



## Orange Water and Sewer Authority

OWASA is Carrboro-Chapel Hill's not-for-profit public service agency delivering high quality water, wastewater, and reclaimed water services.

### Agenda

### Work Session of the OWASA Board of Directors

Thursday, November 11, 2021, 6:00 P.M.

Due to COVID-19 public health concerns, the Orange Water and Sewer Authority (OWASA) Board of Directors is conducting this meeting virtually utilizing [Microsoft Teams](#) software. Board Members, General Counsel and staff will be participating in the meeting remotely.

In compliance with the "Americans with Disabilities Act," interpreter services for non-English speakers and for individuals who are deaf or hard of hearing are available with five days prior notice. If you need this assistance, please contact the Clerk to the Board at 919-537-4217 or [aorbich@owasa.org](mailto:aorbich@owasa.org).

The Board of Directors appreciates and invites the public to attend and observe its virtual meetings online. Public comment is invited via written materials, ideally submitted at least two days in advance of the meeting to the Board of Directors by sending an email to [board\\_and\\_leadership@owasa.org](mailto:board_and_leadership@owasa.org) or via US Postal Service (Clerk to the Board, 400 Jones Ferry Road, Carrboro, NC 27510). Public comments are also invited during the Board Meeting via telephone, and you will need to be available to call-in during the meeting. Please contact the Clerk to the Board at [aorbich@owasa.org](mailto:aorbich@owasa.org) or 919-537-4217 to make arrangements by 3:00 p.m. the day of the meeting.

The Board may take action on any item on the agenda. Public speakers are encouraged to organize their remarks for delivery within a four-minute time frame allowed each speaker, unless otherwise determined by the Board of Directors. The Board may take action on any item on the agenda.

### Announcements

- a. Announcements by the Chair
  - Any Board Member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time.
- b. Announcements by Board Members
  - Update on the November 2, 2021, Cane Creek Mitigation Tract Tour (Yinka Ayankoya)
- c. Announcements by Staff
  - November 18, 2021 Board Strategic Plan Work Session (Mary Tiger)
  - Mason Farm Wastewater Treatment Plant Receives Directors Award from the Partnership for Clean Water (Mary Darr)

### Consent Agenda

#### Action

1. Award a Construction Contract for the Mason Farm Wastewater Treatment Plant Fermenter Mixing Improvements Project (Brad Barber)
2. Minutes of the October 14, 2021 Work Session of the Board of Directors (Andrea Orbich)



3. Minutes of the October 28, 2021 Closed Session for the Purpose of Discussing Confidential Information Regarding Security Infrastructure In-Place to Protect OWASA Customers, Personnel and Assets (Jody Eimers)

**Regular Agenda**

Discussion

4. Review and Discuss Draft Water Conservation Plan (Mary Tiger/Amy Armbruster)
5. Discuss the Development of a New Budget Format (Stephen Winters)
6. Discuss a Temporary Approach for Distributing Care to Share Funds (Mary Tiger/Denise Battle)

Discussion

7. Review Board Work Schedule
  - a. Request(s) by Board Committees, Board Members and Staff (Jody Eimers)
  - b. December 9, 2021 Work Session (Todd Taylor)
  - c. January 13, 2022 Work Session (Todd Taylor)
  - d. 12 Month Board Meeting Schedule (Todd Taylor)
  - e. Pending Key Staff Action Items (Todd Taylor)

**Summary of Work Session Items**

8. Executive Director will summarize the key staff action items from the Work Session

**Closed Session**

9. The Board of Directors will meet in Closed Session for the Purpose of Discussing Potential Environmental Claims in Accordance with N.C. General Statutes 143-318.11(a)(3) (Robert Epting)

## **Agenda Item 1:**

Award a Construction Contract for the Mason Farm Wastewater Treatment Plant (WWTP) Fermenter Mixing Improvements Project.

### **Purpose:**

This memorandum recommends that the OWASA Board award a construction contract to Gilbert Engineering Company (Gilbert) for the construction of the Fermenter Mixing Improvements Project.

### **Background:**

The WWTP utilizes primary solids fermentation to promote biological phosphorus removal. The settled solids from the primary clarifiers are pumped into a large concrete tank (Fermenter) where they undergo fermentation under anaerobic conditions. The fermentation process breaks down some of the more complex organic molecules to form short-chain volatile fatty acids (VFAs) – mainly acetic and propionic acids. After leaving the Fermenter, the fermented product is then separated into solid and liquid components using thickening equipment; the liquids are then pumped to the Nitrified Sludge (NSL) cells to serve as a food source for the biological process.



The Fermenter mixing equipment has reached the end of its useful life as determined by a FY 2019 condition assessment which found significant grit buildup in the fermenter tank leading both to accelerated system deterioration as well as reduced performance. This finding was further corroborated by WWTP staff observations of impacts to treatment processes downstream of the Fermenter, such as dewatering equipment operations and increased need for acetic acid to supplement phosphorus removal. With the Fermenter out of service, the Staff observed higher levels of grit and grease both in the digesters and further downstream in the dewatering equipment that caused more downtime for equipment. Additionally, since the Fermenter has been out of service, the WWTP has seen a significant rise (over \$7,000 per month in additional chemical costs) in the demand for acetic acid to assist with phosphorus removal.

In FY 2019, the draining, cleaning, and inspection of the primary sludge fermenter found the interior lining of the tank to be in relatively good condition, but recommended improvements to the mixing system. This project specifically addresses the recommendations from that condition assessment to replace and make modifications to the jet mixing system and associated piping; these improvements are expected to eliminate solids settlement in the tank, reduce pipe clogging, and increase VFA production.

OWASA selected an engineering consultant, Brown and Caldwell (Engineer), to provide design, bidding, and construction related services for the Fermenter Mixing Improvements Project. The project scope includes:

- Removal of the existing and installation of new mixing equipment, pipe, and headers,
- Removal of the existing underground fermenter gas condensate pipe,
- Installation of a new gas condensate accumulator, drain, and vent piping,
- Installation of electrical improvements for power and controls of new equipment, and
- Installation of new instrumentation and controls.

### **Advertising and Bidding:**

The Engineer completed the Fermenter Mixing Equipment design and bid document in November 2020. The bid was posted on websites, news outlets, and emailed on December 7, 2020. Additionally, throughout the bid process, the Engineer and OWASA staff made direct contact with numerous general contractors via phone calls and emails. A total of four bids were submitted on the February 9, 2021 deadline; however, the bids ranged from \$1.13 million to \$1.59 million and were substantially over the \$750,000 to \$900,000 estimated range of cost of construction. For this reason, all bids were rejected, and staff chose to proceed with a re-design to reduce scope and costs and make improvements to original design.

In September 2021, the Engineer completed the Fermenter Mixing Equipment re-design and bid documents. The bid advertisement was posted to websites, news outlets, and emailed on September 17, 2021. As before, throughout the bid process, the Engineer and OWASA staff made direct contact with numerous general contractors via phone calls and emails. On the October 22, 2021 bid deadline, a total of one bid was submitted. Whereas state statute requires receipt of a minimum of three bids for construction contracts greater than \$500,000, the one bid received was returned unopened and the contract was re-advertised with a re-bid date of November 1, 2021. On November 1, 2021, one bid was received and opened publicly, and the results are summarized below:

Gilbert Engineering Company	\$1,033,031
-----------------------------	-------------

The re-designed price is 9% lower than the original project's lowest bid in February 2021. While the re-designed price is still over the original construction estimate range given by the Engineer in August 2020, the bid price received was within 4% of the anticipated cost of construction resulting from construction cost escalations, material and staffing availability, and current construction climate. A formal engineer's estimate was not included in the scope for the re-design of this project; however, in conversations with the Engineer it was informally conveyed that the costs

were expected to be close to \$1 million for construction. While the bid price does exceed the currently approved CIP funding for this project (\$883,000), that funding was established under the assumption that approximately \$200,000 in construction would be completed in FY 2021 under the initial bid.

After an evaluation of the low bidder's project references, current projects list, financial statement and references, safety performance data, debarment status, and claims and judgements information, Gilbert was determined to be a responsive and responsible bidder. A copy of the certified bid tabulation is attached with the Engineer's recommendation for award (attached).

**Minority and Women Business Enterprise (MWBE) Participation:**

OWASA's Minority Business Participation Outreach Plan and Guidelines include all of the statutory requirements from the State of North Carolina and specifies a 10% goal for participation by minority businesses. OWASA staff took several actions to solicit minority participation in this contract, including advertising the construction bid with the Greater Diversity News, publishing the advertisement on various websites, including the State of North Carolina Interactive Purchasing System (NC IPS) and OWASA, and posting advertisement in multiple plan rooms. Staff also emailed the advertisement directly to approximately five hundred and fifteen (515) MWBE prime contractors and subcontractor firms registered with NC IPS.

OWASA also requires bidders to complete "good faith efforts" to solicit participation by minority subcontractors, and to attest to those efforts via an affidavit submitted with the bid. Staff reiterated this requirement at the pre-bid meeting and provided the bidders with detailed guidelines.

Additionally, Gilbert provided the required documentation of their good faith efforts, including identification of their subcontractors who qualify as Minority and Women-owned Business Enterprise (MWBE) contractors. The scope of work for this project offers limited opportunities for subcontracting to trades such as electrical, controls and instrumentation, and a small amount of painting, and concrete placing and finishing. Often contractors prefer to self-perform the concrete placing and finishing due simplicity of effort required or difficulty locating an interested subcontractor. Despite the nature and scope of this project affording limited subcontracting opportunities for MWBE participation, the total percentage of work going to MWBE in this contract is approximately 20% of the contract value. Both Hispanic and female businesses will be utilized within this contract.

**Bid Review and Recommendation:**

Gilbert has demonstrated sufficient qualifications in past project performance, personnel qualifications/experience, and reference checks. The Engineer and OWASA staff also determined that Gilbert met safety performance, relevant project experience, bonding capacity, and other requirements. Brown and Caldwell's recommendation that the construction contract for this project be awarded to Gilbert is attached along with the certified bid tabulation (attached).

Due to current bid climate and difficulties with materials supply chains that have significantly increased costs and extended material lead times, the re-design effort was not able to realize the

magnitude of cost saving results that were expected. However, the Fermenter remains critical to the overall wastewater treatment process. Key impacts of improved Fermenter operation include grit and grease removal improving dewatering equipment performance and better VFA production necessary for phosphorus removal. With increased VFA production from the fermentation process, operational costs are significantly reduced proportional to reduction in purchases of supplemental acetic acid. For these reasons, OWASA staff supports the Engineer's recommendation and requests that the Board adopt the attached resolution (attached) awarding the construction contract to Gilbert Engineering Company.

**Information:**

- Engineer's Recommendation for Award and Certified Bid Tabulation
- Resolution Awarding a Construction Contract for the Mason Farm Wastewater Treatment Plant Fermenter Mixing Improvements Project

T: 919.424.1520



November 2, 2021

Mr. Brad Barber, P.E.  
Orange Water and Sewer Authority (OWASA)  
400 Jones Ferry Road  
Carrboro, NC 27510

155193

Subject: Mason Farm WWTP Fermenter Mixing Improvements  
Engineer's Recommendation of Award

Dear Mr. Barber:

On October 22, 2021 one bid was received for the Mason Farm WWTP Fermenter Mixing Improvements Project. OWASA and Brown and Caldwell did not open the bid and immediately rebid the contract, with a new bid opening date of November 1, 2021, where only one bid was received. Brown and Caldwell reviewed this bid and has prepared the enclosed certified bid tabulation for your reference. The only bidder on the project is as follows:

<u>Bidder</u>	<u>Grand Total Base Bid</u>
Gilbert Engineering	\$1,033,031.00

Gilbert provided a letter indicating that they would provide their financial statement after bid opening, if required. Since Gilbert was the apparent low bidder, we requested and received their financial statement. Excluding the financial statements (discussed above), Gilbert provided all the required documents listed in the Bidder's Checklist (00 41 43A).

Based on the information stated above, Brown and Caldwell recommends that the OWASA award a construction contract in the amount of \$1,033,031.00 to Gilbert Engineering for the referenced project.

Should you have any questions about this information, please do not hesitate to contact us.

Very truly yours,

A handwritten signature in blue ink that reads "Thomas J. Nangle".

Tom Nangle, Project Manager  
**Brown and Caldwell**

Attachments (1)

1. Attachment A: Certified Bid Tabulation

**Orange Water and Sewer Authority  
Mason Farm WWTP Fermenter Mixing Improvements  
Bid Results - February 9, 2021 - 1:00PM**

<b>Bid Item</b>	<b>Description</b>	<b>Gilbert Engineering Company</b>
<b>1</b>	All work not accounted for in items 2 through 3.	\$972,830.00
<b>2</b>	CITI Allowance (Appendix C)	\$35,201.00
<b>3</b>	Contingency Allowance	\$25,000.00
<b>GRAND TOTAL BASE BID</b>		<b>\$1,033,031.00</b>

The bids tabulated herein were publicly opened and read aloud at 11:00am on the 1st day of November, 2021 at the OWASA Administration Building in Carrboro, NC and all said bids were accompanied by either a certified check or bidder's bond.

I hereby certify that this bid tabulation was prepared by me or under my supervision.

  
\_\_\_\_\_  
Thomas J. Nangle, P.E.  
Brown and Caldwell



**RESOLUTION AWARDING A CONSTRUCTION CONTRACT FOR THE MASON  
FARM WASTEWATER TREATMENT PLANT FERMENTER MIXING  
IMPROVEMENTS PROJECT**

**WHEREAS**, there is a need to replace non-operational fermenter mixing equipment and associated pipe and valves at the Mason Farm Wastewater Treatment Plant; and

**WHEREAS**, plans and specifications for the construction of this project have been prepared by Brown and Caldwell; and

**WHEREAS**, the construction contract bid was publicly advertised on the websites of the State of North Carolina Interactive Purchasing System, OWASA, and The Institute, and in Greater Diversity News beginning September 17, 2021; and

**WHEREAS**, after receiving only one bid on the first bid opening date of October 22, 2021, the project was re-bid; and

**WHEREAS**, one bid was received and opened publicly on November 1, 2021, and Gilbert Engineering Company of Statesville, NC has been determined to be the low responsive, responsible bidder for the project; and

**WHEREAS**, funding for this project is included in the Capital Improvements Budget, last approved by the Board of Directors on June 10, 2021;

**NOW, THEREFORE, BE IT RESOLVED:**

1. That the Orange Water and Sewer Authority Board of Directors awards the construction contract to Gilbert Engineering Company the low responsive, responsible bidder for the Mason Farm Wastewater Treatment Plant Fermenter Mixing Improvements Project, in accordance with the approved plans and specifications, in the amount of \$1,033,031, subject to such change orders as may apply.

2. That the Executive Director be, and hereby is, authorized to execute said contract, subject to prior approval of legal counsel, and to approve and execute change orders and such documents as may be required in connection with the construction contract.

Adopted this 11<sup>th</sup> day of November 2021.

\_\_\_\_\_  
Jo Leslie Eimers, Chair

ATTEST:

\_\_\_\_\_  
John N. Morris, Secretary

## ITEM 2

Orange Water and Sewer Authority  
Virtual Work Session of the Board of Directors  
October 14, 2021

The Board of Directors of the Orange Water and Sewer Authority (OWASA) held its duly noticed regular work session by virtual means in accordance with law, on Thursday, October 14, 2021, at 6:00 p.m. utilizing Microsoft Teams software.

Board Members present: Jody Eimers (Chair), John N. Morris (Secretary), Todd BenDor, Bruce Boehm, and Raymond (Ray) DuBose. Board Members absent: Yinka Ayankoya (Vice Chair) and Kevin Leibel.

OWASA staff present: Mary Darr, Monica Dodson, Robert Epting, Esq. (Epting and Hackney), Vishnu Gangadharan, Stephanie Glasgow, Robin Jacobs (Epting and Hackney), Andrea Orbich, Ruth Rouse, Todd Taylor, Mary Tiger, Stephen Winters, and Richard Wyatt.

Others present: Greg Characklis (Aqua Risk Management) and Reed Palmer (Hazen and Sawyer).

### Motions

1. Ray DuBose made a Motion to approve the Minutes of the September 9, 2021, Work Session of the Board of Directors; second by Todd BenDor and the Motion was unanimously approved.

\* \* \* \* \*

### Announcements

Chair Jody Eimers announced that due to COVID-19 public health concerns, the OWASA Board of Directors held this meeting virtually utilizing Microsoft Teams software. Ms. Ayankoya stated that Board Members, General Counsel, and staff participated in the meeting remotely.

Ms. Eimers asked if any Board Member knew of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight to disclose the same at this time. None were disclosed.

Ms. Eimers said that on October 21, 2021, Mary Tiger (Strategic Initiatives Manager) and she will attend the virtual Orange County Climate Council meeting.

Ms. Eimers said the Carrboro Town Council did not appoint an OWASA Board Member and the Board agreed to continue to encourage people to apply to the local governments to be an OWASA Board Member. General Counsel and staff will review Board Member compensation and provide an update either via email or at a future Board meeting.

Item One: Quarterly Report on Board and Committee Meetings

The Board accepted this as an information item.

Item Two: Minutes

Ray DuBose made a Motion to approve the Minutes of the September 9, 2021, Work Session of the Board of Directors; second by Todd BenDor and the Motion was unanimously approved. Please see Motion 1.

Item Three: Long-Range Water Supply Plan: Alternative Agreements to Reliably Access OWASA's Allocation of Water Supply in Jordan Lake

Ruth Rouse (Planning and Develop Manager) and Greg Characklis (Aqua Risk Management) provided a presentation on overview of work completed on OWASA's Long-Range Water Supply Plan, information on a set of alternatives to access OWASA's Jordan Lake allocation, and a proposed path forward before finalizing an alternative as well as a proposed community engagement plan.

Board discussion and comments included: leveraging the use of OWASA owned land for the future Jordan Lake intake; the need for planning level costs of each alternative and how they impact our budget; partnership considerations for OWASA with Western Intake Partners; rate increases; keep each of the alternatives to access Jordan Lake for additional analysis and present them against the guiding principles in a way the Board can understand. The Board discussed the importance to understand how these alternatives are impacted by regional water supply (e.g., when this plant comes online, there will be an additional way for all Jordan Lake allocation holders to access their allocation) and how the agreements may help OWASA defend its Jordan Lake allocation in the future. Staff will incorporate the Board's comments in future Jordan Lake alternatives updates and include an additional alternative that combines being a future partner with an option to access water.

Item Four: Strategic Plan Update

The Board received this as an information item and has scheduled strategic plan work sessions on November 18, 2021 and December 16, 2021.

Item Five: Review Board Work Schedule

Todd Taylor noted the Board tour of OWASA's Cane Creek Mitigation Tract is scheduled for Tuesday, November 2, 2021, at 10:30 a.m. and additional information will be emailed in advance of the tour.

Item Six: Summary of Work Session Items

Todd Taylor said staff incorporate the Board's comments into updated Long-Range Water Supply Plan, Jordan Lake alternatives for future discussions.

Item Seven: Closed Session

Without objection, the Board of Directors convened in a Closed Session for the purpose of discussing a personnel matter as provided in N.C. General Statutes 143.318.11(6).

Following the Closed Session, the Board reconvened in open session, reported no action was taken in the closed session, and the meeting adjourned at 7:56 p.m.

Respectfully submitted by:

Andrea Orbich  
Executive Assistant/Clerk to the Board

DRAFT

## ITEM 3

### Orange Water and Sewer Authority

#### Closed Session of the Board of Directors

October 28, 2021

During the October 28, 2021, meeting of the OWASA Board of Directors, the Board went into closed session to discuss sensitive, confidential information regarding OWASA's infrastructure.

Board Members present: Jody Eimers (Chair), Yinka Ayankoya (Vice Chair), John Morris (Secretary), Todd BenDor, Bruce Boehm, Raymond (Ray) DuBose, and Kevin Leibel.

Staff present: Mary Darr, Vishnu Gangadharan, Stephanie Glasgow, Daniel Przybyl, Todd Taylor, and Stephen Winters.

\*\*\*\*\*

#### Item One

The Board of Directors met with appropriate OWASA staff in Closed Session in accordance with N.C. General Statutes 143.318.11, and discussed confidential information regarding the security infrastructure in-place to protect OWASA customers, personnel and assets.

No official action was taken at the meeting.

The meeting was adjourned at 8:33 p.m.

---

Jo Leslie Eimers, Chair  
Board of Directors

#### **Agenda Item 4:**

Review and Discuss Draft Water Conservation Plan

#### **Purpose:**

To receive feedback and guidance from the Board of Directors on OWASA's draft Water Conservation Plan, which will serve as an appendix to the Long-Range Water Supply Plan (LRWSP)

#### **Background:**

Demand management through water conservation, water efficiency, and reclaimed water use is a key value of the organization and our community. Developing a Water Conservation Plan is also a strategic initiative of the 2016 Strategic Plan and in-line with our current strategic plan's core value of sustainability: *the utility strives to make the highest and best use of our local water resources and promotes conservation of water, energy and other natural resources.*

OWASA and the community we serve have a long history of water conservation. In the last few decades, our community has invested in a suite of water conservation strategies that have made our community a leader in water conservation, efficiency, and reclaimed water use.

In updating our LRWSP, staff evaluated the costs and benefits of various supply and demand management alternatives against the social, environmental, and economic goals established and approved by the Board. ([Link to August 2020 evaluation.](#)) Based on this evaluation, OWASA determined that, at present, there are no individual or collective group of demand management strategies that, if pursued further, would prevent the need for additional supply in the long run.

There were two demand management strategies determined, at a planning level, to be "cost effective." These strategies were deemed "cost effective" in that the estimated cost per gallon saved was less than the estimated cost of water supply alternatives. However, they are not cost-free and need to be evaluated against a more comprehensive water conservation objective. We have committed to considering these two alternatives in the final version of the Water Conservation Plan against criteria and goals set by the Board.

#### **Existing Strategies and Initiatives**

Although water conservation has been integrated into the framework of much of what we do at OWASA, we have not had a comprehensive, up-to-date document that summarizes all of the existing policies, pricing structures, and programs that incentivize water conservation and efficiency in our community.

November 11, 2021

The plan is intended to serve as a complementary document to OWASA’s Long-Range Water Supply Plan, Water Shortage Response Plan, Affordability Program Plan, Energy Management Plan, Asset Management Plan, Communications and Community Engagement Plan, and various operational plans.

The following table summarizes OWASA’s existing suite of water conservation strategies. These programs have been a key part in reducing the demand for water in our community. Drinking water sales are now 22% less than they were in 1995, while the number of accounts has increased by 50%. Additional details regarding these strategies are provided in the attached draft plan.

<b>Conservation Measure</b>	<b>Target Use Class</b>
<b>EDUCATION AND OUTREACH</b>	
School-based Education and Community Events	Residential
Affordability Program	Residential
Water Conservation Kits	Residential
Agua Vista Leak Detection and AMI Technology	All
Agua Vista Water Use Data	All
<b>REGULATORY</b>	
Water Conservation Ordinances	All
Alternate Day Watering Ordinance	All – Outdoor
<b>CONSERVATION-ORIENTED RATE STRUCTURES</b>	
Increasing Block Rate Structure	Single Family Residential
Irrigation Rates and Metering	All – Outdoor
Seasonal Rate Structures	Commercial and Institutional
Drought Surcharges	All
<b>RECLAIMED WATER</b>	
Delivered to Customers (Offset Potable Water Use)	Commercial
<b>OWASA’S INTERNAL WATER CONSERVATION EFFORTS</b>	
Maintenance and Upgrade of Infrastructure	Internal
Water Main Break Repair	Internal
Leak Detection and Pressure Monitoring	Internal
Water Conservation and Reuse at the Wastewater Treatment Plant	Internal
Recirculation System at Rogerson Drive Pump Station	Internal
In-plant Recycling of Water Treatment Plant Process Water	Internal
Water Sense Fixtures and Equipment	Internal
Data Management	Internal

### **Opportunities for a More Active Water Conservation Program**

Although, recent analyses did not identify cost-effective strategies likely to have a significant impact on water demands in the long run, there are opportunities to extend our current water supplies through additional water conservation programming and/or enhance efforts to advance the water conservation ethos in our community.

In addition to reducing pressure on our long-term water supply, water conservation has many benefits, including:

- Eliminating, downsizing, or postponing the need for capital projects
- Improving the utilization and extending the life of existing facilities
- Lowering variable operating costs
- Improving drought or emergency preparedness
- Educating customers about the value of water
- Protecting and preserving environmental resources
- Reducing energy use and greenhouse gas emissions
- Reducing water bills for our neighbors in need

Additionally, our community places a high value on conservation. The Town of Chapel Hill's Climate Action plan and the Town of Carrboro's Comprehensive Plan include water conservation, efficiency and reuse as top priorities. In addition, UNC-CH is in the process of developing a Water Action Plan.

#### **Action Needed:**

No formal motion or action is needed.

Staff requests feedback from the Board of Directors on the draft Water Conservation Plan. In addition, staff requests guidance on what is needed to finalize the Water Conservation Plan, including criteria that should be used in identifying and evaluating additional conservation opportunities, if any.

Based on this guidance, staff will draft a summary of guiding principles for OWASA's water conservation program for the Board to review and consider before finalizing the Water Conservation Plan.

#### **Information:**

Draft Water Conservation Plan: Summary of Existing Program

# Orange Water and Sewer Authority

## Water Conservation Plan: Summary of Existing Program

### DRAFT

November 2021

#### Introduction

OWASA and the community we serve have a long history of water conservation. In the last two decades, our community has invested in a suite of water conservation strategies that have made us a leader in water conservation, efficiency, and reclaimed water use:

- Our utility has implemented policies, pricing structures and programs that encourage water conservation and efficiency.
- Our customers have installed water-saving products in their homes, yards, and businesses, making water conservation and demand management a way of life in Carrboro and Chapel Hill.
- The University of North Carolina at Chapel Hill, in partnership with OWASA, has made significant investments in water demand reduction, including an innovative reclaimed water system that now meets over 10% of system-wide water demand, freeing up the community's drinking water supply.

As a result of these and other efforts, drinking water sales are now 22 percent less than they were in 1995, despite increasing the number of accounts by about 50 percent.

In updating our Long Range Water Supply Plan (LRWSP), staff evaluated the costs and benefits of various supply and demand management alternatives against social, environmental, and economic goals established and approved by the Board. ([Link to August 2020 evaluation.](#)) Based on this evaluation, OWASA determined that, at present, there are no individual or collective group of demand management strategies that, if pursued further, would prevent the need for additional supply in the long run.

Nonetheless, demand management through water conservation, water efficiency, and reclaimed water use remains a key value of the organization and our community, and we are committed to considering water demand management strategies as an appendix of the LRWSP. Developing a Water Conservation Plan is also a strategic initiative of the 2016 strategic plan. Sustainability is a core value of that plan: *the utility strives to make the highest and best use of our local water resources and promotes conservation of water, energy, and other natural resources.*

## Purpose

The purpose of this document is to summarize existing policies, pricing structures, and programs that incentivize water conservation and efficiency, as well as the use of reclaimed water.

This plan is intended to serve as a complementary document to OWASA's Long-Range Water Supply Plan (LRWSP), Water Shortage Response Plan, Affordability Program Plan, Energy Management Plan, and Communications and Community Engagement Plan. This plan captures OWASA's current water conservation and efficiency practices and ensures that demand management elements of these plans are well-coordinated. A full accounting of how these plans work together is included as Appendix A of this document.

## Background

### Historical System-wide Water Demand

OWASA and the community that we serve is a leader in water conservation, efficiency, and reclaimed water use.

Stretching our water supply and wisely managing our water resources makes good sense for the short-term and the long-term. Reductions in drinking water demand – and the associated reductions in wastewater flows – help defer the need for costly expansion of the capacities of our raw water supplies, water treatment plant, and wastewater treatment plant. More efficient use of water also helps reduce costs for energy and chemicals for water supply, drinking water treatment and water distribution, and wastewater collection and treatment.

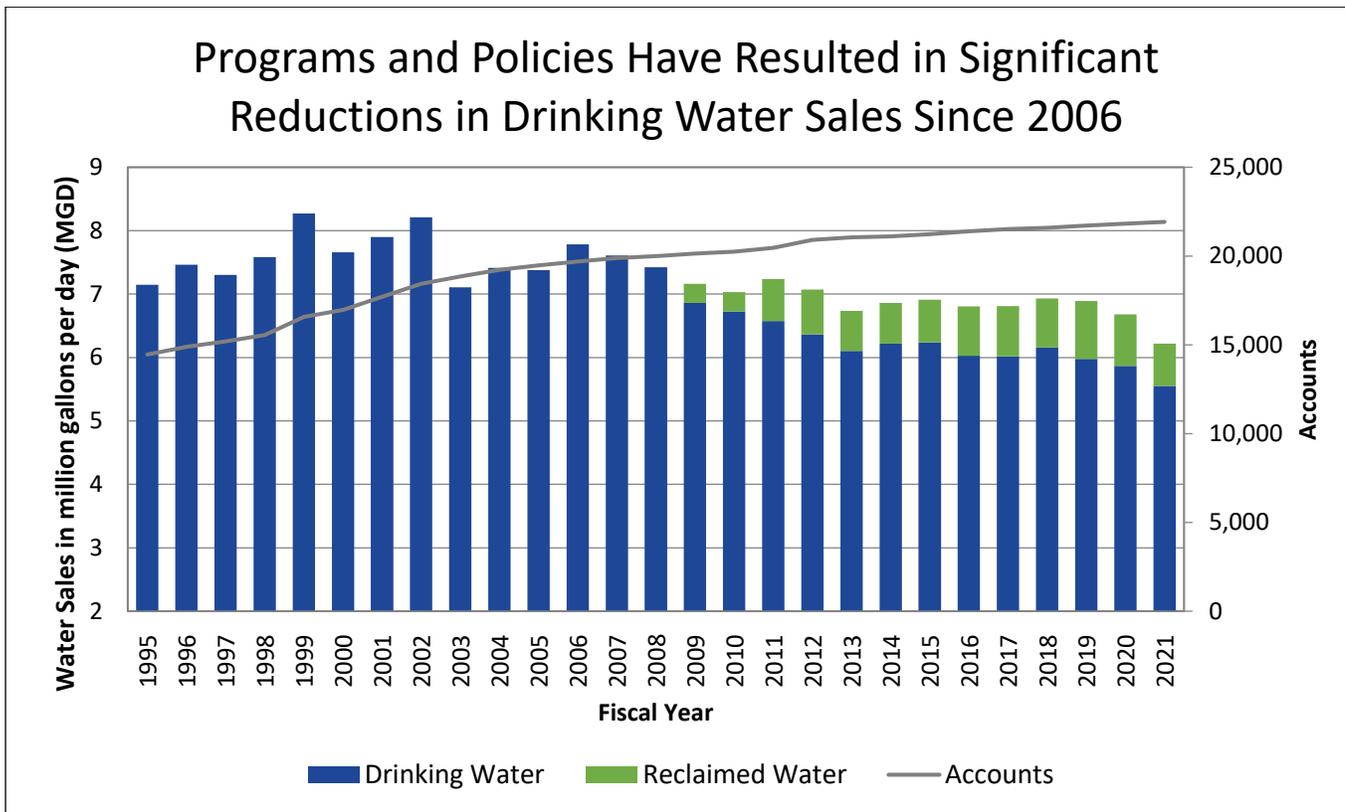
Water demand management is also critical when responding to droughts. In 2001/2002 and again in 2007/2008, our community was hit with prolonged and severe droughts. Since then OWASA and the community have made investments in water conservation, efficiency and reclaimed water use that have resulted in significant and sustained declines in water consumption.

From 1995 to 2020, water sales decreased despite adding about 5,000 customer accounts (Fig. 1). This is due primarily to four key programs that demonstrate how policy changes, rate structures, and infrastructure and technology can positively influence water demand:

- 1) Federal efforts and initiatives, most notably the 1992 Energy Policy Act, changed national policy regarding water fixture efficiency. Utilities across the country have seen declines in per capita water use as a result this legislation. Since 1994, it has been

almost impossible to purchase a toilet that does not meet the national standard for water use efficiency (at 1.6 gallons per flush). Now, models that are even more efficient (1.28 gallons per flush or less) are readily available. EPA Water Sense fixtures, dishwashers and washing machines are commonplace in our community.

- 2) In 2002, OWASA established seasonal water rates for all customers. Subsequently, in 2007, the utility was one of the first in the state to implement a five-tiered increasing block rate structure for all individually metered residential customers. These rate structures are designed to encourage conservation.
- 3) In 2009, the reclaimed water system came online. This unique system, funded predominately by UNC-Chapel Hill, now meets over 10% of the community's water needs, freeing up the drinking water supply.
- 4) In 2019, OWASA's Advanced Metering Infrastructure (AMI) project was completed, and the corresponding Agua Vista web portal was launched. The program reads data hourly from roughly 22,000 new meters installed across the service area. This powerful data allows customers to know more about their water usage and suggests ways to conserve water. It also allows OWASA to send leak alert to customers much more quickly.



*Fig. 1: Total potable water sales declined in 2003 and again in 2009. These declines correspond with droughts, as well as significant changes in OWASA’s rate structure. Additionally, in 2009, when the reclaimed water system came online, OWASA’s potable water sales decreased significantly and have remained at these lower levels. The drop off in sales in 2021 is due to the pandemic and will likely rebound in 2022.*

In addition to direct water sales, it is also important to look at unbilled water that may be lost throughout the system. Every year, we conduct a system water audit using the American Water Works Association (AWWA) Water Audit Method and Water Audit Software. This analysis compares treated water pumped to the system to all billed water consumed by customers, as well as water used in flushing, Capital Improvements Program (CIP) projects, unbilled water from illicit connections, and water that leaks out of OWASA’s nearly 400 miles of drinking water distribution pipes.

The Water Audit Software calculates an “infrastructure leak index” (ILI) as the ratio of real water losses (physical losses from the distribution system) to the unavoidable real water losses (an industry-calculated technical low limit of leakage for well-managed systems in good condition with aggressive active leak control). OWASA maintains a historical ILI at or around 1.0, which means that the water leaking from our distribution system is equal to the lowest limit technically (and economically) feasible to maintain.

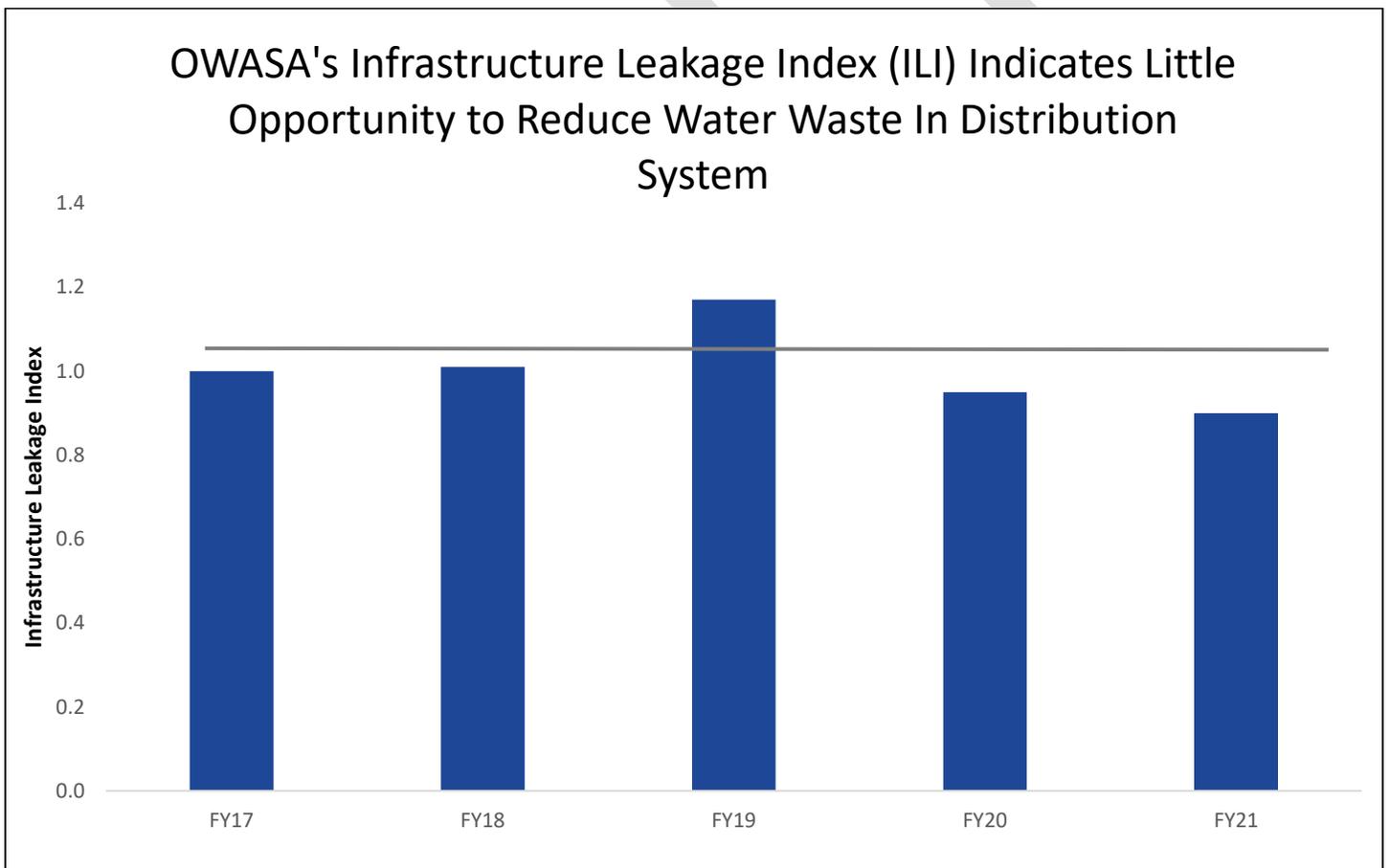
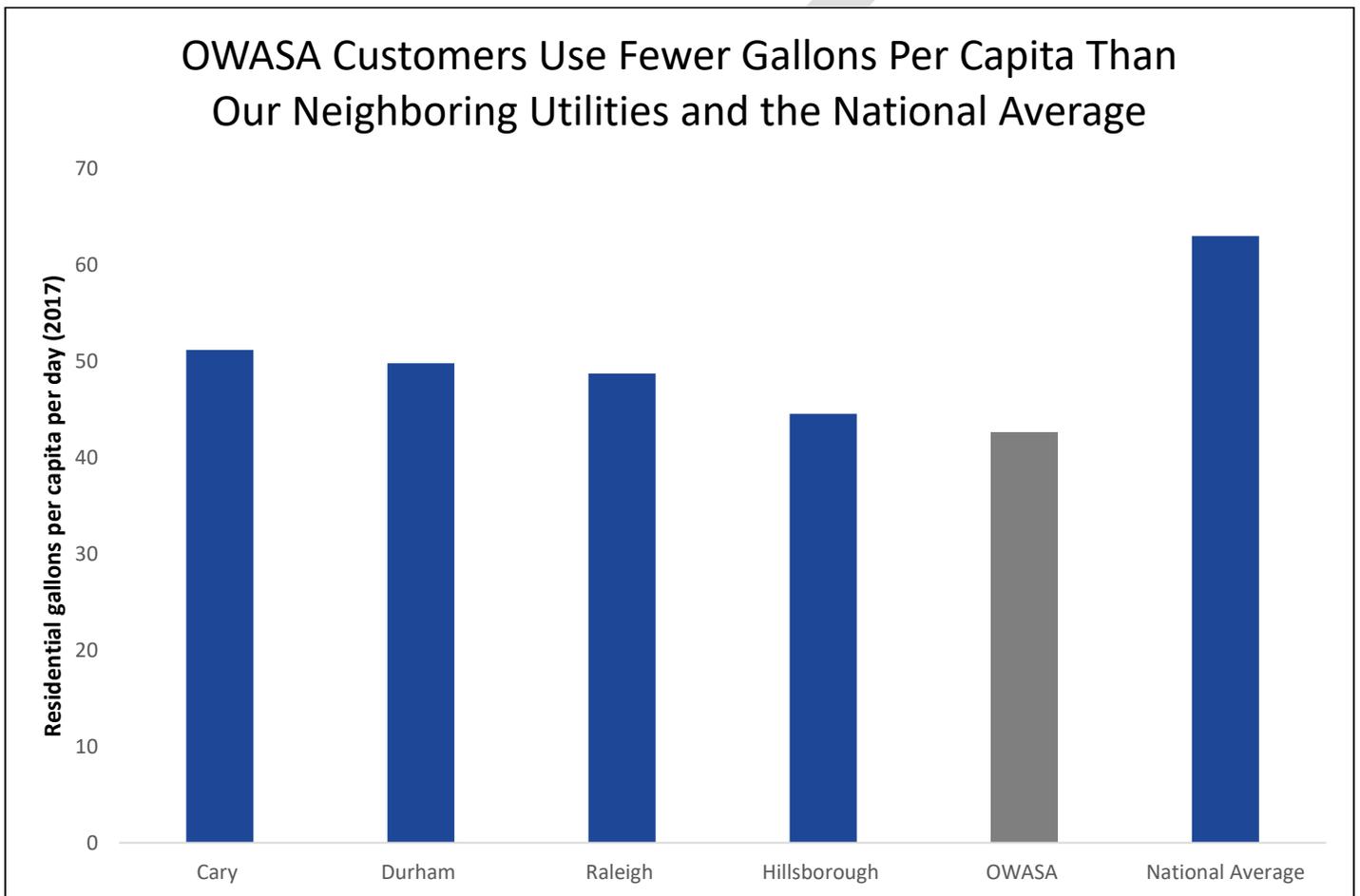


Fig. 2: OWASA's Infrastructure Leakage Index (ILI) has been consistently close to 1.0.

Finally, gallon per capita per day (gpcd) use by residential customers provides a useful way for primarily residential systems like OWASA's to benchmark water demand management. OWASA's residential customers used 48 gallons per capita per day in 2010. In 2017, they used 42.6 gpcd, a decrease of about 11% from 2010 levels.

OWASA's residential customers use less water per day than those in Raleigh, Durham, Cary, and Hillsborough. Our gallons per capita per day is also significantly less than the national average, which was calculated using data from 23 utilities across the country.



*Fig. 3: OWASA residential customers used 42.6 gallons per capita per day in 2017. Neighboring utility data from the NC Division of Water Resources' Local Water Supply Plans. National average figure from the Water Research Foundation's Residential End Uses of Water, Version 2 (2016).*

### Customer Water Demands

Unlike many water utilities, one large customer is responsible for over 30 percent of OWASA’s system-wide water use, when reclaimed water is included: UNC-Chapel Hill. The University has an out-sized impact on our water sales as is evident in the large drop in potable water sales when the reclaimed water system came on-line in 2009 and in the significant decline in water sales when the University moved to virtual instruction and work from home procedures due to the pandemic.

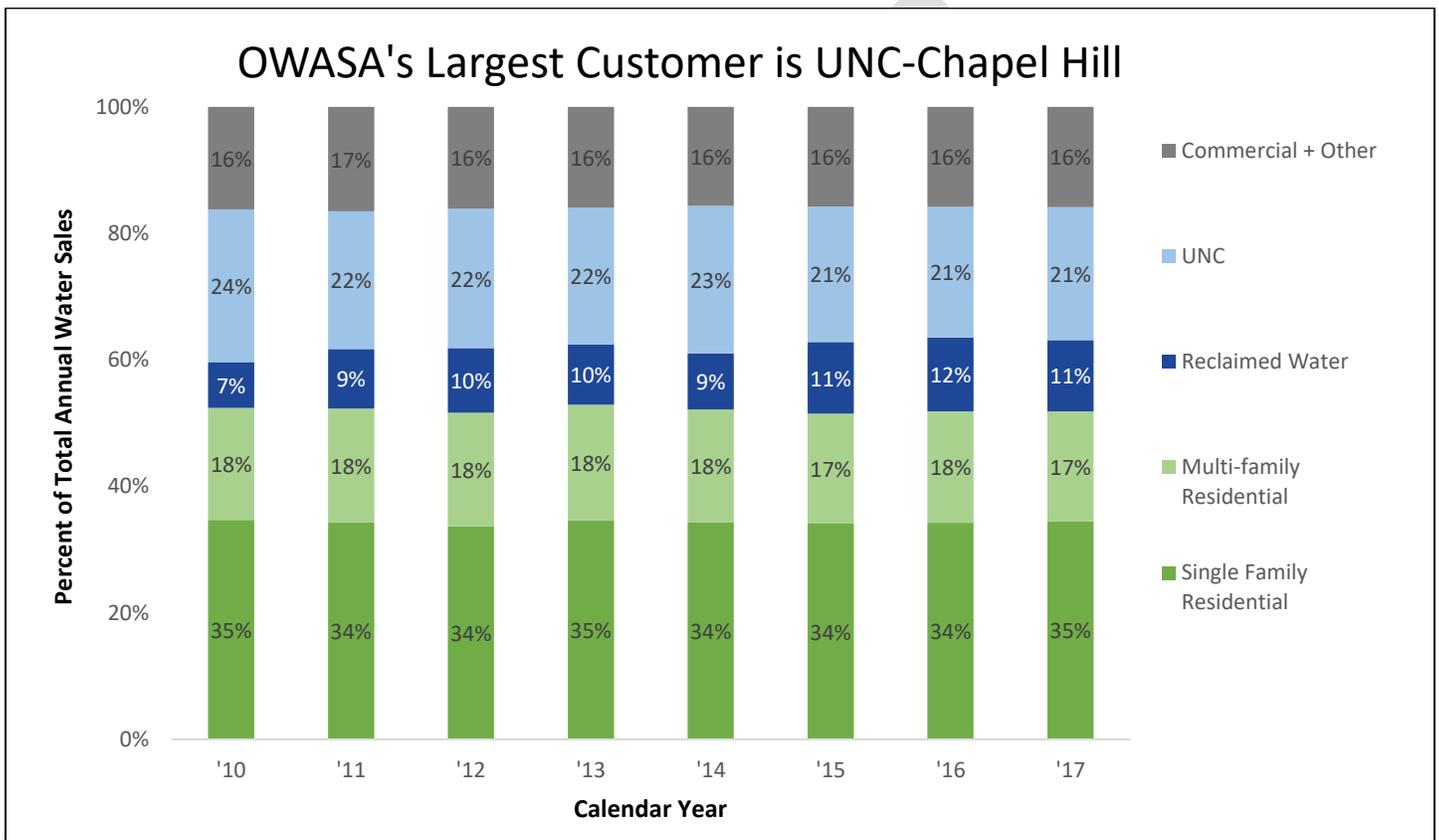


Fig. 4: Water Use by sector shows little change since 2010.

Next to UNC, and to a much lesser extent, the Chapel Hill-Carrboro City School System (CHCCS) is OWASA’s largest customer.

### OWASA'S Top 10 Largest Water Users

Name	Consumption FY21 (million gallons)	Sector
UNC-CH	386	UNC
CHCCS	19.5	Commercial
OWASA	14.8	*Not included in graph above
RA Properties	14.3	Multi-family residential
Triangle Communities	13.9	Multi-family residential
Northwood Ravin	12.7	Multi-family residential
Estes Part Apts.	11.9	Multi-family residential
CH Housing	11.9	Multi-family residential
ACV XVII LLC	11.2	Multi-family residential
Mid-Atlantic Management	10.9	Multi-family residential
Autumn Hill	10.6	Multi-family residential

While single family residential homes represent the largest percentage of our system-wide water use, growth and demand forecasts made as part of the LRWSP indicate that non-residential water use will become the dominant water use sector in the next 50 years. Multi-family master metered accounts are also projected to grow over this time-period, with single-family residential accounts remaining relatively stable.

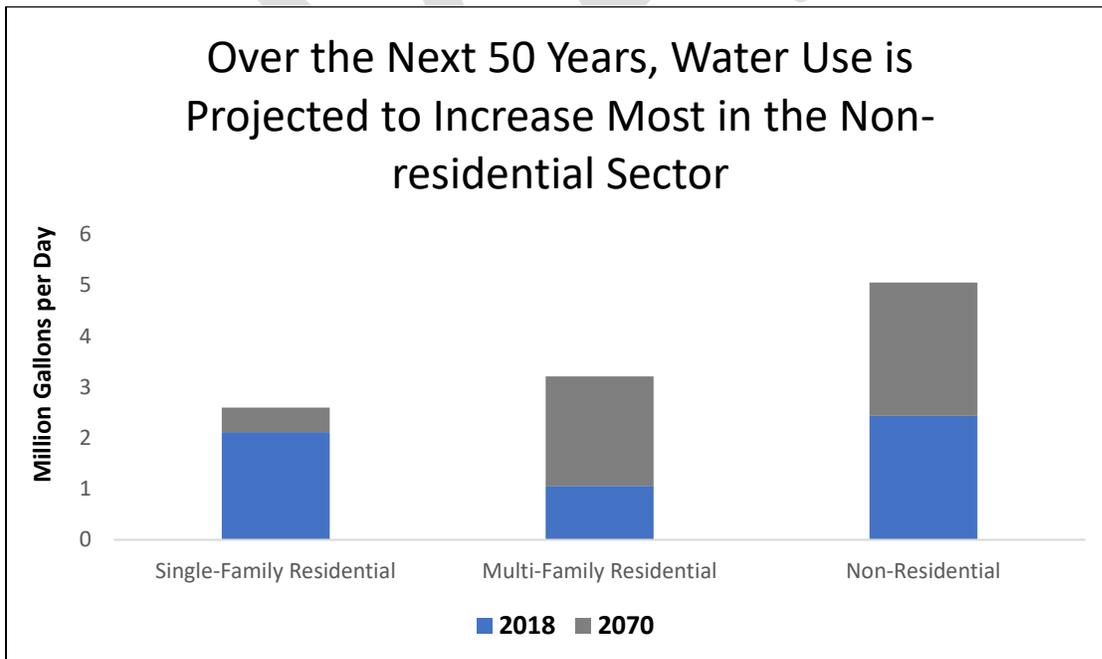


Fig. 5: Non-residential water use is projected to more than double between now and 2070, making it the largest water use sector in OWASA's system. Multi-family residential water consumption is also projected to increase, while single family residential is projected to have only a modest increase in consumption.

### Water Demand by OWASA

One of OWASA’s core values is sustainability, which includes making the highest and best use of our local water resources and promoting conservation of water, energy, and other natural resources. OWASA operations use a large amount of water. Figure 6 tracks water use across the top three water-using facilities: the Mason Farm Wastewater Treatment Plant (WWTP), the Rogerson Drive Pump Station (RDPS), and for use by the Distribution and Collection System. The graph does not capture drinking water use at the Water Treatment Plant. AMI meters will be installed at the plant in FY 2022 and will allow us to better monitor and manage drinking water use at this facility.

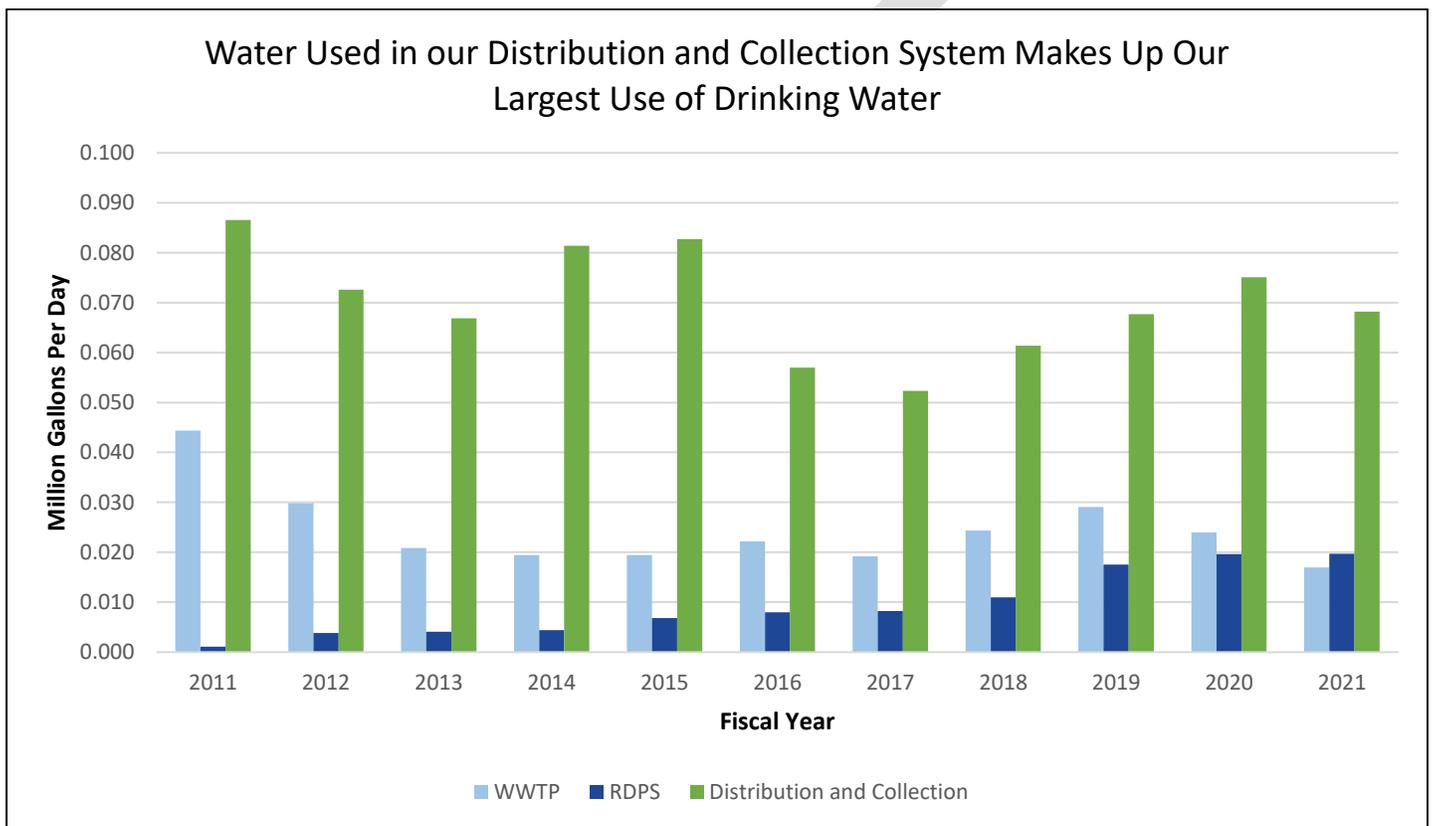


Fig. 6: Over the past 11 years, drinking water use for OWASA facilities has varied. Most recently, water use has increased at Rogerson Drive Pump Station (RDPS) and for the purposes of system flushing.

The largest water-using OWASA “facility” is distribution and collection for distribution system flushing and sewer cleaning. In early 2015 (mid-FY15), OWASA started a uni-directional flushing program that continued until late 2017 (mid-FY18). During these years, OWASA used less water for routine flushing. Since discontinuing the program, water use has increased for distribution system flushing. The LRWSP investigated a possible demand management strategy that would loop distribution lines, which would reduce the amount of water used in flushing. This was not determined to be economically viable. Additionally, in 2018, OWASA started using much more water at its Rogerson Drive Pump Station for the purposes of pump sealing. This is discussed further in existing strategies and initiatives.

## Existing Strategies and Initiatives

OWASA has a long history of water conservation and a suite of active water conservation strategies.

Conservation Measure	Target Use Class
<b>EDUCATION AND OUTREACH</b>	
<a href="#">School-based Education and Community Events</a>	Residential
<a href="#">Affordability Program</a>	Residential
<a href="#">Water Conservation Kits</a>	Residential
<a href="#">Agua Vista Leak Detection and AMI Technology</a>	All
<a href="#">Agua Vista Water Use Data</a>	All
<b>REGULATORY</b>	
<a href="#">Water Conservation Ordinances</a>	All
<a href="#">Alternate Day Watering Ordinance</a>	All – Outdoor
<b>CONSERVATION-ORIENTED RATE STRUCTURES</b>	
<a href="#">Increasing Block Rate Structure</a>	Single Family Residential
<a href="#">Irrigation Rates and Metering</a>	All – Outdoor
<a href="#">Seasonal Rate Structures</a>	Commercial and Institutional
<a href="#">Drought Surcharges</a>	All
<b>RECLAIMED WATER</b>	
<a href="#">Pumped to Customers (Offset Potable Water Use)</a>	Commercial
<b>OWASA'S INTERNAL WATER CONSERVATION EFFORTS</b>	
<a href="#">Maintenance and Upgrade of Infrastructure</a>	Internal
<a href="#">Water Main Break Repair</a>	Internal
<a href="#">Leak Detection and Pressure Monitoring</a>	Internal
<a href="#">Water Conservation and Reuse at the Wastewater Treatment Plant</a>	Internal
<a href="#">Recirculation System at Rogerson Drive Pump Station</a>	Internal
<a href="#">In-plant Recycling of Water Treatment Plant Process Water</a>	Internal
<a href="#">Water Sense Fixtures and Equipment</a>	Internal
<a href="#">Data Management</a>	Internal

## EDUCATION AND OUTREACH

### School-based Education and Community Events

OWASA's Communications and Community Engagement Plan identifies the provision of "unique educational experiences to get people interested and invested in OWASA and the water/wastewater system" as a key strategy. Water conservation is a topic thoroughly integrated into these experiences, including outreach through school programs and presentations, as well as the Youth Water Academy. In addition, messages of water conservation are integrated into our annual water quality report card and outreach at community events using the OWASA Water Wagon.

### Affordability Program

The goal of OWASA's Affordability Program is to increase awareness of options to manage and reduce water and sewer bills and to empower low-income customers, and the local agencies that serve them, with information and tools to manage and reduce water and sewer bills. Over the years, this program has included a pilot toilet replacement program, home water audits, presentations to a wide range of community groups, community events, and co-publishing of water conservation tips with partner organizations. More recently, it included a pilot Home Water Report program, using information compiled and analyzed in the Agua Vista web portal/Regular letters and emails were sent to low-wealth customers to summarize individual household water use and make recommendations on water conserving strategies.

### Water Conservation Kits

OWASA offers free-of-charge water conservation kits, which include toilet leak detection tablets; low-flow showerheads; faucet aerators; shower timers; and grease scrapers, to any interested residential customers.

### Agua Vista Leak Detection and AMI technology

OWASA finished upgrading all meters to AMI technology and deployed the Agua Vista Web Portal in 2019. These have become important tools in our water conservation toolbox. Before AMI technology, a customer would not notice a silent leak until they received a larger-than-expected bill. At this point, water may have been leaking for almost a month. National studies have estimated that 10 – 12 percent of water used across the country is lost due to leaks, with toilets, faucets, and outdoor spigots being the main culprits. Leaking water can cause huge amounts of property damage and can disrupt a family's finances, both of which are particularly devastating to low-wealth families, which is why this tool plays an important role in our Affordability Program. OWASA customers can now take control of their water usage and save

money with the help of OWASA's Agua Vista program.

In 2020, Agua Vista detected 274 million gallons of water loss due to leaks. Over 9,900 leak alerts were sent to customers. The Agua Vista platform estimates that almost 74 million gallons were saved due to leak alerts.

If OWASA has an email address for a customer, they will automatically receive a leak alert if the system detects a leak. For residential customers for whom we do not have email addresses, we pay an additional service to mail a printed leak alert.

#### Agua Vista Water Use Data

In addition to detailed hourly water use data and proactive leak notifications, the Aqua Vista web portal provides customized water conservation tips based on a customer's historical water use. The portal even quantifies the savings that customers could expect from making changes to their behavior or by replacing a fixture.

**Install High-Efficiency Toilets**

[+ Start action](#) [Save for later](#) [✓ I completed this](#) [✗ Not for me](#) Savings up to... **20 GPD** **\$107/yr**



**Did you know?**  
Toilets are the largest contributor to indoor water use (source: U.S. Environmental Protection Agency). Older toilets use about 3.6 gallons per flush, while high-efficiency toilets typically use 1.28 gallons or less per flush.

That's a **64% reduction** in water use! When you consider that each person flushes about 5 times per day, that can add up to **BIG** savings. High-efficiency toilets often pay for themselves in less than two years.

**What to do next**

- Figure out when your toilet was manufactured, or how many gallons per flush (gpf) it uses.
  - To do this, look for the manufacturer's date stamp or gpf label. On most toilets, one of these indicators can be found behind the seat hinge on the bowl, on the wall of

Fig. 7: Screenshot of a water saving recommendation our customers might see on their Agua Vista page.

OWASA customers can register for this free service through the web portal with their account number and zip code. Encouraging new and existing customers to register with Agua Vista and

share either a phone number or email address so that they can receive timely leak alerts is an important objective of the Communication Plan, Affordability Plan, and the Customer Service team.

## REGULATORY

### Water conservation ordinances

In 2003, the Towns of Carrboro and Chapel Hill both adopted local water conservation ordinances which include year-round conservation standards. The Town of Carrboro's Water Conservation Restrictions and The Town of Chapel Hill's Water Conservation Standards and Regulations are identical:

- Prohibit water waste
- Require year-round water restrictions for spray irrigation, that all irrigation systems be equipped with automatic controllers, rain or soil moisture sensors that prevent irrigation during periods of rainfall or when there is sufficient moisture in the ground for plant health and survival
- Specify that all hoses used for hand watering, vehicle washing, or other uses must have a shutoff nozzle
- Require all indoor and outdoor water leaks to be repaired within 10 days of discovery
- Requires restaurants and dining facilities to serve water only on request, hotels, motels and other facilities must change bed linens on upon request of the customer, upon customer changeover or every 5 days for long-term customers

If customers do not comply with these restrictions, OWASA may discontinue water service after notice of a prohibited use is delivered to the service address.

### Alternate day watering ordinance

The Town of Chapel Hill's and the Town of Carrboro's identical ordinances state:

The following outdoor or exterior use requirements shall apply to all customers using OWASA-supplied potable water:

- Spray irrigation shall not occur more than three (3) days per week. Even-numbered properties may be irrigated with spray systems only on Sundays, Wednesdays, and/or Fridays. Odd-numbered properties may be irrigated with spray systems only on Tuesdays, Thursdays, and/or Saturdays. All spray irrigation shall occur only between the hours of 6:00 p.m. and 10:00 a.m. and shall apply no more than one (1) inch of water in any given week. These restrictions shall not apply to properties using underground, drip irrigation, micro spray, low precipitation bubblers, soaker hoses,

hand watering, tree or shrub watering bags, or where watering of containerized plants and commercial plant stock in trade is maintained for resale.

- All irrigation systems shall be equipped with automatic controllers that activate the system according to a desired frequency and duration and shall also be equipped with rain or soil moisture sensors that will prevent irrigation during periods of rainfall or when there is sufficient moisture in the ground for plant health and survival.
- All hoses used for hand watering, vehicle washing, or other allowable outdoor uses shall be equipped with shutoff nozzles.
- No exterior use of OWASA-supplied potable water shall result in the flow of water onto adjacent property or public right-of-way, and all irrigation systems shall be designed and maintained to prevent to the extent practicable water from flowing onto paved or other impervious surfaces.
- Outdoor water leaks on property or facilities of OWASA customers shall be repaired within ten (10) days of discovery by the customer and/or notification by OWASA.
- Owners of public purpose athletic fields, recreational fields, and/or public purpose botanical sites shall not be subject to the year-round limitations of subsections (a)(1)— (5) if those facilities are operated in compliance with an OWASA-approved water conservation plan that specifies the conservation measures and irrigation operating modes to be employed at that facility year-round and during successive stages of a declared water shortage.

#### **CONSERVATION-ORIENTED RATE STRUCTURES**

In providing essential drinking water, wastewater, and reclaimed-water services to our customers, OWASA charges “cost-of-service” rates. Water pricing can have a significant impact on water use. One of the most effective ways to reduce water use (and waste) is by charging higher prices. Given that water demands track back to the size and operation of costly infrastructure, OWASA has implemented rate structures that both align with utility costs and promote water conservation.

##### [Increasing Block Rate Structure](#)

In 2007, OWASA implemented a 5-tiered increasing block rate structure for individually metered residential customers. Block pricing incentivizes water conservation by maintaining low cost for small-volume users but charging more for high-volume users.

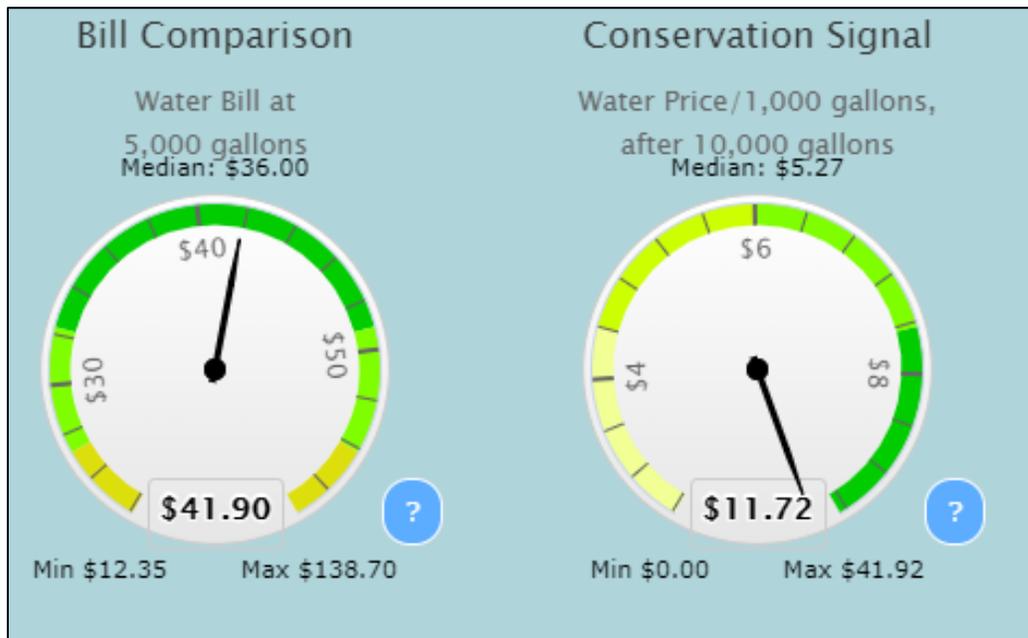


Fig. 8: The Environmental Finance Center at UNC School of Government's NC Water and Wastewater Rates Dashboard indicates that OWASA's conservation signaling is high compared to other NC utilities and our rates are about average. Conservation signaling looks at the charge for the next 1,000 gallons after a customer uses 10,000 gallons/month. It affects single family residential customers with high water use.

#### Irrigation rates and metering

To further incentivize wise water use, irrigation-only accounts are charged a higher monthly charge than all other customers and a more expensive rate than the average individually-metered residence. There is no block rate structure for irrigation accounts. In effect, irrigation is charged at one of the highest rates to discourage overwatering and encourage water-saving landscape design and maintenance. In addition, in accordance with state law, any newly platted land that installs in-ground irrigation is required to be separately metered and billed for irrigation water use.

#### Seasonal rates

Peak seasonal rates for all non-residential commercial and institutional accounts begin in May and end in September. These rates are designed to encourage conservation in times of peak system-wide water demand. Residential and Multi-family Master Meter (MFMM) accounts are not charged these higher rates in the warmer months to help address affordability and billing challenges.

Drought surcharges

Starting in Stage 1 of declared water shortages, OWASA begins to apply a drought surcharge to certain levels of water use. These multipliers and the level of water use against which they are applied increase as drought conditions worsen.

Individually Metered Residential						Multi-family master-metered residential	Non-residential and irrigation-only
Block:	Res. Block 1	Res. Block 2	Res. Block 3	Res. Block 4	Res. Block 5		
Use level (gallons)	1,000 to 2,000	3,000 to 5,000	6,000 to 10,000	11,000 to 15,000	16,000 and up		
Stage 1	No surcharge	No surcharge	1.25 times normal Block 3 rate	1.5 times normal Block 4 rate	2 times normal Block 5 rate	1.15 times year-round rate	1.15 times seasonal and irrigation-only rate
Stage 2	No surcharge	1.25 times normal Block 2 rate	1.5 times normal Block 3 rate	2 times normal Block 4 rate	3 times normal Block 5 rate	1.25 times year-round rate	1.25 times seasonal and irrigation-only rate
Stage 3 and Emergency	No surcharge	1.5 times normal Block 2 rate	2 times normal Block 3 rate	3 times normal Block 4 rate	4 times normal Block 5 rate	1.5 times year-round rate	1.5 times seasonal and irrigation-only rate

## RECLAIMED WATER SYSTEM

Reclaimed water is the clean water produced from the advanced treatment of wastewater at our wastewater treatment plant. It is used in our service area for non-drinking water purposes, such as flushing toilets, irrigating fields, and in the cooling towers at UNC and UNC Hospital. Other utilities also use reclaimed water for washing cars, concrete mixing, and augmentation of surface drinking water supplies.

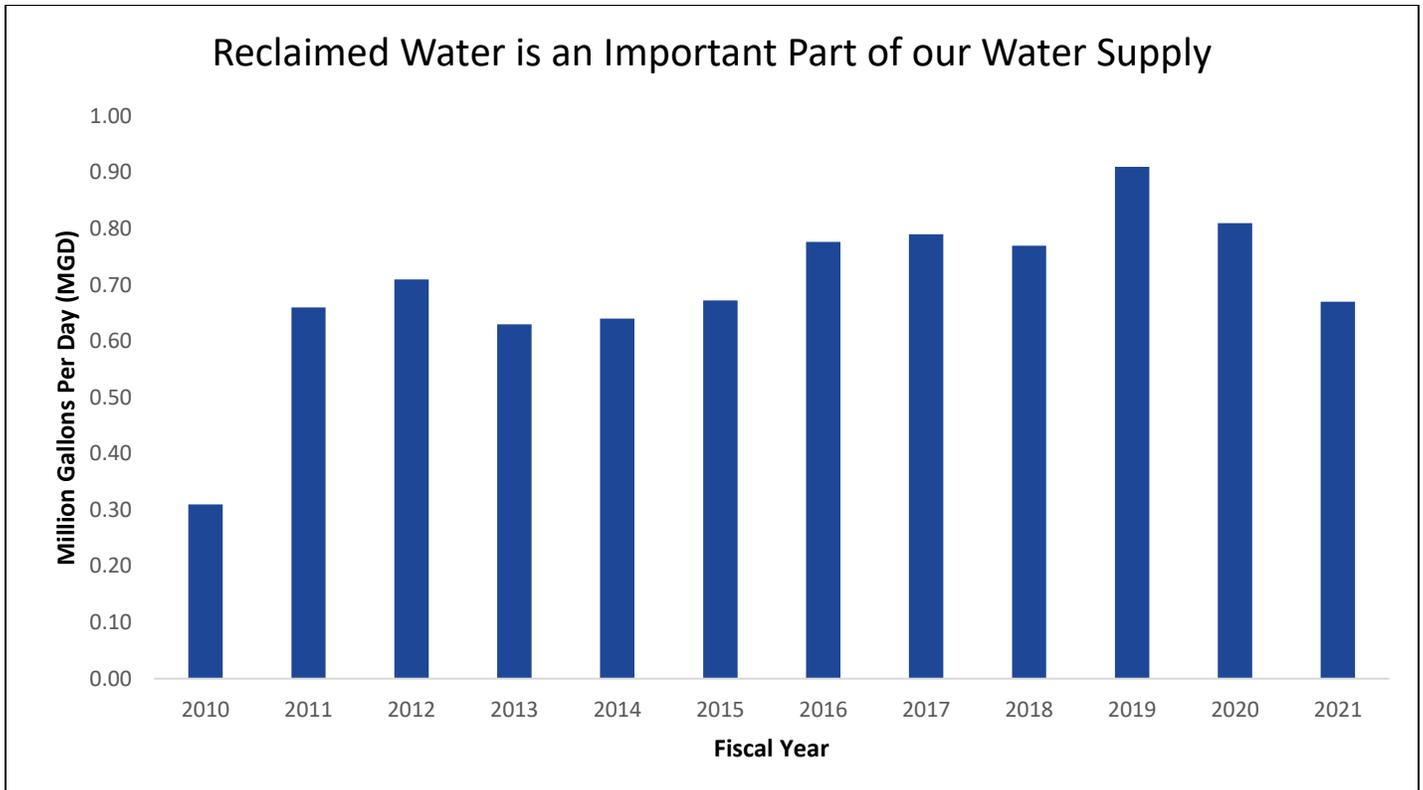


Fig. 9: Reclaimed water sales reached over 900,000 gallons per day in 2019.

### The Reclaimed Water System:

- Enables OWASA to meet non-potable water needs, freeing up the community's drinking water supply in a cost-effective manner
- Lowers the risk of a water shortage in future droughts
- Defers or eliminates the need for costly water supply or expanded treatment facilities

As currently constructed, the reclaimed water system can meet peak demand of 3 million gallons per day (mgd), and it was constructed to allow cost-effective expansion to about 5 mgd.

The cost to operate and maintain the system is paid solely by reclaimed water customers: the University of North Carolina at Chapel Hill, which uses the majority of reclaimed water, as well as St. Thomas More School.

## **OWASA'S INTERNAL WATER CONSERVATION EFFORTS**

### *Maintenance and upgrade of infrastructure*

Since beginning operations in 1977, OWASA has utilized a systematic replacement program for aging water distribution mains. Under this program, projects are identified or triggered by the following conditions:

- where pipe material replacement or pipe relocation would improve water quality;
- there are serious risks to water service reliability;
- where the costs of repairing pipes and leaks have become excessive;
- where line breaks may result in major damage; and
- where capacity is no longer adequate.

OWASA catalogs the risk conditions listed above using the following two sources: a system hydraulic model and a risk-based pipe prioritization model:

- In 2011, the hydraulic model of the water distribution system was updated to identify and prioritize any areas of capacity and/or pressure concerns that need to be addressed in OWASA's water system through 2030. It determined that OWASA's distribution system has relatively few hydraulic deficiencies, and that near-term investment requirements are not significant.
- In 2020, as part of a comprehensive Distribution System Management Plan Update, OWASA updated its detailed distribution system prioritization model, which systematically evaluates and prioritizes water mains for replacement. This model relies on a statistical analysis of historical breaks to define pipe deterioration drivers for water main failures and determine potential failure patterns. This detailed understanding of failure patterns was combined with criteria regarding the consequence of specific main failures to develop the risk prioritization framework which is used to guide decisions on replacement projects. The model is not intended to predict when or where breaks will occur but rather to be used as a tool to observe trends in likelihood of failure and then use engineering judgement to prioritize lines and project groupings for replacement within the Capital Improvements Program (CIP).

Over the last 10 years, OWASA has replaced about 1.8 miles of water main per year. OWASA's water main replacement goal is 3 miles per year. Recently, additional water main replacements have been completed by OWASA's internal construction crew, which focuses on small diameter, neighborhood replacements.

#### Water main break repair

OWASA's valve maintenance program ensures that we test the valves in our distribution system on a routine basis and fix valves that are broken - before they fail. If a water main does break, our goal is to isolate the break as soon as possible. Our GIS-based valve isolation tool pinpoints the primary and secondary valves necessary to isolate the area needed to make the repair. The faster we can isolate the break; the less water is lost.

#### Leak detection and pressure monitoring

OWASA currently monitors distribution system pressure at nine locations in addition to the Jones Ferry Road Water Treatment Plant (WTP). The distribution system locations include three storage tanks, three booster pump stations, and three locations elsewhere in the distribution system. Data from each of these locations are transmitted from their location back to the Supervisory Control and Data Acquisition (SCADA) system at the Water Treatment Plant (WTP). WTP staff monitor the pressures in the elevated water storage tanks, but the locations at the booster pump stations and throughout the distribution system are not monitored routinely.

Although OWASA's Infrastructure Leakage Index (ILI) indicates that there is little opportunity to reduce water waste in our distribution system, when leaks occur, time is of the essence: the faster we know about a leak, the faster we can repair it and stop the water loss. In addition to water conservation benefits, both pressure and leak monitoring strategies can provide benefits to operations, condition assessment and capital planning efforts. These monitoring strategies and associated technologies can help pinpoint water leaks, identify main failures or mains that are more likely to fail, reduce break response time, alert operators to system anomalies and respond to customer complaints, among other benefits.

Based on recent recommendations, OWASA staff is evaluating both temporary and permanent leak and pressure monitoring strategies throughout the distribution system. OWASA's FY22-26 Capital Improvements Program plan has \$215,000 of funding for distribution system asset management strategies which includes leak detection and pressure monitoring among other initiatives.

#### Water conservation and reuse at the Wastewater Treatment Plant

Since the 1960s, the wastewater treatment plant has incorporated non-potable water, treated wastewater, into many of its processes. Non-potable water is used in the headworks, in the solids building, in the aeration basin spray system, to backwash the filters, in the secondary clarifiers, fire hydrants, and as seal water for the pumps that move water throughout the wastewater treatment plant. Using this non-potable water instead of potable water saved approximately 200 million gallons of potable water in 2020 (about 0.5 MGD).

In 2021, WWTP staff conducted a water audit at the plant. They identified two potential opportunities to conserve potable water:

- 1) Investigate the possibility of connecting the odor scrubbers to non-potable water. This system currently uses potable water but changing to non-potable water should have no impact on operations to this system.
- 2) Investigate a means to run the digester mixers using another substance besides potable water to cool the system. This would potentially make a closed-loop system in which this new substance is recirculated, cutting potable water use to zero.

#### Recirculation System at Rogerson Drive Pump Station

In late 2017, the recirculating seal water system for the pumps at the Rogerson Drive Pump Station began to fail. This damaged the pumps. By 2018, the recirculation system was taken off-line entirely. Now, instead of recirculating water, potable water is used as seal water to maintain the pump pressure. With the recirculating system out-of-service, the seal water is sent back into the wastewater collection system. In FY21, this used approximately 20,000 gallons per day. Staff have a plan to put the recirculation system back in place in FY 22 and potable water use should fall to pre-2018 levels.

#### In-plant recycling of water treatment plant process water

After the 2001/2002 drought, OWASA sought state approval to recycle process water at the Jones Ferry Road WTP. Process water is the water used to remove solids from the treatment process and backwash (clean) filters. In 2005, OWASA received approval from the State of North Carolina to use recycled process water for up to 10 percent of the total daily flow of raw water. This change effectively cut the amount of raw water used by 0.4 million gallons per day. In addition, it allows treatment plant operators to make small adjustment to WTP flow without making changes to University Lake or Cane Creek Reservoirs pumping rates.

#### Water Sense certified toilets, showerheads, dishwashers and water efficient fixtures

OWASA has water saving devices, fixtures and faucets installed in many bathrooms and kitchens.

#### Data Management

OWASA tracks water use in many of our facilities using Agua Vista. The system alerts our maintenance staff when water use increases indicating a possible leaking faucet or toilet so that repairs can be made promptly. In addition, OWASA regularly conducts AWWA water audits to identify cost-effective strategies to reduce water waste in our distribution system.

## Conclusion and Next Steps

OWASA and the community we serve have made significant investments in water demand management that have resulted in impressive reductions in water consumption over the last two decades. We are leaders in water conservation in North Carolina and the U.S.

OWASA's current water demand management programs, policies, and initiatives have allowed us to reduce total water sales, despite growing the number of customer accounts; increase the use of reclaimed water, freeing up the community's drinking water supply; reduce costs and keep our essential services affordable; wisely use and protect our natural resources; and build resiliency in the face of climate change.

After an in-depth analysis of demand-side alternatives for the LRWSP, OWASA determined that, as of now, there is no individual or collective group of demand management strategies available at this time that, if pursued further, would prevent the need for additional supply in the long-run. Our community has already implemented a suite of water conservation initiatives, making additional reductions more difficult.

Although, recent analyses did not identify cost-effective strategies likely to have a significant impact on water demands in the long run, there are opportunities to extend our current water supplies through additional water conservation programming and/or enhance efforts to advance the water conservation ethos in our community.

Water conservation has many benefits in addition to reducing pressure on our long-term water supply, including:

- Eliminating, downsizing, or postponing the need for capital projects
- Improving the utilization and extending the life of existing facilities
- Lowering variable operating costs
- Improving drought or emergency preparedness
- Educating customers about the value of water
- Protecting and preserving environmental resources
- Reducing energy use and greenhouse gas emissions
- Reducing water bills for our neighbors in need

Additionally, our community places a high value on conservation. The Town of Chapel Hill's Climate Action plan and the Town of Carrboro's Comprehensive Plan include water conservation, efficiency and reuse strategies. UNC-CH is also in the process of developing a Water Action Plan.

## **APPENDIX A:**

This plan captures OWASA's current water conservation and efficiency practices and ensures that demand management elements of OWASA's Long-Range Water Supply Plan (LRWSP), Water Shortage Response Plan, Affordability Program Plan, Energy Conservation Plan and Communications Plan are well-coordinated.

A copy of the most recent version of all these plans can be found at:

<https://www.owasa.org/plans-budgeting/>

### **Long-Range Water Supply Plan**

The Long-Range Water Supply Plan used 50-year forecasts to evaluate the need, costs, and benefits of various alternatives to increase the resiliency of our water supply. Staff evaluated several supply and demand management alternatives against the social, environmental, and economic goals established and approved by the OWASA Board of Directors. Based on this evaluation, it was determined that there is no individual or collective group of demand management strategies that, if pursued further, would prevent the need for additional supply in the long-run in a cost-effective manner.

Demand management through water conservation, water efficiency, and reclaimed water use, however, remain a key value of OWASA, and we are committed to considering cost-effective demand management strategies as part of this Water Conservation Plan. Cost-effective is defined by the LRWSP as having a lower unit cost (\$ per million gallons) than the next supply option.

### **Water Shortage Response Plan**

For the purposes of this document, demand side strategies do not include those that are only enacted in times of drought. While water shortage response strategies are important to extending OWASA's water supply during a drought, they are not desirable to reduce average day demands on a regular basis. Instead, these strategies are considered in OWASA's Water Shortage Response Plan.

### **Communication and Community Engagement Plan**

Additionally, for the purposes of this document, demand side strategies are not communications and outreach strategies. Although extremely important in influencing our community's ethos regarding sustainable water use, the impacts of outreach strategies are difficult to quantify. Now that OWASA has a strategic communication plan such strategies will be included in the updates of these plans.

### **Affordability Plan**

OWASA's affordability plan ensures that our rates are fair and equitable. One program that helps OWASA accomplish this goal while also contributing to water conservation is the tiered rate structure. Single-family households that use less water enjoy a lower rate than those that use more. In addition, multi-family master meter customers (ie apartment complexes) are no

longer subject to seasonal rate fluctuations to ensure that families living in these households are not faced with larger bills in the warmer months.

### **Energy Management Plan**

It is important to note that saving water in turn conserves energy. The treating, transporting, and heating of water all take some form of either electricity or gas power, and those costs translate to rising rates on utility bills. Water conservation efforts, including increasing the use of non-potable water at our wastewater treatment plant, are also a part of OWASA's Energy Management Plan.

DRAFT

**Agenda Item 5:**

Discuss the Development of a New Budget Format

**Purpose:**

In Fiscal Year (FY) 2020, staff and the Board of Directors began working on improving the way budget information is presented to the Board and public to make it easier to digest and to make the Board decision-making process more efficient. When the pandemic began impacting the local community in March of 2020 and we had to rethink and rework our FY 2021 budget, the Board and staff decided to postpone further efforts on a new budget format until the local economy, and OWASA’s budget outlook returned to a more normal state. The purpose of this agenda item is to review the progress we made prior to putting the effort on hold and to get the Board’s input and advice.

**Goal-Based Budgeting:**

Our initial approach is to try to tie spending to measurable inputs (in the form of benchmarks) or outputs (in the form of performance). We chose to start with analyzing the costs associated with the goal related to sewer overflows primarily because the costs associated with this goal are more easily identifiable than others. The cost and effectiveness of goals related to drinking water quality, wastewater processing and recycling, and others will require more administrative effort.

<b>Goal</b>	Reliable collection of wastewater resources
<b>Desired outcome</b>	No wastewater spills or overflows
<b>Performance measures</b>	Number and severity of wastewater spills and overflows

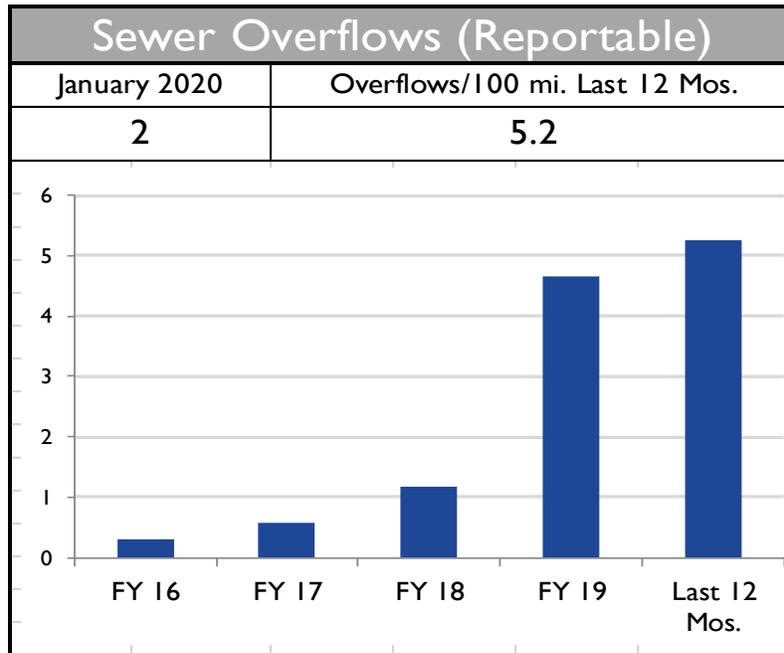
The following outlines activities the team employs to minimize the number of overflows in the wastewater collection system and an incomplete estimate of the expenses associated with these activities; numbers are based on an early draft of the FY 2021 budget.

**Team Goals, Activities, and Related Costs**

<b>Item No.</b>	<b>Priority</b>	<b>Activity</b>	<b>Materials/ Subcontractor Expense</b>	<b>Equipment- Use Allocation</b>	<b>Labor</b>	<b>Total</b>
1	High	Clean ~200 miles of sewer lines	20,000	TBD		20,000
2	Medium	Inspect 150 sewer grease traps		TBD		-
3	High	Inspect (CCTV) ~40 miles of sewer lines		TBD		-
4	Medium	Apply root control herbicide to about 24 miles of sewer lines	230,000	N/A		230,000
5	Medium	Smoke test 4 mini-basins (Smoke tests help control inflow and infiltration)		TBD		-
6	Low	Repair sewer lateral pipes (we budget for six per year)	30,000	TBD		30,000
7	High	Clean and maintain sewer collection system pump stations		TBD		-
8	High	Labor allocated to Items 1-7 Sewer Preventative Maintenance Crew		N/A	388,700	388,700
9	High	Mow, clear debris, maintain about 150 miles of sewer easements	30,000	TBD		30,000
10	High	Make sewer point repairs (we budget for five per year)	35,000	TBD		35,000
11	High	Inspect and maintain 266 creek crossings		TBD		-
12	High	Make sewer taps (we budget for five per year)		TBD		-
13	Medium	Inspect and maintain 3,038 manholes		TBD		-
14	High	Road resurfacing	30,000	TBD		30,000
15	High	Labor allocated to items 9-14 Sewer Maintenance/ Easements Crew		N/A	273,000	273,000
		Totals	375,000	-	661,700	1,036,700

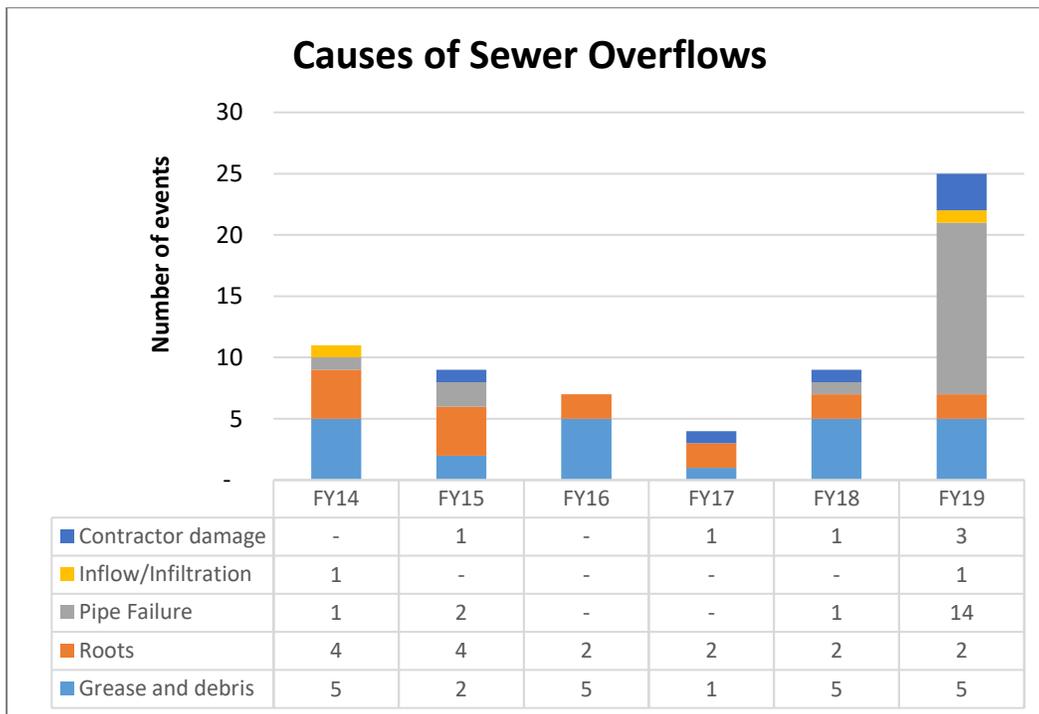
The information above is incomplete because we have not yet allocated the expense of vehicles and other equipment that are used in almost all of the activities to accomplish the tasks involved. Once the additional information is included, we hope to be able to show the cost of the activities and the estimated impact of increasing or decreasing our investment in them.

We track performance against this goal on our monthly Key Performance Indicator (KPI) Report. The following graph is from the January 2020 KPI report.



### Causes of wastewater overflows

Wastewater overflows result from a variety of circumstances. The following chart shows the factors that have caused our reportable wastewater overflows for the last several years. The spike in FY 2019 from pipe failures was caused by the Rogerson Drive Force Main rupture.



**Next steps:**

Due to several high-priority OWASA projects currently in the works (Long-Range Water Supply Plan, OWASA's strategic plan, and our diversity and inclusion organizational assessment), it may be in the Board and staff's best interest to delay the development of a new budget format. These projects will likely influence the budget format and staff is concerned that the time and effort of reworking the budget will require significant participation by Board members and will take away from other important initiatives.

**Board action requested:**

We request the Board's feedback and action on the new budget format including staff's proposal to delay development until completion, or near completion, of the Long-Range Water Supply Plan, strategic plan, and diversity work. If the Board chooses to delay the development of a new budget format, staff will incorporate your feedback into the next iteration.

## **Agenda Item 6:**

Discuss a Temporary Approach for Distributing Care to Share Funds

### **Purpose:**

To update the OWASA Board of Directors on a temporary change to how Care to Share donations will be distributed following the resumption of standard collection practices

### **Background:**

In March 2020, OWASA suspended disconnections for non-payment due to the COVID-19 pandemic. Since that time, the number of customers past due on their OWASA bill has increased significantly, as have past due balances. Currently, 567 individually metered residential customers are 60+ days past due on their OWASA bill, and the average amount past due is over \$450.

As we prepare to announce the resumption of standard collection practices (no sooner than January 2022), we are preparing to efficiently and effectively handle a surge of customers seeking assistance in managing their past due balances. To assist with this, we will be offering fee-free extended payment plans to allow customers to pay their past due balances over up to 18-months. In addition, during the time that we are signing customers up for extended payment plans, the method for distributing Care to Share donations will be temporarily changed.

Since 1997, the Inter-Faith Council for Social Service (IFC) has distributed Care to Share (formerly Taste of Hope) donations to OWASA customers for utility bill assistance. The typical process for providing Care to Share bill assistance proceeds in the following order.

- Individuals meet with IFC representatives to discuss their need for assistance.
- IFC covers the cost of their bill up to \$200.
- OWASA reimburses the IFC with funds collected from on-bill donations to Care to Share.

Due to the availability of IFC representatives, the process can take multiple days, even weeks.

Historically, this process has adequately distributed available funds, kept OWASA staff from assessing an individual's need for bill assistance, and allowed IFC to provide more comprehensive household assistance beyond the utility bill. However, as we prepare for a surge of requests for bill assistance and extended payment plans, we have concerns about the administrative challenges with the delays associated with the various steps in the process. We have determined that it will be most efficient for our Customer Service Team if they are able to directly apply Care to Share assistance to a customer's balance before setting them up on an extended payment plan. Moreover, this will result in a better process for our customers.

We have consulted with our partners at IFC, and they support this temporary adjustment in the distribution of Care to Share funds.

### **Action Needed:**

No action by the Board is needed

### **Information:**

- Letter of Support from IFC Executive Director Jackie Jenks



October 19, 2021

Orange Water and Sewer Authority  
400 Jones Ferry Road  
Carrboro, NC 27510

Dear Mr. Todd Taylor,

In 1997, Inter-Faith Council for Social Service (IFC) launched a partnership with Orange Water and Sewer Authority (OWASA) to administer the first customer assistance program for water bills in the State of North Carolina, Taste of Hope. Although the name of the program has changed, the IFC values our continued partnership in connecting neighbors to neighbors to help cover the costs of essential water and sewer services for low-income individuals and families in our community.

Our community appreciates OWASA's temporary suspension of service disconnections during the COVID-19 pandemic, but we recognize that this is not a long-term, sustainable strategy for OWASA to address water service affordability in our community. We understand that, currently, there are over 570 individually metered residential customers that are over 60 days past due on their OWASA bill and under standard collection practices would be subject to service disconnection. The average amount due from these customers is over \$440, more than many customers could afford to cover in one month time.

We appreciate that OWASA will offer fee-free extended payment plans once it announces the resumption of standard collection practice and that OWASA is preparing for a surge in request for utility bill assistance. As such, we support OWASA's request to directly apply up to \$200 of Care to Share funds per customer when signing them up for extended payment plans. We recognize that this process will be a much more efficient one for the resident and for OWASA, as opposed to referring each resident to IFC for later review and assistance. OWASA will keep diligent records on the funds distributed, to whom they are distributed, and when they are distributed. OWASA will share these records with IFC, and they will serve in-place of the applications that IFC typically receives for Care to Share.

Initially, OWASA will cover the costs of Care to Share disbursements with the fund it manages of on-bill donations. After that account has been fully utilized, OWASA will notify IFC of any need for checks to be issued, with OWASA providing pertinent info to ensure sent payment is credited to correct resident account. The fund that IFC manages of direct donations to Care to Share will be used to cover these costs.

We understand that this arrangement will be in-place while OWASA is offering extended payment plans or until all funds have been applied to customer accounts.

Sincerely,

Jackie Jenks  
Executive Director, Inter-Faith Council for Social Service

**Agenda Item 7:**

Review Board Work Schedule

**Purpose:**

- a) Request(s) by Board Committees, Board Members, Counsel and Staff
- b) December 9, 2021 Board Work Session
- c) January 13, 2022 Board Work Session
- d) Review 12 Month Board Meeting Schedule
- e) Review Pending Key Staff Action Items

**Information:**

- Draft agenda for the December 9, 2021 Meeting of the Board
- Draft agenda for the January 13, 2022 Board Work Session
- 12 Month Board Meeting Schedule
- Pending Key Staff Action Items from Board Meetings

November 11, 2021

**Agenda**  
**Work Session of the OWASA Board of Directors**  
**Thursday, December 9, 2021, 6:00 P.M.**

Due to COVID-19 public health concerns, the Orange Water and Sewer Authority (OWASA) Board of Directors is conducting this meeting virtually utilizing [Microsoft Teams](#) software. Board Members, General Counsel and staff will be participating in the meeting remotely.

In compliance with the "Americans with Disabilities Act," interpreter services for non-English speakers and for individuals who are deaf or hard of hearing are available with five days prior notice. If you need this assistance, please contact the Clerk to the Board at 919-537-4217 or [aorbich@owasa.org](mailto:aorbich@owasa.org).

The Board of Directors appreciates and invites the public to attend and observe its virtual meetings online. Public comment is invited via written materials, ideally submitted at least two days in advance of the meeting to the Board of Directors by sending an email to [board\\_and\\_leadership@owasa.org](mailto:board_and_leadership@owasa.org) or via US Postal Service (Clerk to the Board, 400 Jones Ferry Road, Carrboro, NC 27510). Public comments are also invited during the Board Meeting via telephone, and you will need to be available to call-in during the meeting. Please contact the Clerk to the Board at [aorbich@owasa.org](mailto:aorbich@owasa.org) or 919-537-4217 to make arrangements by 3:00 p.m. the day of the meeting.

The Board may take action on any item on the agenda. Public speakers are encouraged to organize their remarks for delivery within a four-minute time frame allowed each speaker, unless otherwise determined by the Board of Directors. The Board may take action on any item on the agenda.

**Announcements**

- a. Announcements by the Chair
  - Any Board Member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time.
- b. Announcements by Board Members
- c. Announcements by Staff
  - Thursday, December 16, 2021, Strategic Plan Work Session (Mary Tiger)

**Consent Agenda**

Action

1. Resolution Awarding a Construction Contract for the East Main Street Sewer - Phase 1 Project (Deepthi Kalyanam)
2. Minutes of the November 11, 2021, Work Session of the Board of Directors (Andrea Orbich)
3. Minutes of the November 11, 2021, Closed Session for the Purpose of Discussing Potential Environmental Claims in Accordance with N.C. General Statutes 143-318.11 (Robert Epting)

**Regular Agenda**

Discussion

4. Long-Range Water Supply Plan – Evaluation of Alternatives to Provide Access to OWASA’s Jordan Lake Allocation (Ruth Rouse)

Information and Reports

5. Information Session on Fiscal Year 2023 Medical Insurance Renewals (Stephanie Glasgow)

Discussion

6. Review Board Work Schedule
  - a. Request(s) by Board Committees, Board Members and Staff (Jody Eimers)
  - b. January 13, 2022 Work Session (Todd Taylor)
  - c. January 27, 2022 Board Meeting (Todd Taylor)
  - d. 12 Month Board Meeting Schedule (Todd Taylor)
  - e. Pending Key Staff Action Items (Todd Taylor)
  - f. Action Items Reoccurring Every 3 to 5+ Years (Todd Taylor)

**Summary of Work Session Items**

7. Executive Director will summarize the key staff action items from the Work Session

**Closed Session**

8. The Board of Directors will meet in Closed Session for the Purpose of Discussing a Personnel Matter in Accordance with N.C. General Statutes 143-318.11.6 (Ray DuBose)

**Agenda**  
**Work Session of the OWASA Board of Directors**  
**Thursday, January 13, 2022, 6:00 P.M.**

Due to COVID-19 public health concerns, the Orange Water and Sewer Authority (OWASA) Board of Directors is conducting this meeting virtually utilizing [Microsoft Teams](#) software. Board Members, General Counsel and staff will be participating in the meeting remotely.

In compliance with the "Americans with Disabilities Act," interpreter services for non-English speakers and for individuals who are deaf or hard of hearing are available with five days prior notice. If you need this assistance, please contact the Clerk to the Board at 919-537-4217 or [aorbich@owasa.org](mailto:aorbich@owasa.org).

The Board of Directors appreciates and invites the public to attend and observe its virtual meetings online. Public comment is invited via written materials, ideally submitted at least two days in advance of the meeting to the Board of Directors by sending an email to [board\\_and\\_leadership@owasa.org](mailto:board_and_leadership@owasa.org) or via US Postal Service (Clerk to the Board, 400 Jones Ferry Road, Carrboro, NC 27510). Public comments are also invited during the Board Meeting via telephone, and you will need to be available to call-in during the meeting. Please contact the Clerk to the Board at [aorbich@owasa.org](mailto:aorbich@owasa.org) or 919-537-4217 to make arrangements by 3:00 p.m. the day of the meeting.

The Board may take action on any item on the agenda. Public speakers are encouraged to organize their remarks for delivery within a four-minute time frame allowed each speaker, unless otherwise determined by the Board of Directors. The Board may take action on any item on the agenda.

**Announcements**

- a. Announcements by the Chair
  - Any Board Member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time.
- b. Announcements by Board Members
- c. Announcements by Staff

**Consent Agenda**

Action

- 1. Resolution Appointing Independent Audit Firm for the Orange Water and Sewer Authority's Fiscal Year 2022 Finance Audit (Stephen Winters)
- 2. Minutes of the December 9, 2021 Work Session of the Board of Directors (Andrea Orbich)
- 3. Minutes of the December 9, 2021 Closed Session for the Purpose of Discussing a Personnel Matter in Accordance with N.C. General Statutes 143-318.11.6 (Ray DuBose)

**Regular Agenda**

Discussion and Action

4. Long-Range Water Supply Plan – Select Alternative to Provide Access to OWASA’s Jordan Lake Allocation for Comparison to Other Viable Supply Alternatives (Ruth Rouse)

Information and Reports

5. Employee Health and Dental Insurance Update for Fiscal Year 2023 (Stephanie Glasgow)
6. Diversity and Inclusion Update (Stephanie Glasgow)

Discussion

7. Review Board Work Schedule
  - a. Request(s) by Board Committees, Board Members and Staff (Jody Eimers)
  - b. January 27, 2022 Board Meeting (Todd Taylor)
  - c. February 10, 2022 Work Session (Todd Taylor)
  - d. 12 Month Board Meeting Schedule (Todd Taylor)
  - e. Pending Key Staff Action Items (Todd Taylor)

**Summary of Work Session Items**

8. Executive Director will summarize the key staff action items from the Work Session

**Closed Session**

9. The Board of Directors will meet in Closed Session for the Purpose of Discussing a Personnel Matter in Accordance with N.C. General Statutes 143-318.11.6 (Ray DuBose)

DRAFT

## OWASA Board of Directors – 12 Month Board Meeting Schedule (November 5, 2021)

Month	Board Meetings		Committee Meetings & Other Board Items
	Work Session	Business Meeting	
November 2021	Award Fermenter Construction Project Development of a New Budget Format Temporary Approach for Distributing Care to Share Funds Review and Discuss Draft Water Conservation Plan CS – PFAS Cost Recovery Program 11/11/2021	<i>Holiday – no meeting</i>	<i>Cane Creek Mitigation Tract Tour (11-2-2021)</i>  <i>Strategic Plan Work Session (11-18-2021)</i>  <i>Possible welcome of new Board member(s)</i>
December 2021	Award East Main Street Sewer Construction Project – Phase 1 LRWSP – Evaluate Alternatives for Access to JL Allocation Information Session on Medical Insurance Renewals CS – Prepare for ED Interim Review (C) 12/9/2021	<i>Holiday – no meeting</i>	<i>Strategic Plan Work Session (12-16-2021)</i>  <i>Board/Staff Panel Meeting to Interview Audit Firms (TBD)</i>
January 2022	Appoint Audit Firm (C) LRWSP – Select Jordan Lake Alternative (C) Employee Health and Dental Insurance Update for FY 23 (C) D&I Update (C) CS – ED Interim Performance Review (C) 1/13/2022	2021 Annual Lakes Recreation Report (C) CIP Semiannual Report (C) Q2 Financial Report (C) Discuss FY 23 Budget Calendar and Planning Assumptions (C) LRWSP – Select Alternative 1/27/2022	<i>Strategic Plan Work Session (TBD)</i>  <i>BOD D&amp;I Training Sessions (Tentative - TBD)</i>
February 2022	Award WTP Belt Filter Press Construction Project Review and Approve CEP for LRWSP Department Managers FY 23 Budget Presentations (C) Reliability and Resiliency Improvements Update (C) Annual Update of the Energy Management Plan (C) CS – Prepare for GC Interim Review (C) 2/10/2022	Award University Lake Permanganate Facility Construction Project (Tentative) Receipt of the OC Board of Health Report on Drinking Water Fluoridation Affordability Program Update (C) CS – GC Interim Review (C) 2/24/2022	<i>Strategic Plan Work Session (TBD)</i>
March 2022	FY 23 Draft Budget (C) 3/10/2022	Set date for Public Hearings – FY 23 Budget & Rates (C) FY 23 Draft Budget and Rate Adjustment (C) 3/24/2022	
April 2022	Review Employee Health and Dental Insurance Renewals (C) FY 23 Draft Budget and Rate Adjustment (C) Strategic Plan Update (C) BOD Eligible for Nominations to Election as Board Officers (include Officer descriptions) (C) Planning for BOD Self-Assessment (C) 4/14/2022	Q3 Financial Report (C) Authorize Staff to Publish FY23 Budget and Rate Information (C) BOD Eligible for Nominations to Election as Board Officers (include Officer descriptions – if needed) (C) 4/28/2022	<i>Mitigation Banking Field Trip (TBD)</i>
May 2022	Approve Employee Insurance Renewals (C) Employee Merit Pay for FY23 (C) CS – Prepare ED Annual Review (C) 5/12/2022	Public Hearings – FY 23 Budget and Rates (C) CS –ED Annual Performance Review (C) (Public Hearings) 5/26/2022	
June 2022	Approve FY 23 Budget and Rates (including Employee Merit Pay decision) (C) Election of Officers (C) 6/9/2022	TBD 6/23/2022	
July 2022	D&I Update (C) 7/14/2022	TBD 7/28/2022	<i>Possible welcome of new Board member(s)</i>

## OWASA Board of Directors – 12 Month Board Meeting Schedule (November 5, 2021)

Month	Board Meetings		Committee Meetings & Other Board Items
	Work Session	Business Meeting	
August 2022	TBD  8/11/2022	Preliminary 12 Month Financial Report (C) CIP Semiannual Report (C) CS – Prepare GC Annual Review (C) 8/25/2022	
September 2022	Annual Report on Disposal of Surplus (C) Personal Property EEO/Affirmative Action Report and D&I Update (C) CS – GC Annual Review (C) 9/8/2022	Annual Report and Financial Audit (C) Approve GC Engagement (C) Forest Management Program Update (C)  (Annual Meeting of the BOD) 9/22/2022	
October 2022	TBD  10/13/2022	Strategic Trends Report (C) Q1 Financial Report (C) 10/27/2022	

The 12 Month Board Meeting Schedule shows Strategic Plan initiatives and other priority efforts that the Board and staff plan to give greatest consideration to during the next twelve months. The schedule also shows major recurring agenda items that require Board action, or items that have been scheduled in response to the Board's prior standing request. This schedule does not show all the items the Board may consider in a work session or business meeting.

The 12 Month Board Meeting Schedule will be reviewed and updated at each monthly work session and may also be discussed and updated at the Board's business meetings.

In addition to the initiatives shown in this schedule, staff will be working on other Strategic Plan and organizational priorities that are not expected to require major additional discussion with the Board except as part of budget deliberations.

The schedule implies that the following Strategic Plan initiative would be addressed beyond the 12-month period. The Board may conclude that the following initiative is higher priority. The schedule will be revised as needed to reflect the Board's priorities, and any additional initiatives that the Board may decide to address.

- Development of a plan and policy framework for OWASA lands is considered a longer-term priority. The NRTS Committee discussed this issue in September 2017 and determined it was lower priority than Forest Management.

The OWASA Board determines which topics it wants to explore as a full Board (potentially in a work session format) and which topics it wants to assign to Board committees or committee chairs for further analysis and development of recommendations. Board also determines priorities and desired timeframes for addressing topics. Committee meetings will be updated on the schedule routinely.

### Abbreviations Used in Draft Schedule:

(C)	Recurring agenda item (generally these are "required" items)	CIP	Capital Improvements Program
AV/AMI	Agua Vista/Advanced Metering Infrastructure	COLA	Cost of Labor Adjustment
BOCC	Orange County Board of County Commissioners	CS	Closed Session of the Board
BOD	Board of Directors	CTC	Carrboro Town Council
CCR	Cane Creek Reservoir	CY	Calendar Year
CE	Community Engagement	D&I	Diversity and Inclusion
CEP	Community Engagement Plan	ED	Executive Director
CHTC	Chapel Hill Town Council	EEO	Equal Employment Opportunity
		EPA	Environmental Protection Agency

**OWASA Board of Directors – 12 Month Board Meeting Schedule** (November 5, 2021)

FY	Fiscal Year	NCDOT	North Carolina Department of Transportation
GC	General Counsel	NRTS	Natural Resources and Technical Services
HR	Human Resources	OC	Orange County
JL	Jordan Lake	Q	Quarter
KPI	Key Performance Indicator	RFP	Request for Proposals
LRWSP	Long-Range Water Supply Plan	SRF	State Revolving Fund
MOA	Memorandum of Agreement	SOW	Scope of Work
MWBE	Minority/Women-owned Business Enterprises	TBD	To Be Determined
MST	Mountains-to-Sea Trail	WTP	Water Treatment Plant
MFMM	Multi-Family Master Meter	WWTP	Wastewater Treatment Plant

## Pending Key Staff Action Items from Board Meetings

No.	Date	Action Item	Target Board Meeting Date	Person(s) Responsible	Status
1.	10-28-2021	Incorporate Board feedback into next year's Strategic Trends Report including revisions to the water main replacement decision support model graph and a graph on wastewater treatment daily max flow.	10-27-2022	Rouse Spinelli	
2.	10-28-2021	Consider how to evaluate reliability and risk for the Reclaimed Water System.	2-10-2022	Darr Gangadharan	
3.	10-28-2021	Evaluate trends in the labor market, cyber security, etc.	NA	Taylor Directors	
4.	10-28-2021	Provide information on the estimated yield of our local reservoirs.	NA	Rouse	Completed – emailed on 11-3-2021
5.	10-28-2021	Provide information on potential unit submetering for Multi Family Master Meters.	NA	Rouse Tiger	Completed – emailed on 11-3-2021
6.	10-14-2021	Incorporate Board comments into Long-Range Water Supply Plan, Jordan Lake alternatives analysis.	12-9-2021	Rouse	
7.	8-26-2021	Update on the American Rescue Plan Act (ARPA) and opportunities for Board involvement.	10-28-2021	Winters	Complete. Presented information on funding sources at the October 28 Board meeting. Staff continues to monitor the situation and will report to the Board in the future as appropriate.
8.	7-8-2021	Schedule Board D&I training session.	NA	Taylor Orbich	Will be scheduled once a consultant is hired.
9.	7-8-2021	Schedule separate Board Work Sessions to update the Strategic Plan this fall and winter.	11-18-2021 12-16-2021	Orbich Tiger	November and December sessions scheduled; will schedule 2022 sessions in December.