$9,614	$58,638	$117,277
Final Utility Cost (50% WRWSA Cost)		**$8,135**	**$7,717**	**$9,248**	**$1,816**	**$2,404**	**$29,319**	

*Mailings completed by SWFWMD

3.8 Costs for Enhanced and Core Audits

Table 3.8 shows the total cost by utility summarized for enhanced and core audits. The average cost for a core audit was $366, while the average cost for an enhanced audit (Citrus County) was $712, and the average cost of an enhanced audit (Hernando and Marion County) was $523. The average cost for all evaluations in the Phase VI program was $495.

Table 3.8 Costs for Enhanced and Core Audits

	Number of Audits	Total Cost	Audit Cost Only / Audit	Total Cost / Audit
Costs for Core Evaluations				
Citrus	29	$11,606	$351	$401
Hernando	1	$370	$320	$370
Marion	1	$408	$358	$408
VCCDD (LSSA)	20	$6,640	$282	$332
NSCUDD (VWCA)	24	$8,432	$301	$351
Total	**75**	**$27,456**	**$316**	**$366**
Costs for Enhanced Evaluations with Water Sense Controllers Only (Citrus County)				
Citrus	28	$19,934	$662	$712
Total	**28**	**$19,934**	**$662**	**$712**
Costs for Enhanced Evaluations with Additional improvements (Hernando and Marion County)				
Hernando	59	$30,372	$465	$515
Marion	69	$36,583	$480	$530
Total	**128**	**$66,955**	**$473**	**$523**
Combined Evaluation Costs				
Citrus	57	$31,539	$504	$554
Hernando	60	$30,742	$462	$512
Marion	70	$36,992	$478	$528
VCCDD (LSSA)	20	$6,640	$282	$332
NSCUDD (VWCA)	25	$8,769	$301	$351
Total	**232**	**$114,777**	**$445**	**$495**

3.9 Cost Effectiveness

The cost effectiveness can be calculated using the SWFWMD method of benefit/cost analysis. The benefit/cost calculations are summarized below, with additional calculation detail in Appendix G.

Table 3.9: Cost Effectiveness Calculation Summary

Evaluation Type	Cost/Benefit Calculation ($/Kgal)
Core Evaluations	$1.21
Enhanced Evaluation (Citrus County)	$2.09
Enhanced Evaluation (Hernando and Marion Counties)	$2.82
All Evaluations	**$2.04**

The enhanced audits with the additional Water Sense Irrigation Controllers appear to be more cost effective than the core audits, while the enhanced audits with the additional irrigation system adjustments and improvements included appear to provide a lesser impact than core audits for each dollar spent.

4. Customer Implementation

The program included the Authority's contractor revisiting approximately 25 percent of each utility's participating customers to inspect how recommendations have been implemented and other changes the homeowners may have made to their irrigation systems since the evaluation was performed. Each follow-up evaluation included an estimate of the changes made by the customer based on the original evaluation and recommendations provided. A sample of a complete evaluation is contained in Appendix B. The evaluation form was used to provide a written set of recommendations to each customer. On the follow-up inspection, the contractor used the last column of the form to note whether changes were implemented. The results of the follow-up inspections are included in this section.

4.1 Implementation Rates for Efficiency Recommendations

About a year after the first on-site evaluation, the irrigation contractor began scheduling follow-up appointments with customers. He reviewed the irrigation system on each site using the original written evaluation. Based on the changes made to the system relative to the written evaluation and its recommendations, an implementation rate was determined for completion of water conservation measures (Section 3.3 covers the number of follow-up evaluations). The implementation rate is not necessarily indicative of the potential or actual water savings. Some changes to system components may have a greater impact on one system than another depending on the severity of the particular issue and the corresponding changes to the systems. Table 4.1 summarizes the follow-up evaluations conducted for participants within each utility as well as the average for enhanced, core and all follow-ups. Appendix F summarizes the follow-up inspections.

Table 4.1 Summary of Follow-up Findings

Utility	Number of Follow-Up Inspections			Percent of Changes Implemented		
	Core	Enhanced	Total	Core	Enhanced	Total
Citrus	8	0	8	61%	0%	61%
Hernando	0	1	1	0%	91%	91%
Marion	0	0	0	0%	0%	0%
VCCDD (LSSA)	5	0	5	51%	-	51%
NSCUDD (VWCA)	6	0	6	51%	-	51%
Total	19	1	20	53%	91%	55%

Potential changes included relocation of heads, changes in types of heads, eliminating or removing items that block the spray pattern or coverage, repairing or replacing leaking or broken heads, reducing turf areas, reducing areas of overspray, and capping heads in areas where irrigation is not needed. All customers who participated in the follow-up evaluations made some changes to their irrigation systems, ranging from 23 to 100 percent. The overall program implementation rate was 55%.

The installation or repair of the rain sensor by the irrigation contractor and alterations to system run times were not included in the percent of changes implemented.

4.2 Customer Satisfaction Surveys

A customer satisfaction survey was prepared using Momentive (previously Survey Monkey). The complete survey and results are included in Appendix D. A total of 45 responses were received. Respondents to the survey included customers who received either a core or enhanced irrigation system evaluation.

71% of respondents reported making at least some changes to their irrigation systems. 46% reported making adjustments to irrigation system run times, followed by adjusting, repairing or replacing irrigation heads (38%). 56% reported using less water after implementing the recommendations. Respondents were asked to rate the overall evaluation process by selecting "Pleased," "Very Pleased," "Dissatisfied," or no response. Of the respondents, 98% selected "Pleased" or "Very Pleased" with the irrigation system evaluation.

5. Recommendations

It is recommended that this Irrigation System Audit program be continued for additional phases. The Phase VI results show a positive outcome for both core and enhanced audits. This was the third time enhanced audits have been offered in the program and the results were positive each time. Core audits saved on average 107 gallons per person per day, a 25% reduction. Enhanced audits with the water sense irrigation controller improvements saved on average 106 gallons per person per day, a 31% reduction, and the enhanced evaluations with other repairs/adjustments to the irrigation systems saved on average 62 gallons per capita per day, a 18% reduction.

The calculated cost effectiveness of the core audits is $1.21 $/Kgal, while enhanced audit calculations come in at $2.09 and $2.82 $/Kgal for evaluations with irrigation controller upgrades in Citrus County, and with other irrigation system improvements in Hernando and Marion Counties, respectively. Therefore, for Phase VI, the enhanced audits with the irrigation controller upgrades were more cost effective while the enhanced evaluations with the other repairs and adjustment in the irrigation system appear to provide a lesser impact than core audits for each dollar spent.

It appears for the 28 enhanced evaluations in Citrus County that included only the additional water sense irrigation controller improvements that this modification can be very cost effective. These customers were selected to receive the enhanced evaluation because they had very high water use. While the cost per evaluation is higher, the water saved was also greater.

It also appears that having the irrigation contractor complete additional repairs in the irrigation system does save more water than leaving the repairs up to the customer but it is less cost effective to the utilities within this program; however, the cost effectiveness calculation does not include the component of the cost that is then shifted to the customer.

It is recommended for future phases to maintain the variety of core and enhanced evaluations and to incorporate the water sense controllers where appropriate based on very high water users. This would allow for continued attractiveness of the program to residents and utilities based on their comfort level of commitment.

Appendices

A. Marketing Materials

B. Sample Evaluation Report

C. List of Educational Material

D. Customer Satisfaction Survey

E. Water Use Data by Utility

F. Summary of Follow-ups

G. SWFWMD Cost Effectiveness Calculation

Appendix A

Marketing Materials

(Municipality Logo)

(Date)

(Name)
(Address)
(City/State/Zip)

Subject: Potential Water Bill Savings

Dear (Name),

We noticed your water usage has averaged about __,000 **gallons per month** at your home located at (Address) in (Municipality), Florida. This usage is higher than the average user. The average residential customer of the _____ Utilities Department is between 8,000-10,000 gallons per month, which includes both indoor and outdoor water consumption. So, we are trying to find ways to help you reduce your water use.

Based on past performance, I believe our Irrigation Evaluation program could reduce your water use by 20% or more. Using Hernando County Utilities 2018 water rates that went into effect this October, I estimate participation in this program could save you an average of **$__** a month! There are other things Hernando County does to help customers save water, but I think the Irrigation Evaluation program will offer the greatest savings – and, it's **FREE** to you. See the enclosed brochure which further describes our program.

If you choose to participate, our contractor will run each of your irrigation system zones to identify ways to improve water efficiency, create a map of the irrigation system for you to keep, and provide written recommendations of improvements. With your permission, he can even do some minor fixes and adjustments at no cost to you. All you must do is complete the enclosed application and return it to:

LuAnne Stout, Administrative Assistant
Withlacoochee Regional Water Supply Authority
3600 W Sovereign Path, Suite 228
Lecanto, FL 34461

The contractor will contact you to schedule a convenient time to visit your home. This is a by 'invitation only' offer available on a first-come, first-served basis. Space is limited. I hope you will consider participating. If you have any questions, please give me a call. I look forward to working with you.

Sincerely,

(Municipality Coordinator)

Enclosures

WITHLACOOCHEE REGIONAL WATER SUPPLY AUTHORITY

Irrigation Evaluation Program (Q138) Application Form

Residential Water Customer Information:

Complete Name:	Account Number:	Day-Time Telephone Number: Best Time to Call:
Street Address with Zip Code:	Email Address:	
Does your water account serve more than one home? _____No _____Yes If Yes, how many?_____		
Is your irrigation system operational and without any known or major breaks, leaks or other damage? _____Yes _____No **If the system is not functioning, the irrigation system must be repaired before an evaluation can be scheduled.**	Do you have a rain sensor installed on your automatic in-ground sprinkler system? _____Yes _____No _____Don't Know	
Please indicate the number of zones your sprinkler system contains: 1 - 4 zones _____ 5 - 8 zones _____ More than 8 zones _____ Don't know_____		

(Please Turn Page Over for Program Guidelines)

By signing below, I certify that I have read and will abide by the program guidelines as outlined. IN ADDITION, I certify that my entire irrigation system is in good operating condition. In the event my irrigation system or major parts of my irrigation system are inoperable when the System Evaluator arrives to conduct the irrigation system evaluation, I understand that I will be ineligible to receive the requested evaluation.

_____ _____

Signature Name (Please Print)

_____

Date

NSC UDD North Sumter County UTILITY Dependent District

VCDD UTILITIES

Southwest Florida Water Management District
WATERMATTERS.ORG · 1-800-423-1476

This program is cooperatively funded by the Withlacoochee Regional Water Supply Authority, participating local governments, and the Southwest Florida Water Management District.

- **This program applies only to single-family residential users using public-supply, metered water for their operable in-ground irrigation or sprinkler system.**

How to Participate:

1. Complete and sign this application form.

2. Return the application in the stamped, self-addressed envelope that is included with this application; OR, if filling out the online form, return to: lstout@wrwsa.org

3. The Program's contractor will contact you to arrange an appointment to perform an evaluation of your irrigation system. You will need to provide access to your property and your sprinkler system's time clock.

What to Expect from the Irrigation Evaluation Program:

1. ***At no cost to you***, an irrigation system evaluation, including suggested changes to improve the operation and efficiency of your irrigation system**.**
2. Installation of a rain sensor where a rain sensor is not present or is inoperable. Acceptance of a functioning rain sensor is a requirement to participate in this program. ***There is no cost to you.***
3. Educational materials on water conservation, ***at no cost to you*.**
4. Reduction in water use and lower water bills.
5. Possible improvement in the health and appearance of your lawn and landscape over time.

Program Terms and Conditions – What is expected of Participants:

1. The irrigation system must be fully functional without any major breaks, leaks or other damage, as far as you know.
2. The application form must be completed and signed.
3. The Irrigation System Evaluator will need access to the property, including the area where the time clock is installed. The participant or an adult representative will need to be available.
4. The Irrigation System Evaluator is on-site to evaluate the system and to recommend modifications. They are **not** authorized to make recommended modifications or repairs.
5. Any licensed irrigation professional can make the recommended modifications, if the participant chooses to hire someone.
6. Any costs incurred in making recommended modifications will be at the participant's expense.
7. The participant or adult representative agrees to participate in a follow-up evaluation regarding the suggested sprinkler system modifications. If the participant is chosen to participate in a Follow-up Evaluation, this visit will be scheduled approximately 10 to 12 months after the initial visit.
8. A customer satisfaction survey will be completed and returned at the end of the program.

If you have further questions related to this program, please call

LuAnne Stout at 352-527-5795 or email lstout@wrwsa.org

Residential Water Customer Information:

Printed Name:	Water Account Number:	Phone Number(s):
Street Address with Zip Code:		Email Address:

If the irrigation system is not functioning, it must be repaired before an evaluation can be scheduled. Is your irrigation system operational and without any major breaks or leaks? _____Yes _____No

The Irrigation System water must be purchased from Citrus County Utilities to participate in this program. Those connected to a private well are NOT eligible.

Do you have a rain sensor installed on your automatic in-ground sprinkler system?

_____Yes _____No _____Don't Know

How many zones does your sprinkler system contain?

___1-4 zones ___5-8 zones ___If more than 8, indicate how many.

How old is your controller?

____1-5 years ____6-10 years ____11-15 years ____16+ years ____Don't Know

Irrigation Controller:

Brand:_____ Model:_____

Does the controller have pins that are pushed or pulled to schedule the system?

_____Yes _____No

On a scale of 1-10, 10 being the most knowledgeable, how would you rate your understanding of your irrigation controller? ____

On a scale of 1-10, 10 being the most capable, how would you rate your ability to modify the irrigation schedule (day of week, time of day) using the controller? ____

Does a hired professional adjust your controller for you? ____Yes ____No

Wireless internet connection (WiFi) is used for some smart controllers. Do you have WiFi at your home? ____Yes ____No

If you could upgrade your existing controller, which feature would you find most desirable?

____ Irrigation schedule able to be modified from anywhere in the world via Smart Phone

____ Irrigation schedule modified on the irrigation control panel

____ Both of the above are desired

____ I'm not interested in an updated controller

On average, how many gallons of water do you think your household uses a day (while bathing/showering, cooking, washing clothes, watering the lawn, etc.)?

___0-50 gallons ___50-100 gallons ___100-150 gallons ___150-200 gallons ___200+ gallons

(Please Turn Page Over for Program Guidelines)

By signing below, I certify that I have read and will abide by the program guidelines as outlined. In addition, I certify that my entire irrigation system is in good operating condition. In the event my irrigation system or major parts of my irrigation system are inoperable when the System Evaluator arrives to conduct the irrigation system evaluation, I understand that I will be ineligible to receive the requested evaluation.

Name (Please Print) _____ Signature _____ Date _____

This program is cooperatively funded by the Withlacoochee Regional Water Supply Authority, Citrus County Utilities, and the Southwest Florida Water Management District.

FREE

IRRIGATION SYSTEM EVALUATION

This program is for Citrus County Utilities single-family residential customers that have an in-ground irrigation / sprinkler system connected to the utility's water supply.

How to Participate:

1. Complete and sign the application on the back of this page.
2. Return the application via mail, email, fax or hand deliver. We have provided a self-addressed, stamped envelope for your convenience. Other delivery options below:
    - Email to: lstout@wrwsa.org
    - Fax: 352-527-5797
    - Deliver to: WRWSA, 3600 W. Sovereign Path, Ste 228, Lecanto FL 34461
3. The Program's contractor, Jack Overdorff, will contact you to arrange an appointment to perform an evaluation of your irrigation system. You must be present at the time of the evaluation and will need to provide access to your property and sprinkler system's time clock.

What to Expect from the Irrigation Evaluation Program:

1. ***At no cost to you***, an irrigation system evaluation, including suggested changes to improve the operation and efficiency of your irrigation system**.**
2. Installation of a rain sensor where a rain sensor is not present or is inoperable. Acceptance of a functioning rain sensor is a requirement to participate in this program. ***There is no cost to you.***
3. Educational materials on water conservation, ***at no cost to you*****.**
4. Likely, reduction in water use and lower water bills.
5. Possible improvement in the health and appearance of your lawn and landscape over time.

Program Terms and Conditions – What is expected of Participants:

1. The irrigation system must be fully functional without any major breaks, leaks or other damage.
2. The application form must be completed and signed.
3. The Irrigation System Evaluator will need access to the property, including the area where the time clock is installed. The participant or an adult representative will need to be available.
4. The Irrigation System Evaluator is on-site to evaluate the system and to recommend modifications. The evaluator is **only** authorized to make minor modifications or repairs necessary to improve system efficiency. The evaluator may also replace the irrigation controller under special circumstances.
5. Recommended modifications not carried out by the evaluator can be done by any licensed irrigation professional, should the participant choose to hire someone.
6. The irrigation system must be connected to Citrus County Utilities water supply. Systems connected to a private well do not qualify for this program.
7. Any costs incurred by hiring a licensed professional to make modifications are the participant's responsibility.
8. The participant or adult representative agrees to participate in a follow-up evaluation regarding the suggested sprinkler system modifications. If the participant is chosen to participate in a Follow-up Evaluation, this visit will be scheduled approximately 10 to 12 months after the initial visit.
9. Participant agrees to complete and return a customer satisfaction survey at the end of the program.

If you have further questions related to this program, please call LuAnne Stout
352-527-5795 or lstout@wrwsa.org

Appendix B

Sample Evaluation Report

Eco Land Design
landscape architecture studio

7615 Terrace River Drive
Tampa, FL 33637
Ph: (813) 466-8705
E-Mail: ecolandfl@gmail.com

Residential Landscape/Irrigation Evaluation Report

Evaluator: Jack Overdorff, RLA

Date:

Resident Name:

Address:

E-mail:

Report Overview:

On Monday, _____ 20__, a site inspection was conducted for the irrigation system at the above referenced residence. The irrigation system is connected to the potable (drinking) water supply.

A visual inspection as well as a more in-depth review of the irrigation system was conducted. The findings are outlined below as well as recommendation for addressing the system issues and setting of watering durations.

Turf Area

Checklist:

Item	Location	Functioning?
Time clock	Garage wall of the residence	Program A, Zones 1-8 Program Running Days:, Tuesday, Thursday & Saturday @ 1am Zones #1 thru #3, #7 & #8 running 40 minutes Zones #2 & #3 running 40 minutes Zone #4 running 30 minutes Zone #5 running 20 minutes Zone #6 running 55 minutes Program B, Zone 2 Program Running Days:, Mon., Wed., Fri. & Sat. @ 5:15am Zone #2 running 35 minutes Low Volume Zone (Hose bib battery valve) Program Running Days: Every 3 days #9 running 45 minutes
Rain sensor	East Side	No, new wired sensor installed and functioning correctly
Backflow Preventer	Side yard	Yes

Evaluation:

Area	Observation	Action	Addressed by Homeowner
General	Spray Heads & Rotor Heads have irregular head spacing	Recommend moving heads and adding heads as noted below to achieve head to head coverage and improve the spray pattern coverage	

	The overall turf maintenance can be reduced as large turf areas are difficult to maintain	Recommend reducing the turf areas by installing Florida Friendly Landscape materials that are suited for the site conditions.	
	Zones are irrigating turf and landscape beds within the same zone	It is not recommended to irrigate turf and landscape beds within the same zone as each have different water requirements. Recommend separating the landscape beds and turf/lawn areas into separate zones	
	Spray Heads in the landscape beds are being blocked by plant material	Recommend making adjustments as noted below to improve the irrigation coverage	
	Several heads are of a different manufacture than other heads on the zones	It is not recommended to use different manufacturer's equipment within a zone as the spray nozzle precipitation rates vary between the different manufactures and can create uneven coverage. Recommend installing all of the same equipment fitted with matched precipitation rate nozzles on each zone.	

Zone #1 **Rotor Zone** **Side Yard Turf Area** **(See attached site plan)**	Water can be conserved as Rotor Head R1 is leaking	Recommend replacing the head with a similar large turf Rotor Head similar to other heads on the zone fitted with a matched precipitation rate spray nozzle	
	Water can be conserved as Rotor Head R4 is overspraying onto the street	Recommend adjusting the spray pattern to reduce overspray and to conserve water	
	Zone is operating at approximately 9 Gallons Per Minute (GPM)	No action	
Zone #2 **Rotor Zone** **Side Yard Turf Area** **(See attached site plan)**	Water can be conserved as Rotor Heads R5 thru R7 are irrigating a narrow turf area and overspraying mature plantings	Recommend replacing the heads with fixed Spray Heads fitted with strip spray nozzles to reduce overspray and to conserve water	
	Spray pattern coverage for the turf areas can be improved as Rotor Head R6 is set too low and blocked by the surrounding turf areas	Recommend raising the head and also recommend trimming the turf around the head to conserve water	

	Zone is operating at 10 Gallons Per Minute (GPM)	No Action	
Zone #3 **Rotor Zone** **Front Yard Turf Area & Landscape Beds** **(See attached site plan)**	Spray pattern coverage can be improved as rotating Spray Head #1 is located in a planting bed	Recommend moving the head to the turf area for better coverage	
	Water can be conserved as Rotor Head R8 is overspraying onto the street	Recommend adjusting the spray pattern to reduce overspray and to conserve water	
	Zone is operating at approximately 11 Gallons Per Minute (GPM)	No action	
Zone #4 **Spray Zone** **Side Yard Turf Area** **(See attached site plan)**	Spray pattern coverage can be improved as Spray Head #2 does not have head to head spray pattern coverage for the turf areas	Recommend adding a similar fixed Spray Head at the street fitted with a matched precipitation rate spray nozzle to improve the spray pattern coverage for the turf areas	
	Water can be conserved as Spray Head #8 is overspraying onto the air conditioning unit	Recommend adjusting the spray pattern to reduce overspray, conserve water and prevent water damage to the air conditioning unit	

	Water can be conserved as Spray Head #9 is overspraying onto the residence	Recommend adjusting the spray pattern to reduce overspray, conserve water and prevent water damage to the residence	
	Spray pattern coverage can be improved as Spray Head #10 is set too low and blocked by the surrounding turf	Recommend raising the head or replacing the 4" tall Spray Head with a 6" tall Spray Head to improve the spray pattern coverage for the turf area	
	Zone is operating at 6 Gallons Per Minute (GPM)	No action	
Zone #5 **Spray Zone** **Front/Side Yard Planting Beds & Turf Areas** **(See attached site plan)**	Spray pattern coverage can be improved for the turf areas as Spray Heads #17, #18 & #19 are blocked by the plantings	Recommend moving the heads to the turf area to improve the spray pattern coverage for the turf	
	Water can be conserved as Spray Heads #11 thru #15 are irrigating mature plantings	Recommend replacing the heads with low volume dripline or micro-irrigation on a separate low volume zone to conserve water	
	Water can be conserved as Spray Head #16 is irrigating an area covered by low volume dripline	Recommend capping the head to conserve water	
	Zone is operating at 12 Gallons Per Minute (GPM)	No action	

Zone #6 **Spray Zone** **Side/Rear Yard Turf Area & Landscape Beds** **(See attached site plan)**	The zone efficiency can be improved as Spray Heads #21 thru #25 are irrigating mature plantings on a turf zone	Recommend replacing the heads with low volume dripline or micro-irrigation on a separate zone to improve the zone efficiency and to conserve water	
	Water can be conserved as Spray Head #28 is overspraying onto the residence	Recommend adjusting the spray pattern to reduce overspray, conserve water and prevent water damage to the residence	
	Spray pattern coverage can be improved as Spray Heads #30 thru #32 have low pressure	Recommend capping heads irrigating mature plantings and/or moving heads to zone 2. Also, recommend further investigating the issue to determine the appropriate solution	
	Spray pattern coverage can be improved as Spray Head #32 is set too low and blocked by the surrounding turf	Recommend raising the head or replacing the 4" tall Spray Head with a 6" tall Spray Head to improve the spray pattern coverage for the turf area	
	Zone is operating at 13 Gallons Per Minute (GPM)	No action	

Zone #7 **Rotor Zone** **Side Yard Turf Area** **(See attached site plan)**	Water can be conserved and the spray pattern coverage improved as Rotor Head R13 is leaking and blocked by plantings	Recommend replacing the head with a similar large turf Rotor Head similar to other heads on the zone fitted with a matched precipitation rate spray nozzle. Also, recommend trimming plantings to improve the spray pattern coverage	
	Spray pattern coverage can be improved as Rotor Head R14 is leaning	Recommend straightening the head to improve the spray pattern coverage for the turf areas	
	Zone is operating at 8 Gallons Per Minute (GPM)	No action	
Zone #8 **Rotor Zone** **Side Yard Turf Area** **(See attached site plan)**	Water can be conserved as Rotor Head R15 is overspraying onto the street	Recommend adjusting the spray pattern to reduce overspray and to conserve water	
	Water can be conserved as Rotor Head R17 is located in a planting bed	Recommend capping the head and irrigating plantings with only dripline or micro-irrigation	
	Zone is operating at 10 Gallons Per Minute (GPM)	No action	
Zone #9 **Low Volume Zone** **(See attached site plan)**	Zone is operating at 4 Gallons Per Minute (GPM)	No action	

A catch can test was performed on Zones #4 & #7 to determine the system spray uniformity and also determine appropriate run times for the scheduled waterings in order to achieve a 1/2" to 3/4" application rate. .

Zone #4 is running at 6 gallons per minute and according to the catch can test, is operating at 45% spray uniformity for the Zone (above 70% is considered to be good). This zone is applying 1.38" of water per hour. The lawn has areas of distress. If the recommendations above are made to the system with the application rate increased to 1.40" per hour and the spray uniformity improved to 70%, it is recommended that the zone runtime be set at 30 minutes once per week to achieve a 1/2" application rate. Also, based on the existing soil profile (sandy clay) and root depth it is recommended that the runtime be completed in one application.

Zone #7 is running at 8 gallons per minute and according to the catch can test, is operating at 52% spray uniformity for the Zone (above 70% is considered to be good). This zone is applying .68" of water per hour. The lawn has areas of distress. If the recommendations above are made to the system with the application rate increased to .70" per hour and the spray uniformity improved to 70%, it is recommended that the zone runtime be set at 60 minutes once per week to achieve a 1/2" application rate. Also, based on the existing soil profile (sandy clay) and root depth it is recommended that the runtime be completed in one application.

Irrigation Schedules:

The Watering schedule below (Left Side) reflects the information recorded from the irrigation controller at the time of the inspection by the irrigation evaluator called (Pre-inspection zone runtimes and water usage). The water schedule below (Right Side) reflects recommended changes to the watering times and frequency based on the evaluation inspection called (Post-inspection zone runtimes and water usage). These modifications can create significant water savings in many cases.

The suggested runtimes reflect the fact that Spray Heads deliver more water than rotor sprinklers during a given time period and that turf grasses typically require more frequent irrigation than most plants and shrubs. Following the Post Inspection suggested runtimes will allow for deeper development of turf grass roots, greater soil moisture retention and help promote a more drought resistant turf. Over-watering allows water to travel beyond the root zone, while under-watering may cause shallow roots that will dry out quickly

Plant type	Pre-inspection zone runtimes And water usage	Plant type	Post-inspection suggested runtimes And water usage
	Program A (3 application times per week)		Program A (1 application time per week)
Turf	Zone 1 (Rotor) - 40 mins = 360 Gal	Turf	Zone 1 (Rotor) - 60 mins = 540 Gal
Turf	Zone 2 (Rotor) - 40 mins =400 Gal	Turf	Zone 2 (Rotor) - 60 mins =600 Gal
Mixed	Zone 3 (Rotor) - 40 mins = 440 Gal	Turf	Zone 3 (Rotor) - 60 mins = 660 Gal
Turf	Zone 4 (Spray) - 30 mins = 180 Gal	Turf	Zone 4 (Spray) - 30 mins = 180 Gal
Mixed	Zone 5 (Spray) -20 mins = 240 Gal	Turf	Zone 5 (Spray) -30 mins = 360 Gal
Mixed	Zone 6 (Spray) - 55 mins = 715 Gal	Turf	Zone 6 (Spray) - 30 mins = 390 Gal
Turf	Zone 7 (Rotor) - 40 mins = 320 Gal	Turf	Zone 7 (Rotor) - 60 mins = 480 Gal
Turf	Zone 8 (Rotor) - 40 mins = 400 Gal	Turf	Zone 8 (Rotor) – 60 mins = 600 Gal
	Program A - Current Total Water Usage (per application) = 3,055 Gallons per application x 3 applications per week =9,165 Gallons per week		Program A - Total Water Usage (per application) after run time modifications = 3,810 Gallons per week
	Program C (4 application times per week)		Program C (0 application time per week)
Turf	Zone 2 (Rotor) - 35 mins =350 Gal	Turf	Zone 2 (Rotor) - 0 mins =0 Gal
	Program C - Current Total Water Usage (per application) = 350 Gallons per application x 4 applications per week = 1,400 Gallons per week		Program C- Total Water Usage (per application) after run time modifications = 0 Gallons per week

	Hose Bib Battery Valve (2.5 application times per week)		Hose Bib Battery Valve (2.5 application times per week)
Plants	Zone 9 (Low Vol.) - 45 mins = 180 Gal	Plants	Zone 9 (Low Vol.) - 45 mins = 180 Gal
	Hose Bib Valve -Current Total Water Usage (per application) = 180 Gallons per application x 2.5 applications per week = 450 Gallons per week		Hose Bib Valve -Current Total Water Usage (per application) = 180 Gallons per application x 2.5 applications per week = 450 Gallons per week
	Current Total Water Usage (per application) = 11,015 Gallons per week		Total Water Usage (per application) after run time modifications = 4,260 Gallons per week

*Plant type has three terms: Turf Only, Plants/Shrubs only and Mixed (combination of Both)

a. Consider placing these charts next to your controller.
b. Consider skipping your watering day when there is significant rainfall 1/2 half inch or more).

When watering your lawn and landscape **please observe the local water use restrictions**.

Please check for any changes to the current watering restrictions at: http://swfwmd.state.fl.us/conservation/restrictions/swfwmd.php

Additionally, seasonal adjustments may also be used to further reduce water use during the winter months (December, January and February) when root growth is minimal thus requiring much less water. By watering every other week during the winter months an additional 25,560 gallons could be saved. The controller also has a seasonal adjustment capability that can also be used to adjust runtimes of all zones by increasing or reducing the percentage of application time; during the rainy season or in winter months when plant materials are not in a growth cycle, the controller's seasonal adjustment can be set at 60% to 80% of the current application rate to conserve water.

Also note: additional water savings can occur by repairing leaks, removing heads, capping heads and changing nozzles on heads as noted above.

The chart below reflects how much water is currently used compared to the Post-evaluation water use with adhering to the recommendations noted above.

Estimate of existing water usage[1]	Post-evaluation water use [2]	Projected annual gallons saved[2]	Projected Annual Gallons Saved w/ Skip a Week[2]
11,015 GAL/CYCLE/WEEK	4,260 GAL/CYCLE	6,755 GAL/CYCLE	**4,260 GAL/CYCLE**
572,780 GAL/YEAR	*221,520 GAL/YEAR*	*351,260 GAL/YEAR*	**376,820 GAL/YEAR (66% Annual Savings)**

[1] Based on watering days and applications as noted above
[2] Based on 1 day a week watering with 1 application per day

Not only is it important to follow these recommendations because it will help conserve the water supply in the Coastal Rivers and Withlacoochee river Basins, it may also help to lower your current utility bill.

For system repairs: Contact a licensed irrigation contractor for a professional installation, particularly if the system involved additional equipment or major modifications. For a listing of qualified contractors in your area, call the Florida Irrigation Society at 1-800-441-5341 or visit their website: http://www.fisstate.org/. or refer to the yellow pages of the phone directory. For do-it-yourselfers, irrigation supplies can be obtained from home improvement centers or irrigation supply facilities.

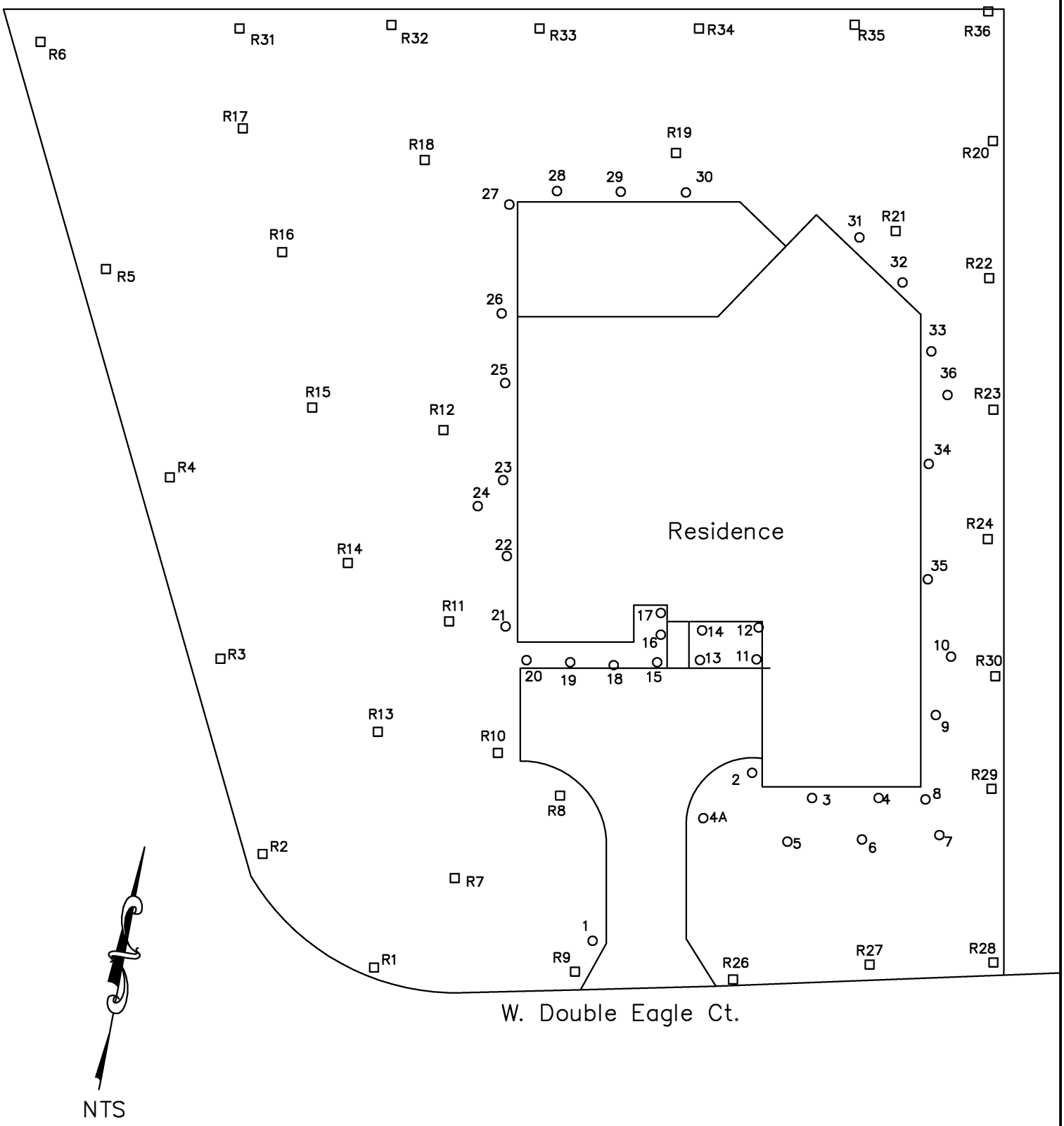
Approximately once per month inspect the irrigation system. Turn on each irrigation zone and visually examine all sprinkler heads. (Are they broken, spraying in the wrong direction or not rotating?) Take notes for later reference. Ten minutes of operation time is allowed for this inspection.

Thanks again for participating in the Withlacoochee Regional Water Supply Authority's Irrigation Evaluation program. We hope this information will benefit you. There are various recommendations and suggested changes made in this report.

Please contact WRWSA Contracted Administrator at 352-527-5795 if you have any questions or comments.

Urban runoff has been identified as the primary source of pollutant loading to surface waters in Florida and is regulated by local, state and federal regulations. Runoff in residential areas is contaminated with fertilizers, bacteria from pet waste, sediment, as well as oil and other automotive fluids from vehicles in driveways and streets. Your efforts in eliminating runoff from excessive irrigation helps reduce the amount of these pollutants which will be transported to local waters. By following the recommendations in this audit report not only will you be conserving water by irrigating more efficiently you will also be reducing your impact on the environment!

See attached Irrigation Layout Plan for irrigation equipment locations on the property.



Plan provided courtesy of the SWFWMD, Withlacoochee Regional Water Supply Authority & Citrus County

LEGEND

- ○ Location of Spray Heads
- □ Location of Rotor Head

ECO-Land Design
7615 Terrace River Drive
Tampa, FL 33637
Ph: (813) 466-8705
eco-landdesign.com

IRRIGATION LAYOUT PLAN

DATE: January 2023

APPLICANT:

Appendix C

List of Educational Material

List of Educational Materials

(1) A Guide to the Basics of Micro-Irrigation

(2) Rain Barrels: A Homeowner's Guide

(3) Watch the Weather, Wait to Water!

(4) A Do-It-Yourself Guide to Florida Friendly Fertilizing

(5) Saving Water Outdoors

(6) Saving Water Indoors

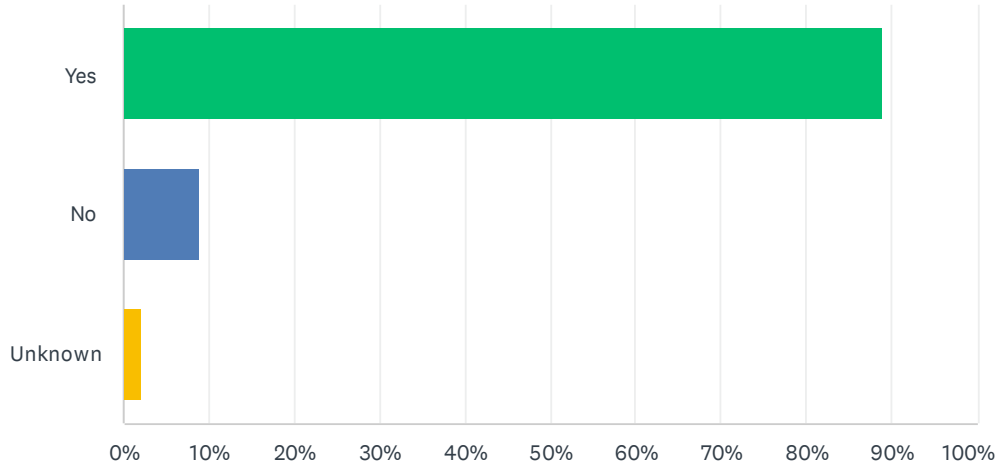
The educational materials were ordered by Jack Overdorff, the irrigation evaluation contractor, and distributed during the onsite irrigation system evaluation.

Appendix D

Customer Satisfaction Survey

Q1 Did the irrigation evaluation contractor make any changes to your system?

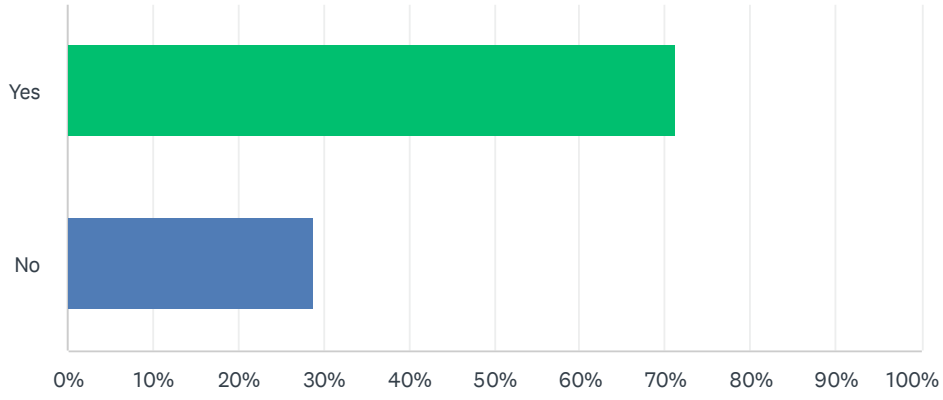
Answered: 45 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	88.89%	40
No	8.89%	4
Unknown	2.22%	1
TOTAL		45

Q2 Did you make any changes to your irrigation system as a result of the system evaluation?

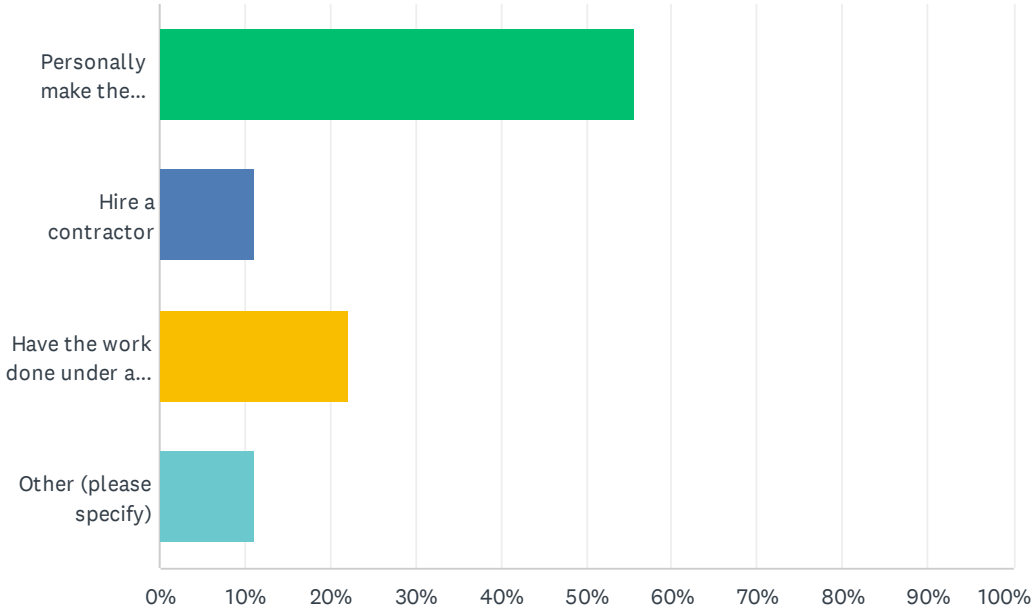
Answered: 45 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	71.11%	32
No	28.89%	13
TOTAL		45

Q3 If you made changes to your system, did you ...

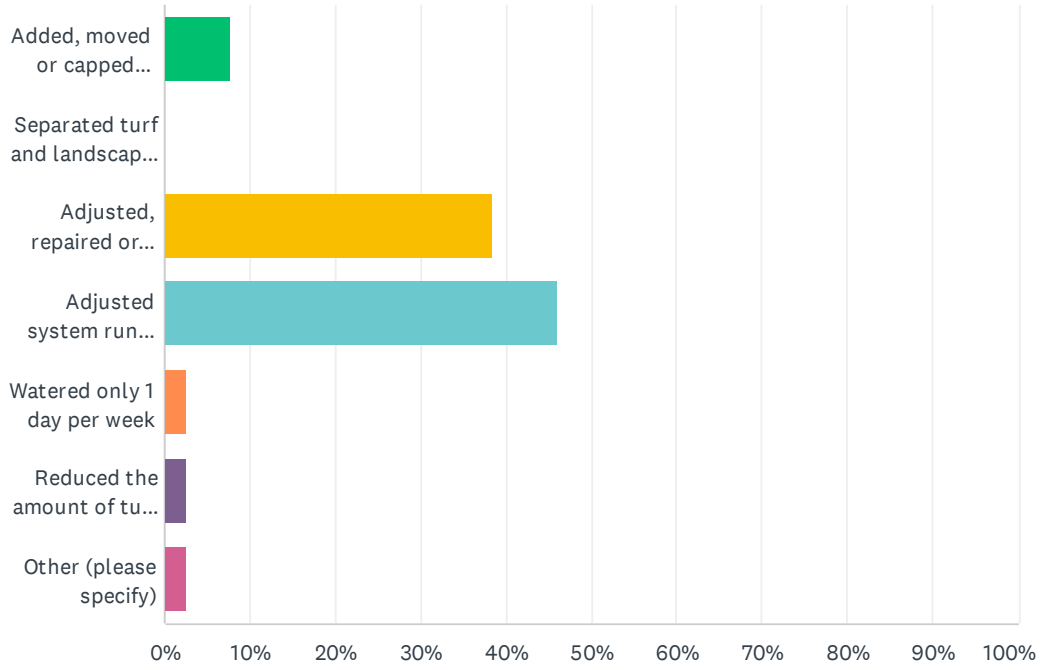
Answered: 36 Skipped: 9



ANSWER CHOICES	RESPONSES	
Personally make the changes	55.56%	20
Hire a contractor	11.11%	4
Have the work done under an existing maintenance contract	22.22%	8
Other (please specify)	11.11%	4
TOTAL		36

Q4 What changes did you make to your irrigation system? (Choose all that apply)

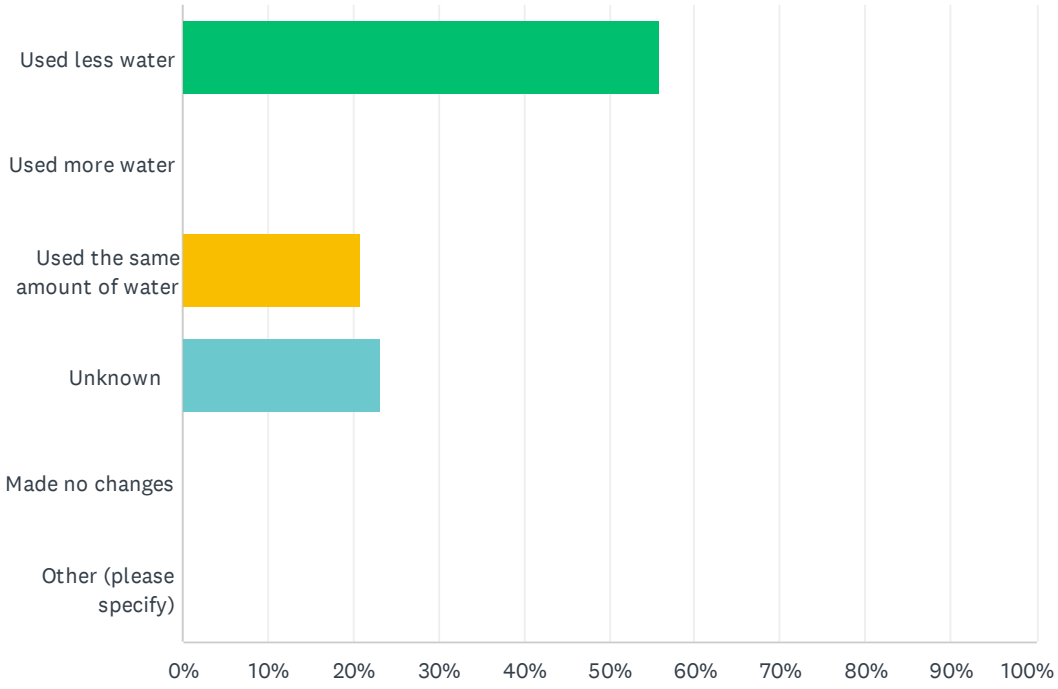
Answered: 39 Skipped: 6



ANSWER CHOICES	RESPONSES	
Added, moved or capped sprinkler heads	7.69%	3
Separated turf and landscape zones	0.00%	0
Adjusted, repaired or replaced sprinkler heads	38.46%	15
Adjusted system run times	46.15%	18
Watered only 1 day per week	2.56%	1
Reduced the amount of turf grass	2.56%	1
Other (please specify)	2.56%	1
TOTAL		39

Q5 Did you notice a change in your water usage as a result of any changes made?

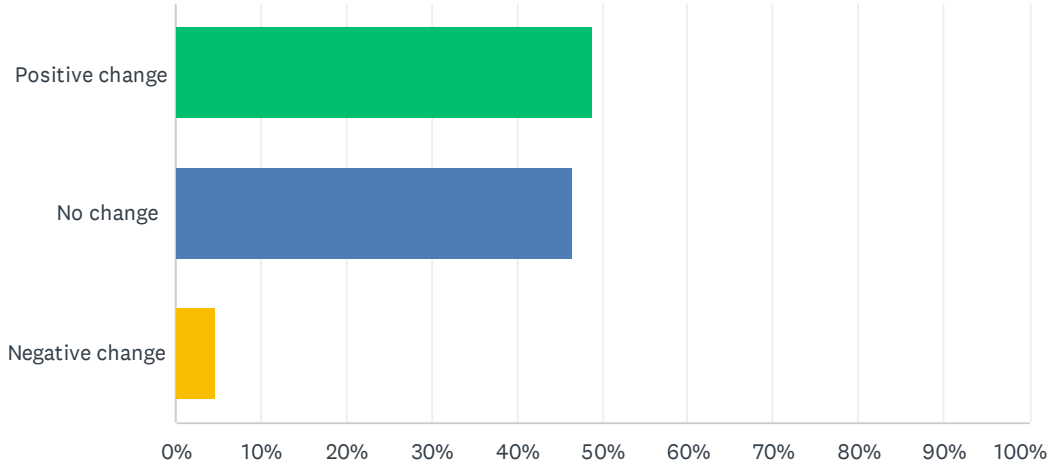
Answered: 43 Skipped: 2



ANSWER CHOICES	RESPONSES	
Used less water	55.81%	24
Used more water	0.00%	0
Used the same amount of water	20.93%	9
Unknown	23.26%	10
Made no changes	0.00%	0
Other (please specify)	0.00%	0
TOTAL		43

Q6 Did you notice any changes in your lawn/landscaping?

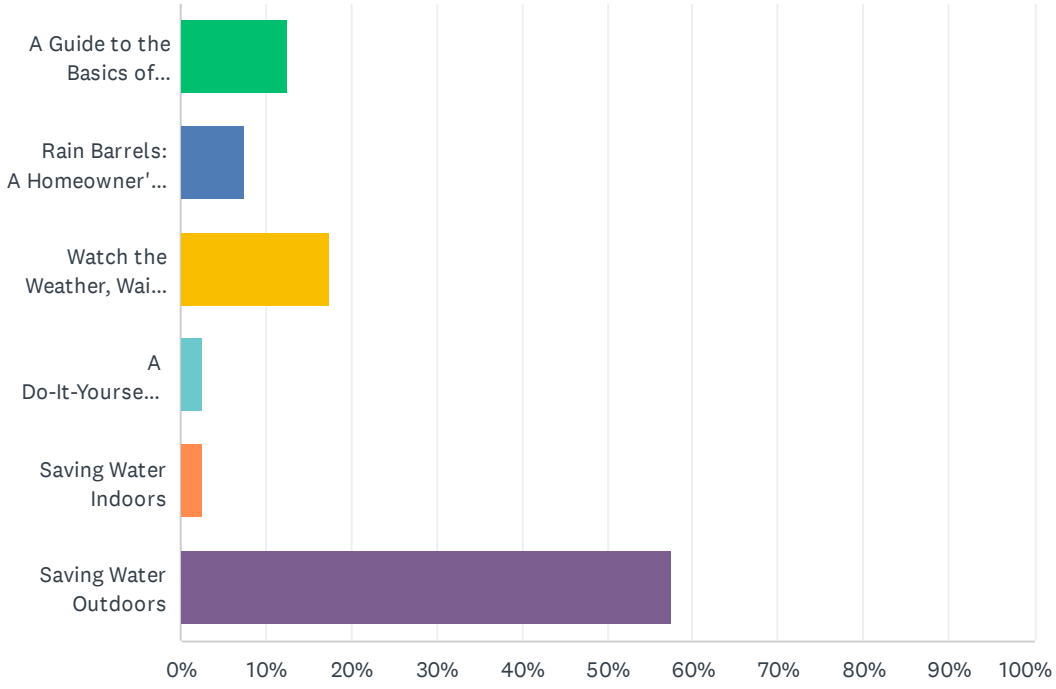
Answered: 43 Skipped: 2



ANSWER CHOICES	RESPONSES	
Positive change	48.84%	21
No change	46.51%	20
Negative change	4.65%	2
TOTAL		43

Q7 Which education information provided was most helpful?

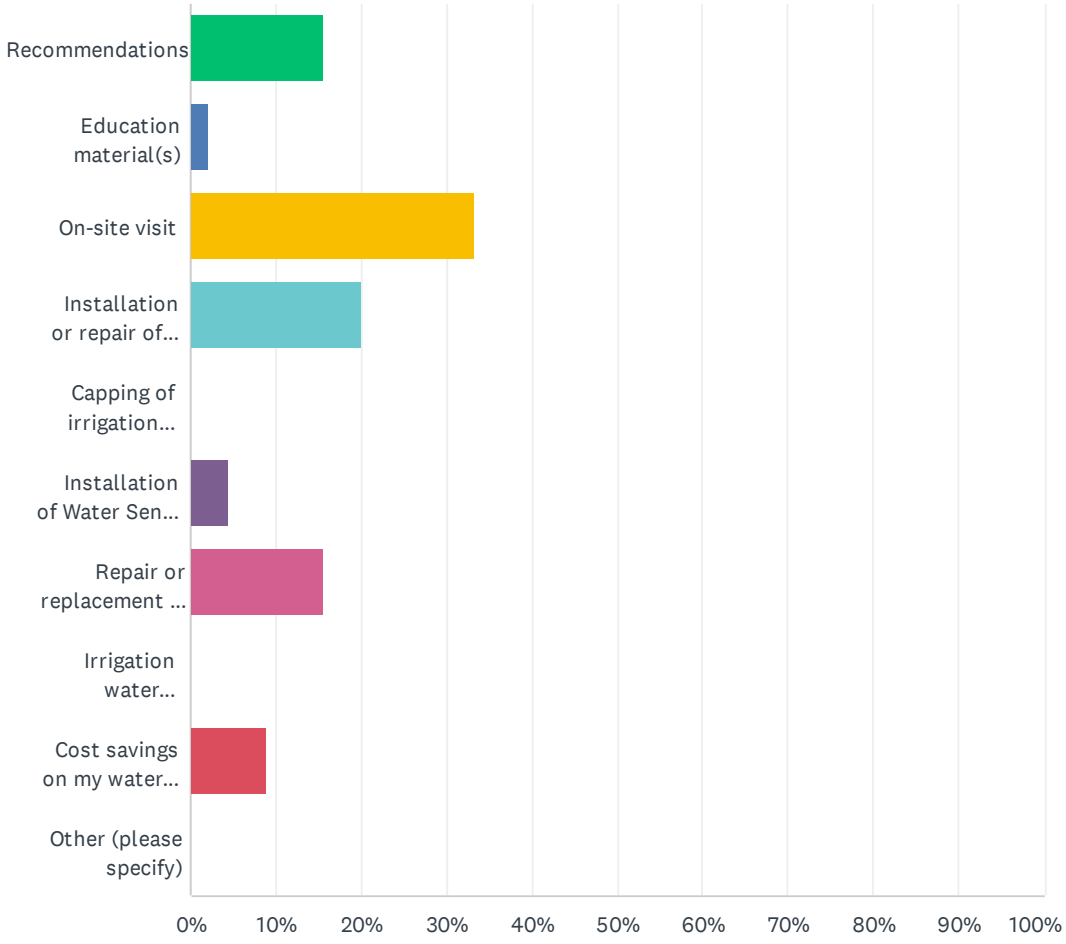
Answered: 40 Skipped: 5



ANSWER CHOICES	RESPONSES	
A Guide to the Basics of Micro-Irrigation	12.50%	5
Rain Barrels: A Homeowner's Guide	7.50%	3
Watch the Weather, Wait to Water!	17.50%	7
A Do-It-Yourself Guide to Florida Friendly Fertilizing	2.50%	1
Saving Water Indoors	2.50%	1
Saving Water Outdoors	57.50%	23
TOTAL		40

Q8 What was the most helpful part of the evaluation?

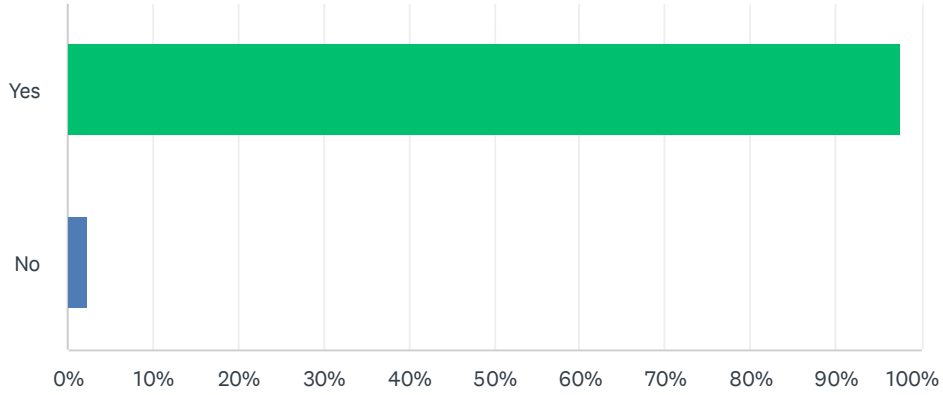
Answered: 45 Skipped: 0



ANSWER CHOICES	RESPONSES	
Recommendations	15.56%	7
Education material(s)	2.22%	1
On-site visit	33.33%	15
Installation or repair of rain sensor	20.00%	9
Capping of irrigation heads	0.00%	0
Installation of Water Sense Controller	4.44%	2
Repair or replacement of irrigation heads	15.56%	7
Irrigation water consumption/application calculations	0.00%	0
Cost savings on my water bill	8.89%	4
Other (please specify)	0.00%	0
TOTAL		45

Q9 Would you recommend this program to a neighbor?

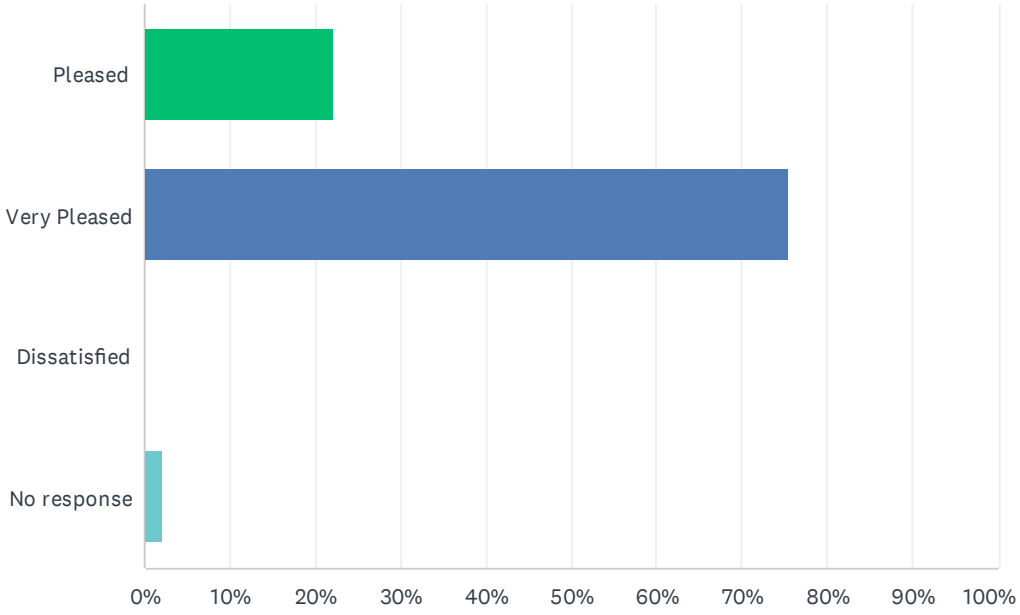
Answered: 44 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	97.73%	43
No	2.27%	1
TOTAL		44

Q10 Overall, how would you rate the irrigation system evaluation:

Answered: 45 Skipped: 0



ANSWER CHOICES	RESPONSES	
Pleased	22.22%	10
Very Pleased	75.56%	34
Dissatisfied	0.00%	0
No response	2.22%	1
TOTAL		45

Q11 Other comments:

Answered: 22 Skipped: 23

#	RESPONSES	DATE
1	Good customer service and education on water use.	9/9/2022 9:39 PM
2	Jack's advice was very informative. He repaired some issues himself and I hired someone else and some diy. Great program.	9/5/2022 8:36 AM
3	perfect system for snow birds. thanks	9/2/2022 3:48 PM
4	This was a great program and very happy I was able to participate.	9/2/2022 11:53 AM
5	the survey did not allow me to pick more than one option for some of the questions	9/1/2022 8:45 AM
6	It was very helpful learning irrigation for Florida	8/31/2022 8:46 PM
7	He does a great job	8/31/2022 4:13 PM
8	Contractor was very efficient and thorough. Explained all changes and replacements to my satisfaction. Well done!	8/31/2022 12:59 PM
9	I reason I did not notice any changes because work was just completed.	8/31/2022 11:51 AM
10	Jack did a wonderful job.	8/31/2022 3:40 AM
11	This a great service that is offered. Appreciate it very much.	8/30/2022 7:38 PM
12	My system seems to be out of whack agsin. I just paid a $200 water bill.	8/30/2022 5:16 PM
13	He was friendly snd very informative. I thought he did a great job!	8/30/2022 5:08 PM
14	We appreciate the program and being able to take advantage of it. He updated our control and added the rain gauge. The rain gauge has saved us water. Thanks! :)	8/30/2022 3:22 PM
15	The worker advised as to how to tell if more water is needed. He was knowledgeable and and showed me how to do some maintenance.	8/30/2022 2:53 PM
16	Jack is very knowledgeable and professional.	8/30/2022 2:25 PM
17	Bought a stop valve for when system not running	8/30/2022 1:51 PM
18	Did a great job!! Thankyou	8/30/2022 1:34 PM
19	This was an excellent service and the Tech was fantastic	8/30/2022 1:29 PM
20	Thanks for the assist.	8/30/2022 1:26 PM
21	Awesome, very helpful and positive	8/30/2022 1:21 PM
22	welcomed service	8/30/2022 12:46 PM

Appendix E

Water Use Data by Utility

Appendix E Water Use Data By Utility

			Unadjusted Data (gallons per year)				Adjusted Data (gallons per year)				
#	City	Evaluation Date	12 Month Pre-Usage	12-Month Post-Usage	Year One Gallons Saved	Year One % Saved	12 Month Pre-Usage	12-Month Post-Usage	Year One Gallons Saved	Year One % Saved	Explanation of Adjusted Data
Citrus County											
1	Lecanto	#########	271,000	120,000	151,000	56%	271,000	120,000	151,000	56%	
2	Inverness	#########	336,000	208,000	128,000	38%	336,000	208,000	128,000	38%	
3	Beverly Hills	1/8/2021	272,000	229,000	43,000	16%	272,000	229,000	43,000	16%	
4	Lecanto	1/8/2021	262,000	109,000	153,000	58%	262,000	109,000	153,000	58%	
5	Inverness	1/13/2021	265,000	215,000	50,000	19%	265,000	215,000	50,000	19%	
6	Beverly Hills	1/13/2021	264,000	308,000	-44,000	-17%	264,000	308,000	-44,000	-17%	
7	Hernando	1/14/2021	304,000	290,000	14,000	5%	304,000	290,000	14,000	5%	
8	Inverness	1/14/2021	289,000	161,000	128,000	44%	289,000	161,000	128,000	44%	
9	Hernando	1/20/2021	275,000	89,000	186,000	68%	275,000	97,091	177,909	65%	1 month of zero post-data adjusted
10	Hernando	1/22/2021	350,000	239,000	111,000	32%	350,000	239,000	111,000	32%	
11	Hernando	1/22/2021	362,000	133,000	229,000	63%	362,000	133,000	229,000	63%	
12	Lecanto	1/26/2021	320,000	107,000	213,000	67%	320,000	107,000	213,000	67%	
13	Hernando	1/27/2021	495,000	431,000	64,000	13%	495,000	431,000	64,000	13%	
14	Beverly Hills	1/28/2021	575,000	472,000	103,000	18%	575,000	472,000	103,000	18%	
15	Inverness	1/28/2021	392,000	244,000	148,000	38%	392,000	244,000	148,000	38%	
16	Homosassa	2/3/2021	322,000	191,000	131,000	41%	322,000	191,000	131,000	41%	
17	Homosassa	2/3/2021	245,000	209,000	36,000	15%	245,000	209,000	36,000	15%	
18	Homosassa	2/9/2021	266,000	64,000	202,000	76%	266,000	64,000	202,000	76%	
19	Inverness	2/11/2021	258,000	334,000	-76,000	-29%	258,000	334,000	-76,000	-29%	
20	Hernando	2/11/2021	378,000	327,000	51,000	13%	378,000	356,727	21,273	6%	1 month of zero post-data adjusted
21	Hernando	2/18/2021	289,000	175,000	114,000	39%	289,000	175,000	114,000	39%	
22	Beverly Hills	2/19/2021	290,000	187,000	103,000	36%	290,000	187,000	103,000	36%	
23	Inverness	2/19/2021	429,000	186,000	243,000	57%	269,455	186,000	83,455	31%	1 month of abnormally high pre-data adjusted
24	Hernando	2/23/2021	185,000	170,000	15,000	8%	185,000	170,000	15,000	8%	
25	Beverly Hills	2/23/2021	361,000	348,000	13,000	4%	361,000	348,000	13,000	4%	
26	Homosassa	3/4/2021	257,000	219,000	38,000	15%	257,000	219,000	38,000	15%	
27	Citrus Springs	3/5/2021	258,000	177,000	81,000	31%	258,000	177,000	81,000	31%	
28	Lecanto	3/5/2021	244,000	485,000	-241,000	-99%	266,182	529,091	-262,909	-99%	1 month of zero pre-data and 1 month of zero post-data adjusted
29	Citrus Springs	3/22/2021	297,000	142,000	155,000	52%	297,000	142,000	155,000	52%	
30	Citrus Springs	3/22/2021	388,000	227,000	161,000	41%	388,000	227,000	161,000	41%	
31	Hernando	3/22/2021	255,000	172,000	83,000	33%	255,000	172,000	83,000	33%	
32	Inverness	3/23/2021	259,000	195,000	64,000	25%	259,000	195,000	64,000	25%	

33	Beverly Hills	3/23/2021	372,000	210,000	162,000	44%	372,000	210,000	162,000	44%	
34	Lecanto	3/29/2021	288,000	166,000	122,000	42%	288,000	181,091	106,909	37%	1 month of zero post-data adjusted
35	Beverly Hills	4/20/2021	214,000	207,000	7,000	3%	214,000	207,000	7,000	3%	
36	Hernando	5/7/2021	353,000	212,000	141,000	40%	353,000	212,000	141,000	40%	
37	Lecanto	5/19/2021	536,000	319,000	217,000	40%	536,000	319,000	217,000	40%	
38	Inverness	6/8/2021	216,000	224,000	-8,000	-4%	216,000	224,000	-8,000	-4%	
39	Dunnellon	6/8/2021	318,000	258,000	60,000	19%	318,000	258,000	60,000	19%	
40	Inverness	6/10/2021	334,000	306,000	28,000	8%	334,000	306,000	28,000	8%	
41	Homosassa	6/13/2021	315,000	111,000	204,000	65%	315,000	111,000	204,000	65%	
42	Lecanto	6/17/2021	354,000	70,000	284,000	80%	354,000	76,364	277,636	78%	1 month of zero post-data adjusted
43	Inverness	6/23/2021	265,000	158,000	107,000	40%	265,000	158,000	107,000	40%	
44	Lecanto	6/28/2021	252,000	226,000	26,000	10%	252,000	226,000	26,000	10%	
45	Inverness	6/28/2021	235,000	250,000	-15,000	-6%	235,000	250,000	-15,000	-6%	
46	Beverly Hills	7/26/2021	336,000	185,000	151,000	45%	336,000	185,000	151,000	45%	
47	Lecanto	9/8/2021	227,000	198,000	29,000	13%	227,000	198,000	29,000	13%	
48	Hernando	9/8/2021	238,000	211,000	27,000	11%	238,000	211,000	27,000	11%	
49	Hernando	#########	353,000	192,000	161,000	46%	255,600	192,000	63,600	25%	1 month of zero pre-data adjusted, 1 month of abnormally high pre-data adjusted
50	Hernando	11/9/2021	227,000	164,000	63,000	28%	227,000	164,000	63,000	28%	
51	Inverness	#########	155,000	212,000	-57,000	-37%	155,000	212,000	-57,000	-37%	
52	Beverly Hills	2/20/2022	374,000	175,000	199,000	53%	374,000	175,000	199,000	53%	
53	Beverly Hills	2/17/2022	226,000	141,000	85,000	38%	226,000	141,000	85,000	38%	
54	Beverly Hills	3/29/2022	257,000	105,000	152,000	59%	257,000	105,000	152,000	59%	
55	Lecanto	5/2/2022	196,000	92,000	104,000	53%	196,000	92,000	104,000	53%	
56	Hernando	5/2/2022	217,000	174,000	43,000	20%	217,000	174,000	43,000	20%	
57	Citrus Springs	5/27/2022	246,000	265,000	-19,000	-8%	246,000	265,000	-19,000	-8%	
Citrus County Subtotals			**17,117,000**	**11,994,000**	**5,123,000**	**30%**	**16,882,236**	**12,097,364**	**4,784,873**	**28%**	
Hernando County											
1	Spring Hill	#########									Missing data
2	Spring Hill	#########									Missing data
3	Spring Hill	#########									Missing data
4	Spring Hill	1/5/2021	309,300	209,800	99,500	32%	412,400	209,800	202,600	49%	3 months of missing pre-data adjusted
5	Spring Hill	1/5/2021	289,700	234,700	55,000	19%	289,700	234,700	55,000	19%	
6	Spring Hill	1/6/2021	263,000	392,400	-129,400	-49%	263,000	392,400	-129,400	-49%	
7	Spring Hill	1/6/2021	304,600	244,400	60,200	20%	304,600	244,400	60,200	20%	
8	Spring Hill	1/6/2021									Missing data
9	Spring Hill	1/8/2021	372,300	378,500	-6,200	-2%	372,300	378,500	-6,200	-2%	
10	Spring Hill	1/11/2021	350,400	130,400	220,000	63%	350,400	195,600	154,800	44%	4 months of zero post-data adjusted
11	Weeki Wachee	1/11/2021	266,200	318,600	-52,400	-20%	266,200	318,600	-52,400	-20%	
12	Spring Hill	1/11/2021	398,800	380,900	17,900	4%	398,800	380,900	17,900	4%	

13	Spring Hill	1/19/2021	271,200	87,600	183,600	68%	0	0	0%	Removed due to 8 months of missing post-data
14	Spring Hill	1/19/2021	521,400	355,700	165,700	32%	521,400	355,700	165,700	32%
15	Brooksville	1/19/2021	331,600	194,500	137,100	41%	331,600	194,500	137,100	41%
16	Spring Hill	2/2/2021	379,100	261,800	117,300	31%	379,100	261,800	117,300	31%
17	Spring Hill	2/2/2021	277,300	519,800	-242,500	-87%	322,760	519,800	-197,040	-61% 2 months of zero pre-data adjusted
18	Brooksville	2/3/2021	252,100	229,100	23,000	9%	252,100	229,100	23,000	9%
19	Spring Hill	2/4/2021	440,800	73,500	367,300	83%	440,800	73,500	367,300	83%
20	Spring Hill	2/4/2021	372,800	222,900	149,900	40%	372,800	222,900	149,900	40%
21	Spring Hill	2/4/2021	349,700	303,400	46,300	13%	349,700	303,400	46,300	13%
22	Spring Hill	2/5/2021	332,600	201,200	131,400	40%	332,600	201,200	131,400	40%
23	Spring Hill	2/5/2021	407,300	209,800	197,500	48%	407,300	209,800	197,500	48%
24	Spring Hill	2/5/2021	301,600	207,900	93,700	31%	301,600	207,900	93,700	31%
25	Spring Hill	2/10/2021	334,800	179,000	155,800	47%	334,800	179,000	155,800	47%
26	Spring Hill	2/10/2021	418,300	145,300	273,000	65%	418,300	145,300	273,000	65%
27	Spring Hill	2/17/2021	322,300	303,600	18,700	6%	322,300	303,600	18,700	6%
28	Spring Hill	2/17/2021	553,800	329,600	224,200	40%	429,600	329,600	100,000	23% 1 month of abnormally high pre-data
29	Spring Hill	2/17/2021	258,800	207,200	51,600	20%	258,800	207,200	51,600	20%
30	Weeki Wachee	2/26/2021	365,300	336,800	28,500	8%	365,300	336,800	28,500	8%
31	Spring Hill	2/26/2021	379,700	262,600	117,100	31%	379,700	262,600	117,100	31%
32	Weeki Wachee	3/9/2021	55,600	126,900	-71,300	-128%	0	0	0%	Removed due to 8 months of missing pre-data
33	Weeki Wachee	3/9/2021	313,200	271,400	41,800	13%	313,200	271,400	41,800	13%
34	Spring Hill	3/11/2021	345,500	325,400	20,100	6%	345,500	325,400	20,100	6%
35	Spring Hill	3/11/2021	325,600	376,800	-51,200	-16%	325,600	376,800	-51,200	-16%
36	Spring Hill	3/11/2021	302,900	326,200	-23,300	-8%	302,900	326,200	-23,300	-8%
37	Spring Hill	3/11/2021	305,300	189,700	115,600	38%	305,300	189,700	115,600	38%
38	Spring Hill	3/18/2021	307,600	212,200	95,400	31%	307,600	212,200	95,400	31%
39	Brooksville	3/18/2021	333,800	166,900	166,900	50%	333,800	166,900	166,900	50%
40	Weeki Wachee	3/24/2021	417,800	362,300	55,500	13%	417,800	362,300	55,500	13%
41	Weeki Wachee	3/24/2021	232,000	142,400	89,600	39%	309,333	142,400	166,933	54% 3 months of zero pre-data adjusted
42	Weeki Wachee	3/26/2021	320,300	304,100	16,200	5%	320,300	304,100	16,200	5%
43	Weeki Wachee	3/26/2021	261,200	279,900	-18,700	-7%	348,267	279,900	68,367	20% 3 months of zero pre-data adjusted
44	Brooksville	3/31/2021	331,200	216,300	114,900	35%	331,200	216,300	114,900	35%
45	Brooksville	3/31/2021	343,500	89,800	253,700	74%	343,500	89,800	253,700	74%
46	Weeki Wachee	4/6/2021	324,200	325,200	-1,000	0%	324,200	325,200	-1,000	0%
47	Weeki Wachee	4/6/2021	316,800	265,400	51,400	16%	316,800	265,400	51,400	16%
48	Spring Hill	4/7/2021	334,800	236,300	98,500	29%	334,800	236,300	98,500	29%
49	Weeki Wachee	4/7/2021	336,700	246,500	90,200	27%	336,700	246,500	90,200	27%
50	Spring Hill	4/21/2021	369,500	315,800	53,700	15%	369,500	315,800	53,700	15%
51	Spring Hill	4/21/2021	292,200	413,200	-121,000	-41%	292,200	413,200	-121,000	-41%

52	Spring Hill	4/22/2021	239,000	133,900	105,100	44%	0	0	0	0%	Removed due to 6 months of missing post-data
53	Spring Hill	4/22/2021	350,400	282,900	67,500	19%	350,400	282,900	67,500	19%	
54	Spring Hill	4/22/2021	351,600	177,400	174,200	50%	351,600	177,400	174,200	50%	
55	Brooksville	4/28/2021									Missing data
56	Brooksville	4/28/2021									Missing data
57	Spring Hill	5/3/2021	441,800	390,900	50,900	12%	441,800	390,900	50,900	12%	
58	Spring Hill	5/3/2021	202,400	133,500	68,900	34%	202,400	133,500	68,900	34%	
59	Spring Hill	5/3/2021	403,200	460,800	-57,600	-14%	403,200	460,800	-57,600	-14%	
60	Hernando Bch.	5/7/2021	265,800	232,600	33,200	12%	265,800	232,600	33,200	12%	
Hernando County Subtotals			**17,848,700**	**13,925,700**	**3,923,000**	**22%**	**17,471,660**	**13,642,500**	**3,829,160**	**22%**	
Marion County											
1	Ocala	6/6/2021	166,000	201,000	-35,000	-21%	166,000	201,000	-35,000	-21%	
2	Ocala	6/16/2021	221,000	261,000	-40,000	-18%	221,000	261,000	-40,000	-18%	
3	Ocala	6/30/2021	237,000	270,000	-33,000	-14%	0	0	0	0%	Removed due to 4 months of missing pre-data
4	Ocala	6/30/2021	238,000	213,000	25,000	11%	238,000	213,000	25,000	11%	
5	Ocala	6/30/2021	266,000	321,000	-55,000	-21%	266,000	321,000	-55,000	-21%	
6	Ocala	7/1/2021	212,000	186,000	26,000	12%	212,000	186,000	26,000	12%	
7	Ocala	7/1/2021	217,000	237,000	-20,000	-9%	217,000	237,000	-20,000	-9%	
8	Ocala	7/1/2021	272,000	289,000	-17,000	-6%	272,000	289,000	-17,000	-6%	
9	Ocala	7/2/2021	257,000	188,000	69,000	27%	257,000	188,000	69,000	27%	
10	Ocala	7/2/2021	191,000	191,000	0	0%	191,000	191,000	0	0%	
11	Ocala	7/9/2021	155,000	216,000	-61,000	-39%	155,000	216,000	-61,000	-39%	
12	Ocala	7/9/2021	197,000	337,000	-140,000	-71%	197,000	337,000	-140,000	-71%	
13	Ocala	7/22/2021	199,000	142,000	57,000	29%	199,000	142,000	57,000	29%	
14	Ocala	7/22/2021	231,000	147,000	84,000	36%	231,000	147,000	84,000	36%	
15	Ocala	7/27/2021	220,000	309,000	-89,000	-40%	220,000	309,000	-89,000	-40%	
16	Ocala	7/27/2021	287,000	218,000	69,000	24%	287,000	218,000	69,000	24%	
17	Ocala	7/28/2021									Missing data
18	Ocala	7/28/2021	241,000	171,000	70,000	29%	241,000	171,000	70,000	29%	
19	Ocala	8/9/2021	92,000	57,000	35,000	38%	92,000	57,000	35,000	38%	
20	Ocala	8/9/2021	555,000	458,000	97,000	17%	555,000	458,000	97,000	17%	
21	Ocala	8/13/2021	303,000	298,000	5,000	2%	303,000	298,000	5,000	2%	
22	Ocala	8/13/2021	345,000	368,000	-23,000	-7%	345,000	368,000	-23,000	-7%	
23	Ocala	8/16/2021	44,000	42,000	2,000	5%	44,000	42,000	2,000	5%	
24	Ocala	8/16/2021	108,000	99,000	9,000	8%	108,000	99,000	9,000	8%	
25	Ocala	8/26/2021	211,000	148,000	63,000	30%	211,000	148,000	63,000	30%	
26	Ocala	9/23/2021	183,000	140,000	43,000	23%	183,000	140,000	43,000	23%	
27	Ocala	9/23/2021	240,000	165,000	75,000	31%	240,000	165,000	75,000	31%	
28	Ocala	9/30/2021	199,000	156,000	43,000	22%	199,000	156,000	43,000	22%	

29	Ocala	9/30/2021	264,000	373,000	-109,000	-41%	264,000	373,000	-109,000	-41%	
30	Ocala	#########	230,000	162,000	68,000	30%	230,000	162,000	68,000	30%	
31	Ocala	#########	276,000	217,000	59,000	21%	276,000	217,000	59,000	21%	
32	Ocala	2/1/2022	236,000	161,000	75,000	32%	236,000	161,000	75,000	32%	
33	Ocala	2/1/2022	287,000	331,000	-44,000	-15%	287,000	331,000	-44,000	-15%	
34	Ocala	2/23/2022	306,000	194,000	112,000	37%	306,000	194,000	112,000	37%	
35	Ocala	2/23/2022	307,000	230,000	77,000	25%	307,000	230,000	77,000	25%	
36	Ocala	2/23/2022	342,000	243,000	99,000	29%	342,000	243,000	99,000	29%	
37	Ocala	2/23/2022	203,000	189,000	14,000	7%	203,000	189,000	14,000	7%	
38	Ocala	3/2/2022	263,000	185,000	78,000	30%	0	0	0	0%	Removed due to 2 months of missing post-data
39	Ocala	3/2/2022	278,000	343,000	-65,000	-23%	278,000	343,000	-65,000	-23%	
40	Ocala	3/2/2022	281,000	169,000	112,000	40%	281,000	169,000	112,000	40%	
41	Ocala	3/2/2022	339,000	193,000	146,000	43%	339,000	193,000	146,000	43%	
42	Ocala	3/2/2022	324,000	347,000	-23,000	-7%	324,000	347,000	-23,000	-7%	
43	Ocala	3/23/2022	246,000	227,000	19,000	8%	246,000	227,000	19,000	8%	
44	Ocala	3/23/2022	319,000	81,000	238,000	75%	319,000	81,000	238,000	75%	
45	Ocala	3/23/2022	300,000	172,000	128,000	43%	300,000	172,000	128,000	43%	
46	Ocala	4/1/2022	311,000	166,000	145,000	47%	311,000	166,000	145,000	47%	
47	Ocala	4/1/2022	260,000	222,000	38,000	15%	260,000	222,000	38,000	15%	
48	Ocala	4/1/2022	270,000	222,000	48,000	18%	270,000	222,000	48,000	18%	
49	Ocala	4/1/2022	245,000	102,000	143,000	58%	245,000	102,000	143,000	58%	
50	Ocala	4/6/2022	33,000	148,000	-115,000	-348%	33,000	148,000	-115,000	-348%	
51	Ocala	4/6/2022	202,000	85,000	117,000	58%	0	0	0	0%	Removed due to 8 months of missing post-data
52	Ocala	4/6/2022	288,000	288,000	0	0%	288,000	288,000	0	0%	
53	Ocala	4/6/2022	183,000	166,000	17,000	9%	183,000	166,000	17,000	9%	
54	Ocala	4/19/2022	220,000	198,000	22,000	10%	220,000	198,000	22,000	10%	
55	Ocala	4/19/2022	316,000	300,000	16,000	5%	316,000	300,000	16,000	5%	
56	Ocala	4/19/2022	236,000	235,000	1,000	0%	236,000	235,000	1,000	0%	
57	Ocala	4/19/2022	231,000	150,000	81,000	35%	231,000	150,000	81,000	35%	
58	Ocala	4/19/2022	154,000	193,000	-39,000	-25%	154,000	193,000	-39,000	-25%	
59	Ocala	4/25/2022	337,000	310,000	27,000	8%	337,000	310,000	27,000	8%	
60	Ocala	4/25/2022	368,000	341,000	27,000	7%	368,000	341,000	27,000	7%	
61	Ocala	4/25/2022	156,000	177,000	-21,000	-13%	0	0	0	0%	Removed due to 1 month of missing pre-data
62	Ocala	4/25/2022	239,000	176,000	63,000	26%	239,000	176,000	63,000	26%	
63	Ocala	5/9/2022	253,000	249,000	4,000	2%	253,000	249,000	4,000	2%	
64	Ocala	5/9/2022	143,000	114,000	29,000	20%	143,000	114,000	29,000	20%	
65	Ocala	5/9/2022	370,000	253,000	117,000	32%	370,000	253,000	117,000	32%	
66	Ocala	5/18/2022	283,000	224,000	59,000	21%	283,000	224,000	59,000	21%	

67	Ocala	5/18/2022	368,000	341,000	27,000	7%	368,000	341,000	27,000	7%	
68	Ocala	5/18/2022	323,000	231,000	92,000	28%	323,000	231,000	92,000	28%	
69	Ocala	5/18/2022	47,000	168,000	-121,000	-257%	0	0	0	0%	Removed due to 8 months of missing pre-data
70	Ocala	5/25/2022	94,000	148,000	-54,000	-57%	0	0	0	0%	Removed due to 2 months of missing pre-data
	Marion County Subtotals		**16,818,000**	**14,852,000**	**1,966,000**	**12%**	**15,819,000**	**13,819,000**	**2,000,000**	**13%**	
						VCCDD (LSSA)					
1	The Villages	4/5/2021	298,490	168,480	130,010	44%	298,490	168,480	130,010	44%	
2	The Villages	4/5/2021	297,760	137,400	160,360	54%	297,760	137,400	160,360	54%	
3	The Villages	4/12/2021	301,230	260,570	40,660	13%	301,230	260,570	40,660	13%	
4	The Villages	4/12/2021	393,590	338,100	55,490	14%	393,590	338,100	55,490	14%	
5	The Villages	4/16/2021	315,410	284,240	31,170	10%	315,410	284,240	31,170	10%	
6	The Villages	4/16/2021	305,570	241,340	64,230	21%	305,570	241,340	64,230	21%	
7	The Villages	4/30/2021	310,610	124,670	185,940	60%	310,610	124,670	185,940	60%	
8	The Villages	4/30/2021	329,310	225,300	104,010	32%	329,310	225,300	104,010	32%	
9	The Villages	4/30/2021	461,940	260,120	201,820	44%	461,940	260,120	201,820	44%	
10	The Villages	7/5/2021	312,620	245,170	67,450	22%	312,620	245,170	67,450	22%	
11	The Villages	7/5/2021	297,810	66,560	231,250	78%	0	0	0	0%	Removed due to 6 months of missing post-data
12	The Villages	8/18/2021	305,640	286,200	19,440	6%	305,640	286,200	19,440	6%	
13	The Villages	8/18/2021	339,710	257,540	82,170	24%	339,710	257,540	82,170	24%	
14	The Villages	8/18/2021	318,850	272,730	46,120	14%	318,850	272,730	46,120	14%	
15	The Villages	8/18/2021	298,330	297,800	530	0%	298,330	297,800	530	0%	
16	The Villages	9/10/2021	310,570	206,090	104,480	34%	310,570	206,090	104,480	34%	
17	The Villages	9/10/2021	300,240	204,810	95,430	32%	300,240	204,810	95,430	32%	
18	The Villages	9/10/2021	299,150	186,710	112,440	38%	299,150	203,684	95,466	32%	1 month of missing post-data adjusted
19	The Villages	9/10/2021	307,600	93,290	214,310	70%	307,600	93,290	214,310	70%	
20	The Villages	9/13/2021	299,200	248,650	50,550	17%	299,200	248,650	50,550	17%	
	VCCDD (LSSA) Subtotals		**6,403,630**	**4,405,770**	**1,997,860**	**31%**	**6,105,820**	**4,356,184**	**1,749,636**	**29%**	
						NSCUDD (VWCA)					
1	The Villages	2/24/2021	323,190	286,200	36,990	11%	323,190	286,200	36,990	11%	
2	The Villages	2/24/2021	320,320	260,350	59,970	19%	320,320	260,350	59,970	19%	
3	The Villages	2/24/2021									Missing data
4	The Villages	2/24/2021	350,110	136,860	213,250	61%	350,110	136,860	213,250	61%	
5	The Villages	2/25/2021	335,620	158,930	176,690	53%	335,620	158,930	176,690	53%	
6	The Villages	2/25/2021	332,410	263,920	68,490	21%	332,410	263,920	68,490	21%	
7	The Villages	3/2/2021	351,670	224,430	127,240	36%	351,670	224,430	127,240	36%	
8	The Villages	3/2/2021	346,040	338,020	8,020	2%	346,040	338,020	8,020	2%	
9	The Villages	3/2/2021	348,610	347,240	1,370	0%	348,610	347,240	1,370	0%	
10	The Villages	3/2/2021	414,880	403,430	11,450	3%	414,880	403,430	11,450	3%	

11	The Villages	3/8/2021	279,510	242,140	37,370	13%	279,510	242,140	37,370	13%	
12	The Villages	3/8/2021	351,910	271,680	80,230	23%	351,910	271,680	80,230	23%	
13	The Villages	3/8/2021	333,830	275,560	58,270	17%	333,830	275,560	58,270	17%	
14	The Villages	3/30/2021	345,830	245,030	100,800	29%	345,830	245,030	100,800	29%	
15	The Villages	3/30/2021	326,290	260,880	65,410	20%	326,290	260,880	65,410	20%	
16	The Villages	3/30/2021	345,070	255,610	89,460	26%	345,070	255,610	89,460	26%	
17	The Villages	3/2/2021									Missing data
18	The Villages	4/12/2021	335,510	63,680	271,830	81%	0	0	0	0%	Removed due to 9 months of missing post-data
19	The Villages	4/12/2021	331,110	374,450	-43,340	-13%	331,110	374,450	-43,340	-13%	
20	The Villages	4/16/2021	321,420	264,480	56,940	18%	321,420	264,480	56,940	18%	
21	The Villages	7/5/2021	278,550	278,340	210	0%	334,260	278,340	55,920	17%	2 months of missing pre-data adjusted
22	The Villages	7/5/2021	385,510	415,420	-29,910	-8%	385,510	415,420	-29,910	-8%	
23	The Villages	9/13/2021	442,920	232,030	210,890	48%	0	0	0	0%	Removed due to 7 months of missing post-data
24	The Villages	9/13/2021	351,170	234,630	116,540	33%	351,170	234,630	116,540	33%	
25	The Villages	9/13/2021	230,190	99,130	131,060	57%	345,285	99,130	246,155	71%	4 months of missing pre-data adjusted
NSCUDD (VWCA) Subtotals			**7,781,670**	**5,932,440**	**1,849,230**	**24%**	**7,174,045**	**5,636,730**	**1,537,315**	**21%**	

Appendix F

Summary of Follow-ups

Appendix F. Phase 6 Q138 Follow-Up Summary

Utility / Count	Evaluation Number	Core or Enhanced	Number of Recommendations	Number of Changes Implemented	Percent of Changes Implemented
Citrus					
1	2	Core	15	6	40.00%
2	27	Core	12	11	91.67%
3	29	Core	17	9	52.94%
4	32	Core	14	8	57.14%
5	37	Core	23	9	39.13%
6	44	Core	7	4	57.14%
7	45	Core	3	3	100.00%
8	49	Core	11	7	63.64%
Subtotal			102	57	55.88%
Hernando					
1	6	Enhanded	11	10	90.91%
Subtotal			11	10	90.91%
Marion	None				
VCCDD					
1	1	Core	13	3	23.08%
2	2	Core	7	5	71.43%
3	8	Core	12	3	25.00%
4	10	Core	14	9	64.29%
5	19	Core	11	9	81.82%
Subtotal			57	29	50.88%
NSCUDD					
1	5	Core	6	3	50.00%
2	13	Core	10	6	60.00%
3	14	Core	11	7	63.64%
4	17	Core	11	3	27.27%
5	19	Core	10	8	80.00%
6	25	Core	11	3	27.27%
Subtotal			59	30	50.85%
Program Total			229	126	55.02%
Enhanced Evaluations		1	11	10	90.91%
Core Evaluations		19	218	116	53.21%

Appendix G

SWFWMD Cost Effectiveness Calculation

Appendix G: SWFWMD Cooperative Funding Initiative Water Conservation Project Cost Effectiveness Calculator

Description: A calculation of the cost to develop the project, amortized at 8%, versus the effectiveness of the project over its anticipated life. The calculation enables all types of projects to be compared to each other, as well as other potential uses (investments) of District funds.

Instructions:

1) Enter component type in the "Project/components" column
2) Enter the amount of water conserved into the water savings column. Use the other tabs of this workbook to calculate savings.
3) Enter the total estimated cost of the project (see below for guidelines)
4) Enter the Service life for component - use the figures provided on the right-hand side of this sheet, unless better information is provided
5) Voila! The $/kgal will automatically calculate
6) In instances when there are multiple components with varying service lives, a weighted average will need to be calculated.
7) Save this workbook and all calculations in your project folder for future reference

Water savings (gpd) = Amount of water conserved or made available by the total project

	Inputs
	Calculation factors (if adjusted, provide rational)
	Results

Interest rate (annual %) = **8.000%**

Project / components	Water savings (gpd)	Total Estimated Cost*	Service Life	$/kgal	% of total savings	Weighted $/Kgal	Weighted average $ Kgal
Core Evaluations	15,555	$27,456	5	$1.21	0.405141428	$0.49	$2.04
Enhanced Evaluaitons (Citrus County)	6,560	$19,934	5	$2.09	0.17086003	$0.36	
Enhanced Evaluations (Marion and Hernando County)	16,279	$66,955	5	$2.82	0.423998541	$1.20	
Total	**38,394**	**$114,345**	5	$ 2.04			

*** Total Estimated Cost - Include all elements that apply, such as:**

Program administration (may include consulting fees)
Devices/materials (may include advertising materials, but not including staff time or equipment purchased by the cooperator, such as printers or office space
Data analysis (may include consultant fees, but not cooperator staff time)
Reporting (costs of report production)
Marketing/Education (all print work must be done through an outside vendor to qualify for reimbursement)

Charles A. Black Wellfield Fiscal Year 2022-23 Revenues

Mrs. Suzannah Folsom, WRWSA Executive Director, will present this item.

The end of Fiscal Year 2022-23 represented the sixth full year operating under the revised Water Supply Contract with Citrus County. The purpose of this agenda item is to report to the Board the status of water sales to Citrus County and corresponding revenues for the fiscal year. The FY 2022-23 budget included the minimum contract charge of $240,000. The revenue received reflects a surplus revenue of $64,760.

The following table summarizes quantities of water sold water and revenues for FY 2022-23.

Month	Pumpage Reported by Citrus Co.	Rate	Amount Billed	Payment	Payment Date
Oct	155,079,000	0.1487	$23,060.25	$23,060.25	11/3/2022
Nov	159,326,200	0.1487	$23,691.81	$23,691.81	12/2/2022
Dec	167,725,000	0.1487	$24,940.71	$24,940.71	1/4/2023
Jan	155,287,000	0.1487	$23,091.18	$23,091.18	2/2/2023
Feb	148,855,000	0.1487	$22,134.74	$22,134.74	3/2/2023
Mar	187,912,000	0.1487	$27,942.51	$27,942.51	4/3/2023
Apr	195,405,000	0.1487	$29,056.72	$29,056.72	5/4/2023
May	191,571,000	0.1487	$28,486.61	$28,486.61	6/5/2023
Jun	172,460,000	0.1487	$25,644.80	$25,644.80	7/5/2023
Jul	172,361,000	0.1487	$25,630.08	$25,630.08	8/4/2023
Aug	173,185,000	0.1487	$25,752.61	$25,752.61	9/3/2023
Sep	170,331,000	0.1487	$25,328.22	$25,328.22	10/4/2023
Total	2,049,497,200	0.1487	$304,760.23	$304,760.23	

Staff Recommendation:

This is an information item only and no Board action is required.

Minimum Flows and Levels – Priority Lists and Schedules

Suzannah Folsom, WRWSA Executive Director, will present this item.

The purpose of this item is to provide a status report to the Board of the establishment of minimum flows and levels (MFLs) in the Authority's four-county area.

Chapter 373, Florida Statutes, requires each of the water management districts to have a Priority List and Schedule for the establishment of MFLs. The Priority List and Schedule identifies water bodies for which the District plans to establish minimum flows and levels and also identifies planned water reservations. Minimum flows and levels are limits set by the District Governing Board for surface waters and groundwater systems that are intended to prevent significant harm to the water resources or ecology of the area that may be caused by water withdrawals. Reservations set aside water from withdrawals for the protection of fish and wildlife or public health and safety.

The Districts are required to update this List and Schedule each year and provide the updated List to the Florida Department of Environmental Protection (DEP) by November 15th.

Included as exhibits to this item are the MFLs that have been established to-date, and the proposed Priority Lists and Schedules for waterbodies within the WRWSA four-county area that are to be approved by the District Governing Boards for submittal to the DEP in November. A GIS map of the MFL locations and the current status of the MFL are provided by the DEP Office of Water Policy at:

https://fdep.maps.arcgis.com/apps/webappviewer/index.html?id=dff89179a4994477a70e6ed3dfc16647

The Water Management Districts will use these MFLs to assess the health of the environment and will limit the issuance of future water supply permits based on monitoring these locations.

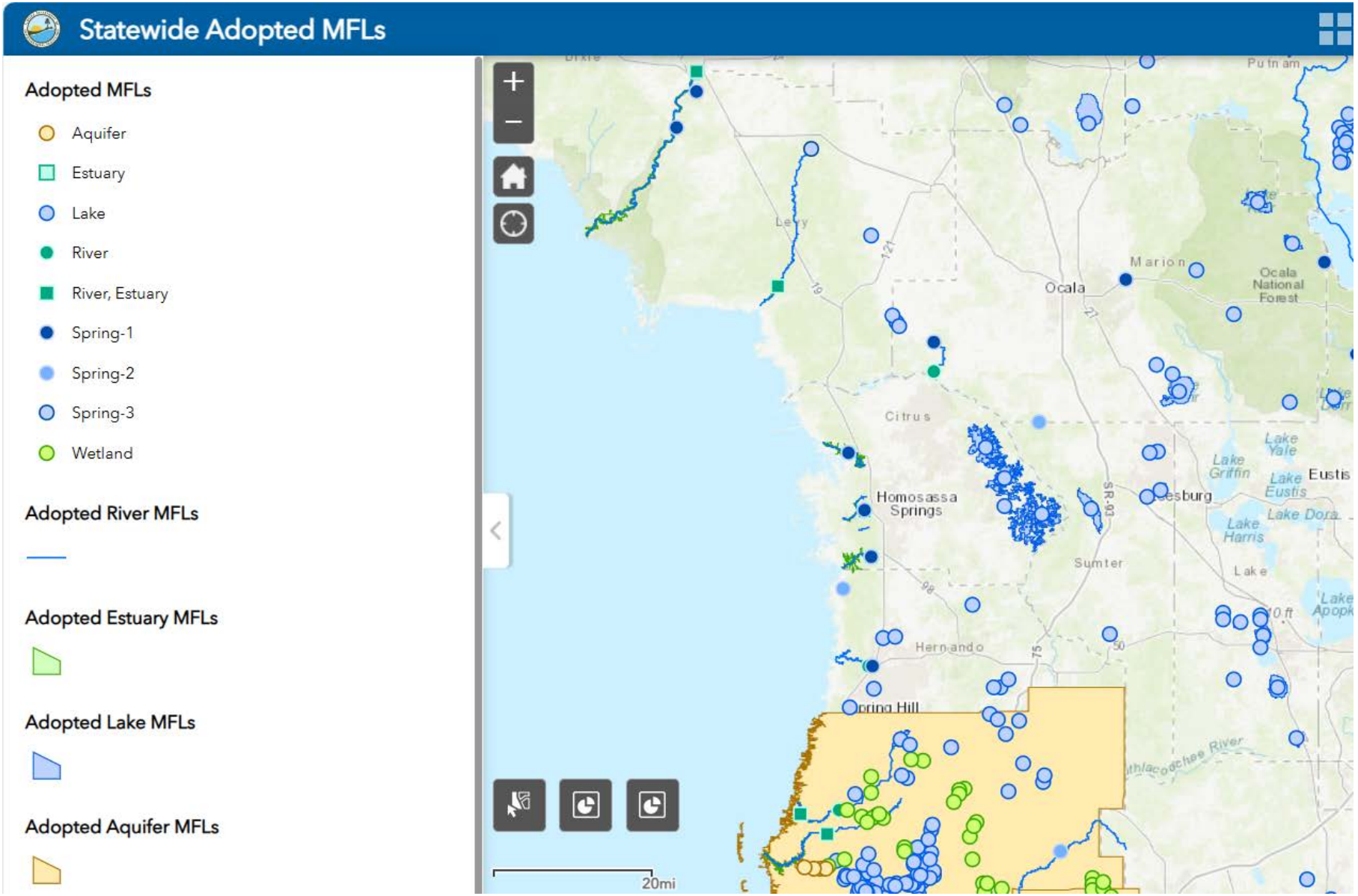
All MFLs are currently being met except for the Silver Spring MFL, which is listed as "Prevention" which means that the SJRWMD has a Prevention Strategy in place to bring it back to "Meeting" the MFL. This strategy includes conservation, aquifer recharge with the Ocala wetland aquifer recharge park, relocating supply to the lower Floridan aquifer, and increasing use of reclaimed for irrigation.

The most relevant upcoming MFLs to be set will be four locations along the Withlacoochee River, three of which were "*rescheduled from 2024 to 2025 based on delayed acquisition of topographic data necessary for hydrologic model development"* and the fourth (Lower segment) rescheduled from 2024 to 2026 "*to allow for acquisition of critical environmental data necessary for hydrological modeling of the estuarine portion of the river"*.

The Withlacoochee River has been identified as a potential alternative water supply source for the region, but the potential quantities that could be available cannot be determined until the minimum flows are set. WRWSA will continue to monitor and report on efforts to set these MFLs.

Staff Recommendation:

This is an information item only and no Board action is required.


Statewide Adopted MFLs
Adopted MFLs
Aquifer
Estuary
Lake
River
River, Estuary
Spring-1
Spring-2
Spring-3
Wetland
Adopted River MFLs
Adopted Estuary MFLs
Adopted Lake MFLs
Adopted Aquifer MFLs
Putnam
Levy
Marion
Ocala
Ocala National Forest
Citrus
Homosassa Springs
Lake Yale
Lake Griffin
Lake Eustis
Eustis
Lake Dora
Lake Harris
Sumter
Lake
Hernando
Spring Hill
SR 93
20mi

Minimum Flows and Levels (MFLs) Adopted
As of October 2023

WMD	Waterbody Name	Waterbody Type	Year Adopted	Current Status
Marion County				
SJRWMD	Kerr	Lake	1996, reevaluated 2016	Meeting
SJRWMD	Weir	Lake	2000 – scheduled for reevaluation	Meeting
SJRWMD	Charles	Lake	2003	Meeting
SJRWMD	Halfmoon	Lake	2003	Meeting
SJRWMD	Bowers	Lake	2004	Meeting
SJRWMD	Hopkins Prairie	Lake	2004	Meeting
SJRWMD	Nicotoon	Lake	2004	Meeting
SJRWMD	Smith	Lake	2004	Meeting
SWFWMD	Bonable	Lake	2013	Meeting
SWFWMD	Little Bonable	Lake	2013	Meeting
SWFWMD	Tiger	Lake	2013	Meeting
SJRWMD	**Silver**	**Spring**	**2017**	**Prevention**
SJRWMD	Silver Glen	Spring	2017	Meeting
SWFWMD	Rainbow River/Rainbow Spring Group (OFS)	River, Spring Group	2017 2019 reevaluation	Meeting Meeting
Citrus County				
SWFWMD	Ft. Cooper	Lake	2007	Meeting
SWFWMD	Tsala Apopka – Floral City, Inverness and Hernando Pools	Lake	2007	Meeting
SWFWMD	Chassahowitzka River/Chassahowitzka Spring Group (OFS) and Blind Springs	River/Spring Group	2013 2019 reevaluation	Meeting
SWFWMD	Homosassa River/Homosassa Spring Group (OFS)	River, Spring Group	2013 2019 reevaluation	Meeting
SWFWMD	Rainbow River/Rainbow Spring Group (OFS)	River, Spring Group	2017	Meeting
SWFWMD	Crystal River/Kings Bay Spring Group (OFS)	River, Spring Group	2018	Meeting

Hernando County				
SWFWMD	Mountain	Lake	2005	Meeting
SWFWMD	Neff	Lake	2005	Meeting
SWFWMD	Spring	Lake	2005	Meeting
SWFWMD	Weekiwachee Prairie	Lake	2005	Meeting
SWFWMD	Hunters	Lake	2005	Meeting
SWFWMD	Lindsey	Lake	2005	Meeting
SWFWMD	Weeki Wachee River/Weeki Wachee Spring Group (OFS)	River, Spring Group	2009	Meeting
SWFWMD	Chassahowitzka River/Chassahowitzka Spring Group (OFS) and Blind Spring	River/Spring Group	2013 2019 reevaluation	Meeting
SWFWMD	Tooke	Lake	2013	Meeting
SWFWMD	Whitehurst	Lake	2013	Meeting
Sumter County				
SWFWMD	Big Gant	Lake	2007	Meeting
SWFWMD	Black	Lake	2007	Meeting
SWFWMD	Deaton	Lake	2007	Meeting
SWFWMD	Miona	Lake	2007	Meeting
SWFWMD	Okahumpka	Lake	2007	Meeting
SWFWMD	Panasoffkee	Lake	2007	Meeting
SWFWMD	Gum Slough Spring Run	Spring	2016	Meeting

Minimum Flows and Levels (MFLs) Priority Lists and Schedules

As of October 2023

WMD	Year	New or Re-Evaluation	Waterbody Name	Waterbody Type	County(s)	Cross- Boundary Impacts from Adjacent WMD?
SWFWMD	**2026**	New	Withlacoochee River (lower segment)	River, Estuary	Citrus, Levy	No
SWFWMD	**2025**	New	Withlacoochee River (upper segment, U.S. GeologicalSurvey Holder gage to U.S. Geological Survey Wysong gage)	River	Citrus, Marion, Sumter	Yes
SWFWMD	**2025**	New	Withlacoochee River (upper segment, U.S. GeologicalSurvey Wysong gage to U.S. Geological Survey Croom gage)	River	Citrus, Sumter, Hernando	Yes
SWFWMD	**2025**	New	Withlacoochee River (upper segment, upstream of U.S. Geological Survey Croom gage)	River	Hernando , Sumter	Yes
SJRWMD	2025	Reevaluation	Weir	Lake	Marion	No
SWFWMD	2026	Reevaluation	Gum Slough Spring Group	Spring	Sumter	Yes
SWFWMD	2027	Reevaluation	Crystal River	River, Estuary	Citrus	Yes
SWFWMD	2027	Reevaluation	Kings Bay Spring Group (OFS)	Spring	Citrus	Yes
SWFWMD	2027	Reevaluation	Rainbow River	River	Marion	Yes
SWFWMD	2027	Reevaluation	Rainbow Spring Group (OFS)	Spring	Marion	Yes
SWFWMD	2029	Reevaluation (second)	Chassahowitzka River	River, Estuary	Citrus, Hernando	No
SWFWMD	2029	Reevaluation (second)	Chassahowitzka Spring Group (OFS)	Spring	Citrus, Hernando	No
SWFWMD	2029	Reevaluation (second)	Blind Spring	Spring	Citrus, Hernando	No
SWFWMD	2029	Reevaluation (second)	Homosassa River	River, Estuary	Citrus	No
SWFWMD	2029	Reevaluation (second)	Homosassa Spring Group (OFS)	Spring	Citrus	No

Legislative Report

Ms. Suzannah Folsom, Executive Director will report on this item

The 2024 Florida Legislative Session is scheduled to start January 9, 2024 and end March 8, 2024. Staff will gather information on relevant bills that are related to conservation and water supply from SWFWMD, 1000 Friends of Florida, and the Florida Engineering Society's Conservation and Environmental Quality Committee, and the House and Senate websites.

Hernando County and Sumter County both held their local legislative delegation meetings on October 26, 2023.

Staff Recommendation:

This item is for information only.

Item 11

Attorney’s Report

To be provided at meeting

Item 12.a.

Executive Director's Report

Water Use Permit Demand Summary

Summary of Major Water Use Permits in WRWSA Service Area

Updated 10/20/2023

Water Use Permit #	Applicant/Permittee Name	Permit Expiration Date	Permitted Average GPD	Actual 12-Month Rolling Average GPD*	Actual 5-Year Rolling Average GPD**	Actual Use / Permit Capacity	WRWSA RWSP Projection for 2023 GPD	RWSP Accuracy for 2023 +/-%
Citrus County								
207.007	City of Crystal River	3/27/2032	919,000	988,561	831,042	107.6%	746,000	-24.5%
419.013	City of Inverness	5/18/2031	1,535,000	1,182,079	1,113,071	77.0%	1,144,000	-3.2%
1118.008	Floral City Water Association, Inc.	2/28/2038	395,000	378,847	357,172	95.9%	306,000	-19.2%
2842.011	Citrus County	8/25/2035	4,780,000	3,143,203	2,697,329	65.8%	2,654,000	-15.6%
4153.015	Rolling Oaks Utilities, Inc.	8/20/2038	1,573,000	1,838,510	1,608,564	116.9%	1,510,000	-17.9%
4406.009	Homosassa Special Water District	8/25/2032	951,000	808,984	825,934	85.1%	766,000	-5.3%
7121.007	Citrus County - Charles A Black	8/22/2043	7,181,900	5,526,629	4,971,606	77.0%	3,788,000	-31.5%
9791.011	Citrus County - Sugarmill Woods	11/17/2025	2,435,300	2,752,330	2,257,130	113.0%	2,374,000	-13.7%
11839.01	GCP Walden Wds. One & Two, LLC, c/o Sun Communities, Inc.	4/23/2039	187,900	161,266	167,276	85.8%	140,000	-13.2%
Hernando County								
5789.014	Hernando Co. BOCC, Wiscon Maintenance Compound/Attn: Landis Legg	8/26/2035	23,299,000	21,543,022	19,279,392	92.5%	19,396,000	-10.0%
7627.005	City of Brooksville	2/25/2024	2,448,000	1,540,373	1,409,131	62.9%	1,144,000	-25.7%
Marion County - SWFWMD								
1156.013	Bay Laurel Community Development District	2/23/2041	7,560,900	4,456,871	3,779,030	58.9%	2,722,000	**-38.9%**
5643.008	Utilities, Inc. of Florida - Golden Hills	2/23/2036	188,400	130,257	136,817	69.1%	160,000	22.8%
6151.014	Marion County Utilities Consolidated WUP	1/22/2043	9,323,500	8,453,529	6,201,164	90.7%	5,352,000	-36.7%
8020.008	Association of Marion Landing Owners, Inc.	9/9/2040	179,400	135,298	133,109	75.4%	160,000	**18.3%**
8339.008	Florida Governmental Utility Authority-Dunellon	3/21/2035	1,117,100	1,303,301	1,270,708	116.7%	952,000	**-27.0%**
Marion County - SJRWMD								
2993-12	CSWR-Florida Utility Operating Company - South Marion Regional	5/27/2042	231,000	273,223	184,752	**118.3%**	236,000	**-13.6%**
2995-7	Tradewinds Utilities Inc	2/27/2035	227,000	90,992	94,417	40.1%	100,000	9.9%
3016-4	Ocala East Villas Inc	8/27/2031	107,000	84,337	90,801	78.8%	100,000	18.6%
3021-5	Rolling Greens Communities	9/13/2025	610,000	473,912	424,585	77.7%	350,000	**-26.1%**
3043-7	Florida Governmental Utility Authority - Ocala Oaks	1/6/2040	194,000	161,357	140,615	83.2%	182,000	12.8%
3137-6	City of Belleview	10/11/2036	1,022,000	1,136,060	1,002,788	111.2%	884,000	-22.2%
4578-8	Marion County Utilities Consolidated CUP	9/10/2023	7,090,000	6,839,488	6,178,825	96.5%	6,782,000	-0.8%
50324-9	City of Ocala	8/7/2027	17,540,000	12,908,359	11,996,390	73.6%	11,556,000	-10.5%
Sumter County								
1368.008	Lake Panasoffkee Water Assoc Inc	8/22/2024	410,000	319,748	285,547	78.0%	344,000	7.6%
6519.01	City of Bushnell	3/29/2031	1,366,800	504,836	463,394	36.9%	730,000	**44.6%**
7185.007	City of Webster	5/23/2043	386,200	103,098	90,665	26.7%	190,000	**84.3%**
8135.015	City of Wildwood	3/31/2035	4,344,800	2,983,929	2,253,262	68.7%	4,916,000	**64.7%**
8193.006	City of Center Hill	11/18/2042	150,000	71,529	68,805	47.7%	186,000	**160.0%**
13005.012	Village Center Community Development District	1/23/2038	19,345,900	15,303,463	12,894,221	79.1%	24,646,000	**61.0%**
20721.003	South Sumter Utility Company	2/2/2038	2,600,000	1,654,104	not enough data	63.6%	n/a	n/a

12-month Rolling Average for most recent available data

5-year Rolling Average for most recent available data

**Renewal submitted; Permitted GPD represents WUP request; no new expiration date confirmed; revision number updated to reflect submittal*

Item 12.b.

Executive Director's Report

WMIS WUP Notifications

Summary of Recent Water Use Permit Activity in WRWSA Service Area

Updated October 25, 2023

Water Use Permit #	Applicant/Permittee Name	Activity Type	Date	Avg GPD	Peak GPD	Use Type	Status
Citrus County							
3467.004	The Fountains Memorial Park	Renewal	8/14/2023	45,400	133,200	Landscape/ Recreation	In Review
13279.005	*World Woods Golf Club**	Modification	8/15/2023	734,800	1,645,000	Landscape/ Recreation	Issued 9/28/2023
Hernando County							
5789.015	Hernando County Water System	Modification	8/10/2022	24,360,000	31,911,600	Public Supply	In Review
4430.004	Ernie Wever Park	Modification	5/22/2023	49,400	143,700	Landscape/ Recreation	In Review
7627.007	City of Brooksville	Renewal	9/6/2023	2,448,000	3,672,000	Public Supply	In Review
Marion County - SWFWMD							
9497.003	Marion Oaks Country Club	Renewal	3/23/2023	133,600	307,600	Landscape/ Recreation	In Review
11602.004	McGinley Farm	Modification	5/9/2023	149,800	874,500	Agricutural	Issued 10/18/2023
4386.004	Stancil's Pineywoods	Renewal	8/11/2023	5,000	29,800	Agricutural	Issued 9/6/2023
21154.000	Freedom Common Development	New	10/23/2023	303,920	892,060	Agricutural	In Review
Sumter County							
21031.000	Blue Goose Utility Company, LLC	New	4/4/2022	6,000,000	8,600,000	Public Supply	In Review
21039.000	Blue Goose Water Conservation Authority	New	5/9/2022	3,835,200	19,358,900	Landscape/ Recreation	In Review
20949.002	Gibson Place Water Conservation Authority	Modification	1/18/2023	4,466,000	22,341,000	Landscape/ Recreation	In Review
20901.002	Gibson Place Utility Company, LLC	Modification	7/11/2023	4,000,000	5,800,000	Public Supply	In Review
11575.004	Florida Beef	Modification	7/13/2023	452,700	469,200	Industrial/ Commercial	Withdrawn
11658.003	Hibernia Wholesale Nursery	Modification	9/11/2023	373,000	816,900	Agricutural	Issued 9/25/2023
3282.003	Hugh L. Marshall	Renewal	9/14/2023	14,600	117,000	Agricutural	Issued 9/15/2023
8135.016	*City of Wildwood***	Modification	9/19/2023	4,583,200	6,870,400	Public Supply	In Review
20387.002	Buffalo Hide and Cattle Company	Transfer	9/20/2023	572,600	2,538,500	Agricutural	Issued 9/25/2023
6793.008	Rainforest RV	Transfer	10/13/2023	224,400	557,400	Landscape/ Recreation	In Review
**WUP is located in both Citrus and Hernando Counties*							
***WUP is located in both Sumter and Marion Counties*							

Residential Irrigation Evaluation Programs Update

Ms. Suzy Folsom, Executive Director, will present this item.

Residential irrigation evaluations are great tools to promote water conservation, and help municipalities meet their per capita water usage goals. This is a progress update on the three residential irrigation evaluation programs that WRWSA is currently ongoing.

Phase 6 Residential Irrigation Evaluation Program – SWFWMD

All of the evaluations have all been completed for this program phase. We will complete the final report once we have water usage data for a 12-month period after the last evaluation. A draft copy of the report for this phase is included in this Board Packet. This report will be completed by December 2023. A summary of the evaluations planned and completed is listed below:

Participating Utility	Total Evaluations To-date	Target # of Evaluations	Percent Complete
Citrus	57	53	108%
Hernando	60	44	136%
Marion	70	71	99%
Villages VCCDD-LSSA	20	16	125%
Villages NSCUDD-VWCA	25	32	78%
Total	**232**	**216**	**107%**

Phase 7 Residential Irrigation Evaluation Program – SWFWMD

This program began in December 2022. Forty-Nine percent of the planned evaluation have been completed to date. This program will be complete in December 2025.

Participating Utility	Total Evaluations To-date	Target # of Evaluations	Percent Complete
Citrus	15	29	52%
Hernando	33	44	75%
Marion	2	71	3%
Villages VCCDD-LSSA	34	16	213%
Villages NSCUDD-VWCA	11	32	34%
Total	**95**	**192**	**49%**

Residential Irrigation Evaluation Program Pilot – SJRWMD

WRWSA has received approval for the program from the SJRWMD and started in October 2023. WRWSA has been working with Marion County and the City of Belleview to identify the highest residential users to be a part of this program, and is preparing to mail out promotional items to the targeted users.

Participating Utility	Total Evaluations To-date	Target # of Evaluations	Percent Complete
City of Belleview	0	20	0%
Marion County	0	40	0%
Total	**0**	**60**	**0%**

Regional Water Supply Plan Update – Status Report

Ms. Suzannah Folsom, Executive Director will present this item.

The Authority entered into a cooperative funding agreement with the Southwest Florida Water Management District (SWFWMD) in December 2022 (23CF0004079) for Regional Water Supply Plan Update project. The Authority entered into a contract with Hazen and Sawyer in January 2023 to undertake the project.

With the assistance of the SWFWMD, St. Johns River Water Management District, and a Technical Advisory Committee comprised of representatives from member governments and public supply utilities in the four-county region, the Plan Update is being coordinated.

A kickoff meeting for the project was held on March 2, 2023. The consultant has been working on population and demand projections, and conservation reuse evaluations. Hazen and Sawyer will present on an overview of the Regional Water Supply Plan, and the progress made so far on the Population and Demand projections.

Task Summary

Task	Description	Schedule	% Complete
1	Project Management and Stakeholder Engagement	February 2023 - September 2024	30%
2	Data Collection and Processing	February 2023 – January 2024	80%
3	Population and Demand Estimates	February 2023 – July 2023	50%
4	Water Conservation and Reuse Evaluation	February 2023 – August 2023	50%
5	Water Sources Evaluation	February 2023 – September 2023	0%
6	Water Supply Project Options	October 2023 – January 2024	0%
7	Organization, Funding, and Governance Requirements	February 2024 – April 2024	0%
8	Recommendations	February 2024 – September 2024	0%

Project Billing Summary

Hazen and Sawyer Contract Amount	Billed To Date	Remaining	SWFWMD Reimbursement Received
$350,000.00	$106,918.60	$243,081.40	$0.00

Staff Recommendation:

This item is for the Board's information and no action is required.

Item 12.e.

Executive Director's Report

Correspondence

September 13, 2023

Paige TaraCruz, Environmental Scientist 2
Southwest Florida Water Management District
2379 Broad Street
Brooksville, FL 34604-6899

Subject: Q324 2024 Regional Water Supply Plan Update - Schedule Revision

Dear Ms. Tara-Cruz:

The schedule of the Q324 2024 Regional Water Supply Plan Update project has been delayed for several reasons. The table below lists the original estimated completion dates and the revised estimated completion dates for the project, along with the reason for the schedule delay.

Task	Task Description	Original Completion Date	Revised Completion Date	Reason
1	Population and Demand Estimates	6/30/2023	12/31/2023	Difficulty reconciling WUP and PSAR demand data from SWFWMD and SJRWMD
2	Conservation and Reuse Evaluation	8/31/2023	1/31/2024	Requires the demand projections task to complete
3	Water Sources Evaluation	9/30/2023	2/28/2024	This task has been delayed to coincide with the availability of the new Central Springs Model
4	Water Supply Project Options	1/31/2024	4/30/2024	Required completion of the previous tasks
5	Recommendations	4/30/2024	6/30/2024	Required completion of the previous tasks
6	Draft Regional Water Supply Plan	7/31/2024	9/30/2024	Required completion of the previous tasks
7	Final Regional Water Supply Plan	9/30/2024	11/30/2024	Required completion of the previous tasks

Please do not hesitate to call me at 813-395-4004 or email at sfolsom@wrwsa.org if you have any questions.

Sincerely,

Suzannah Folsom, PE, PMP
Executive Director

cc: Lisa Krentz, Hazen

WITHLACOOCHEE REGIONAL WATER SUPPLY AUTHORITY

October 17, 2023

Mr. Ken Cheek, PE
Director, Department of Water Resources
Citrus County Board of County Commissioners
3600 W. Sovereign Path, Suite 291
Lecanto, Florida 34461

Subject: Cost of Living Increase for Fiscal Year 2024 rate per 1000 gallons

Dear Ken:

This letter serves as formal confirmation of the annual cost of living rate increase for fiscal year 2024 effective October 1, 2023 as required in Section 10.2 of the Water Supply Contract.

The rate in fiscal year 2023 was $0.1487 per 1000 gallons. In an email on October 5, 2023, your staff confirmed that Citrus County is adjusting the rates applied to your customers by 5.0% in fiscal year 2024. The Master Water Contract allows for the same adjustment to be applied to the water rate that WRWSA charges Citrus County. The new calculated rate for fiscal year 2024 will be $0.1561 per 1000 gallons.

Should you have any questions or wish to discuss this matter, please contact me.

Sincerely,

Suzannah Folsom, PE, PMP
Executive Director

cc: Gary Loggins, Operations Division Director

Lecanto Government Building
3600 W. Sovereign Path, Suite 228
Lecanto, FL 34461

(352) 527-5795
Fax: (352) 527-5797
wrwsa@wrwsa.org

Item 12.f.

Executive Director's Report

News Articles

Wildwood residents unhappy about 20 percent hike in water rate

Villages-News

By Marv Balousek

September 26, 2023

Upgrading wastewater treatment capacity due to exploding growth pushed Wildwood's city budget to a record $258.5 million for the 2023-24 fiscal year, which begins Oct. 1.

Commissioners Monday night gave final budget approval after a public hearing.

The budget includes an estimated $150 million to build a new wastewater treatment plant and upgrade the current 30-year-old facility. Payment is expected to come from municipal bonds, which usually are paid back over 20 to 30 years, and potential grants.

Property owners will pay taxes of about $2.83 per $1,000 assessed valuation, a 5.7 decrease from last year's rate of $3. The tax rate will be at the rolled-back rate, the amount needed to collect the same revenue as the prior year excluding new construction.

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Lady Lake cracking down on dangerous overuse of fertilizer

Villages-News

September 26, 2023

Emphasizing the importance of the water quality of lakes, streams and wetlands, the Lady Lake Commission has unanimously approved a new fertilizer ordinance that goes into effect Oct. 1.

The ordinance is based on the “Florida-Friendly Best Management Practices for Protection of Water Resources” by the Green Industries. Lady Lake’s ordinance is modeled after Lake County’s fertilizer ordinance.

“The overuse and misuse of fertilizers has the potential for adverse effects on surface and ground water,” said Public Works Director C.T. Eagle. “This can be caused by excessive nutrients found in fertilizers, resulting in increasing levels of nitrogen seeping into the aquifer and springs.”

These water bodies are critical to the environmental, recreational, cultural and economic well-being of the town and surrounding areas. Overgrowth of algae and vegetation can hinder the effectiveness of flood prevention provided by stormwater systems. The regulation of nutrients can help to improve and maintain water and habitat quality.

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What it means that flamingos are back in Florida | Column
Kelly Cox
Oct. 3, 2023

You've seen it all over the news: Flamingos are invading Florida. Thanks to blustery winds from Hurricane Idalia, a pink wave recently washed over the Sunshine State.
Audubon Florida has received reports of more than 100 flamingos from as far north as St. Marks Wildlife Refuge all the way south to Collier County and the Keys — and they seem to be sticking around.

American flamingos were more common in Florida before people hunted them almost to extinction by the turn of the 20th century. Today, they are numerous in Mexico and Cuba, where they breed, with a few individuals straying to the Everglades and Florida Bay. As Hurricane Idalia passed between the Yucatan and Western Cuba in August, its strong winds likely swept up flamingos from this region, carrying them to Florida's coast and even as far north as Ohio and Pennsylvania.

While a little off course, these flamingos appear to be quite satisfied with the Sunshine State's offerings: clean, abundant wetland habitats that contain plenty of food for foraging. It's an important moment: Wetland restoration is working for our wading birds. The reason we are able to host frolicking flamingo friends is because groups like Audubon have worked tirelessly over the past several decades to restore and protect America's Everglades, coastal habitats and wetlands across the state.

In recent years, we've seen historic momentum toward the colossal effort that Everglades restoration requires: unprecedented levels of state and federal funding, millions of gallons of water flowing south once again and banner years for wading bird populations in 2018 and 2020. This year, we broke ground on the Everglades Agricultural Area Reservoir project — the crown jewel for all components of Everglades restoration.

Now, we must keep moving. Hurricanes like Idalia show us that our best defense against storms' increased frequency and intensity is a healthy Everglades. Continuing our progress on restoration will build resilience as Florida deals with ongoing and future impacts of a changing climate.

Along with alligators, panthers and manatees, these lanky, pink birds are icons of our state. To bring them back permanently, we must continue to advance Everglades restoration, safeguard conservation lands and curb pollution.

If we do this, our blue and green spaces might just become a little more pink.

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If we do this, our blue and green spaces might just become a little more pink.

Fertilizer blamed for corrosive impact on pipes in The Villages

Villages-News

By Meta Minton

October 9, 2023

Fertilizer is being blamed for corrosive damage to pipes in The Villages.

The Project Wide Advisory Committee on Monday approved spending $136,384 for an emergency pipe repair in the Village of Bridgeport at Lake Sumter.

The 20-year-old 54-inch pipe located between private residences at 1177 Harley Circle and 1189 Harley Circle was found to be near collapse during a recent inspection. Its repair has been deemed as “critical.”

Mike Harris of District Property Management said the overuse of fertilizer has had a “very corrosive” impact on the pipe. Lady Lake recently cracked down on the overuse of fertilizer due to environmental concerns, including on the water supply.

“Is this something we are going to look forward to in other parts of The Villages?” asked PWAC member Duane Johnson. “Those are enormous costs to repair. Is there any indication we are going to see more of these?”

Unfortunately, more pipes will have to be repaired.

“As we inspect more pipes, we will find failures,” Harris said.

The good news is that the repaired pipe in the Bridgeport at Lake Sumter should last for 50 years.

PWAC had set aside $250,000 in the budget for pipe repairs in the 2023-24 fiscal year. After this project is paid for, $113,616 will remain in the pipe repair fund.

Will Florida manatees be listed as an endangered species again? Feds to review data.

Tampa Bay Times
By Max Chesnes
October 11,2023

In the wake of thousands of Florida manatee deaths in recent years, federal wildlife officials Wednesday announced they will launch a new scientific review to determine whether the animal should be reclassified as an endangered species.

The U.S. Fish and Wildlife Service in the coming months will round up manatee data and decide whether the West Indian manatee species should be given bolstered protections under the federal Endangered Species Act.

In 2017, federal wildlife officials downlisted West Indian manatees to a "threatened" species, a decision the agency claimed was based on improved population numbers. Many environmental advocacy groups have decried that decision as premature, especially after 1,100 animals died in 2021, many of them from a human-fueled seagrass famine.

This week's announcement comes after a coalition of environmental groups in November petitioned the federal agency to go back to the drawing board and reconsider classifying the species as the manatee die-off unfolded in Florida's Indian River Lagoon, a 156-mile estuary on the Atlantic coast that has been plagued by nutrient pollution in recent decades.

Pollution fueled by a cocktail of human influences through wastewater discharges, rainfall runoff laden with fertilizer and leaky septic tanks have contributed to more algal blooms in the Indian River Lagoon. Those blooms block sunlight that seagrass needs to survive and thrive. Dying seagrass prompted the manatees to starve after months of emaciation and weakness.

"This finding by the Fish and Wildlife Service is a crucial step in manatees' road to recovery," said Ben Rankin, who helped write the petition while at Harvard University's Animal Law & Policy Clinic.

"Scientists have documented overwhelming threats to manatees in recent years, and it's heartening the government is taking action to respond," Rankin said in a prepared statement.

The advocacy groups who petitioned the wildlife service pointed to the widespread seagrass loss in the Indian River Lagoon, and across Florida, as a reason why the manatee should once again be considered an endangered species. Between 2009 and 2021, the lagoon lost 75% of its seagrass, according to the St. Johns River Water Management District.

Declining seagrass is not unique to Florida's east coast: Tampa Bay has lost 12% of its seagrass in just the past two years, state water managers found in a survey earlier this year.

“We are pleased that the Fish and Wildlife Service recognizes the need to reevaluate its ill-timed decision to downlist the Florida manatee,” said Patrick Rose, an aquatic biologist and executive director of Save the Manatee Club.

“There can be no doubt that the Service needs to immediately rebuild its manatee recovery program through increased staffing and funding,” Rose said in a prepared statement.

Rose’s organization in November launched the petition along with the Center for Biological Diversity, Harvard Animal Law & Policy Clinic, Miami Waterkeeper and Puerto Rican engineer Frank S. González García.

Federal wildlife officials are already revising what is considered a “critical habitat” for the manatees in Florida, or a habitat that’s crucial for the recovery of a species in trouble.

According to federal law, the wildlife service has 12 months from when the petition was first filed to make its decision about reclassifying the manatee. Conservation groups expect a decision later this winter, according to Ragan Whitlock, an attorney at the Center for Biological Diversity.

At least 476 manatees have died statewide this year through early October, according to Florida Fish and Wildlife Conservation Commission data. That compares to 800 deaths in all of 2022 and 1,100 in 2021. Deaths so far this year have trended behind the five-year average of 650 deaths through Oct. 6.

The wildlife service assures its upcoming review will be robust.

“We are committed to ensuring we are getting the most updated scientific information during this status review to protect and recover the species,” said Mike Oetker, the acting regional director for the wildlife service’s Southeast region, in a prepared statement. “The Service has a long history of working to save the manatee from extinction since it was one of the first species listed under the 1967 precursor to the Endangered Species Act.”