ORANGE WATER AND SEWER AUTHORITY

A public, non-profit agency providing water, sewer and reclaimed water services to the Carrboro-Chapel Hill community.

Agenda
Work Session of the OWASA Board of Directors
Thursday, December 8, 2016, 6:00 P.M.
OWASA Community Room

The Board of Directors appreciates and invites the public to attend and observe its meetings. For the Board's Work Session, public comments are invited on only items appearing on this agenda. Speakers are invited to submit more detailed comments via written materials, ideally submitted at least three days in advance of the meeting to the Clerk to the Board via e-mail or US Postal Service (aorbich@owasa.org/400 Jones Ferry Road, Carrboro, NC 27510).

Public speakers are encouraged to organize their remarks for delivery within a four-minute time frame allowed each speaker.

The Board may act 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 now.

b. Announcements by Board Members

c. Announcements by Staff

Consent Agenda

1. Approve the Advanced Metering Infrastructure Community Engagement Plan (Todd Taylor)
2. Minutes of the October 27, 2016 Meeting of the Board of Directors (Andrea Orbich)
3. Minutes of the November 3, 2016 Special Meeting of the Board of Directors (Andrea Orbich)
4. Minutes of the November 10, 2016 Meeting of the Board of Directors (Andrea Orbich)
5. Minutes of the November 10, 2016 Closed Session of the Board of Directors for Discussing a Personnel Matter (Robert Morgan)

Discussion and Action

6. Consider a Motion to Approve the Proposed Year-Round Water Rate for Multi-Family Master-Metered Customers (Stephen Winters)
7. Resolution Approving Revisions to OWASA's Ordinance for the Control of Backflow and Cross-Connections (Todd Taylor)

Discussion

8. Affordability Program Update and Plan (Mary Tiger)
9. Discussion of Key Performance Indicator Report (Mary Tiger)
10. Discuss Draft Executive Director Performance Goals (Ed Kerwin)

11. Review Board Work Schedule (John Young/Ed Kerwin)
    a. Request(s) by Board Committees, Board Members and Staff
    b. January 12, 2017 Work Session
    c. January 26, 2017 Board Meeting
    d. 12 Month Board Meeting Schedule
    e. Pending Key Staff Action Items

Summary of Work Session Items

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

Agenda Item 1:

Approve Advanced Metering Infrastructure (AMI) Community Engagement Plan (CEP)

Purpose:

As the AMI project moves into the procurement and installation phases, we will have significant opportunities and need to engage with stakeholders in our community. The CEP identifies these opportunities and proposes methods to solicit their feedback. The Board reviewed the draft CEP at the November 10, 2016 Board meeting and staff requests that the Board approve the CEP.

Action Requested:

Staff requests that the Board approve the AMI CEP.

Background:

On March 24, 2016, following a feasibility assessment and an extensive community engagement effort, the Board of Directors determined that implementation of AMI is in the best interests of our customers and authorized staff to proceed with procurement and implementation planning.

Since March, we hired a consultant to assist staff with the procurement process, to develop a change management plan, and to help manage the installation process. In addition, we are in the process of recruiting a Business Systems Analyst to help ensure a successful process and have applied for a low-interest State Revolving Fund Loan to finance the project. Additionally, we are finalizing a Request for Proposals and have developed the attached CEP with feedback from our consultant.

Board approval of formal CEPs is required for key strategic initiatives, such as AMI. These plans ensure alignment between the Board and staff on core messages and the methods to be used to engage with stakeholders.

Staff Recommendation:

Staff recommends that the Board approve the AMI CEP.

Information:

- CEP for OWASA's AMI Project Procurement and Installation Phase

COMMUNITY ENGAGEMENT PLAN

OWASA's Advanced Metering Infrastructure (AMI) Project – Procurement and Installation Phase

December 8, 2016

Purpose

The following plan outlines an approach for engaging our community in the procurement and installation phases of the Advanced Metering Infrastructure Project.

The purposes of community engagement in the Procurement Phase are to:

1. Provide transparency into procurement decisions, and
2. Provide the opportunity for stakeholders to question assumptions behind procurement decisions.

The purposes of community engagement in the Installation Phase are to:

1. Keep stakeholders informed on the schedule and progress of installation
2. Provide ample and straightforward opportunities for the public to inquire about the project
3. Inform customers about the impact of AMI on them, both in the short and long-term
4. Engage stakeholders in Board actions regarding the creation of or revisions to policies, as a result of the AMI system installation.

Desired Outcomes of Community Engagement

- Stakeholders have opportunities to provide input on the decision-making process.
- Stakeholder feedback is used as a resource to enhance decision-making.
- Stakeholders are well-informed and receive advance notice about the system installation.
- Stakeholders understand the affects the installation process will have on them.

Measuring the Effectiveness of the Engagement

Throughout the procurement and installation phases, we will request and collect feedback on the quality and timeliness of information and engagement activities via email, phone calls, feedback forms at Board meetings, and an ongoing feedback survey on our website. On forms and surveys, we will ask for a categorical ranking of the communication and engagement process.

Measuring stakeholder's perception of the success of the project will also be important to evaluating the success of our engagement and process. We will invite all account holders to participate in post-installation survey to request feedback on the overall process.

Our goal is that all stakeholders will rate the information provided and participation opportunities as very good to excellent in the feedback/survey process.

Stakeholder Groups

All accountholders and system users are stakeholders in the Procurement and Installation Phases of the AMI Project. This category includes major customers and organizations such as the Towns of Chapel Hill and Carrboro, Orange County, the University, UNC Healthcare, Chamber of Commerce, affordability outreach partners, etc.

Additionally, the vendor that is ultimately chosen for the AMI system will be a key partner in implementing this community engagement plan, and therefore a critical stakeholder.

Core messages

Our website will host background information on what AMI is and how we got to this point. However, as we move through the various phases of this project, we will want to focus on specific messages to efficiently engage our community in the most appropriate way. We have dialed into three specific messages for the Procurement Phase and the Installation Phase, in support of which we will provide more detailed information (outlined in the following section).

Procurement Phase

1. AMI is a significant investment in our community.
2. We have some important decisions to make regarding the AMI system in our community and value stakeholder participation and feedback.
3. We are evaluating AMI systems based on their initial and ongoing costs, community impact, capabilities, ease of installation and use, and quality.

Installation Phase

1. How will the installation affect stakeholders?
2. How will AMI technology benefit stakeholders?
3. Where can you go if you have questions?

Key information for stakeholders

Procurement Phase

1. AMI is an investment in our community.
    a. AMI will provide our customers with increased access to their water use data and improve the ability to proactively address water leaks.
    b. AMI will provide benefits in:
        i. Leak detection and water conservation
        ii. Greenhouse gas reduction (from reducing vehicle use)
        iii. Safety
        iv. Cost savings from avoiding expenses associated with our current, less efficient meter reading program and reducing our workforce (no employees will be laid off as a result of AMI, instead the number of positions will be reduced over time through normal turnover).
2. We have some decisions to make regarding the AMI system in our community and value your participation and feedback.
    a. *March 9, 2017 and March 23, 2017 Board meetings*: Receive public comments and questions (e.g., Opt-Out Program).
    b. *As needed*: Preceding any policy decisions related to AMI that may affect stakeholders.
3. We are evaluating AMI systems based on their initial and ongoing costs, community impact, capabilities, ease of installation and use, and quality.
    a. We do not anticipate a rate increase for water and sewer services to fund the AMI system.
    b. In the feasibility assessment, the AMI system is projected to cost ~$6 million.
    c. Performance of vendor proposals against established objectives
    d. The community raised important concerns during our feasibility phase, and we will address the concerns raised by the community during procurement and installation:
        i. *Radio frequency exposure*: We will continue efforts to inform stakeholders about the relatively limited exposures due to: location of the low powered transmitters in relation to stakeholders' homes and the intermittent nature of their use.
        ii. *Reduction in force*: We will reaffirm OWASA's public commitment that no employees will be laid off and position reductions will occur through normal turnover.
        iii. *Data security and privacy*: We will continue efforts to inform stakeholders about data encryption and the relatively low value of this data.
        iv. *Other*: We will address other concerns that may arise on an ongoing, as-needed basis.

Installation Phase

1. How will the installation affect stakeholders?
    a. Water service may need to be interrupted briefly during the installation of AMI equipment.

   b. Stakeholders may have interactions with contract installers working for OWASA. Installers will be working at the meter box near the street and should not need to enter homes or businesses. They will be readily identifiable. They will be, for the most part, working in only one area at a time.
   c.
   d. Lawns, sidewalks, landscaping, etc. within the public right-of-way may be disturbed if the meter box has been buried.
   e. Leaks in service lines may be discovered during or result from the installation.
   f. If old, inaccurate meters are replaced, some customers who were being under-billed may notice an increase in billed-for consumption;
2. How will AMI technology benefit stakeholders?
   a. Stakeholders will have access to their own usage data via a web portal after system testing and staff training has been completed.
   b. Policies may be created/revised to address stakeholder concerns and to take advantage of new system benefits. We will provide the community opportunity to comment on these policies before they are approved.
3. Where can you go if you have questions?
   a. Website
   b. Phone
   c. Email

Communication/engagement methods

The OWASA website will serve as an information hub for the AMI project's background, status, answers to frequently asked questions, feasibility study, and related documents. We will develop clear, concise, and accessible summaries of key information using fact sheets, diagrams, and brief videos. Topics of these summaries will include:

- What is AMI?
- Project timeline and map
- AMI: anticipated returns on this investment
- How will the installation impact your household?
- How will AMI technology impact your household?

We will highlight opportunities for the community to provide feedback on our website, based on where we are in the process. Additionally, we will actively invite the community to visit the website using the following modes:

- Email stakeholders who have signed up to receive such notices.
- Blue Thumb newsletter articles included in paper bills and via links in e-bills.
- Notices on electronic and paper bills.

Given where we are in the process, these notices may be specific calls-to-action (e.g. invitation to Board meeting discussion on AMI vendor procurement) or more general in nature (e.g. AMI is coming, what you should know).

Installation Phase

As we approach the Installation Phase, the information will become more focused and specific. We will offer presentations/discussions with interested community groups letting them know what they can expect. Staff will seek to meet with organizations including:

- Towns of Chapel Hill and Carrboro and Orange County
- UNC and UNC Healthcare
- Chapel Hill-Carrboro City Schools
- Chamber of Commerce
- Sierra Club
- Civic and property owner groups
- Additional entities among our top 20 stakeholders
- Affordability outreach partners

We will also notify the community of the installation process via:

- News releases
- Guest column from the Board Chair in local media (optional)
- Announcements in televised Board meetings
- Door hangers placed in advance of installations
- Direct mail letters in advance of installations

Resources Required

In-house staff will handle the majority of these activities, therefore additional out-of-pocket costs for its implementation will be minimal. We anticipate that certain items will be addressed by the installers (i.e. door hanger printing and placement, call center for installation appointments and follow-up, etc.) and therefore included in the contract amount.

Board Engagement

How will the Board be involved in the community engagement?

- Announcements at televised Board meetings.
- Communications with elected officials.
- Guest column from the Board Chair in local media (optional).

On what frequency and by what method(s) will staff keep the Board updated about the initiative?

- Staff announcements at Board meetings.
- E-mail updates as-needed.

On what frequency and by what method(s) will the Board provide staff feedback regarding the effectiveness of the community engagement work for the initiative?

- Ongoing, as-needed verbal and written feedback.

ORANGE WATER AND SEWER AUTHORITY

PUBLIC HEARING AND MEETING OF THE BOARD OF DIRECTORS

OCTOBER 27, 2016

The Board of Directors of the Orange Water and Sewer Authority (OWASA) held a public hearing and regular meeting on Thursday, October 27, 2016, at 7:00 P.M. at the Chapel Hill Town Hall Council Chamber, 405 Martin Luther King Jr. Boulevard, Chapel Hill.

Board Members present: John A. Young (Chair), Jeff Danner (Vice Chair), Barbara Foushee (Secretary), Yinka Ayankoya, Terri Buckner, David (Dave) Moreau, Robert Morgan, Heather Payne and Ruchir Vora.

OWASA staff present: Ed Kerwin, Justin Andrews, Denise Battle, Dylan Bowers, Mary Darr, Greg Feller, Robert Herring, Katie Harrold, Kenneth Loflin, Andrea Orbich, Ruth Rouse, Todd Taylor, Mary Tiger, Stephen Winters, Robin Jacobs (Epting and Hackney) and Robert Epting (Epting and Hackney).

Others present: Elijah Ayankoya; Shannon Brummett, Regional Vice President, General Services Corporation (GSC); Meg Holton, Water, Wastewater and Stormwater Manager at the University of North Carolina at Chapel Hill (UNC); Earl Manhertz; David Occhiuzzo; Ben Poulson, Associate Director of Energy Services at UNC; James Ray; Kathy L. Sain-Ray; Crystal Sorrell of GSC; Taylor Sorrell; and Pamela Tekumalla.

There being a quorum present, Chair John Young called the meeting to order.

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MOTIONS ACTED UPON

1. Dave Moreau made a motion to close the Public Hearing on the proposed change in the water rate for Multi-Family Master Metered customers; the motion was seconded by Robert Morgan, and unanimously approved.

2. Robert Morgan made a motion to conclude the Board's discussion on the proposed change in the water rate for Multi-Family Master-Metered customers with the intent of further discussion and a possible decision on December 8, 2016; second by Heather Payne and the motion passed with a vote of eight to one with Jeff Danner opposed.

3. John Young made a motion to amend the Minutes of the September 8, 2016 Work Session of the Board of Directors by adding the following sentence to the end of the first paragraph on page 3, Item Three, Discuss Multi-Family, Master-Metered Rate Structure Alternatives: *John Young supported further consideration of the uniform commodity rate; however, he said he would oppose the motion because this decision was scheduled for the Board's consideration at its October 13 meeting and because this meant the Board did not receive, consider, and provide the appropriate opportunity for insights from absent Board Members*. Second by Jeff Danner and unanimously approved.

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4. Robert Morgan made a motion to approve the Minutes of the September 8, 2016 Work Session of the Board of Directors as amended in Motion No. 2; second by Ruchir Vora and unanimously approved.

5. Dave Moreau made a motion to approve the Minutes of the September 8, 2016 Closed Session of the Board of Directors; second by Robert Morgan and unanimously approved.

6. Robert Morgan made a motion to approve the Minutes of the September 22, 2016 Meeting of the Board of Directors; second by Ruchir Vora and unanimously approved.

7. Robert Morgan made a motion to approve the Minutes of the October 13, 2016 Work Session of the Board of Directors; second by Ruchir Vora and unanimously approved.

8. Robert Morgan made a motion to approve the Minutes of the October 13, 2016 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Ruchir Vora and unanimously approved.

9. Terri Buckner made a motion to place the proposed revisions to OWASA's Cross Connection Control Ordinance for approval on the Board's December 8, 2016 agenda and that staff will notify/inform customer and stakeholders; second by Jeff Danner and unanimously approved.

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ANNOUNCEMENTS

Conflict of Interest

John Young said 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 at this time; none were disclosed.

Special Meeting

John Young said the Board will hold a Special Meeting to discuss diversity and inclusion on Thursday, November 3, 2016, at 6:00 P.M. in OWASA's Community Room.

OWASA Employee Service Awards

Ed Kerwin recognized OWASA employees who have served for 10, 15, 20 and 30 years at OWASA. The following employees received service awards:

10 Years: *Dylan Bowers, Johnny Breedlove, Andrew Crawford, James Dodson, Vishnu Gangadharan, John Miller and Jason Thomas

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15 Years: Nathan Barnhardt, Brett Bradshaw, Terry Burkhart, *Robert Herring and Pamela Whitmore
20 Years: Donald Boggs, *Ed Kerwin and *Denise Battle
30 Years: Roy Blackwood

The Board thanked and expressed appreciation to staff for their service to OWASA and the community.

*These employees attended the Board meeting and were recognized by their supervisors.

PETITIONS AND REQUESTS

John Young asked for petitions and requests from the public, Board and staff; there were none.

ITEM ONE: PUBLIC HEARING

John Young opened the Public Hearing on the proposed change in the water rate for Multi-Family Master-Metered (MFMM) customers.

Stephen Winters, Director of Finance and Customer Service, said the purpose of tonight's public hearing is to give the public an opportunity to comment on the proposed change for MFMM accounts and for the Board to discuss the input and determine next steps.

Mr. Winters said that MFMM customers are those residents who live in properties for which one OWASA meter serves more than one residential dwelling such as duplexes or apartment complexes. In these instances, OWASA bills the property owner rather than individual residents for water and sewer services. Generally, water and sewer service costs are either included in the residents' rent or, if the property is sub-metered, billed separately by the property manager or a third-party service provider.

Mr. Winters said the Board is considering changing the way OWASA charges MFMM customers for water use; instead of a seasonal rate which is higher during the months of May through September and lower from October to April, the proposal is to change to a year-round rate. (The sewer rate and fixed monthly service charges will remain the same.) Water use at most MFMM complexes does not fluctuate greatly from month-to-month and customers are surprised when their bills increase but their water use has not.

Mr. Young opened the Public Hearing for public comments and noted that a few comments were received via e-mail from customers and stakeholders.

Shannon Brummett, Regional Vice President of General Service Corporation, said he agrees with proposed change for MFMM customers and hopes the Board approves it.

Dave Moreau made a motion to close the Public Hearing on the proposed change in the water rate for Multi-Family Master Metered customers; the motion was seconded by Robert Morgan, and unanimously approved. Please see Motion No. 1 above.

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Mr. Young opened the discussion for Board comments.

Mr. Moreau pointed out that the data for the MFMM residents for this class of customers is very different than any other customer class that OWASA serves and that the seasonal rates no longer seem appropriate for MFMM customers.

Heather Payne acknowledged that MFMM customers' billing is a problem but that she believes that a conservation signal, such as that communicated through seasonal rates, should be maintained for all customer classes. She stated that if a uniform rate is appropriate for one customer class, a uniform rate should be used for all customers.

Terri Buckner reminded the Board that the MFMM customer billing was discussed as part of our affordability outreach and that she would be willing to vote on the proposed change tonight.

Jeff Danner said that water conversation is a stated goal of rate-making and eliminating the seasonal rate conservation signal for MFMM customers would be contrary to that goal. Mr. Danner opposed voting on the proposed MFMM change tonight.

Yinka Ayankoya said that she agreed with the proposed change for MFMM customers but wants to ensure that the administrative fee charged to MFMM customers, and allowed by the North Carolina Utilities Commission (NCUC), is appropriate.

Mr. Winters said that the NCUC governs the administrative fee, not OWASA.

Mr. Young said he has concerns about eliminating a conservation signal to MFMM customers and suggested incorporating an increasing block rate structure. However, this alternative would require a change in the NCUC's rate-approval practices. Mr. Young opposed a vote on the MFMM change tonight.

Mr. Moreau said that an excess-use charge could also be applied, however, this option would require additional review and analysis. Mr. Moreau also stated that his comments are not intended for the short-term, that he is willing to vote for a uniform rate now, or in December, and to consider other options in the future.

Robert Morgan made a motion to conclude the Board's discussion on the proposed change in the water rate for Multi-Family Master-Metered customers with the intent of further discussion and a possible decision on December 8, 2016; second by Heather Payne and the motion passed with a vote of eight to one with Jeff Danner opposed. Please see Motion No. 2 above.

ITEM TWO: QUARTERLY ATTENDANCE AT BOARD AND COMMITTEE MEETINGS

The Board received this as an information item.

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ITEM THREE: MINUTES

John Young made a motion to amend the Minutes of the September 8, 2016 Work Session of the Board of Directors by adding the following sentence to the end of the first paragraph on page 3, Item Three, Discuss Multi-Family, Master-Metered Rate Structure Alternatives: *John Young supported further consideration of the uniform commodity rate; however, he said he would oppose the motion because this decision was scheduled for the Board's consideration at its October 13 meeting and because this meant the Board did not receive, consider, and provide the appropriate opportunity for insights from absent Board Members*. Second by Jeff Danner and unanimously approved. Please see Motion No. 3 above.

Robert Morgan made a motion to approve the Minutes of the September 8, 2016 Work Session of the Board of Directors as amended in Motion No. 2; second by Ruchir Vora and unanimously approved. Please see Motion No. 4 above.

ITEM FOUR: MINUTES

Robert Morgan made a motion to approve the Minutes of the September 22, 2016 Meeting of the Board of Directors; second by Ruchir Vora and unanimously approved. Please see Motion No. 5 above.

ITEM FIVE: MINUTES

Robert Morgan made a motion to approve the Minutes of the September 22, 2016 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Ruchir Vora and unanimously approved. Please see Motion No. 6 above.

ITEM SIX: MINUTES

Robert Morgan made a motion to approve the Minutes of the October 13, 2016 Work Session of the Board of Directors; second by Ruchir Vora and unanimously approved. Please see Motion No. 7 above.

ITEM SEVEN: MINUTES

Robert Morgan made a motion to approve the Minutes of the October 13, 2016 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Ruchir Vora and unanimously approved. Please see Motion No. 8 above.

ITEM EIGHT: COMPREHENSIVE ANNUAL FINANCIAL REPORT – COMMENTS FROM THE BOARD AND PUBLIC

John Young said that OWASA's financial condition is excellent and that over 80 percent of OWASA's Capital Improvements Program investments go towards renewing and replacing infrastructure.

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Mr. Young asked about the status of benchmark information the Board requested about how OWASA's liability relating to other post-employment benefits (OPEB) compares to other similar organizations. Stephen Winters said that information is being developed.

Heather Payne congratulated staff on a job well done.

ITEM NINE: UPDATE TO THE CROSS CONNECTION CONTROL ORDINANCE

Todd Taylor, General Manager of Operations, provided a presentation on the proposed revisions to OWASA's Cross Connection Control Ordinance. He said that in 1999, the OWASA Board of Directors adopted an Ordinance for the Control of Backflow and Cross-Connections to "…prevent the community drinking water from being contaminated by a polluting substance caused by a back siphonage, back pressure, or a direct connection…" In general, this ordinance ensures that certain connections to the drinking water distribution system are either prohibited or, at a minimum, have a testable device (i.e. backflow prevention assembly) installed on the connection to reduce the potential for contaminants being drawn back into the drinking water distribution system. Mr. Taylor went on to say that while industry best practices in regards to the prevention of backflow and cross-connections have evolved, OWASA's Ordinance has remained virtually unchanged since its adoption. Therefore, staff is proposing changes to reflect current practices.

Mr. Taylor said that it is important to note the proposed revisions with the most significant impact will be to customers who are required to have these devices will be the standardization to a reduced pressure principle device, as well as actively enforcing the requirement of annual testing of the device. Mr. Taylor said that staff will inform and solicit feedback from affected customers about the proposed changes and active enforcement prior to Board approval.

Heather Payne said her concern with the proposed revisions is that customers have devices that are buried and the cost to replumb as proposed would be expensive. She suggested a variance process be implemented to replace a device in the current location instead of replumbing.

Terri Buckner requested feedback from customers and stakeholders prior to a vote.

Mr. Taylor said that staff plans to notify and inform customers and stakeholders of the proposed revisions and will provide that information to the Board.

Terri Buckner made a motion to place the proposed revisions to OWASA's Cross Connection Control Ordinance for approval on the Board's December 8, 2016 agenda and that staff will notify/inform customers and stakeholders; second by Jeff Danner and unanimously approved. Please see Motion No. 9 above.

ITEM TEN: ANNUAL REVIEW AND UPDATE OF STRATEGIC TRENDS AND UTILITY PLANNING ISSUES

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The Board received this report and suggested next year's review include information on technologies that other utilities are implementing and areas of importance being noted by national water and wastewater organizations.

ITEM ELEVEN: FINANCIAL REPORT FOR THE THREE MONTH PERIOD ENDED SEPTEMBER 30, 2016

The Board received this as an information item.

ITEM TWELVE: EXECUTIVE DIRECTOR WILL SUMMARIZE THE KEY ACTION ITEMS FROM THE BOARD MEETING AND NOTE SIGNIFICANT ITEMS FOR DISCUSSION AND/OR ACTION EXPECTED AT THE NEXT BOARD MEETING

Ed Kerwin summarized the meeting as follows:

- Staff will address the Board's feedback on the Cross Connection Control Ordinance;
- Staff will address the Board's feedback on the Update of Strategic Trends and Utility Planning Issues;
- Staff will add the 12 Month Board Schedule to each agenda; and
- The November 10, 2016 Work Session will include the following:
    - Review Draft Advanced Metering Infrastructure System Community Engagement Plan;
    - Discussion of the Long-Range Water Supply Plan Goals and Objectives;
    - Review an Interlocal Agreement for Historic Rogers Road Sewer Bidding and Construction between Orange County and OWASA; and
    - Staff recommendations regarding OWASA's 40th Anniversary in February 2017.

ITEM THIRTEEN: CLOSED SESSION

Without objection, the Board of Directors convened in a Closed Session in the First Floor Conference Room for the purpose of discussing a personnel matter.

The meeting was adjourned at 10:15 P.M.

Respectfully submitted,

Andrea Orbich
Executive Assistant/Clerk to the Board

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ORANGE WATER AND SEWER AUTHORITY

WORK SESSION OF THE BOARD OF DIRECTORS

NOVEMBER 3, 2016

The Board of Directors of the Orange Water and Sewer Authority (OWASA) held a Special Meeting on Thursday, November 3, 2016 at 6:00 P.M. in OWASA's Community Room of the Administration Building located at 400 Jones Ferry Road, Carrboro, NC.

Board Members present: John A. Young, Chair; Barbara Foushee, Secretary; Yinka Ayankoya; Terri Buckner; David Moreau; Bob Morgan and Heather Payne. Board Members absent: Jeff Danner, Vice Chair; and Ruchir Vora.

OWASA staff present: Ed Kerwin, Denise Battle, Mary Darr, Greg Feller, Jeremy Fireline, Stephanie Glasgow, Andrea Orbich, Dan Przybyl, Todd Taylor, Richard Wyatt, Stephen Winters, and Robert Epting, Esq., Epting and Hackney.

Panel Members: Camille Brooks, Jennifer Bynum, Maria Hicks-Few, Michelle Johnson and Faith M. Thompson.

Public: Braxton Foushee and Herman Foushee.

There being a quorum present, Chair John Young called the meeting to order.

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The Board of Directors received presentations on diversity and inclusion by Maria Hicks-Few, Camille Brooks, Jennifer Bynum, Faith Thompson and Michelle Johnson.

The Board invited comments and engaged in discussion with the presenters, the public and staff. The extended comments of the five presenters were recorded and are available to the public to review at http://owasa.org/board-of-directors-meetings.

Herman Foushee expressed appreciation to the Board for holding the special meeting and that the reason behind diversity and inclusion is to take advantage of every person's skill sets and abilities.

Braxton Foushee said the panel was excellent and he hopes that the Board and the organization takes into consideration the panel members' advice.

The Board expressed deep appreciation to the presenters and the public for attending and participating in the meeting. The information and comments received will be used to further improve OWASA's diversity and inclusion work.

Ed Kerwin suggested and the Board agreed that staff will update the draft Diversity and Inclusion Plan based on information learned since the draft in July 2016. Staff will seek

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feedback on the updated draft Diversity and Inclusion Plan from employees, peers and other resources.

The work session was adjourned at 9:35 P.M.

Respectfully submitted by:

Andrea Orbich
Executive Assistant/Clerk to the Board

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ORANGE WATER AND SEWER AUTHORITY

WORK SESSION OF THE BOARD OF DIRECTORS

November 10, 2016

The Board of Directors of the Orange Water and Sewer Authority (OWASA) held a work session on Thursday, November 10, 2016 at 6:00 P.M. in OWASA's Community Room in the Administration Building, 400 Jones Ferry Road, Carrboro.

Board Members present: Jeff Danner, Vice Chair; Barbara Foushee, Secretary; Yinka Ayankoya; Terri Buckner; David Moreau; Bob Morgan and Heather Payne. Absent: John A. Young, Chair; and Ruchir Vora.

OWASA staff present: Ed Kerwin; Mary Darr; Greg Feller; Andrea Orbich; Ruth Rouse; Todd Taylor; Mary Tiger; Stephen Winters; and Robert Epting, Esq., Epting and Hackney.

Others present: Margaret Holton, Water, Sewer and Reclaimed Water Coordinator, University of North Carolina at Chapel Hill.

There being a quorum present, Vice Chair Jeff Danner called the meeting to order.

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MOTIONS

1. Robert Morgan made a motion to approve the Interlocal Agreement with Orange County for Historic Rogers Road Sewer Bidding and Construction Services; second by Dave Moreau and unanimously approved.

2. Robert Morgan made a motion to approve the Minutes of the October 27, 2016 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Dave Moreau and unanimously approved.

ANNOUNCEMENTS

Jeff Danner said that 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; none were disclosed.

Mr. Danner said Ed Kerwin and Ruth Rouse will attend the Assembly of Governments' meeting on November 17, 2106 at 7:00 P.M. in the Whitted Building, Hillsborough and will be prepared to provide information if requested regarding OWASA's Long-Range Water Supply Plan Update.

Robert Morgan, Chair of the Human Resources Committee, reported on the November 3, 2016 Special Meeting of the Board regarding diversity and inclusion.

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Todd Taylor said staff will hold a community meeting on November 16, 2016 at 6:00 P.M. in the OWASA's Community Room on proposed changes to the Cross-Connection Control Ordinance.

ITEM ONE: INTERLOCAL AGREEMENT WITH ORANGE COUNTY FOR HISTORIC ROGERS ROAD SEWER BIDDING AND CONSTRUCTION SERVICES

Robert Morgan made a motion to approve the Interlocal Agreement with Orange County for Historic Rogers Road Sewer Bidding and Construction Services; second by Dave Moreau and unanimously approved. Please see Motion No. 1 above.

ITEM TWO: MINUTES

Robert Morgan made a motion to approve the Minutes of the October 27, 2016 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Dave Moreau and unanimously approved. Please see Motion No. 2 above.

ITEM THREE: REVIEW DRAFT ADVANCED METERING INFRASTRUCTURE SYSTEM COMMUNITY ENGAGEMENT PLAN

The Board concurred with the draft Community Engagement Plan and agreed to place this item on the consent agenda for action during the December 8, 2016 work session.

ITEM FOUR: LONG-RANGE WATER SUPPLY PLAN – GOALS AND OBJECTIVES

The Board reviewed the Long-Range Water Supply Plan goals and objectives and informed staff that they could use those goals and objectives to evaluate water supply and demand management alternatives. The Board agreed not to actively engage customers/stakeholders on the goals and objectives at this time as they would be more meaningful when evaluating water supply and demand management options. The Board also suggested that staff word the goals and objectives in a manner that would be easily understood by the public in future documents.

The Board agreed that the public would be most interested in understanding how much water OWASA needs and the strategies OWASA proposes to meet those needs; staff will focus community engagement efforts on these two items.

ITEM FIVE: DISCUSS ACTIVITIES FOR OWASA'S 40 YEARS OF SERVICE TO THE CHAPEL HILL-CARRBORO-ORANGE COUNTY COMMUNITY

The Board authorized staff to proceed with planning for the public anniversary celebration events next spring as proposed.

ITEM SIX: REVIEW BOARD WORK SCHEDULE

The Board and staff agreed that the 12 Month Board Schedule will include future items for discussion and action on diversity and inclusion work.

DRAFT

ITEM SEVEN: EXECUTIVE DIRECTOR WILL SUMMARIZE THE KEY STAFF ACTION ITEMS FROM THE WORK SESSION

Staff action items noted above.

ITEM EIGHT: CLOSED SESSION

Without objection, the Board convened in a Closed Session for the purpose of discussing a personnel matter.

The work session was adjourned at 7:40 P.M.

Respectfully submitted by:

Andrea Orbich
Executive Assistant/Clerk to the Board

DRAFT

ORANGE WATER AND SEWER AUTHORITY

CLOSED SESSION OF THE BOARD OF DIRECTORS

NOVEMBER 10, 2016

The Board of Directors of Orange Water and Sewer Authority met in Closed Session on Thursday, November 10, 2016, following the Board meeting.

Board Members present: Jeff Danner, Vice Chair; Barbara M. Foushee, Secretary; Yinka Ayankoya; Terri Buckner; David (Dave) Moreau; Robert Morgan; and Heather Payne. Board Members absent: John A. Young, Chair; and Ruchir Vora.

Staff present: Ed Kerwin, Executive Director.

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ITEM ONE

The Board of Directors met in Closed Session with staff to evaluate the Executive Director's annual performance review.

No official action was taken at the meeting.

The meeting was adjourned at 7:40 P.M.

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Robert Morgan, Chair
Human Resources Committee

DRAFT

Agenda Item 6:

Consider a Motion to Approve the Proposed Year-Round Water Rate for Multi-Family Master-Metered Customers

Purpose:

Based on analyses and discussions during the rate study conducted in Fiscal Year (FY) 2016, the Board established multi-family master-metered (MFMM) customers as a separate class of customers for the purpose of rate-setting. The Board is considering changing the water commodity rate for MFMM customers from a seasonal to a year-round rate.

Overview:

On September 8, staff was authorized to publicize that the Board is considering a year-round water rate for MFMM customers, and a public hearing was held on October 27, 2016. Since September 8, staff have conducted a variety of community engagement activities to make stakeholders aware of the potential change in the MFMM water rate. The Board is scheduled to vote on whether to approve the proposed rate change on December 8, 2016. If approved, it is staff's understanding that the Board would like to have the new MFMM rate structure in-place before May 1, 2017.

Action Requested:

Decide whether to approve the proposed change to the MFMM water rate. A resolution has been provided for the Board's consideration.

Purpose

Based on analyses and discussions during the rate study conducted in Fiscal Year (FY) 2016, the Board (on February 11) established multi-family, master-metered (MFMM) customers as a separate class of customers for the purpose of rate-setting. The cost-of-service rationale for this decision is that water use trends of MFMM customers are significantly different from those of other general service customers (i.e. water use is less seasonal). It is staff's understanding that the Board would like to establish a rate structure for charging MFMM customers for water services for the purposes of improving customer understanding and addressing affordability issues. On September 8, staff was authorized to publicize that the Board is considering a year-round water rate for MFMM customers and a public hearing was held on October 27, 2016. During October and November, staff conducted a variety of additional community engagement activities to make stakeholders aware of the potential change in the MFMM water rate.

The Board is scheduled to vote on whether to approve the proposed rate change on December 8, 2016. If approved, it is staff's understanding that the Board would like to have the new MFMM rate structure in-place before May 1, 2017.

Background

MFMM customers are properties served by one (or more) meter(s) that subsequently serves more than one residence or dwelling unit. Examples in our system include apartment complexes and some condominiums, duplexes, triplexes, etc.

About one-third of the MFMM locations have installed private sub-metering systems and use these systems to measure and re-bill each tenant's water use. Sub-meter reading and re-billing is typically performed by a third-party service provider. Property owners and managers have told us that they are motivated to install and manage such a system because it reduces overall costs; tenants see a direct link between their water use and their monthly bills. We estimate that this type of system is in-place for over 6,000 individual residences and anticipate this number to increase in the future.

Complexes and most of their tenants use about the same amount of water each month of the year regardless of the unit price for water. For those complexes that sub-meter and re-bill tenants, the seasonal rate change can lead to problems for property managers and their tenants. MFMM property managers have reported a significant increase in work orders regarding non-existent leaks in the spring when water rates increase. They also believe it contributes to tension and mistrust between the managing company and their tenants. We have received feedback that the seasonal rate structure complicates the budgets of households and property managers.

A second challenge can result from the twice-per-year (seasonal) change in price. The third-party service provider must change the rates they use for sub-meter billing each time our rates change. It has been reported to us that the service providers do not always make the rate change which results in tenants receiving incorrect bills.

Proposed Rate Change

The following table shows the current and proposed water rate structure for the MFMM customer class.

Commodity Charge	Current	Year-round Rate
Water rate per 1,000 gals (May-Sept.)	$7.91	$5.67
Water rate per 1,000 gals (Oct.-Apr.)	$4.16	

No changes are proposed to the monthly service charge or sewer commodity charge for MFMM customers.

Customer Impact

The proposed change to a year-round water rate is designed to be revenue-neutral. Under the new approach, on an annual basis, assuming the same volume of water use, customers should pay no more for their service, and OWASA should receive no additional revenue. At the household level, water and sewer charges are expected to be more consistent from month-to-month making bills more understandable: and more affordable since bills will fluctuate based on water use rather than seasonal price changes.

Staff Recommendation

Staff believes a year-round water commodity rate is justified by this rate class' water use patterns, and we believe that it helps meet the goals of improving customer understanding and addressing affordability issues. Staff recommends approving the proposed MFMM water rate change.

Action Requested

Decide whether to approve the proposed change to the MFMM water rate. The resolution following this memo is provided for the Board's consideration.

RESOLUTION ADOPTING A YEAR-ROUND WATER COMMODITY RATE FOR THE MULTI-FAMILY MASTER-METERED CUSTOMER CLASS TO BE EFFECTIVE ON AND AFTER MAY 1, 2017

WHEREAS, Orange Water and Sewer Authority (OWASA) has an adopted *Schedule of Rates, Fees, and Charges* as permitted under North Carolina General Statute 162A-9 and Section 7.04 of OWASA's Amended and Restated Bond Order (Bond Order); and

WHEREAS, General Statute 162A-6(9) and Section 7.04 of OWASA's Bond Order empower and direct the Authority to fix and revise from time to time and to collect rates, fees and other charges for the use of or for the services and facilities furnished by any system operated by the Authority; and

WHEREAS, results of a cost of service study conducted in Fiscal Year 2016 indicated that justification exists for changing the water commodity rate for the multi-family master-metered customer rate class from a seasonal rate to a year-round rate; and

WHEREAS, the Board of Directors wishes to improve the understandability and affordability of OWASA's bills for monthly water and sewer service.

NOW, THEREFORE, BE IT RESOLVED:

1. That OWASA's *Schedule of Rates, Fees, and Charges* is hereby amended to reflect a change in the water commodity rate charged to the multi-family master-metered customer rate class from a seasonal rate of $4.16 per 1,000 gallons from October to April, and $7.91 per 1,000 gallons from May to September, to a year-round rate of $5.67 per 1,000 gallons.

2. That the change to a year-round water commodity rate for the multi-family master-metered customer rate class will be effective on and after May 1, 2017.

3. That the Executive Director is hereby directed to give proper notice as required by the Sale and Purchase Agreements and to take the necessary steps to implement the *Schedule of Rates, Fees, and Charges*.

Adopted this 8th day of December 2016.

_____
John A. Young, Chair

ATTEST:

_____
Barbara M. Foushee, Secretary

Agenda Item 7:

Resolution Approving Revisions to OWASA's Ordinance for the Control of Backflow and Cross-Connections

Purpose:

The Orange Water and Sewer Authority's (OWASA) Ordinance for the Control of Backflow and Cross-Connections was adopted in, and has remained in place since 1999. Staff is proposing changes to reflect current practices. Two proposed changes regarding backflow prevention devices and enforcement will have the most significant impact on our customers. Staff is proposing to standardize to a reduced pressure principle backflow assembly (commonly referred to as a Reduced Pressure Zone or RPZ) to ensure the drinking water distribution system is highly protected from potential backflow contamination. In addition, staff is proposing to initiate and maintain active enforcement of the ordinance in accordance with the provisions outlined in the document, particularly in regards to the annual testing requirements.

Action Requested:

Adoption of the resolution to approve the Ordinance changes (see Attachment A).

Background:

In 1999, the OWASA Board of Directors adopted an Ordinance for the Control of Backflow and Cross-Connections to "…prevent the community drinking water from being contaminated by a polluting substance caused by a back siphonage, back pressure, or a direct connection…" In general, this ordinance ensures that certain connections to the drinking water distribution system are either prohibited or, at a minimum, have a testable device (i.e. backflow prevention assembly) installed on the connection to reduce the potential for contaminants being drawn back into the drinking water distribution system. While industry best practices in regards to the prevention of backflow and cross-connections have evolved, OWASA's Ordinance has remained virtually unchanged since its adoption. Staff is proposing changes to reflect current practices.

Since the discussion of proposed changes with the Board on October 27, 2016, staff has notified stakeholders of proposed revisions to the Ordinance for the Control of Backflow and Cross-Connections and held a public meeting on November 16, 2016. Two items of note based on stakeholder feedback (see Attachment D) were concerns about undocumented devices in need of testing and about the retrofit costs to existing customers. Undocumented devices and cross connections are a concern that will need attention once we have a process in place for achieving full compliance for documented devices and retrofit costs are addressed with the grandfather clause discussed in the following paragraph.

A request was made by a Board Member to grant an exemption from the reduced pressure principle backflow assembly requirement to single family residences who currently have double check valve assemblies installed for their lawn irrigation systems. While staff could find few examples of this exemption in neighboring utilities' ordinances, a grandfather clause which

includes this exemption has been added to the revisions for the Board's consideration (see Attachment B, Section 7).

A Board Member also requested that staff provide a proposed standard operating procedure (SOP) for the enforcement of testing requirements (see Attachment C). In general, it is a lengthy process (6+ months) that begins with multiple notifications to stakeholders before progressively becoming more punative. However, staff is commited to seeking compliance by working extensively with our customers, which is the common approach used by our neighboring utilities. Staff anticipates that charging civil penalties or discontinuing service would be a rare occurrence.

Staff Recommendation:

Staff recommends the Board of Directors adopt the resolution to approve the Ordinance changes (see Attachment A).

Information:

Attachment A: Resolution Approving Updates to the Cross Connection Control Ordinance
Attachment B: Revised Cross Connection Control Ordinance
Attachment C: Proposed Standard Operating Procedure for Enforcing Backflow Prevention Assembly Testing Requirements
Attachment D: Stakeholder Feedback

RESOLUTION APPROVING AN UPDATE TO OWASA'S CROSS-CONNECTION CONTROL ORDINANCE

WHEREAS, in order to protect the OWASA water distribution system and its consumers from the hazards presented by unpermitted cross-connections with and backflows into the System, the OWASA Board of Directors approved a Resolution Adopting Orange Water and Sewer Authority Ordinance for the Control of Backflow and Cross-Connection, effective January 21, 1999;

WHEREAS, as improvements in backflow technology and best industry practices have occurred since, the Board of Directors finds, and prudence requires that the said Ordinance should be amended to update and adopt modern best practices and to require the use of modern, advanced technology and to ensure the safety and security of OWASA's drinking water system; and

WHEREAS, OWASA Staff has prepared the attached revised Ordinance for the Control of Backflow and Cross-Connection to incorporate advances in technology and best practices, and to comply with all Federal, State and local regulations;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE ORANGE WATER AND SEWER AUTHORITY:

1. That the attached Ordinance for the Control of Backflow and Cross-Connection, revised and effective as of January 1, 2017, is hereby approved and adopted

Adopted this the 8th day of December, 2016.

_____
John A. Young, Chair

ATTEST:

_____
Barbara M. Foushee, Secretary

ORANGE WATER & SEWER AUTHORITY
ORDINANCE FOR THE CONTROL OF
BACKFLOW AND CROSS-CONNECTIONS

SECTION 1. CROSS-CONNECTION CONTROL - GENERAL POLICY

1.1 INTRODUCTION

The purpose of this Cross-Connection Control Ordinance is to define Orange Water and Sewer Authority (OWASA) as the water purveyor in the elimination of all cross-connections within its public potable water supply.

This Ordinance shall apply to all consumers connected to OWASA's public potable water supply.

This Ordinance ~~will comply~~complies with the Federal Safe Drinking Water Act (P.L. 93-523), the North Carolina ~~State~~ Administrative Code (Title 15A, Subchapter ~~8C~~18C), and the North Carolina ~~State Building~~Plumbing Code ~~(Volume II)~~ as they pertain to cross-connections with the public water supply.

In accordance with General Statute 162A-9.1, OWASA is authorized and empowered to adopt this ordinance.

1.2 OBJECTIVE OF ORDINANCE

The specific objectives of the Cross-Connection Control Ordinance are as follows:

1.2.1 To protect the public potable water supply of OWASA from the possibility of contamination or pollution by isolating within the consumer's water system such contaminants, waterborne health hazards and other significant pollutants which could backflow into the public water systems.

1.2.2 To eliminate or control existing cross-connections, actual or potential, direct or indirect, between the consumer's potable water system(s) and nonpotable water system(s), plumbing fixtures and industrial piping systems.

1.2.3 To provide a continuing inspection program of cross-connection control; which will systematically and effectively ~~control all actual~~prevent contamination or ~~potential cross-connections which may be installed in~~pollution of the ~~future.~~public water system.

1.3 DESIGNATION OF RESPONSIBILITY

1.3.1 Health Agency's Responsibility

The North Carolina Department of ~~Environment and Natural Resources (Division of~~ Environmental ~~Health)~~Quality has the responsibility for promulgating and enforcing

laws, rules, regulations, and policies applicable to all water purveyors in the State of North Carolina in carrying out an effective Cross-Connection Control Program.

The Division of ~~Environmental~~Public Health also has ~~the~~ primary responsibility of ensuring that the water purveyor operates a public potable water system free of actual or potential sanitary hazards including unprotected cross-connections. The Division of ~~Environmental~~Public Health also has the responsibility of ensuring that the water purveyor provides an approved water supply at the service connection to the consumer's water system and, further, that the purveyor requires the installation, testing, and maintenance of an approved backflow prevention assembly on the service connection when required.

1.3.2. OWASA's Responsibility

Except as otherwise provided herein, OWASA is the water purveyor and is responsible for ensuring a safe water supply begins at the source and includes all of the public water distribution system, including the service connection, and ends at the point of delivery to the consumer's water systems. In addition, OWASA shall exercise reasonable vigilance to ensure that the consumer has taken the proper steps to protect the public potable water system. OWASA will determine the degree of hazard or potential hazard to the public potable water system, the degree of protection required, and will ensure proper containment protection through an ongoing inspection program. OWASA will identify all facilities where approved backflow prevention assemblies are required to be installed.

When it is determined that a backflow prevention assembly is required for the protection of the public system, OWASA shall require the consumer, at the consumer's expense, to install an approved backflow prevention assembly at service connection, to test immediately upon installation and thereafter at frequency as determined by OWASA, to properly repair and maintain assembly or assemblies and to keep adequate records of each test and subsequent maintenance and repair, including materials and/or replacement parts(s) on his/her premises. If the assembly(s) is not installed as required by OWASA, the water service may be disconnected until such assembly(s) has been properly installed.

1.3.3. Plumbing Inspectors Responsibility

The plumbing inspection departments of the Town of Chapel Hill, Town of Carrboro, University of North Carolina, and Orange County have the responsibility to not only review building plans and inspect plumbing as it is installed but, they have the explicit responsibility of preventing cross-connections from being designed and built into the plumbing system within its jurisdiction. Where the review of building plans suggests or detects the potential for cross-connections being made an integral part of the

plumbing system, the plumbing inspector has the responsibility, under the North Carolina Building Code, for requiring that such cross-connections be either eliminated or provided with backflow prevention equipment approved by the North Carolina State Building Code.

The plumbing inspector's responsibility begins at the point of delivery downstream of the first installed backflow prevention assembly and continues throughout the entire length of the consumer's water system. The inspector should inquire about the intended use of water at any point where it is suspected that a cross-connection might be made or where one is actually called for by the plans. When such is discovered it shall be mandatory that a suitable, approved backflow prevention assembly approved by the North Carolina Building Code, North Carolina Department of ~~Environment and Natural Resources~~Environmental Quality and OWASA be required by the plans and be properly installed.

1.3.4. Consumer Responsibility

The consumer has the primary responsibility of preventing pollutants and contaminants from entering his/her potable water system or the public potable water system. The consumer's responsibility starts at the point of delivery from the public potable water system and includes all of his/her water system. ~~The consumer, at his/her expense, shall~~When it is determined by OWASA that a backflow prevention assembly(s) is required for the protection of the public system, OWASA shall require the consumer, at the consumer's expense to install, operate, test, and maintain approved backflow prevention assemblies as directed by OWASA. The consumer shall maintain accurate records of tests and repairs made to backflow prevention assemblies and shall maintain such records for a minimum period of three (3) years. The records shall be on forms approved by OWASA and shall include the list of materials or replacement parts used.

Prior to any repair, overhaul, re-piping, or relocation of assembly(s), the consumer shall contact OWASA to determine if the device is still appropriate ~~device~~ and obtain approval for use of such device. Following any repair, overhaul, re-piping, or relocation of an assembly, the consumer shall have it tested to ensure that it is in good operating condition and will prevent backflow. Tests, maintenance and repairs of backflow prevention assemblies shall be made by a Certified Backflow Prevention Assembly Tester.

It shall be the Consumer's responsibility to notify OWASA immediately if the customer's water system becomes contaminated or polluted or if there is reason to believe that a backflow incident has occurred from the customer's water system into the public water system.

1.3.5. Certified Backflow Prevention Assembly Tester Responsibility

When employed by the consumer to test, repair, overhaul, or maintain backflow prevention assemblies, a Certified Backflow Prevention Assembly Tester (Tester) will have the following responsibilities:

The Tester will be responsible for making competent inspections and for repairing, or overhauling backflow prevention assemblies and making reports of such repair to the consumer and OWASA on forms approved by OWASA. The Tester shall include the list of materials or replacement parts used. The Tester shall be equipped with and be competent to use all the necessary tools, gauges, manometers and other equipment necessary to properly test, repair, and maintain backflow prevention assemblies. It will be the Tester's responsibility to ensure that original manufactured parts are used in the repair of or replacement of parts in a backflow prevention assembly. It will be the Tester's further responsibility not to change the design, material or operational characteristics of an assembly during repair or maintenance without prior approval of OWASA. A Tester shall perform the work and be responsible for the competency and accuracy of all tests and reports. The Tester shall provide a copy of all test and repair reports to the consumer and to OWASA within ten (10) business days of any completed test or repair work. A Tester shall maintain such records for a minimum period of three (3) years.

All Certified Backflow Prevention Assembly Testers must obtain and employ backflow prevention assembly test equipment which has been evaluated and/or approved by OWASA. All test equipment shall be registered with OWASA. All test equipment shall be checked for accuracy annually (at a minimum), calibrated, if necessary, and certified to OWASA as to such calibration, employing an accuracy/calibration method acceptable to OWASA.

SECTION 2. DEFINITIONS

2.1 Air gap. The term "air gap" shall mean a physical separation between the free-flowing discharge end of a potable water supply pipeline and an open or non-pressure receiving vessel. An "approved air gap" shall be at least double the diameter of the supply pipe measured vertically above the overflow rim of the vessel - in no case less than 1 inch (2.54 cm).

~~**2.2 Atmospheric Type Vacuum Breaker**. The term "atmospheric type vacuum breaker" (also known as the "nonpressure type vacuum breaker") shall mean a device containing a float-check, a check seat, and an air inlet port. The flow of water into the body causes the float to close the air inlet port. When the flow of water stops the float falls and forms a check valve against back-siphonage and at the same time opens the air inlet port to allow air to enter and satisfy the vacuum. A shutoff valve immediately~~

~~upstream may be an integral part of the device. An atmospheric vacuum breaker is designed to protect against a nonhealth hazard (isolation protection only) under a back-siphonage condition only.~~**2.2 Approved.** Accepted by OWASA as meeting an applicable specification stated or cited in this ordinance or as suitable for the proposed use.

2.3 Auxiliary Water Supply. Any water supply on or available to the premises other than the purveyor's approved public water supply will be considered as an auxiliary water supply. These waters may be contaminated or polluted or they may be objectionable and constitute an unacceptable water source over which the water purveyor does not have sanitary control.

2.4 Backflow. The term "backflow" shall mean the undesirable reversal of flow of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source or sources. See terms Backpressure (2.7) and Backsiphonage (2.8).

2.5 Backflow Prevention Assembly - Type

A "backflow prevention assembly" shall mean an assembly used to prevent backflow into a consumer or public potable water system. The type of assembly used should be based on the degree of hazard either existing or potential (as defined herein). The types are:

~~a. Double Check Valve Assembly (DCVA)~~
~~b. Double Check Detector Assembly (Fire System) (DCDA)~~
~~c. Pressure Vacuum Breaker (PVB)~~
~~d.~~a.~~d.~~ Reduced Pressure Principle Assembly (RP)
~~e.~~b.~~e.~~ Reduced Pressure Principle-Detector Assembly (Fire System) (RPDA)

Backflow prevention assemblies to be connected to OWASA's public water system are limited to those assemblies approved by the Foundation for Cross Connection Control and Hydraulic Research, University of Southern California, American Society of Sanitary Engineers (ASSE) and FM Approvals (for fire line installations)

2.6 Certified Backflow Prevention Assembly Tester. The term "Certified Backflow Prevention Assembly Tester" (Tester) shall mean a person who has proven their competency to the satisfaction of OWASA. Each person who is certified to make competent tests, or to repair, overhaul, and make reports on backflow prevention assemblies shall be knowledgeable of applicable laws, rules, and regulations, shall be a licensed plumber or have at least two (2) years experience under and be employed by a North Carolina licensed plumber or plumbing contractor, or have equivalent

qualifications acceptable to OWASA, and must hold a certificate of completion from an approved training program in the testing and repair of backflow prevention assemblies.

2.7 Backpressure. The term "backpressure" shall mean any elevation of pressure in the downstream piping system (by pump, elevation of piping, or steam and/or air pressure) above the supply pressure at the point of consideration which would cause, or tend to cause, a reversal of the normal direction of flow.

2.8 Backsiphonage. The term "backsiphonage" shall mean a form of backflow due to a reduction in system pressure which causes a sub atmospheric pressure to exist at a site ~~in theater system.~~.

2.9 Approved Check Valve. The term "approved check valve" shall mean a check valve that is drip-tight in the normal direction of flow when the inlet pressure is at least one (1) psi and the outlet pressure is zero. The check valve shall permit no leakage in a direction reversed to the normal flow. The closure element (e.g. clapper, poppet, or other design) shall be internally loaded to promote rapid and positive closure. An approved check valve is only one component of an approved backflow prevention assembly - i.e., ~~pressure vacuum breaker, double-check valve assembly, double-check detector assembly,~~ reduced pressure principle assembly~~,~~ or reduced pressure detector assembly.

2.10 Consumer. The term "consumer" shall mean any person, firm, or corporation using or receiving water from OWASA water system.

2.11 Consumer's Water System. The term "consumer's water system" shall include any water system commencing at the point of delivery and continuing throughout the consumer's plumbing system located on the consumer's premises, whether supplied by a public potable water or an auxiliary water supply. The systems may be either a potable water system or an industrial piping system.

2.12 Consumer's Potable Water System. The term "consumer's potable water system" shall mean that portion of the privately owned potable water system lying between the point of delivery and point of use and/or isolation protection. This system will include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, store, or use potable water.

2.13 Containment. The term "containment" shall mean preventing the impairment of the public potable water supply by installing an approved backflow prevention assembly at the service connection.

2.14 Contamination. The term "contamination" shall mean an impairment of the

quality of the water which creates a potential or actual hazard to the public health through the introduction of hazardous or toxic substances or waterborne health hazards in the form of physical or chemical contaminants or biological organisms and pathogens.

2.15 Cross-Connection. A "cross-connection" shall mean any unprotected actual or potential connection or structural arrangement between a public or a consumer's water system and any other source or system through which it is possible to introduce any contamination or pollution, other than the intended potable water with which the system is supplied. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and other temporary or permanent devices through which or because of which "backflow" can or may occur are considered to be cross-connections.

~~**2.16 Double-Check Valve Assembly.** The term "double-check valve assembly" shall mean an assembly composed of two (2) independently acting, approved check valves, including tightly closing shut-off valves attached at each end of the assembly and fitted with properly located test cocks. This assembly shall only be used to protect against a nonhealth hazard (i.e., pollutant). Device must be approved by Foundation for Cross-Connection Control and Hydraulic Research.~~

~~**2.17 Double-Check-Detector Assembly.** The term "double-check-detector assembly" shall mean a specially designed assembly composed of a line-size approved double-check valve assembly with a specific bypass water meter and a meter-sized approved double-check valve assembly. The meter shall register (in U.S. gallons) accurately for only very low rates of flow and shall show a registration for all rates of flow. This assembly shall only be used to protect against a nonhealth hazard (i.e., pollutant). Device must be approved by Foundation for Cross-connection Control and Hydraulic Research~~
2.16~~.~~

~~2.~~**18** **Degree of Hazard.** The term "degree of hazard" shall be derived from the evaluation of conditions within a private water system which can be classified ~~as~~ either a ~~"pollutional" (nonhealth)~~moderate or a ~~contaminations (health)~~severe hazard.

2.~~19 Health~~17 Severe Hazard. The term "~~health~~severe hazard" shall mean an actual or potential threat of contamination of a physical, chemical, biological, pathogenic or toxic nature to the public or consumer's potable water system to such a degree or intensity that there would be a danger to health. ~~Examples of waterborne health hazards include but are not limited to:~~

~~***Physical*** radioisotopes/radionuclides;~~
~~***Chemical*** lead, mercury and other heavy metals, organic compounds, other toxics and hazardous substances;~~

~~***Biological*** — microorganisms and pathogens like cryptosporidium, typhoid, cholera and E. Coli.~~

2.~~20 Nonhealth~~19 Moderate Hazard. The term "~~nonhealth~~moderate hazard" shall mean an actual or potential threat to the quality of the public or the consumer's potable water system. A ~~nonhealth~~moderate hazard is one that, if introduced into the public water supply system could be a nuisance to water customers but would not adversely affect human health.

~~**2.21 Pollutional Hazard.** The term "pollutional hazard" shall mean an actual or potential threat to the quality or the potability of the public or the consumer's potable water system but which would not constitute a health or a system hazard, as defined. The maximum degree or intensity of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances.~~

~~2.22~~2.20 **Health Agency.** The term "health agency" shall mean the North Carolina Department of Environment and Natural Resources.

2.~~23~~21 Industrial Fluids. The term "industrial fluids" shall mean any fluid or solution which may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration such as would constitute a ~~health, or nonhealth~~moderate or severe hazard if introduced into a public or consumer potable water system. Such fluids may include, but are not limited to: process waters; chemicals in fluid form; acids and alkalis; oils, gases; etc.

2.~~24~~22 Industrial Piping System. The term "industrial piping system" shall mean a system used by the consumer for transmission, conveyance or storage of any fluid, solid or gaseous substance other than an approved water supply. Such a system would include all pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, or store substances which are or may be polluted or contaminated.

2.~~25~~23 Isolation. "Isolation" is the act of confining a localized hazard within a consumer's water system by installing approved backflow prevention assemblies. Disclaimer: OWASA may make recommendations, upon facility inspection, as to the usages of isolation devices/assemblies, but does not assume or have responsibility whatsoever for such installations.

2.24 Non-Potable Water. Water that has not been approved for human consumption by the appropriate agency of the State of North Carolina.

2.~~2.26~~25 **Point Of Delivery.** "Point of delivery" shall generally be at the ~~back~~ consumer's side of the meter, which are located adjacent to the public street where the

OWASA's water distribution mains are located. The consumer shall be responsible for all water piping and control devices located on the consumer's side of the point of delivery.

2.~~27~~ 26 Pollution. The term "pollution" shall mean an impairment of the quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect the aesthetic qualities of such waters for domestic use.

2.~~28~~27 Potable Water. The term "potable water" shall mean water from any source which has been approved for human consumption by the North Carolina Department of Environmental Quality ~~and Natural Resources~~ (~~NCDENR~~NCDEQ).

2.~~29~~28 Public Potable Water System. The term "public potable water system" shall mean any publicly or privately owned water system operated as a public utility, under a current ~~NCDENR~~ NCDEQ permit, to supply water for public consumption or use. This system will include all sources, facilities, and appurtenances between the source and the point of delivery such as valves, pumps, pipes, conduits, tanks, receptacles, fixtures, equipment, and appurtenances used to produce, convey, ~~—~~ treat, or store potable water for public consumption or use.

2.~~30~~29 Reduced Pressure Principle Backflow Prevention Assembly. The term "reduced pressure principle backflow prevention assembly" shall mean ~~–~~an approved assembly containing within its structure a minimum of two (2) independently acting, approved check valves, together with a hydraulically operating, mechanically independent, pressure differential relief valve located between the check valves and at the same time below the first check valve. The ~~first check valve reduces the supply pressure to a predetermined amount so that during normal flow and at~~assembly shall operate to maintain the pressure in the zone between the two (2) check valves at an acceptable pressure level less than the pressure on OWASA's side of the assembly. At cessation of normal flow, the pressure between the ~~checks~~two (2) check valves shall be less than ~~the supply~~ pressure on OWASA's distribution supply side of the assembly. In case of leakage of either of the check ~~valve~~valves, the ~~pressure~~ differential relief valve~~, by discharge~~ shall operate to maintain the reduce pressure in the zone between the check valves by discharging to the atmosphere~~, shall operate to maintain~~. When the differential pressure ~~between~~in the ~~checks~~zone is two pounds per square inch or less than the supply pressure~~.~~, the relief valve shall open to the atmosphere.

~~The~~This unit ~~shall include~~ is located between two tightly closing resilient-seated shutoff valves ~~located at each end of the~~as an assembly and ~~each assembly shall be fitted~~equipped with properly located resilient-seated test cocks. The assembly shall include four (4) properly located resilient seated test cocks and full flow characteristic

resilient seated shut-off valves at each end of the assembly. The ~~assembly is designed to protect against a health hazard (i.e., contaminant). Device must be approved~~entire assembly shall meet the design and performance specifications as determined by the Foundation for Cross~~-~~ Connection Control and Hydraulic Research~~.~~, University of Southern California, ASSE, and FM Approvals (if on a fire line).

2.~~31~~30 Reduced Pressure Principle-Detector Assembly. The term "reduced pressure principle-detector assembly" shall mean a specially designed assembly composed of a line-size approved reduced pressure principle backflow prevention assembly with a specific bypass water meter and a meter-sized approved reduced pressure principle backflow prevention assembly. The meter shall register (in U.S. gallons) accurately for only very low rates of flow and shall show a registration for all rates of flow. ~~This~~The entire assembly shall ~~be used to protect against health hazard (i.e., contaminant). Device must be approved~~meet the design and performance specifications as determined by the Foundation for Cross~~-~~ Connection Control and Hydraulic Research~~.~~, University of Southern California, ASSE, and FM Approvals (if on a fire line).

2.~~32~~31 Service Connections. The term "service connection" shall mean the terminal end of a service connection from the public potable water system, i.e., where OWASA loses jurisdiction and control over the water at its point of delivery to the consumer's water system.

~~**2.33 Pressure Type Vacuum Breaker.** The term "pressure type vacuum breaker" shall mean an assembly containing an independently operating internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with properly located test cocks and tightly closing shutoff valves attached at each end of the assembly. This assembly is designed to protect against a health hazard (i.e., contaminant) under a back-siphonage condition only.~~

~~2.34~~ 32 **Water Purveyor.** The term "water purveyor" shall mean the ~~consumer or~~ operator of a public potable water system providing an approved water supply to the public.

2.~~35~~ 33 Unapproved Water Supply. The term "unapproved water supply" shall mean a water supply which has not been approved for human consumption by the ~~NCDENR~~NCDEQ.

2.~~36~~34 Used Water. The term "used water" shall mean any water supplied by a water purveyor from a public water system to a consumer's water system after it has passed through the point of delivery and is no longer under the control of the water purveyor.

SECTION 3. RIGHT OF ENTRY

3.1 Upon presentation of proper credentials and identification, authorized representatives from OWASA shall have the right to enter any building, structure, or premises during normal business hours, or at any time during the event of an emergency to perform any duty imposed by this Ordinance. Those duties may include sampling and testing of water, or inspections and observations of all piping systems connected to the public water supply. Where a consumer has security measures in force which would require proper identification and clearance before entry into their premises, the consumer shall make necessary arrangements with the security guards so that upon presentation of suitable identification, OWASA personnel will be permitted to enter without delay for the purpose of performing their specific responsibilities. Refusal to allow entry for these purposes may result in discontinuance of water service.

3.2 On request, the consumer shall furnish to OWASA any pertinent information regarding the water supply system on such property where cross-connections and backflow are deemed possible.

SECTION 4. ELIMINATION OF CROSS-CONNECTIONS: DEGREE OF HAZARD

4.1 When cross-connections are found to exist, the owner, his/her agent, occupant, or tenant will be notified in writing to disconnect the same within the time limit established by OWASA. The degree of protection required and maximum time allowed for compliance will be based upon the degree of potential ~~degree of~~ hazard to the public water supply system. If, in the judgment of OWASA, an imminent ~~health~~ hazard exists water service to the building or premises where a cross-connection exists may be terminated unless an air gap is immediately provided, or the cross-connection is immediately eliminated. The maximum time limits are as follows:

4.2 Cross-connections with private wells or other auxiliary water supplies require immediate disconnection.

4.3 All facilities which pose a severe potential ~~health~~ hazard to the potable water system must have a reduced pressure principle backflow prevention assembly installed within 30 days of notification by OWASA.

4.4 All industrial and commercial facilities not identified as a "severe hazard" shall be considered moderate hazard facilities. All moderate hazard facilities must install a reduced pressure principle backflow prevention assembly within 60 days of notification by OWASA.

~~**4.4** All industrial and commercial facilities not identified as a "health hazard" shall be considered nonhealth hazard facilities. All nonhealth hazard facilities must install a~~

~~double-check valve assembly within 90 days of notification by OWASA.~~

4.5 Water mains served by OWASA but not maintained by ~~the~~ OWASA shall be considered cross-connections, with degree of hazard to be determined by OWASA. Degree of protection and maximum time limit for installation shall be based upon the degrees of hazard, as determined by OWASA.

4.6 In the event that OWASA personnel do not have sufficient access to every portion of a private water system (i.e., classified research and development facilities; Federal government property) to allow a complete evaluation of the degree of hazard associated with such private water systems, an approved reduced pressure principle backflow prevention assembly shall be ~~required as a minimum of protection~~installed within 60 days of notification by OWASA.

4.7 No person shall fill special use tanks or tankers containing pesticides, fertilizers, other toxic chemicals or their residues from the public water system except at an OWASA-approved location equipped with an air gap ~~or an approved reduced pressure principle backflow prevention assembly properly installed~~between the tank and the fill hose on the public water supply.

4.8 No person shall connect to a fire hydrant for any purpose, unless approved by OWASA.

SECTION 5. INSTALLATION OF ASSEMBLIES

5.1 All backflow prevention assemblies shall be installed in accordance with the specifications furnished by OWASA and/or in the latest edition of the North Carolina Building Code, whichever is most restrictive.

~~**5.2** All new construction plans and specifications, when required by the North Carolina Building Code and the North Carolina Division of Environment Health, shall be made available to OWASA for review and approval and to determine the degree of hazard.~~

~~**5.3** Ownership, testing, and maintenance of the assembly shall be the responsibility of the consumer~~**5.2** When it has been determined by OWASA, that a requested service requires the installation of a backflow prevention assembly, the consumer shall, prior to receiving such service, submit for review and approval, plans and specifications of the proposed facilities. The submittal shall include a description of proposed processes, operations, etc., in such detail as needed to evaluate potential effects on OWASA's system. Proposed assemblies shall be identified by size, manufacturer and model number or by specification.

5.3 Upon notification to the consumer by OWASA that a backflow prevention assembly(s) is necessary, the consumer shall install or cause to~~.~~

~~**5.4** All double check valve assemblies must~~ be installed ~~in drainable pits wherever below ground installation is~~entirely at the consumer's expense such assembly(s) as may be necessary.

5.4 When required, an approved backflow prevention assembly shall be installed on each service line to a customer's water system in accordance with the requirements of OWASA.

5.5 Backflow prevention assemblies shall be located downstream of the meter, in accordance with detailed specifications provided ~~by OWASA. Double-check valve assemblies may be installed in a vertical position with prior approval from OWASA, provided the flow of water is in an upward direction~~in OWASA's Cross Connection Control Manual.

~~Reduced~~**5.6** All reduced pressure principle backflow prevention assemblies must be installed in a horizontal position and in a location in which no portion of the assembly can become submerged in any substance under any circumstance~~.~~ or be subjected to temperatures below freezing, in accordance with detailed specifications provided in OWASA's Cross Connection Control Manual. Pit and/or below grade installations are prohibited.

~~**5.6**~~ **5.7** Backflow prevention assemblies shall be installed in such a manner that inspections, periodic testing and necessary repairs can be conveniently performed.

5.8 The installation of any backflow prevention assembly which is not approved by OWASA must be replaced by one which is approved by OWASA.

5.9 Removal of an approved backflow prevention assembly from a service connection that has been deemed a hazard by OWASA may result in immediate disconnection from OWASA's public water system.

5.10 **5.7** The consumer is responsible to make sure a backflow prevention assembly is working properly upon installation and is required to furnish the following information to OWASA within fifteen ~~–~~(15) days after a ~~reduced pressure principle~~ backflow ~~preventer (RP), double-check valve~~prevention assembly ~~(DCVA), pressure vacuum breaker (PVB), double-check detector assembly (DCDA), or reduced pressure principle detector assembly (RPDA)~~ is installed:

5.~~7~~10.1~~—~~ Service address where assembly is located

5.~~7~~10.2 -____Owner (and address, if different from service address)
5.~~7~~10.3 -____Description of assembly's location
5.~~7~~10.4 -____Date of installation
5.~~7~~10.5—____Installer (include name, plumbing company represented, plumber's
———license number).
5.~~7~~10.6 -____Type of assembly and size of assembly
5.10.7.~~7~~ ____Manufacturer, model number, serial number
5.~~7~~10.8 -____Test results/report

5.~~8~~11 When it is not possible to interrupt water service, provisions shall be made for a "parallel installation" of backflow prevention assemblies. OWASA will not accept an unprotected bypass around a backflow preventer.

~~**5.9 Upon notification by OWASA, the consumer shall install the appropriate containment assembly not to exceed the following time frame:**~~

~~Health Hazard.....60 days~~
~~Nonhealth Hazard..... 90 days~~

12
~~**5.10**~~ Following installation, all ~~RP, DCVA, PVB, DCDA, and RPDA~~backflow prevention assemblies are required to be tested by a ~~certified backflow prevention assembly tester~~Certified Backflow Prevention Assembly Tester within ten (10) days.

SECTION 6. TESTING AND REPAIR OF ASSEMBLIES

~~6.1~~6.1 No water service shall be provided to any facility or service that requires the installation of a backflow prevention assembly until the installed assembly has been tested by a Certified Backflow Prevention Assembly Tester, and the test results have been received by OWASA.

6.2 Testing of backflow prevention assemblies shall be made by a ~~certified backflow prevention assembly tester~~Certified Backflow Prevention Assembly Tester approved by OWASA. Such tests are to be conducted upon installation, prior to receiving service and annually thereafter ~~or at a frequency established by OWASA.~~. A record of all testing and repairs is to be retained by the consumer. Copies of the records must be provided to OWASA within ten (10) business days after the completion of any testing, and/or repair work.

~~6.2~~ 6.3 All Certified Backflow Prevention Assembly Testers shall submit a copy of their certification to OWASA prior to testing any backflow prevention assembly(s) connected to OWASA public water system. The Tester is responsible for notifying

OWASA within ten (10) days if their certification status or contact information changes.

6.4 Any time that repairs to backflow prevention assemblies are deemed necessary, whether through annual or required testing, or routine inspection by the consumer or by OWASA, these repairs must be completed within a specified time in accordance with the degree of hazard. In no case shall this time period exceed:

1. ~~Health~~Severe Hazard Facilities - ~~7~~10 days
2. ~~Non-Health~~Moderate Hazard Facilities - ~~21~~15 days

6.~~3~~5 All backflow prevention assemblies with test cocks are required to be tested annually or at a frequency established by OWASA.

6.~~4~~6 All certified backflow prevention assembly testers must obtain and employ backflow prevention assembly test equipment which has been evaluated and/or approved by OWASA. All test equipment shall be registered with OWASA and shall be checked for accuracy annually (at a minimum), calibrated if necessary, and certified to OWASA as to such accuracy/calibration, employing a calibration method acceptable to OWASA (See Section 1.3.5).

6.~~5~~ 7 It shall be unlawful for any consumer or ~~certified backflow prevention assembly tester~~Certified Backflow Prevention Assembly Tester to submit any record to OWASA which is false or incomplete in any material respect. It shall be unlawful for any ~~consumer~~Consumer or ~~certified tester~~Certified Tester to fail to submit to OWASA any record which is required by this Ordinance. Such violations may result in any of the enforcement actions outlined in Section ~~10~~8 of this Ordinance.

SECTION 7. FACILITIES REQUIRING PROTECTION

~~Approved backflow prevention assemblies shall be installed on the service line to any facility that OWASA has identified as having a potential for backflow.~~

~~The following types of~~ All facilities or services, with the exception of domestic services to single family residences, have been identified by OWASA as having a significant potential for backflow of nonpotable water into the public water supply system. Therefore, an approved backflow prevention assembly ~~may~~shall be required on all such services~~ according to the degree of hazard present. Other types of facilities or~~. Domestic services ~~not listed below~~to single family residences may also be required to install approved backflow prevention assemblies if determined necessary by OWASA. ~~As a minimum requirement, all commercial services will be required to install a double check valve assembly, unless otherwise listed below.~~

~~Abbreviations:~~

~~DCVA = Double-Check Valve Assembly~~

~~RP~~ = Approved backflow prevention assemblies, as defined in Section 2 of this Ordinance, are:

a. Reduced ~~Pressure Principle Assembly~~pressure principle backflow prevention assembly

~~DCDA = Double-Check Detector Assembly~~

~~c.~~b. ~~RPDA =~~ Reduced ~~Pressure Detector Assembly~~pressure principle-detector assembly

~~AG = Air Gap~~

~~PVB = Pressure Vacuum Breaker~~

~~7.1 Automotive Services Stations, Dealerships, etc.~~

~~a. No Health Hazard: DCVA~~

~~b. Health Hazard: RP~~

~~7.2 Auxiliary Water Systems:~~

~~a. Approved Public/Private Water Supply: DCVA~~

~~b. Unapproved Public/Private Water Supply: AG~~

~~c. Used Water and Industrial Fluids: RP~~

~~7.3 Bakeries~~

~~a. No Health Hazard: DCVA~~

~~b. Health Hazard: RP~~

~~7.4 Beauty Shops/Barber Shops~~

~~a. No Health Hazard: DCVA~~

~~b. Health Hazard: RP~~

~~7.5 Beverage Bottling Plants: RP~~

~~7.6 Breweries: RP~~

~~7.7 Buildings - Hotels, apartment houses, public and private buildings, or other structures having unprotected cross-connections.~~

~~a. (Under five stories) No Health Hazard: DCVA~~

~~b. (Under five stories) Health Hazard: RP~~

~~c. (Over five stories) All: RP~~

~~7.8 Canneries, packing houses, and rendering plants: RP~~

~~7.9 Commercial carwash facilities: RP~~

~~7.10 Commercial greenhouses: RP~~

~~7.11 Commercial sales establishments (department stores, malls, etc.)~~
~~a. No Health Hazard: DCVA~~
~~b. Health Hazard: RP~~

~~7.12 Concrete/asphalt plants: RP~~

~~7.13 Dairies and cold storage plants: RP~~

~~7.14 Dye works: RP~~

~~7.15 Film laboratories: RP~~

~~7.16.1 Fire Systems 3/4"(inch) to 2"(inch)~~
~~a. No Health Hazard: DCDA~~
~~b. Health Hazard: (Booster Pumps, Foam, Antifreeze Solution, etc.): RP~~

~~7.16.2 Fire Systems 2 1/2"(Inch) to 10"(inch) (or larger)~~
~~a. No Health Hazard: DCDA~~
~~b. Health Hazard: (Booster Pumps, Foam, Antifreeze Solution,etc.): RPDA~~

~~7.16.3 Fire Trucks: RP~~

~~7.17 Hospitals, medical buildings, sanitariums, morgues, mortuaries, autopsy facilities, nursing and convalescent homes, medical clinics, and veterinary hospitals: RP~~

~~7.18 Laundries:~~
~~a. No Health Hazard: DCVA~~
~~b. Health Hazard: (i.e., Dry Cleaners): RP~~

~~7.19 Lawn irrigation systems (split taps):~~
~~a. No Health Hazard: DCVA~~
~~b. Health Hazard: (Booster Pumps, Chemical Systems): RP~~

~~7.20 Metal manufacturing, cleaning, processing, and fabricating plants: RP~~

~~7.21 Mobile home parks:~~
~~a. No Health Hazard: DCVA~~
~~b. Health Hazard: R P~~

~~7.22 Oil and gas production, storage or transmission properties: RP~~

~~7.23 Pest control (exterminating and fumigating): RP~~

~~7.24 Power plants: RP~~

~~7.25 Restaurants:~~
~~a. No Health Hazard: DCVA~~
~~b. Health Hazard: RP~~

~~7.26 Restricted, classified, or other closed facilities: RP~~

~~7.27 Sand and gravel plants: RP~~

~~7.28 Schools and colleges: RP~~

~~7.29 Sewage and storm drain facilities: RP~~

~~7.30 Swimming Pools: RP~~

~~7.31 Waterfront facilities and industries: RP~~

All assemblies and installations shall be subject to inspection and approval by OWASA.

All assemblies installed prior to January 1, 2017, and which are not reduced pressure principle and reduced pressure principle-detector type are permitted to remain in service until OWASA determines their replacement to be necessary.

~~**SECTION 8. CONNECTIONS WITH UNAPPROVED SOURCES OF SUPPLY**~~

~~**8.1** No person shall connect or cause to be connected any supply of water not approved by the NCDENR to the water system supplied by OWASA. Any connections allowed by OWASA must be in conformance with the backflow prevention requirements of this Ordinance.~~

~~**8.2** In the event of contamination or pollution of a public or consumer potable water system, the consumer shall notify OWASA immediately in order that appropriate measures may be taken to overcome and eliminate the contamination or pollution.~~

SECTION ~~9. FIRE PROTECTION SYSTEMS~~

~~**9.1** All connections for fire protection systems connected with the public water~~

~~system 2" and smaller shall be protected with an approved double-check valve assembly as a minimum requirement. All fire systems using toxic additives or booster pumps shall be protected by an approved reduced pressure principle detector assembly at the main service connection.~~

~~**9.2** All connections for fire protection systems connected with the public water system greater than two 2" shall be protected with an approved double-check detector assembly as a minimum requirement. All fire protection systems using toxic or hazardous additives or booster pumps shall be protected by an approved reduced pressure principle detector assembly at the main service connection.~~

~~**9.3** All existing backflow prevention assemblies 2-1/2"and larger installed on fire protection systems that were initially approved by OWASA shall be allowed to remain on the premises, as long as they are being properly maintained, tested and repaired as required by this Ordinance. However, if the existing assembly must be replaced (once it can no longer be repaired), or in the event of proven water theft through an unmetered source, the consumer shall be required to install an approved double-check detector assembly or reduced pressure principle detector assembly as required by this provision.~~

~~SECTION 10~~8. ENFORCEMENT

~~10~~8.1 The consumer or person in charge of any installation found not to be in compliance with the provisions of this Ordinance shall be notified in writing with regard to the corrective action(s) to be taken.

~~10~~8.2 Such notice must explain the violation and give the time period within which the violation must be corrected. The time period set to correct a violation shall not exceed 30-days after receiving notice unless otherwise specified by Section 4. If the violation has been determined by OWASA to be an imminent hazard the consumer shall be required to correct the violation immediately.

~~10~~8.3 In the event a consumer is found in violation of this ordinance and fails to correct the violation in a timely manner or to pay any civil penalty or expense assessed under this section, water service may be terminated, and shall be reestablished when the violation is corrected and any applicable civil penalties are paid.

~~10~~8.4 The violation of any section of this ordinance may be punished by a civil penalty listed as followed:

~~10~~8.4.1 - Unprotected cross-connection involving a private water system which creates an imminent hazard - $1,000.00 per day not to exceed $10,000.00.

~~10~~8.4.2 Unprotected cross-connection involving a private water system

which is of a moderate or ~~high~~severe hazard - $500.00 per day not to exceed $5,000.00.

~~10~~8.4.3 If in the judgment of OWASA, any consumer, manager, supervisor, or person in charge of any installation is found to be in noncompliance with the provisions of this Ordinance and/or neglects their responsibility to correct a violation, water service may be discontinued until compliance is achieved.

~~10~~8.4.4 Failure of a consumer or certified tester to submit any record required by this Ordinance, or the submission of falsified reports/records may result in a civil penalty of up to $500.00 per violation. If a certified backflow prevention assembly tester submits falsified records to OWASA, OWASA shall permanently revoke that tester.

~~10~~8.4.5 Failure to test or maintain backflow prevention assemblies as required - $200.00 per day.

~~10~~8.5 Enforcement of this program shall be administered by the Executive Director of OWASA or his/her authorized representative.

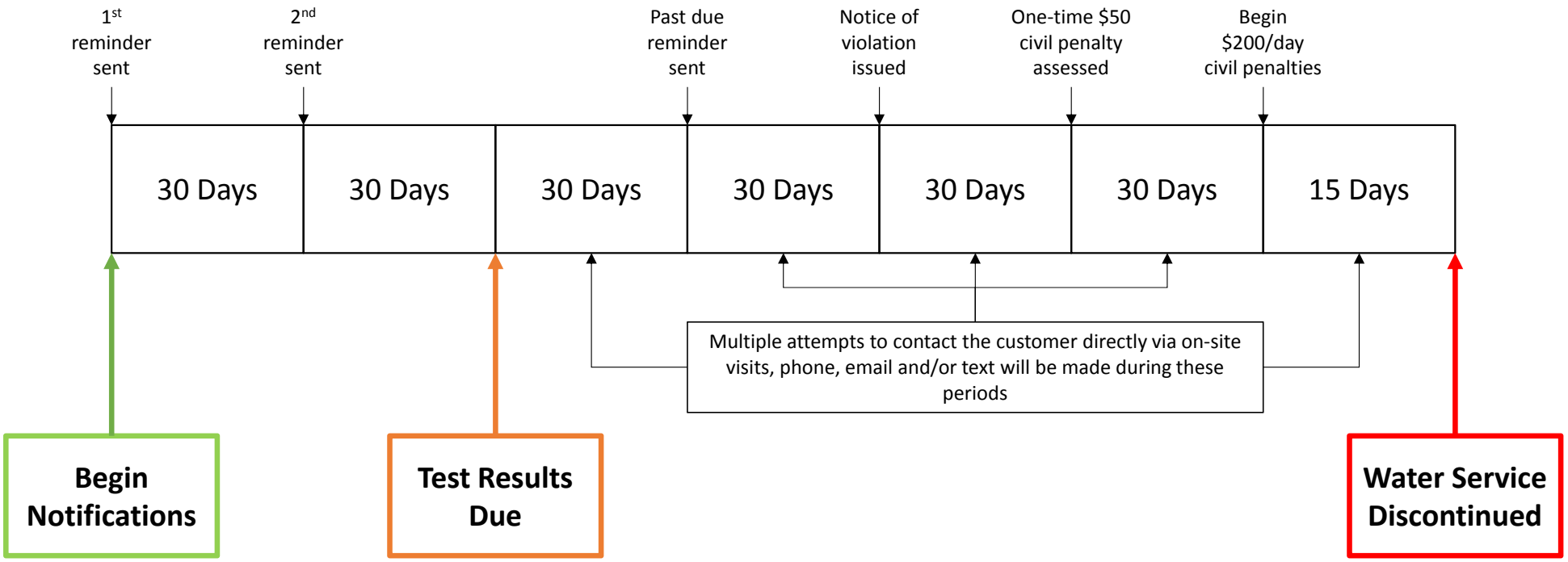
SECTION 9. VARIANCES

Any customer may apply for a variance from the application of the provisions of this Ordinance, provided, such application must be made within ten days of OWASA's written demand for compliance. Such applications shall be made to OWASA's Executive Director, who may grant such a request only if the applicant is able to show that the variance requested will provide equivalent protection and presents no risk of contamination of the public water system. The determination of the Executive Director upon the variance request shall be the final agency decision.

Reviewed by General Counsel: _____ _____
Date General Counsel

Adopted by the Board: _____ _____
Date Clerk of the Board

Proposed
Standard Operating Procedure for Enforcing Backflow Prevention Assembly Testing Requirements



Comments on proposed changes in the Backflow Prevention Ordinance

November 4 - December 1, 2016

Will Raymond

Aimee Burke

Chris Kreutzer

Vincent Stevens

Bruce Sampsell

Margaret Holton

Frances Patterson

Brian Payne

Vincent Stevens

Michele Natale

Myung Lee

November 4

Will Raymond

@OWASA1 Good idea to update required backflow tech in ordinance Last time was '99, 17yrs ago Any examples where RPZ "saved the day"?

> ***OWASA's response***
>
> Dear Will:
>
> I'm following up on your text below to OWASA.
>
> We appreciate your support for updating the backflow prevention ordinance.
>
> Regarding your question, RPZ backflow preventers have features that make them more effective than simpler backflow preventers (with two "check valves"), but I am not aware of any incidents (or studies) indicating a RPZ made a substantial difference compared to what would have occurred with a properly functioning double check valve device.
>
> Please let us know if you have any further comments or questions.
>
> Sincerely,
>
> Todd Taylor, PE, General Manager of Operations

November 7

Aimee Burke

Dear Mr. Feller:

Thank you for your email.

This is to inform you that while my home at 203 Portsmith Place did have an irrigation system, it has been disconnected and has not been used at all in the last 2 years. Furthermore, I have no plans on reconnecting the irrigation system or using it in the future.

I hope given this information that my residence does not need to be included in the backflow discussion.

Thank you.

Sincerely,

Aimee P Burke

OWASA's response

Dear Ms. Burke:

Thank you very much for your e-mail, which I am sharing with other people here. I will check with them about dropping your address from our backflow prevention list assuming you do not have a pool, or something else involving backflow prevention.

Best,

Greg Feller, Public Affairs

Thank you, Mr. Feller.

Your assumption is correct....I do NOT have a pool or anything else involving backflow prevention.

Sincerely,

Aimee Peden Burke

OWASA's response

Dear Ms. Burke:

I understand from our Customer Service Manager, Ms. Denise Battle, that your address (203 Portsmouth Place) will be removed from our list of locations with backflow preventers.

Thank you again for contacting us.

Please let us know whenever we can be of help in the future.

Best regards,

Greg Feller, OWASA Public Affairs

November 7

Chris Kreutzer, Carrboro Plumbing

I just wanted to let you know that I plan to attend the meeting at 6PM on November 16.

To be clear - will the proposed ordinance require RPZs to be installed on private residences such as single family homes?

Thanks,

Chris Kreutzer, Carrboro Plumbing, Inc.

OWASA's response

Dear Chris:

Thank you very much forward for your note. I discussed your question with Todd Taylor, and below are our thoughts.

- Backflow prevention devices are required for customers (including residents) who have swimming pools and irrigation systems or certain other operations or conditions involving contamination risks if there were a backflow or cross-connection. (There are several hundred residences with backflow preventers due to pools or irrigation systems.)
- Most residences are not required to have a backflow preventer under the current ordinance and would not be required to have backflow preventers with the proposed changes.
- Staff is recommending that RPZ devices be required in new construction and renovations and when an existing backflow preventer is replaced, as discussed in Todd's letter.
- However, the OWASA Board of Directors has discussed the possibility of allowing residences to use "double check valve" backflow preventers instead of RPZs.

Please let us know if you have further questions or comments.

We look forward to seeing you on the 16th.

Best regards,

Greg Feller, OWASA Public Affairs

Vincent Stevens

Mr. Stevens said in a voice mail that he will attend meeting on November 16th. Greg Feller called to thank him for the message.

November 15

Bruce Sampsell

I'm responding to your invitation to comment on the subject ordinance. I fully support the stated intent of the changes which is to enhance protection of the water supply. I also agree with Staff that grandfathering existing single family irrigation systems so owners can continue to use and repair their existing DCVA backflow devices. This is because the cost of converting is high compared to installation at a home where a de novo irrigation installation is being made. The difference in cost for the RPZ compared to DCVA devices themselves is less than $150 dollars, but the cost to retrofit with RPZ is high. This is because the installation must be above ground for drainage of any backflow to atmosphere, able to withstand freezing temperatures, and be relocated so it is not sticking up in the middle of the front yard presenting an eyesore subject to damage from power lawnmowers.. The total cost installed will be $500 to $1000. Asking about 750 owners with single family home irrigation to pay that kind of money for the sake of having a uniform standard that all backflow preventers will be RPZ type, irrespective of functional gain in this special case seems very inappropriate.

I also agree with those on the Board who are suggesting it is reasonable to go a step further and permit in-kind replacement of DCVA devices in single family home irrigation systems. This policy makes sense because the risk of hazardous contamination is very low (not moderate). I say this because home irrigation systems work like the water system in the home. During the irrigation season there is a piped header system that is filled with potable water at working pressure waiting for an irrigation zone valve to be opened by the controller. In the home there is a distribution system of pipes that is filled with potable water at pressure waiting for a person to open a faucet or turn on a water-using appliance such as a dishwasher or clothes washer.

In the event of a loss of OWASA water pressure, the potable water in the home water distribution piping can and does backflow by gravity or syphon action back into OWASA's supply pipe. In the case of the Irrigation system, the same OWASA pressure loss results in no backflow unless both check valves on the installed double check valve back flow preventer are faulty. If they are, the consequence is backflow of the potable water in the irrigation distribution header back into the OWASA supply pipe.

This should be a rare event with annual inspection, whereas it happens every time there is an OWASA pressure loss on the in-home water supply for which no backflow device is required. In both cases what is being returned is potable water. OWASA defines any water that has passed through the meter to be "used water" which seems a bit pejorative. On the supply of the meter it's OWASA's water, and on the discharge side it's the customer's water. Both are the same purity unless somehow contaminated, which is what all the plumbing codes are designed to prevent. An illegal cross connection could be made in either system. Home owners should be put on notice that penalties for doing this will be steep.

With respect to the credentials required of Certified Backflow Assembly testers, I see no reason that they should have to be plumbers or qualified to make repairs to the backflow prevention assembly, and not just qualified to perform the tests. That's like requiring a technician trained to perform cardiograph tests to also be qualified to do heart surgery. Or closer to home, consider that a person can go to Jiffy lube which has people vetted to do annual car safety and pollution inspections, but the owner goes to a dealer or auto repair shop he trusts for the actual repair.

One of the reasons it costs between $60 to $110 to have a simple one-off 5-10 minute test made on a backflow preventer assembly is the person doing it is overqualified, and has to recover time spent with manual paperwork for OWASA and the owner, and the travel time which is long compared what it takes to make what is a very simple rapid test that only infrequently calls for repair.. If you doubt that, Google: [How to test residential water back flow preventers} and see a U-Tube demonstration that also includes instruction comments in that timeframe.

To me it would make good sense to have the annual testing of single home irrigation backflow preventers done by an OWASA employee who could travel an efficient computer calculated route to limit travel time between the 750 or so locations requiring tests.. He/she could enter "pass" or in the case of failure, the actual test data on an iPad or other computer input device to complete a computer generated form already filled out as to date, owner, and address that could be mailed to the owner by bulk mail or emailed with return notice that that the email was opened. Such an approach does not require an expensive truck laden with repair equipment and parts--just a car with the test apparatus. The all-in cost would be less than $30/test, and that could be marked that up to $50, and your customers would be thrilled they had nothing to schedule and the test result and charge could go on the monthly bill so there would be no extra check to write or postage cost involved for the customer.

Best of all OWASA would control the integrity of the annual testing process from the beginning so nothing falls through the cracks. As a customer, I would be delighted to have this done by OWASA, and it wouldn't matter when, because testing the irrigation system backflow doesn't require shutting off water to the home. This less than full time job might be done by training one of the meter readers who could shortly be out of a job when the advanced metering initiative goes live. With annual testing, I would be very surprised if more than 1 in 25 tests revealed a failure requiring repair or replacement. That owner would receive a special notice giving details about getting the backflow assembly repaired and tested by a plumber or person certified to do backflow preventer repairs as well as the final test to assure the repair or replacement was fully in compliance with OWASA's standards. Information providing necessary details would then be sent directly to OWASA and the customer to close the loop as is done at present.

I hope you'll revisit the option OWASA of doing the annual tests on single home irrigation backflow preventers, but not the repairs.

Thank you for the opportunity to offer these thoughts.

Sincerely,

Bruce Sampsell

OWASA's response

Dear Mr. Sampsell:

Thank you very much for your thoughtful comments, which we will share with the OWASA Board of Directors.

We encourage you to participate in the meeting with staff Wednesday at 6 PM about the proposed changes in the ordinance, and/or in the Board meeting on December 8th.

Please let us know if you have any further comments or questions at any time.

We will keep you informed about this matter in the future.

Best regards,

Todd

Margaret Holton

I am planning to attend the OWASA Cross Connection Control Ordinance Comments to staff meeting scheduled for Wednesday, Nov. 16 at 6:00 pm.

Thanks,
Meg Holton

M. D. Holton, PE, Water, Wastewater and Stormwater Manager, UNC Energy Services

OWASA's response

Meg—Thank you for letting us know.

See you tomorrow!

Greg Feller, Public Affairs

November 16

Frances Patterson

Ms. Patterson called to express her concern that many people in her neighborhood do not get letters from OWASA about the need to install and to annually inspect backflow preventers for their irrigation systems.

OWASA's response

Dear Ms. Patterson:

I'm writing to follow up on your November 16, 2016, telephone call to Greg Feller about the need for uniform enforcement of OWASA's Ordinance for the Control of Backflow and Cross-Connections.

I certainly understand your concern that OWASA should notify all customers with irrigation systems about the need for a backflow prevention device and the requirement to

have them tested annually to make sure that they work properly. As you know, backflow prevention is an essential part of our work to protect the safety and quality of the community's drinking water.

Please be assured that, as indicated in my letter about proposed changes in the Ordinance for the Control of Backflow and Cross-Connections, we plan to actively enforce the annual inspection requirements.

We will work in coming years to identify places where backflow prevention is needed (due to an irrigation, swimming pool, commercial operations, etc.) but not in place.

We periodically send information to our customers about backflow prevention requirements. (Please see the enclosed Blue Thumb newsletter mailed to customers in June 2014.) However, we recognize that customers and irrigation companies may not tell us about irrigation systems, and additional work is needed.

Thank you again for your comments.

Sincerely,

Todd Taylor, P.E.
General Manager of Operations

Enclosure: June 2014 Blue Thumb newsletter

Brian Payne

Mr. Taylor and OWASA Staff -

Unfortunately, I am unable to attend the meeting tonight due to a work obligation. I will also note that I received the letter less than a week before the proposed meeting, and the short time frame basically guaranteed that I would not be able to participate. Based on this lack of sufficient notice, I would be surprised if turnout was significant.

Additionally, I would expect light participation, especially from homeowners, because the letter you sent does not adequately explain possible implications of the changes. This is especially true on potential costs. I noticed the supporting documentation referenced potential materials costs of $120 to $1000. However, it is entirely possible that labor could be 80% of a retrofit and materials only 20%. Nothing in your letter suggests to homeowners that, in addition to the annual fee we are forced to pay, an additional $1500-$2000 "upgrade" might be required. Without more of a basis to understand what the changes mean to them, homeowners will not participate in this conversation. And I would note that we have our system tested when OWASA sends us a letter telling us it is time to do so.

Moving on to the precise changes, I am concerned about them. I do not feel that residential systems are a significant enough risk to warrant requiring such a large change. Rather than simply grandfathering devices only until they fail, the current backflow options should remain in

place for all residential systems without the need to go through an exception process. It seems the exception process is ill-defined and too discretionary. When will something be deemed not technically feasible for a residence? What about not financially practicable? How is that determined? Is it based on the homeowner's income, the value to the property, the decrease in property value if the system goes from being underground to being a large, above-ground piping installation?

I am also concerned that, for residences, OWASA is creating an additional liability for the homeowner. Currently, many of these systems are underground and in covered boxes. Therefore, they do not create a hazard. However, a piping assembly that must be above ground could almost certainly create a hazard in people's yards. I do not believe OWASA opening homeowners to liability for additional hazards is appropriate, but that is exactly what this proposed ordinance would do. Front lawns are not industrial sites; however, homeowners may need to install fencing, etc., to adequately protect children and others from these required installations should the proposed ordinance go through. I can easily imagine the situation of a toddler not "seeing" the assembly (or thinking they could go under it), running into one of the valves, producing a significant wound to the forehead and necessitating a trip to the ER. If the child was not the homeowners' but rather a friend, a lawsuit may follow.

For all these reasons, I would only support the proposed changes should they allow all residences to maintain the same kind of backflow prevention that is currently in place, without going through an exception process.

Regards,
Brian Payne

OWASA's response

Dear Mr. Payne:

Thank you very much for your e-mail.

We will share your e-mail, as well as other customers' comments, with the OWASA Board of Directors in our report for the December 8th Board meeting.

I am sorry that you received my letter less than a week before the meeting tonight. Please be assured that staff mailed the letters on Friday, November 4th. There is also another opportunity for the public to comment when the Board discusses the proposed changes again on December 8th.

Regarding the potential costs of retrofitting a Reduced Pressure Zone (RPZ) device, I agree that, although difficult to ascertain given the multitude of possible configurations, more detailed information about the scope of costs would have been helpful to customers. Concerns about costs are likely the reason the OWASA Board is considering the option of not requiring existing residential customers to replace "double check valve" devices with RPZs. Staff and counsel will be providing the Board with a proposed grandfather clause with broad exemptions for existing installations for its consideration.

Regarding the exception process, it is necessary to allow some discretion and flexibility because of the many unique circumstances that may arise. However, it will be very important that staff be fair, objective and consistent in our approach to variances. As in many matters where staff is authorized to make decisions in administering a policy, it is essential that a resident (or business) who does not agree with a staff decision be informed of the opportunity to appeal to the OWASA Board and how to do so.

Finally, your concerns about the safety of these installations are duly noted. The majority of these devices currently in our service area are typically installed inside an enclosure or structure primarily for freeze and tamper protection, but also to address the concerns you have raised. Installations that present significant safety issues would be prime candidates for receiving variances as previously discussed.

I cordially invite you to comment further on these matters in the OWASA Board's meeting on December 8th, and look forward to seeing you there. If you have further comments or questions at any time, please feel free to contact me.

Thank you again for your thoughtful comments.

Best regards,

Todd Taylor, PE, General Manager of Operations
919-537-4216 or ttaylor@owasa.org

Comments in community meeting on November 16

Vincent Stevens asked that the proposed "grandfather" policy be expanded to include all existing backflow devices. He said he is also concerned because he is the only person in his neighborhood who has his backflow preventer tested annually.

OWASA's response

Todd Taylor said the OWASA Board would decide on the extent of the grandfathering policy and that OWASA plans to actively enforce the requirement for annual inspections and address the need to identify and contact more customers who should have backflow preventers.

Michele Natale asked how much it would cost to replace an existing backflow preventer with the Reduced Pressure Zone type.

OWASA's response

Todd Taylor said the cost would depend on conditions and is difficult to predict. Staff offered to meet with Ms. Natale and check whether she already has an RPZ device.

November 17

Myung Lee

Mr. Lee called OWASA because the resident at Mr. Lee's property in Chapel Hill relayed OWASA's letter about proposed changes in the backflow prevention ordinance. Mr. Lee said his property does not have a backflow preventer and does not have a swimming pool or irrigation system.

OWASA's response

Greg Feller contacted the Distribution and Collections staff about Mr. Lee's concern and it was confirmed that Mr. Lee is not required to have a backflow preventer. Greg Feller called Mr. Lee to confirm this with him.

Agenda Item 8:

Affordability Program Update and Plan

Purpose:

To receive feedback and guidance on the proposed Affordability Outreach Program Update and Plan for Year 2

Background:

"Affordability and Cost Management" is one of the five key strategic themes in OWASA's Strategic Plan. During rate-setting discussions and strategic planning meetings, the OWASA Board of Directors concluded that water conservation should be promoted as a key strategy for customers – especially those in financial need – to lower monthly water and sewer bills

On October 22, 2015, the Board of Directors approved the Affordability Outreach Program Plan (Year 1) and authorized staff to proceed to implement the program in accordance with the plan.

Our affordability outreach partners were provided an opportunity to discuss and contribute to the update and plan in-person, as well as to review and comment on the written draft. All of those responding expressed support for the proposed plan.

Action Requested:

We invite questions on the update and feedback and guidance on the plan for next year's Affordability Outreach Program from members of the public and the Board of Directors.

Consistent with past practice, we do not believe a formal resolution is needed for this matter. However, we do recommend that if and when the Board supports moving forward with the proposed program, it consider acting on this matter via approval of a motion, perhaps along the lines of the following:

> *"Motion that the Board of Directors approves the proposed Affordability Outreach Program Update and Plan (Year 2) and authorizes staff to proceed to implement the program in accordance with the approach described in the proposed plan."*

Information:

- DRAFT Affordability Outreach Program Update and Plan

Orange Water and Sewer Authority Affordability Outreach Program Update and Plan

Year 2: January 2017 – December 2017

Purpose

OWASA's Affordability Outreach Program is designed to increase community 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. The following plan provides an update on the first year of OWASA's Affordability Outreach Program and identifies specific strategies for the coming year.

Background

"Affordability and Cost Management" is one of the five key strategic themes in OWASA's Strategic Plan. During rate-setting discussions and strategic planning meetings, the OWASA Board of Directors concluded that water conservation should be promoted as a key strategy for customers – especially to those in financial need – to lower monthly water and sewer bills.

And while we cannot provide free service or charge different rates based on our customers' ability to pay because of legal and bond order restrictions, we are a member of the community we serve and recognize the need to ensure that water and wastewater service meets a basic human need. It's important to OWASA that our services be accessible to the community in order to protect public health and the environment.

Furthermore, water conservation practices and investments make our community better prepared for droughts; defer the need for multi-million dollar expansion of OWASA system capacities; and reduce greenhouse gas emissions from use of conventional energy sources to pump lake water, drinking water, wastewater, and treated wastewater. Water conservation has been identified as a key strategy in addressing customer affordability because it reduces costs for customer service, service delivery, and long-term water resource provision. Water conservation has the potential for sustained positive impact for customers, including reduction in water and bills as well as energy costs associated with heating water. Additionally, as proposed, it has the potential to enhance OWASA's engagement with the community.

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Objectives and Target Audience

OWASA's Affordability Outreach Program is designed to increase community 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 OWASA bills. The following goals and metrics provide an indication of water and sewer service affordability and our efforts to provide relevant outreach to the community.

- **Contributions to our Care to Share program:** Currently, about 5.5% of our customers contribute an average of $0.45 per month to Care to Share on their OWASA bill.

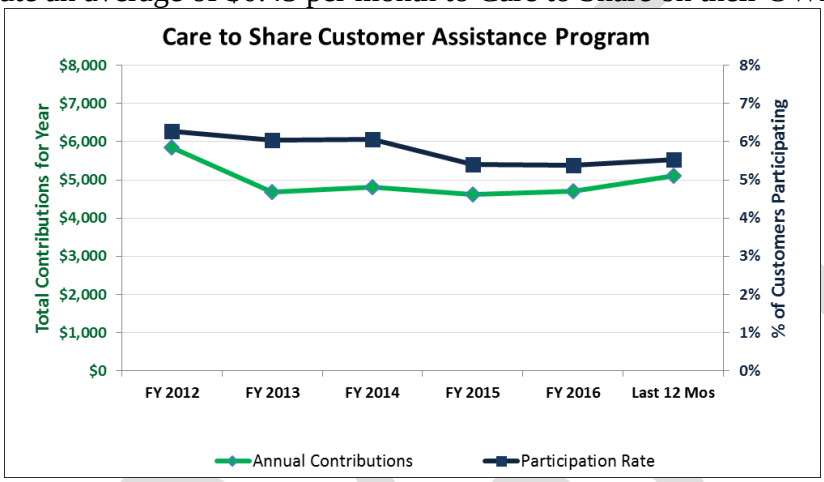


Figure 2: The number of Care to Share contributors and contributions increased slightly over the last 12 months.

- **Average water use of those customers with whom we engage through our affordability outreach program:** While a challenging metric to track for general outreach, we can measure the impact of direct engagement. The following table tracks the water use of six households before (in blue) and after (in orange) a home water use assessment and toilet retrofit conducted in 2015 as part of the Affordability Outreach Pilot Project. Five of the six homes have experienced a decrease in their average water use and bill. (The home that increased water use was a duplex for which only one-half was retrofitted.)



Figure 1: Average water use and water and sewer bills decreased for five of the six homes that received water use assessments and toilet retrofits as a part of the Affordability Outreach Pilot Project in 2015.

- **Cut-offs due to non-payment:** Over the past two years, we have seen a steady decline in the number of service cut-offs due to non-payment. The rolling average of monthly cutoffs has fallen by about 50 cut-offs per month. At $45 per event, this results in an overall annual savings of $27,000 in reconnection fees, as well as the avoided troubles associated with a lapse in water service.

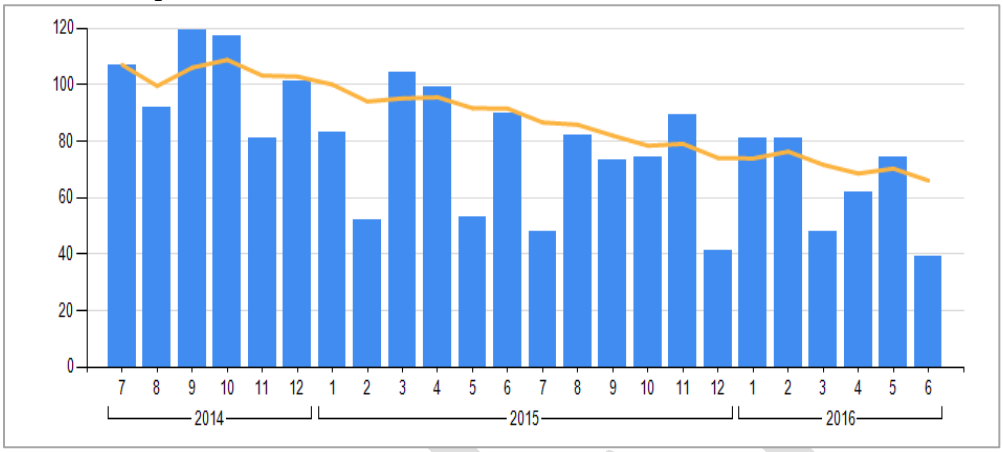


Figure 3: The number of cutoffs has declined steadily over the past two years.

Our program strives to engage customers with difficulty paying for OWASA services. Primarily, these customers are those:

- Requesting and receiving bill payment assistance from local social service agencies, including the Inter-Faith Council for Social Services (IFC) and the "Care to Share" program;
- Requesting extensions of credit to manage bill payments; and
- For whom service is cut-off due to non-payment of bills.

In order to proactively engage with these customers, we partner with local social service agencies that provide bill assistance, home repair, and maintenance assistance, as well as the rental community. The rental community overlaps with much of our target population for affordability outreach and represents a significant portion of our service area population.

We recognize there are other customers for whom water and sewer service comprises a significant portion of their monthly household expenses that do not fall into any of these categories. As such, our outreach efforts are not limited to just the above-mentioned communities. Additionally, it is important to note that while many of the strategies discussed below (including in-home water use assessments) are identified to be focused through certain agencies and to specific households, these services are generally available to our entire customer base upon request, as we cannot differentiate services to our customers based on their financial position or need.

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Strategies for Addressing Affordability

The Affordability Outreach Program includes five major strategies for addressing the affordability of OWASA's services. These strategies are:

- Rates and Billing,
- Information and Outreach,
- Bill Assistance,
- Water Efficiency Retrofits,
- Leak Identification, and
- Partnership

The remainder of this document provides an update of recent initiatives and provides proposals for new, modified, and expanded initiatives for the coming year.

Rates and Billing

Rate structures, rate levels, and billing arrangements have significant ramifications for the affordability of water and sewer for all OWASA customers.

Update:

Proposed modification to multi-family, master-metered (MFMM) rates: Over the last year, the OWASA Board of Directors has evaluated and considered the modification of the water rate for multi-family, master-metered customers (locations where one OWASA meter serves multiple households) to improve affordability and customer understanding. Currently, MFMM customers are charged a seasonal water rate that increases in warmer months (May – September) and decreases in cooler months (October – April). This rate structure has been in effect since 2002. The proposed water rate structure would charge the same rate for water all year.

Increasing block rate structure for single-family residential customers: OWASA continues to use an increasing block rate structure for single-family residential customers' water use. This rate structure is designed to keep charges low for the first 2,000 gallons used by a household.

Extended bill due date from 21 to 25 days from bill date: In response to feedback received on our community survey, we recently increased the due date from 21 to 25 days from the bill date. This gives our customers four additional days to pay their bill before it is considered overdue.

Cost management: Fiscal Year 2016 marked the fifth year in-a-row without the need to raise monthly rates to cover costs. We remain diligent in our stewardship of our customers' funds and view cost management as an important strategy in assuring the affordability of water and sewer services in our community.

New Initiatives:

Pay-by-text and automated pay-over-phone: We deployed pay-by-text on November 3, 2016. We plan to deploy automated pay-by-phone in the coming year to make bill payment more convenient. While these tools will not decrease bills for our customers, we

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hope that by making it easier for customers to pay their bills, they can avoid late payment fees, service cut-off, and reconnection fees.

Implement multi-family, master-metered rates (if approved): If the OWASA Board of Directors approves a modified rate structure for MFMM customers at its December 8, 2016 or a subsequent meeting, we will engage the community in the implementation of this rate structure to ensure that it does in-fact improve affordability and customer understanding.

Information and Outreach

Through accessible and engaging outreach, we aim to give our customers useful information and strategies for reducing their OWASA bill.

Update:

New outreach material: We produced an infographic and motion graphic video to engage all customers in water wise behavior. The infographic was developed in English and Spanish; the motion graphic was narrated in English, Spanish, Burmese, and Karen. We distributed over 800 infographic brochures in the Northside Newsletter and handed out many more through our partners in affordability outreach. The motion graphic has been featured in Community Home Trust's newsletter and will be incorporated into the Town of Chapel Hill Public Housing's new resident orientation. Over the coming year, we will continue to distribute and promote this outreach material.

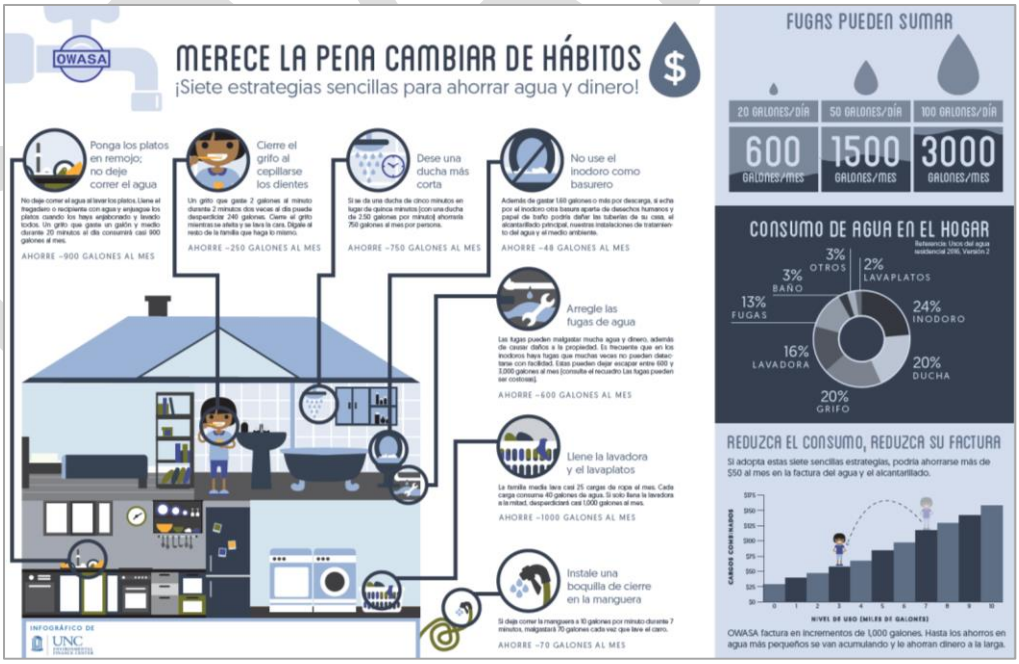


Figure 4: Snapshot of infographic in Spanish

Direct mail to recipients of bill assistance: In June 2016, we began sending letters to recipients of assistance for OWASA bill payment. These letters show how a household's water use has trended over the 12 months compared to that of the average OWASA

household, suggests tips for reducing water use, and invites the customer to request a home water use assessment (see below). Since June, we have mailed 62 letters. We plan to continue to send these letters on a monthly basis over the next year.

Water use assessments: In a water use assessment, we search for leaks and assess the efficiency of a household's water-using infrastructure: toilets, faucets, appliances, etc. In addition, we discuss a household's water-using behavior and provide tailored suggestions for reducing water use and reducing water and sewer bills. We distribute low-flow faucet aerators and low-flow showerheads. From the 62 invitations in the previously mentioned direct mail, we conducted one water use assessment. Additionally, we conducted water use assessments of six units owned by community partner, EmPOWERment.

Community workshops: In partnership with EmPOWERment, we assisted the UNC Environmental Finance Center in providing a community workshop on utility conservation in partnership with EmPOWERment. These workshops took place throughout the summer of 2016.

New Initiatives:

Enhance efforts to provide water use assessments in association with community partners: Over the next year, we will do more to promote the provision of water use assessments as a tool for reducing water use and bills. In addition to sending direct mail to recipients of bill assistance, we will provide infographic brochures and a description of water use assessments to those entities providing bill assistance in our community. We will provide training on how-to conduct water use assessments to our community partners, empowering them to discuss the benefit of such assessments with the community they serve, and if interested, to conduct these assessments themselves. We will conduct educational sessions at events hosted by our community partners and invite attendees of those sessions to request an in-home water use assessment.

Recently, we were contacted by Waste Reduction Partners (WRP) with an invitation to partner in the provision of large-scale water use assessments for multi-family, master-metered (MFMM) accounts. WRP is a grant-funded team of retired engineers, architects and scientists that work with NC businesses and institutions on water, waste, and energy reduction. With funding support from Duke Energy, WRP estimates that they can provide 3-5 audits in our service area and are willing to focus their efforts on MFMM accounts to support our affordability outreach efforts. We will work with WRP to help identify and recruit participating entities. As their costs will be covered by the grant from Duke Energy, OWASA will not be charged for WRP's services.

Neighborhood Conservation Challenge: In partnership with the Town of Chapel Hill Public Housing, we will launch a series of neighborhood conservation challenge events to encourage community commitment to water conservation. We plan to launch each "challenge" at neighborhood clean-up days, hosted by Chapel Hill Public Housing, in the spring of 2017. Following the clean-up day, community members will be encouraged to reduce their neighborhood's use of water to meet a certain goal. In recognition of their achievement of that goal, the Town of Chapel Hill will invest in a community project,

such as a new sign, landscaping, or playground equipment. OWASA will provide faucet aerators, low-flow showerheads, and demonstrate their installation at the community clean-up events.

Bill Assistance

Temporary bill assistance programs offer help to customers during their greatest time of need and help them avoid service cut-off and reconnection fees. The Care to Share program provides OWASA customers the opportunity to voluntarily contribute to a bill assistance program administered by the Inter-Faith Council for Social Services (IFC).

Update

Contractor solicitation letter for Care to Share donations: In July 2016, OWASA's Executive Director sent a letter to contractors and consulting firms with whom OWASA does business asking that they consider donating to the Care to Share Program. Although we have requested that the donors remain anonymous to OWASA, we do know that $625 in direct contributions were given to Care to Share via the IFC directly following the mailing.

Customer service focus on new customer sign-ups: The majority of Care to Share donors become donors when they are setting up an account. The OWASA Customer Service Team has focused efforts this year on getting new account holders to contribute. As of October 2016, there were 26 more Care to Share contributors than in June 2015.

New Initiatives

Increase marketing for Care to Share: In an effort to get existing customers to contribute to Care to Share, we will launch a marketing campaign for Care to Share using our common methods for communicating with customers, including the Blue Thumb Newsletter and website. Additionally, we will work with our partners to publicize the Care to Share to program via their communication methods.

Research causes of service cut-offs: While we can track the absolute number of service cut-offs, we do not know the specific reason. Did the customer forget to pay their bill or are they unable to pay at all? Is the issue of non-payment on-going or temporary? Understanding the root cause will be important for developing strategies to assist. Over the coming year, we will develop a strategy to help identify the cause of cutoffs in a respectful manner.

Water Efficient Retrofits

Ultimately replacing inefficient water-using equipment (primarily toilets) in a home can help a household consistently reduce their water use. In our Affordability Outreach Pilot Project, outside funding for in-home retrofits was identified by our partner agencies as the most important strategy for assisting low-income customers in reducing and managing OWASA bills. The following strategies are designed to assist in the identification and pursuit of outside funding and purchase arrangements for water-efficient fixtures.

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Update

Case study of 2015 retrofits: We conducted post-retrofit assessments with the participants of the 2015 retrofit program to seek feedback on the efficacy of the retrofit program. This feedback was used to develop a case study to help increase awareness of the impact of water efficient retrofits. The case study was published in the August edition of the Northside Newsletter and is now available for use in pursuing outside funding for retrofits (see proposed New Initiative below).

Focus groups with MFMM property managers and landlords: In July 2016, we conducted two focus groups with MFMM property managers and landlords: one with a group that sub-meters and re-bills tenants for water and sewer service and one with a group that does not. Although we only spoke with a small subset of these customers, we learned the following information that is useful in informing initiatives for engaging this group.

1. Water efficiency and leak identification is out-of-sight and out-of-mind for some complexes that sub-meter and re-bill; others use the data to proactively identify water use anomalies.
2. For those complexes that don't sub-meter, identifying leaks can require a great deal of effort to identify within a complex.
3. Complexes are looking for a 6-12 month payback on investments in efficiency.
4. Cost is not the only reason that complexes are not replacing inefficient toilets. Many participants believed that high efficiency toilets are inferior to older toilets.
5. Some property managers believed that seasonal rate structures complicate the conservation signal to tenants who are re-billed because the tenants do not understand the connection between their water use and their bill.

New Initiatives

Pursue outside funding for retrofits of those receiving bill assistance: In Fiscal Year 2016, 97 households received assistance in paying their OWASA bill; 26 of those households received bill assistance more than once throughout the year. With outside funding assistance for the installation and hardware, water efficient retrofits could help improve utility affordability for these households and help leverage bill assistance funding should they need assistance again. Over the coming year, we will work with primary entities providing bill assistance to our customers (including Orange County Department of Social Services and churches) to discuss potential funding for the replacement of inefficient toilets, showerheads, and faucets in those homes.

Develop an interactive business case tool and demonstration of high-efficiency toilets for MFMM property managers and landlords: In certain circumstances, replacing an inefficient toilet with a high-efficiency toilet can achieve a 12 month simple payback. We will create a case study, as well as an interactive tool that can be tailored to individual situations, to help define the business case for toilet replacement. Additionally, we will demonstrate the efficacy of high-efficiency toilets to help inform those in question. This business case will be especially salient for those MFMM property managers and

landlords that do not sub-meter. Although, this will not likely have a direct impact on the affordability of the unit for the tenant, it will help keep overall costs low and will directly benefit individual tenants if and when the unit is sub-metered at some date in the future.

Leak Detection

Proactive leak identification can help our customers avoid high bills, home damage, and water waste and is good customer service.

Ongoing

Proactive desktop and field service for identification and follow-up regarding potential leaks: Throughout the meter reading and billing process, we have a series of check-points for meter reads that are 60% higher than the previous months to help validate the accuracy of our meter reads. When a high bill is validated, Customer Service staff proactively communicate with customers to alert them to the high read and offer assistance with identifying leaks. If a customer is interested, field service staff will visit the home and help the customer determine if there is a leak.

Update

Implementation of Advanced Metering Infrastructure (AMI): We anticipate that Advanced Metering Infrastructure will provide OWASA and our customers more immediate water use information and a platform from which to quickly identify the potential of a leak. Over the coming year, we will work to identify a vendor for Advanced Metering Infrastructure that can provide the tools to do this.

Partnership

Critical to the relevancy and acceptance of OWASA's affordability outreach is partnership: partnership with our customers and the social service agencies that serve our community.

Ongoing

With customers:

Proactive Customer Communication: OWASA proactively communicates with customers regarding impending cut-offs. One day after a customer misses a second month of bill payments, OWASA contacts the customer via a phone service to let them know that if payment for at least one month is not made within the next ten days their service will be cut-off and they will incur the $45 fee for non-payment. If payment has not been received within ten days, the customer is re-notified that if prompt action is not taken, their service will be cut-off.

Social Agency Referral and Collaboration: OWASA's Customer Service Department maintains a list of social service agencies that provide bill payment assistance to customers in need. If a customer contacts OWASA to express difficulty in paying their bill, Customer Service refers the customer to those agencies. Additionally, we inform our customers that if they are working with an agency to obtain financial assistance, they may authorize us to release their billing information to that agency, so that agency can better assist the customer.

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Emergency Water Loss Policy: When a customer reports a leak, OWASA may reduce their bill if the customer provides documentation of repair. A customer is eligible for an Emergency Water Loss bill reduction every three years.

Customer Payment Deferral Agreements (Extensions of Credit): Customer Service staff have the authority to arrange an individual payment plan that will allow a customer to spread payments in arrears over a timeframe that is more manageable for them. Customers must sign a payment deferral agreement and meet the terms of repayment specified in the agreement. We enable agencies providing financial assistance to initiate, on behalf of their clients, requests for extension of credit for customers to pay their bills. The agency can have a client sign the agreement while the client is in the agency's office. This facilitates the process and eliminates the need for the customer to make a separate trip to OWASA to enter in to such an agreement. Furthermore, the assisting agency likely has a better understanding of a plan that will work best for a customer's circumstances.

With community: In the pilot project, OWASA partnered with staff from 14 social service and affordable housing agencies to solicit insight into the challenges of their constituency, input on program design, and the potential to leverage funding in order to help more people. Staff in our partner agencies were very supportive of our efforts and eager to learn and convey information about how their clients can reduce their water and sewer bills by reducing their water use. We continue to seek the feedback and collaboration opportunities with partners in our community, and to expand the list of partners to expand the reach of our efforts. (Starred partner organizations represent those added this past year.)

- Town of Carrboro
- CASA
- Town of Chapel Hill
- College Service Project, UNC Chapter*
- Community Home Trust
- Compass Center for Women and Families
- EmPOWERment Inc.
- Habitat for Humanity of Orange County
- InterChurch Housing Corporation
- Inter-Faith Council for Social Services
- Marion Cheek Jackson Center
- Central Piedmont Community Action (formerly JOCCA)
- Orange County Justice United
- Orange County Department on Aging
- Orange County
- Rebuilding Together of the Triangle*
- UNC Center for Excellence in Community Mental Health
- UNC SWEAT*
- Waste Reduction Partners*

We hosted two meetings over the past year with our community partners (April 22 and November 4) to discuss ideas and initiatives. Over the coming year, we will continue to convene this group on a semi-annual basis to discuss issues related to water and sewer service affordability. In the spring of 2017, we will host a training on water use assessments as the semi-annual meeting.

Resources Required

Successful implementation of this program will require approximately ¼ of Sustainability Manager's time to manage and implement aspects of the program, the commitment and support of OWASA staff, and a modest budget of $2,000 to reproduce outreach material and purchase water-saving devices and demonstration material. Additionally, we will seek to engage an undergraduate intern to assist with implementation.

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Agenda Item 9:

Discussion of Key Performance Indicator Report

Purpose:

The purpose of this memo and its attachment is to provide the OWASA Board of Directors with a thorough explanation of the current monthly Key Indicators and Performance Measurements Report (KPI Report).

Background:

OWASA staff have provided the OWASA Board of Directors with a KPI Report similar to the one currently provided since May 2010. The KPI Report was developed and updated by researching performance measures in the industry, discussing the salience of KPIs for OWASA, and ensuring data availability and quality.

Data for the KPI Report are maintained and summarized by staff across the organization. Currently, the Sustainability Manager reviews and compiles this data into the KPI Report. The monthly KPI Report is delivered to the Board via email and posted to the website, no later than the 20th of the following month. In this email transmittal, we point out noteworthy events and trends and invite questions and feedback.

The purpose of the KPI Report is to provide a monthly snapshot, in graphic form, of organizational performance data to the OWASA Board of Directors and the community we serve. The data is not meant to be comprehensive, but rather to provide insight on metrics most meaningfully measured and reported on a monthly basis. Where goals exist, the metrics are tracked against them.

There are a number of methods through which these goals and targets are set. Financial targets are identified in the annual budgeting process. Other goals, such as “Biosolids Management”, “Drought Triggers”, and “Working Capital Reserve Targets” are set by the Board of Directors as policy in other planning documents. Some KPIs include goals linked back to industry benchmarks. The attached document identifies the source of the goals and targets embedded in the KPI Report.

In addition to keeping the Board of Directors apprised of monthly progress towards these goals and objectives, the KPI Report helps to ensure consistent focus on key performance indicators in a transparent way. Additionally, it keeps staff focused on the integrity of the data that we create and maintain. Data maintain relevancy when they are used.

The monthly KPI Report is not the only mode for reporting and communicating trend analysis. The Board is provided with data and trend analysis in a suite of other reports throughout the year. Below is just a list of some of these reports provided to the Board on a regular basis:

- Strategic Trends Report (Annual)
- Financial reports (Quarterly)
- Capital Improvements Program Status Report (Semi-Annual)
- Asset Management Program Report (Annual)
- Comprehensive Annual Financial Report (Annual)

- Equal Employment Opportunity Report (Annual)
- Budget (Annual)

Of course, for every metric included in these reports, there are a series of output and workload metrics used to help manage the day-to-day operations at OWASA. Additionally, we participate in the American Water Works Association's Benchmarking Survey, which provides us an opportunity to benchmark our performance against an array of performance indicators.

Discussion and Next Steps:

Staff is working to streamline and centralize data compilation, which could lead to a more modern and dynamic dashboard-type report. Additionally, as we work towards the installation of Advanced Metering Infrastructure (AMI), we will be developing a series of business process metrics that we will use to benchmark the success and impact of AMI. There will likely be changes to the KPI Report that come as a result of these initiatives.

The attached document provides a brief description of each set of KPIs, using the most recent KPI Report (October 2016) for content. Through the attached document, we propose some modifications to the existing Report for the Board's consideration (outlined in orange). At the end of the report, we propose a few new KPIs. Some of the recommended changes have data currently compiled, others are more conceptual in nature and would require work to compile.

Staff welcomes the opportunity to discuss the KPI Report and individual metrics with the Board to ensure the report is usable and relevant. Additionally, we welcome input on how the Board would best like to receive and discuss the KPI Report.

Action Requested:

Staff seeks Board members' questions on individual KPIs (existing and proposed), as well as feedback on how to improve the content, update, and delivery of the report.

Information:

- Explanation of Current Key Performance Indicators and Proposed Modifications

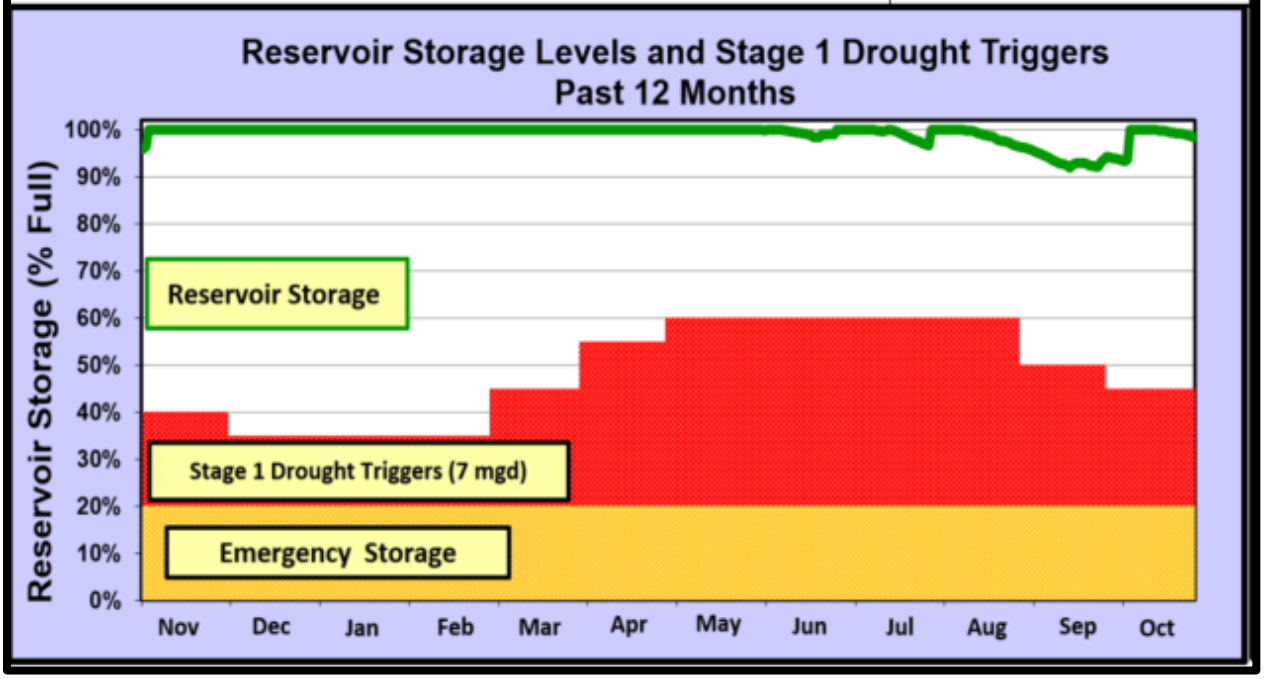
Explanation of Current Key Performance Indicators and Proposed Modifications

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Water Supply and Rainfall

Water Supply	
Reservoir Storage % of Capacity	98.4% (as of October 31, 2016)
Risk of Shortage Restrictions in Coming Year (Minimal, Low, Moderate)	Minimal
Water Use Restrictions Now in Effect	Year-Round



This series of metrics summarizes the condition of our water supply and helps to forecast our potential for entering into drought based on remaining supply in our reservoirs and current average water use by our customers. The calculations are based on the amount of water withdrawn from each reservoir and the water level in each reservoir on a daily basis. OWASA staff tracks customer demands and the amount of raw water supply remaining in each supply source on a daily basis to ensure that customer demands can be met at any given time. On a daily basis, this information is posted on OWASA's Water Watch website. The KPI summarizes this information at a monthly level.

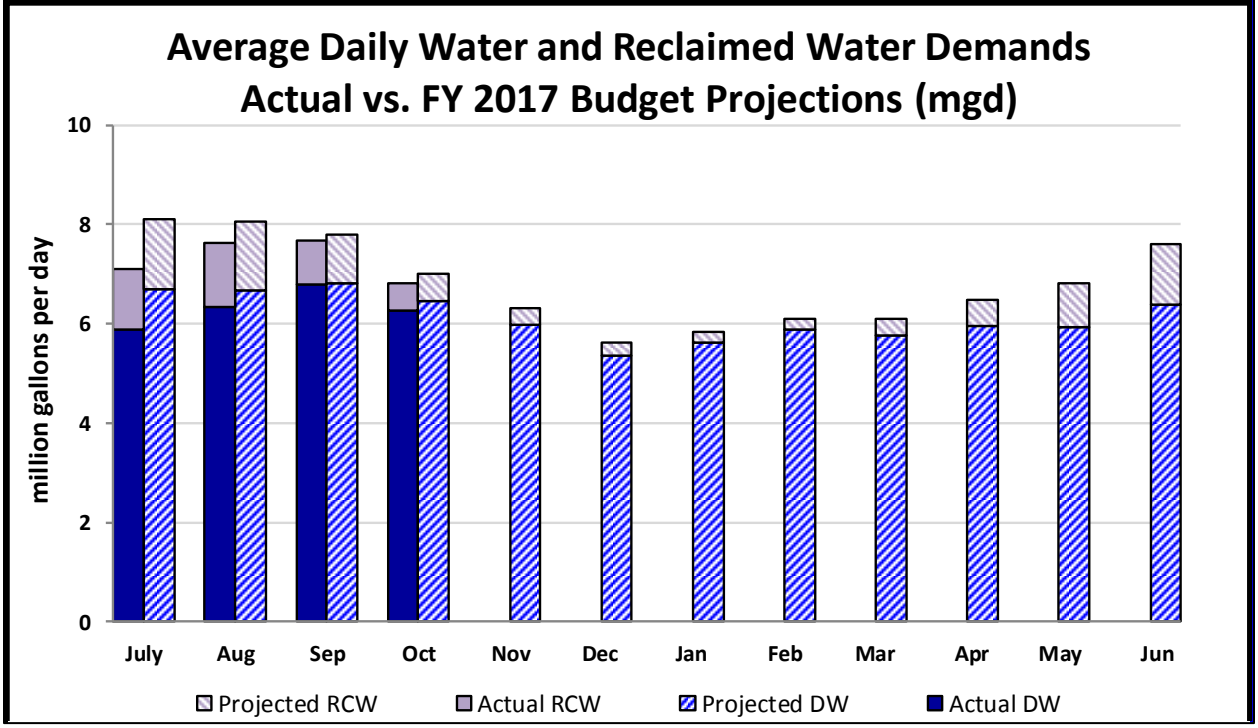
OWASA's Water Shortage Response Plan (2015) defines the process and triggers for implementing water shortage response stages during extended droughts based on water supply risk and our Reservoir Optimization Model. The risk assessments provide a categorical assessment of the risk of entering drought restrictions based on the season and the difference between reservoir storage and the Stage 1 trigger. The KPI graph visually shows how close OWASA is to the Stage 1 drought trigger, given annual average day demand levels. (Stage 1 is the first of five stages of drought of increasing severity.)

Rainfall (inches)						
	October 2016			Last 12 Months		
	Actual	Hist. Avg. for Month	Variance	Actual	Hist. Average	Variance
Water Plant (Carrboro)	6.12	3.90	2.22	71.05	47.00	24.05
Cane Creek Reservoir	4.59	3.18	1.41	57.44	43.77	13.67

Trends in rainfall directly relate to our water supply, as well as inflow into the collection system. OWASA hosts two weather stations in the National Weather Service Cooperative Observer Program: one at Jones Ferry Road Water Treatment Plant (WTP) and one at Cane Creek Reservoir. Information such as maximum and minimum temperatures, current weather conditions, and precipitation amounts are collected daily and reported to the National Weather Service in Raleigh. Each month, we provide the monthly and 12 month cumulative rainfall and compare it to historical averages: 30 year average for Jones Ferry Road WTP and 25 year average for Cane Creek Reservoir. Given that we have no control over rainfall, there are no goals associated with this KPI, only historical context.

Water Demand (Sales in Million Gallons per Day)

Water Demand (Sales in Million Gallons per Day)				
	October 2016		FY 2017 (Avg Year to Date)	
	Est.	% of Projected	Estimated	% of Projected Year-to-Date
Drinking Water (DW)	6.26	**97%**	6.32	**95%**
Reclaimed Water (RCW)	0.55	**100%**	0.98	**91%**
Total	6.81	**97%**	7.31	**94%**



Each year, we make monthly projections of average daily drinking water and reclaimed water sales to project revenues. Drinking water projections are based on analyses of historic information; reclaimed water sales are based on information provided by UNC. As we progress through the year, we compare actual sales to our budget projections. In effect, the budget projections become our goal for the year for water and reclaimed water sales.

Each month in the KPI dashboard, we report the month's actual water sales what was estimated at the beginning of the fiscal year. Sales volume is the number of gallons of water sold. (We also do this for revenues, which is detailed in the Fiscal Year Budget Performance section.)

Monthly projections are made by allocating annual projections across the months based on historical trends. However, it is challenging to accurately align water demand with water revenue on a monthly

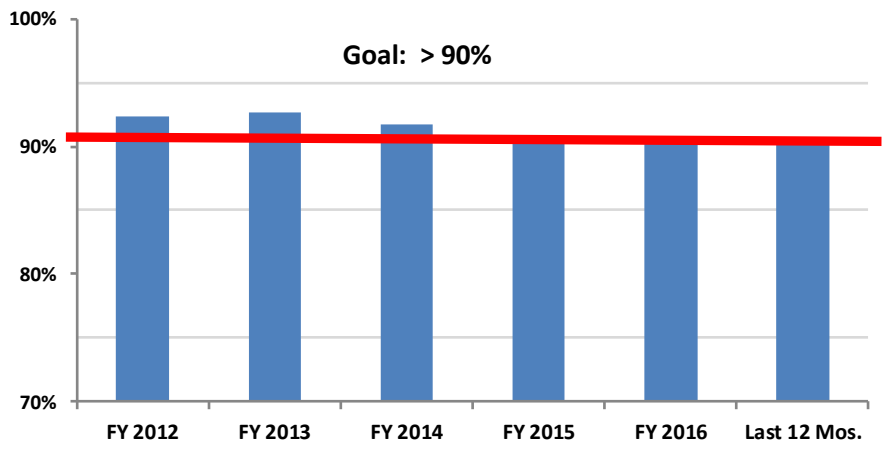
basis. Given our increasing block rate structure, seasonal rates, and sewer cap, a thousand gallons of water sales can generate water and sewer commodity revenue of anywhere from about $10 to $25.

While monthly allocations of annual projections are valuable estimates to generally track water sales and revenue against projections, they are less accurate. We have seen that discrepancies are more evident in the early months of the year when less data is factored-in and a higher amount of the water use in those early months is largely affected by weather conditions.

It is noteworthy to recognize that the previous month's water sales are estimated. Because we only read meters on a monthly basis, we cannot precisely assign a customer's water use to one month or another. In an effort to better align water use with treated water that leaves the Jones Ferry Road WTP, we currently prorate each customer's bills across the time from the latest meter reading to the last meter reading. The use of advanced metering infrastructure will make allocation of water demand easier and more accurate.

Water Sales as % of Water Pumped

Water Sales as % of Water Pumped	
October 2016	Last 12 Months
90% (Est.)	90.7%

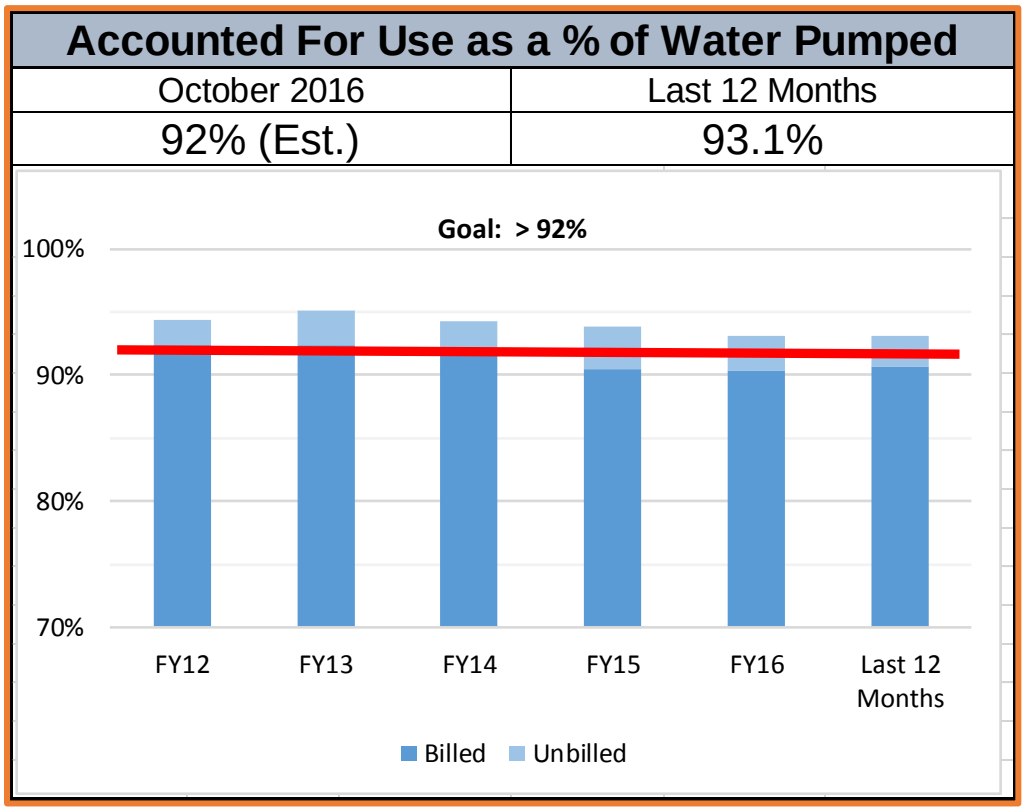


The ratio of water sold to water produced KPI is defined as the volume of billed water use as a percentage of the volume of water pumped into the water distribution system from the Jones Ferry Road Water Treatment Plant, commonly referred to as revenue water. A goal of 90% was chosen based on the industry rule-of-thumb. We exceeded this goal eight of the last ten years. However, the ratio has been trending downward for the past three years. This prompted staff to conduct a water audit (which had not been completed by OWASA since FY 2011) to more definitively explain the "lost" water.

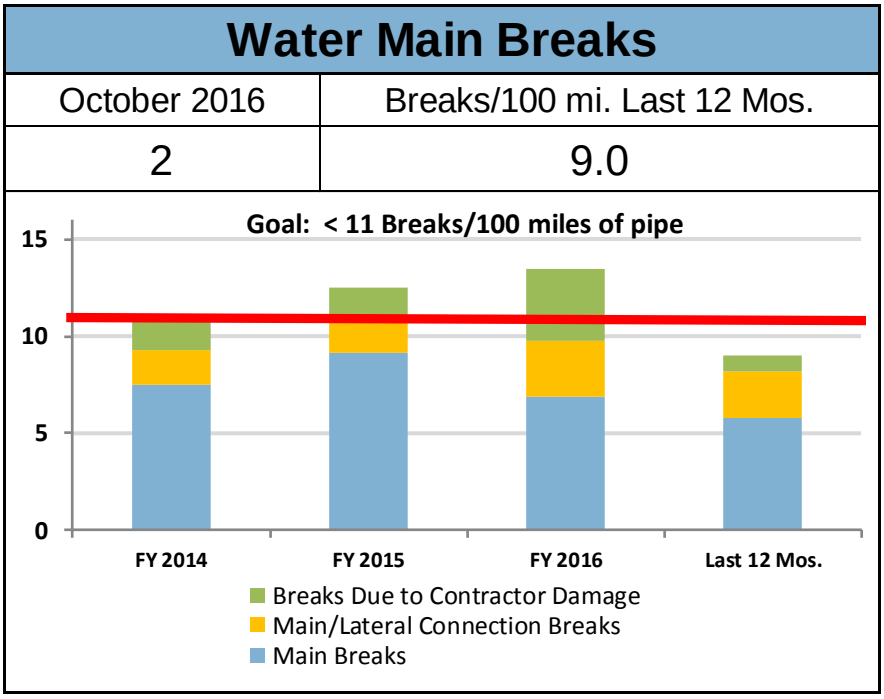
Water loss is defined as the difference between water produced and authorized water usage, which includes unbilled, but known, as well as billed water use. Unbilled water use is actual or estimated volumes of water used for authorized purposes, such as our unidirectional flushing program, blow-off of water associated with the installation and testing of new lines, etc. Primary causes of water loss include

unauthorized water usage, meter inaccuracies, or leaks. The ratio of water sold to water produced can be used to gauge the overall condition of the distribution system. Additional measures can be pursued to determine whether the cost of identifying and repairing the leaks is worth the cost.

Recommended Change: Instead of water sales, we recommend changing the numerator of the ratio to include all accounted for water: billed and unbilled (e.g. water used for unidirectional flushing, water loss assigned to main breaks, etc.). Additionally, we recommend setting the goal for the KPI at the "Unavoidable Annual Real Losses" (UARL) calculated from the most recently conducted water audit. The AWWA Water Audit methodology calculates a UARL as theoretical value representing the technical low limit of leakage that could be achieved if all of today's best technology could be successfully applied. The FY16 water audit identified a UARL that equates to 92% of accounted for use as a % of water pumped as the Unavoidable Annual Real Loss. That means that it would be technically difficult and costly to account for more than 92% of the water pumped from the Jones Ferry Road Water Treatment Plant.



Water Main Breaks



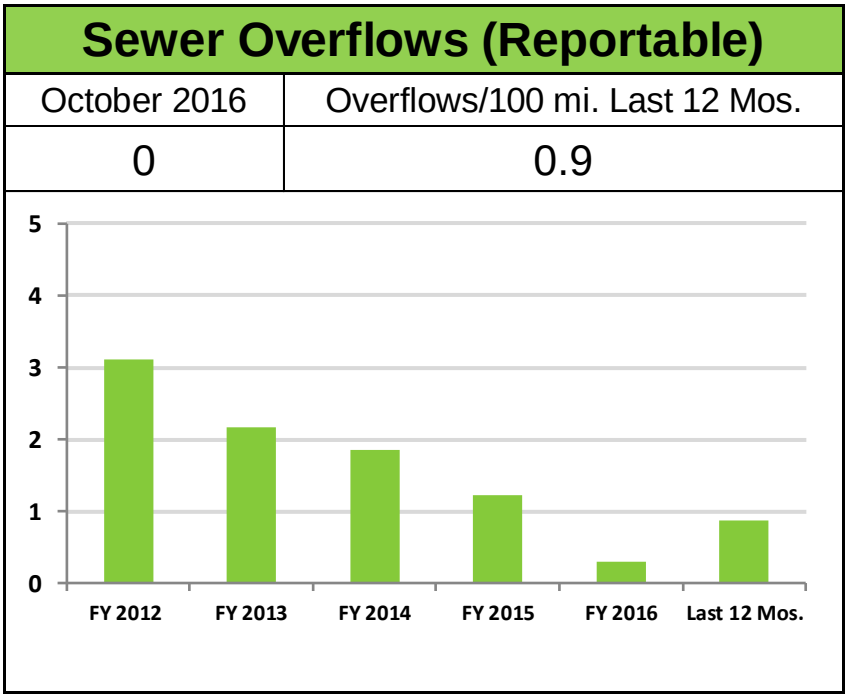
The water main breaks KPI is defined as breaks occurring on water distribution pipes per hundred miles of water distribution pipes. For this indicator, a water distribution pipe is a pipe owned by OWASA that is greater than 2 inches in diameter and conveys water from the Jones Ferry Road WTP to our customers. The quantity of pipe breaks can be one indication of the overall condition of the distribution system. An excessive amount of pipe breaks per 100 miles of pipe indicates that the overall integrity of the distribution system may be declining.

In August 2016, we revised the KPI and associated goal for water main breaks. We did so to better standardize how we track and compare this metric within the organization and the industry. Prior to this month, we reported breaks that occurred directly on water mains larger than 2 inches (currently represented by the majority of the light blue bar on the graph). This portion of the graph drives our investment in the repair and rehabilitation of our distribution system.

After consultation with our peers and the American Water Works Association (AWWA), we concluded that we should include two additional types of breaks: those that occur at the connection of our water mains and laterals and those that occur as a result of contractor damage. This modified KPI measures customer impact alongside system-integrity.

We have separately identified each of these categories on the KPI graph to link back to our historical method of reporting and inform future decision-making. In addition, we changed the goal from "<15 breaks/100 miles of pipe" to "<11 breaks/100 miles of pipe". This new goal comes directly from the most recent (2012) AWWA benchmarking survey as the median number of breaks per 100 miles of pipe. We propose to adjust our goal to match the median reported in the updated survey, which is anticipated to be published by the end of 2016.

Sewer Overflows (Reportable)



The sewer overflow metric is defined as reportable sewer overflows per hundred miles of gravity sewer and pressurized sewer pipes. A sewer overflow is reportable if the volume of sewage is equal to or greater than 1,000 gallons or any amount of sewage that reaches the surface waters of the State (including through ditches, storm drains, etc.). Overflows are typically caused by pipe breaks, pipe blockages, excessive inflow and infiltration, malfunctioning pump stations, and electrical power failure. We track the causes of sewer overflows on the annually-prepared Strategic Trends Report.

The quantity of overflows can be an indication of the overall condition of the collection system and the effectiveness of the collection system maintenance program. An excessive amount of reportable sewer overflows per 100 miles of pipe indicates that the integrity of the collection system may be declining and/or maintenance activities may be inadequate. The national median per the American Water Works Association 2012 Benchmarking Report is 2.7 per 100 miles of pipe. Per NC Division of Water Resources guidance, OWASA strives to have no overflows.

System Compliance

SYSTEM COMPLIANCE SUMMARY - LAST TWELVE MONTHS					
	Water Treatment	Wastewater Treatment	Reclaimed Water	Biosolids	Collection System
Primary Drinking Water Violations	In Compliance				
Secondary Drinking Water Violations	In Compliance				
NPDES Permit Violations	In Compliance	In Compliance			
Operating Permit Violations			In Compliance	In Compliance	1 Notice of Violation

The System Compliance Table summarizes if there were any system compliance violations within the last 12 months. System compliance requirements come from state and federal regulations. OWASA's goal is to be in full compliance with the regulations at all times. Violations may indicate that a portion of our system is not operating properly due to capacity limitations, aging/deteriorating equipment, inadequate operations and maintenance activities, etc.

Primary and Secondary Drinking Water Violations: National Primary Drinking Water Regulations are limits set for substances that are thought to pose a threat to health when present in drinking water at certain levels. Secondary Drinking Water Regulations are non-enforceable federal guidelines regarding taste, odor, color and certain other non-aesthetic effects of drinking water. These contaminants normally do not have any health effects and normally do not affect the safety of our water**.**

Collection System Operating Permit Violations: Requirements for the wastewater collection system's design and construction, operation and maintenance, and overflow reporting are included in the Wastewater Collection System Operating Permit.

NPDES Permit Violations: The National Pollution Discharge Elimination System (NPDES) is a permit system for regulating point sources of pollution. The goal of the NPDES program is to reduce pollution by establishing effluent discharge limits and monitoring requirements. OWASA's NPDES permitted discharges are located at the Jones Ferry Road WTP and Mason Farm Wastewater Treatment Plant (WWTP). The Jones Ferry Road WTP is permitted to discharge wastewater associated with clarifier effluent into Rockybrook Creek. The Mason Farm WWTP is permitted to discharge treated wastewater effluent into Morgan Creek.

Biosolids Operating Permit Violations: OWASA is permitted for both Class A and Class B land application of biosolids. The biosolids permits include treatment requirements, metal concentration limits, land application restrictions, and operation and maintenance requirements.

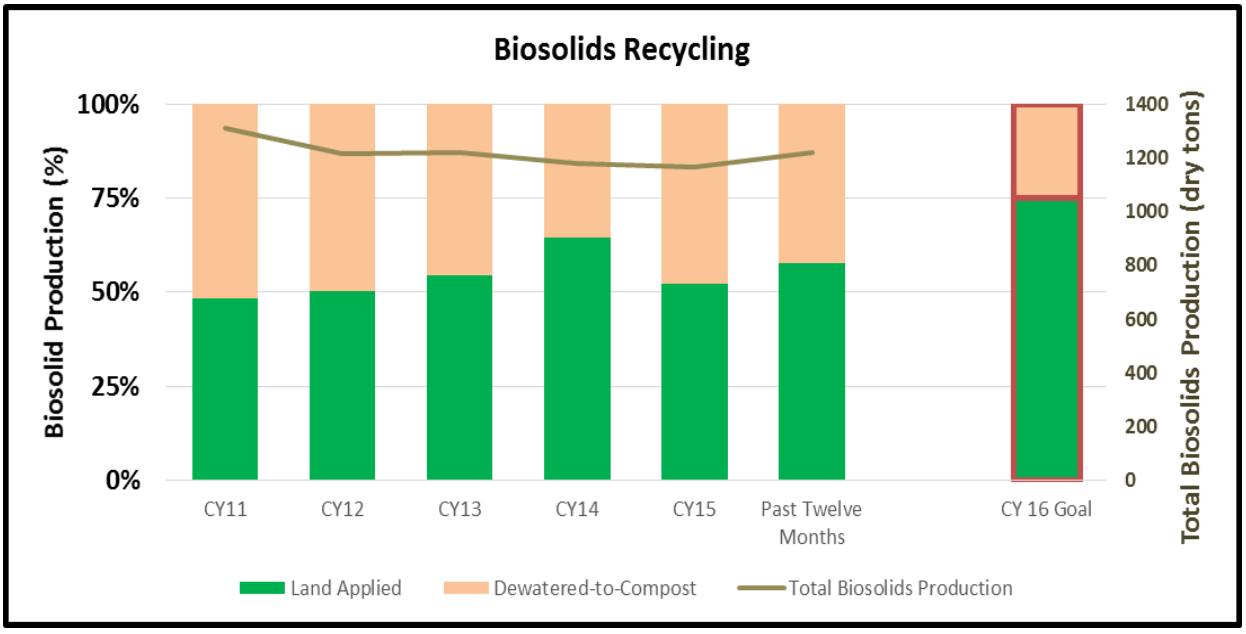
Reclaimed Water Utilization System Operating Permit Violations: The Reclaimed Water Utilization System Permit includes design and construction, operation and maintenance, and effluent limit and monitoring requirements for the reclaimed water system.

Recommended Change: Given our long history of compliance, we recommend removing this table from the KPI Report. Instead, we recommend that we specifically identify if and what violations have occurred in the last 12 months. Here is an example of how this would look in the October 2016 KPI Report.

System Violations with in the Last Twelve Months

- Operating Permit Violation: Sanitary System Overflow due to Debris in Line (July 2016)

Biosolids Recycling

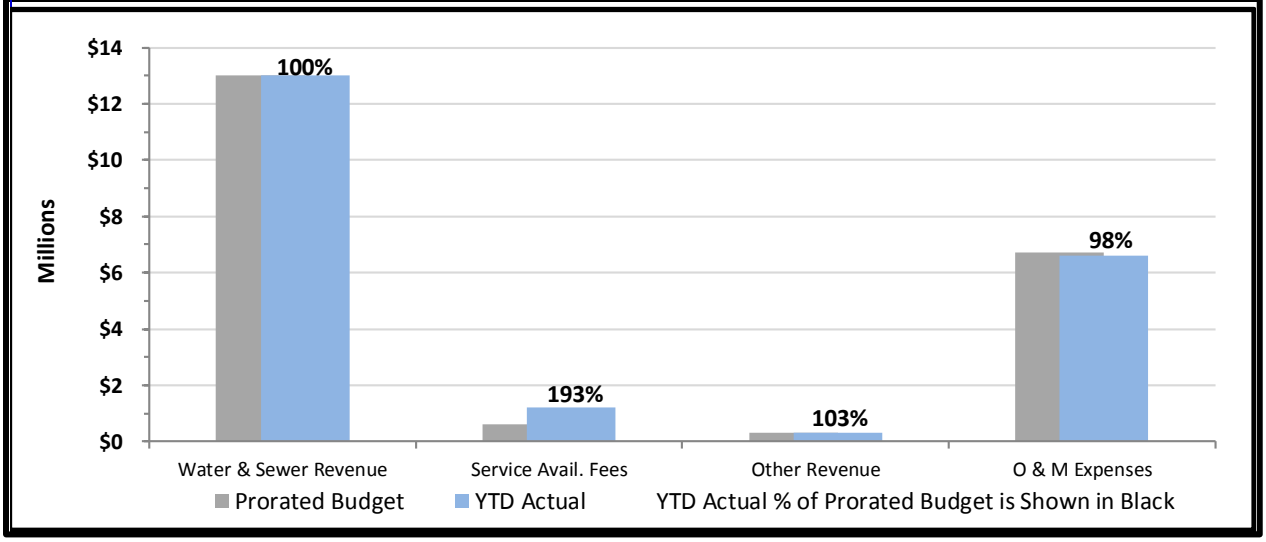


The Biosolids Recycling KPI tracks trends in the amount of biosolids which OWASA applies to land and the amount it dewaters for composting. The WWTP produces an annual average of about 4 dry tons of biosolids each day. Most of this is applied in liquid form to agricultural land and a portion is dewatered to the texture and consistency of moist soil and transported to a private composting facility in Chatham County.

At its October 8, 2015 work session, the Board of Directors agreed that OWASA's goal is to apply 75 percent of our biosolids in liquid form, and to dewater 25 percent of our biosolids. The Board of Directors understands that there are factors including weather conditions which may keep staff from meeting the goal.

Fiscal Year Budget Performance

FY 2017 Budget Performance (millions of dollars)					
Category	**October 2016**		**FY 2017 Year-to-Date**		
	Actual	***Budget***	**Actual**	***Budget***	**Variance**
Revenue (Preliminary)	3.3	3.2	14.5	13.9	**0.6**
Operating Expenses (Preliminary)	1.6	1.7	6.6	6.7	**(0.1)**

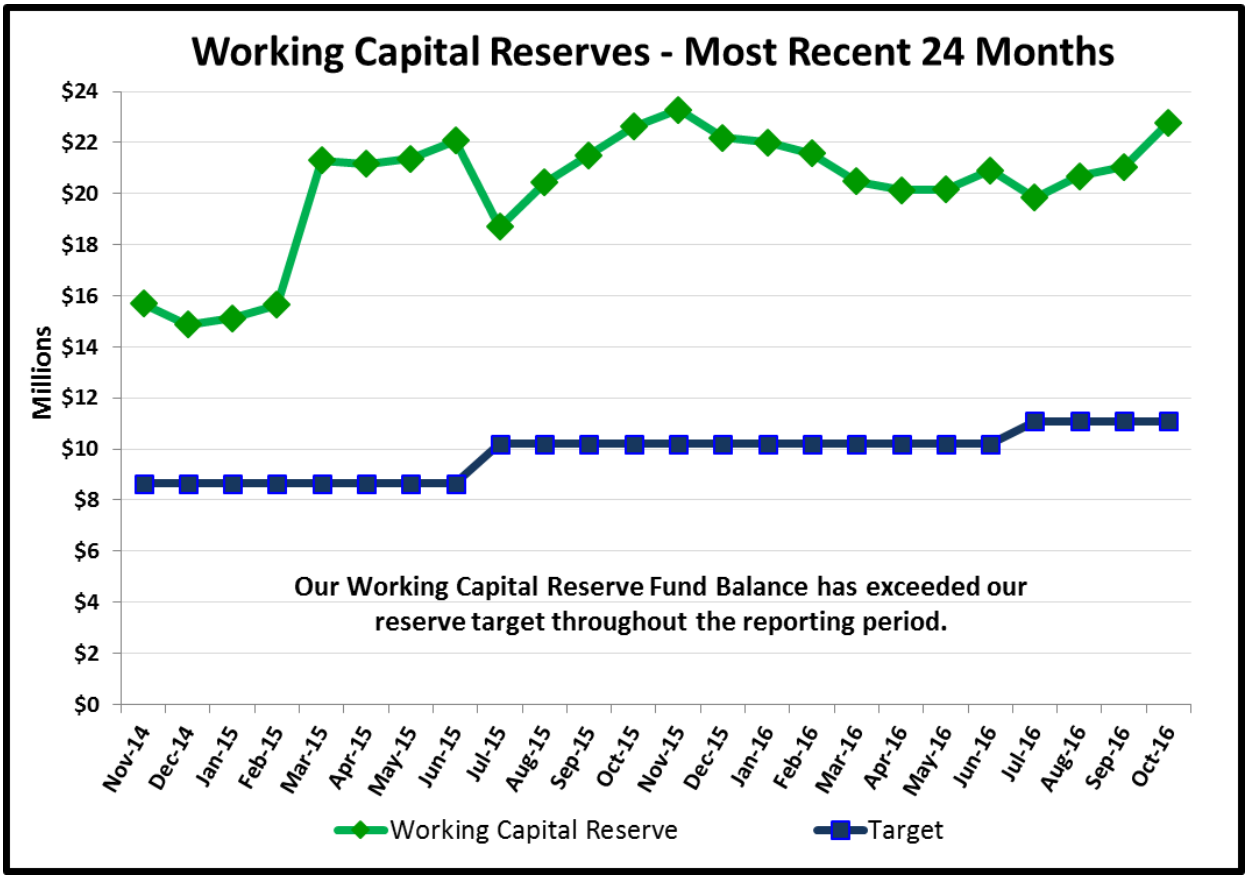


This KPI tracks actual budget performance against an estimate of what we expected in the annual budgeting process. We then allocate the annual budget across the months of the year based on estimates of when revenues will be realized and expenditures incurred.

We use the following methods to prorate the budget:

- Revenue is allocated based on analyses of historic trends (see Water Demand KPI).
- Operating expenses are allocated across the year using several different methods:
    - Direct costs such as chemicals and energy are allocated based on projected water sales.
    - Project-type costs such as consulting fees are allocated based on our estimate of when the work will occur.
    - Most personnel costs are allocated based on pay-periods.
    - Some costs are simply prorated evenly across the months of the year.
    - Most other costs are based on historical trends of when the expenses were incurred during prior years.

Working Capital Reserves

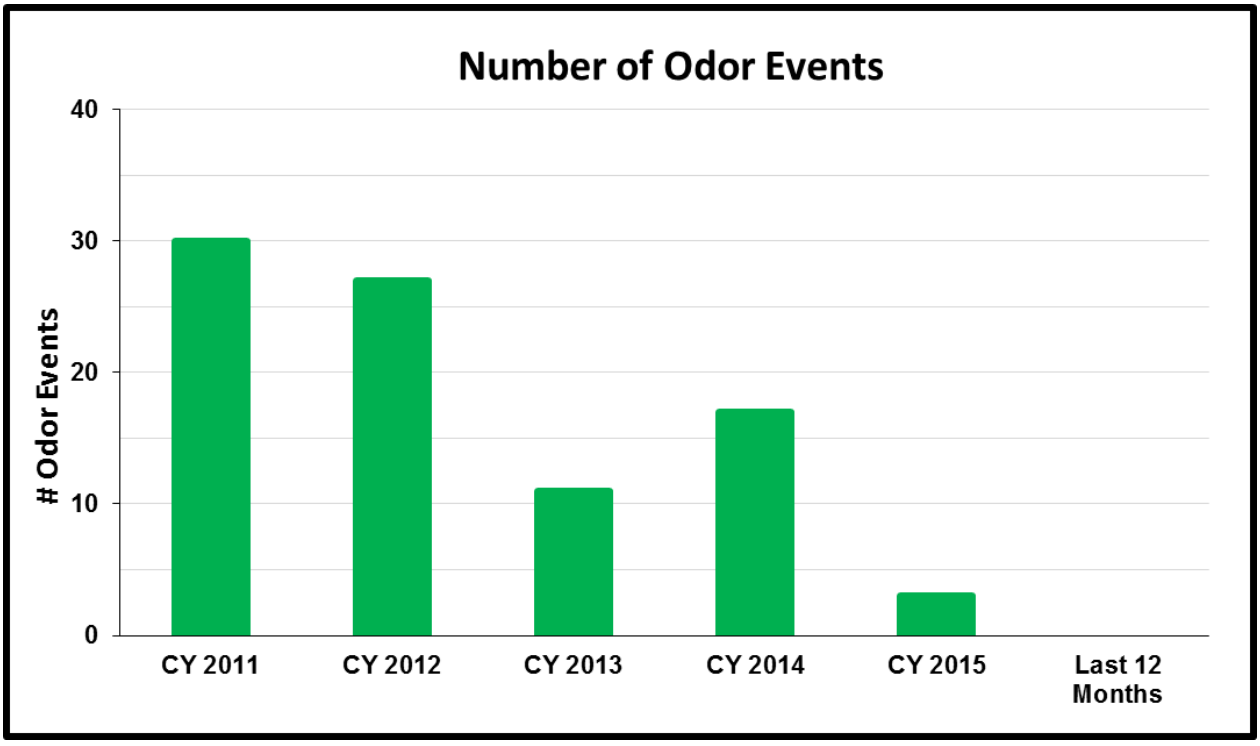


We have three reserve funds. Our Financial Management Policy specifies minimum target balances for each fund as follows:

- Rate/revenue stabilization (5% of budgeted annual water and sewer revenue)
- Capital improvements (2% of annual depreciated capital costs)
- Working capital (33% of budgeted annual operating expenses)

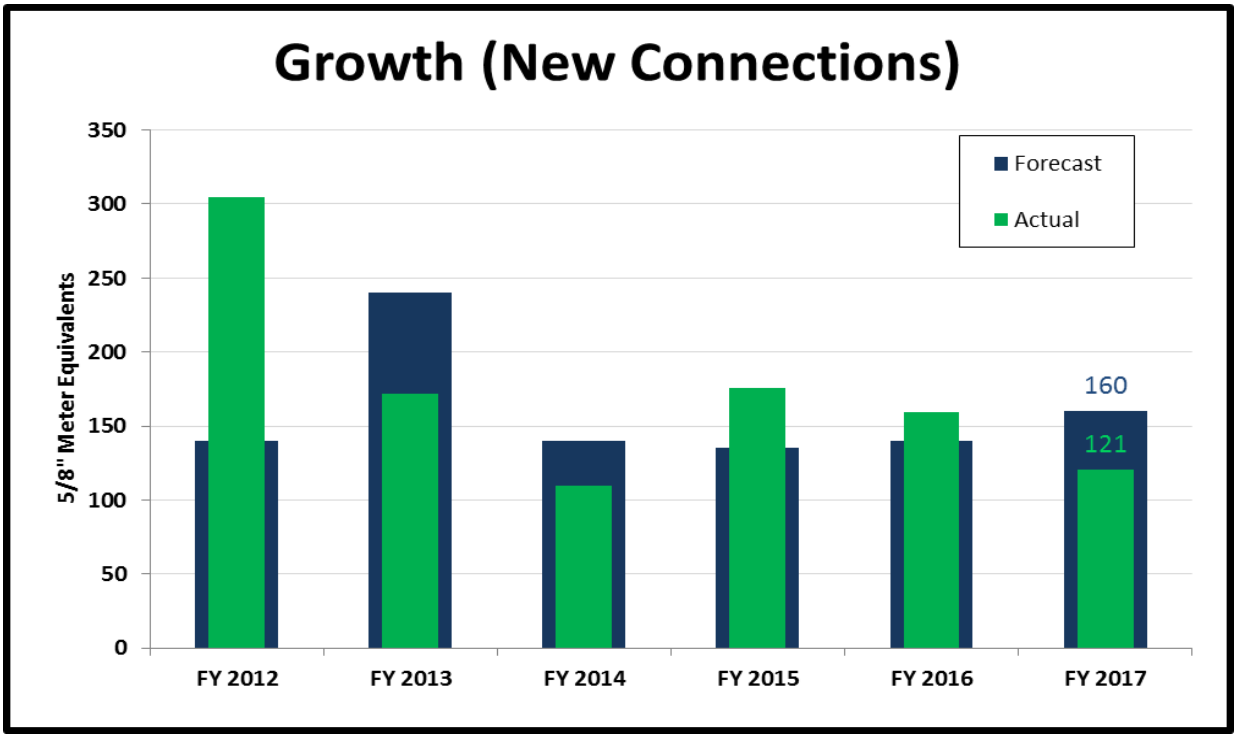
The graph above shows the working capital reserve balance compared to the working capital reserve fund target. To calculate the working capital reserve, we subtract the balances in the Rate/revenue stabilization and Capital improvements reserves from the total amount of reserves on hand.

Odor Elimination at Mason Farm Wastewater Treatment Plant



On March 1, 2004, the Chapel Hill Town Council approved a Special Use Permit (SUP) for an OWASA project to upgrade and expand the Mason Farm WWTP. The upgrade was completed in 2007. The SUP included a provision that OWASA eliminate odor from the Mason Farm WWTP to the satisfaction of the Town Council and that OWASA regularly report to the Council on the progress of its off-site odor elimination program. Wastewater treatment plant odor events indicate that the odor control equipment may not be operating as intended due to capacity limitations, aging equipment, equipment malfunction, inadequate operations and maintenance activities, etc. Odor events are reported by neighboring property owners and documented by OWASA staff. The notable reduction in odor events over the past 3 years is due to several capital improvement projects that were completed as part of the WWTP's Odor Elimination Program.

Growth (New Connections)



This metric is designed to compare the number of new service connections (measured in terms of a 5/8-inch residential meter equivalent) against the total forecast for the fiscal year. Each year, we estimate the next year's growth based on known development based our field work and anticipated development based on historical trends. One meter equivalent (ME) represents the water demand exerted by a typical single family residential customer. Single family homes are typically served through 5/8-inch water meters, while larger facilities are served through larger meters. These non-residential or institutional customer with greater demands requires a larger meter, and are therefore represented by multiple MEs as noted in the following table.

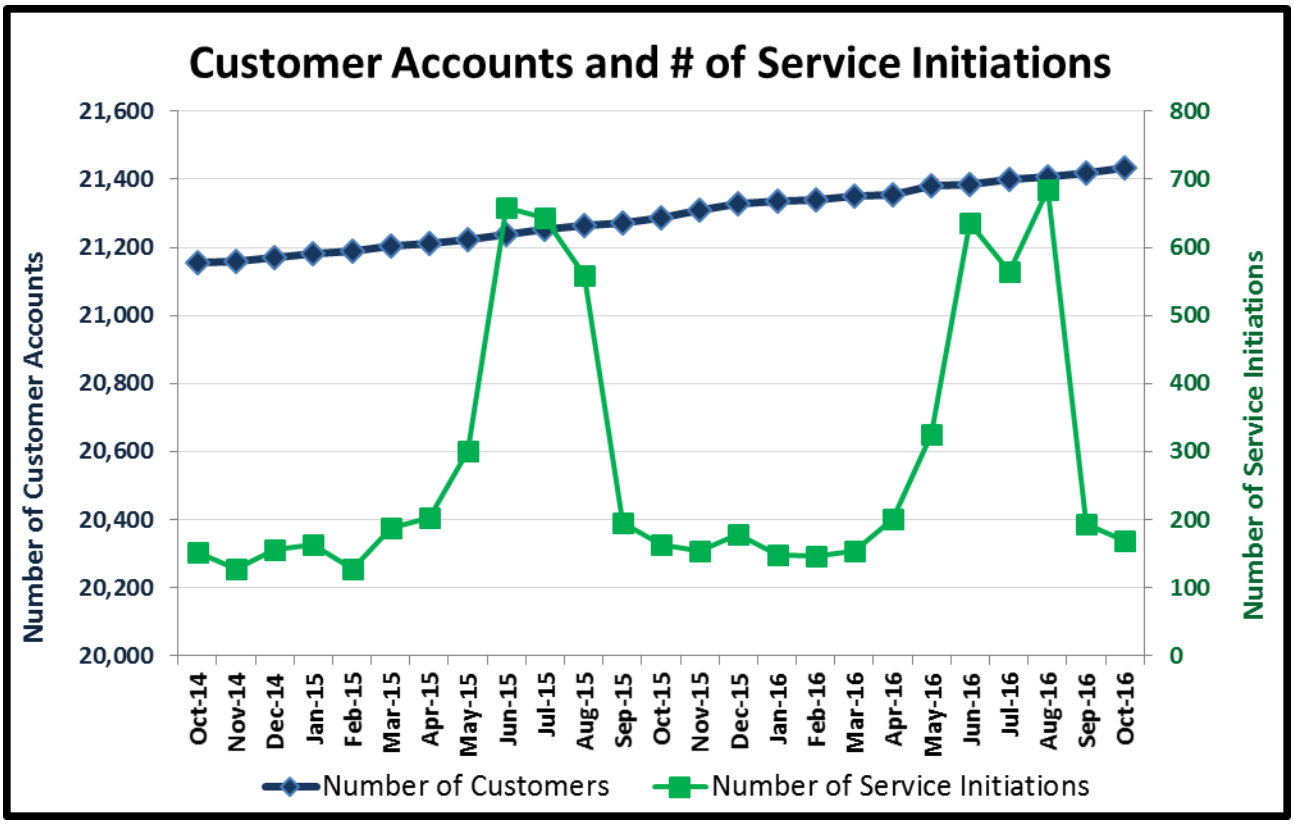
Meter Size	Meter Equivalent
5/8"	1
1"	2.5
1 ½"	5
2"	8
3"	16
4"	25
6"	50

The rate of new service connections began to steadily decline since an all-time high of more than 850 ME in FY 2002. This decline ended roughly in FY 12 with about 300 new connections for that year. Since then, new MEs for connections have been averaging about 150 per year, with a total of 160 for FY 16.

For the current fiscal year (past 4 months), 121 new meter equivalents have been installed therefore it is expected that MEs for FY 17 will exceed the 160 that were projected for the FY. This is mainly due to a

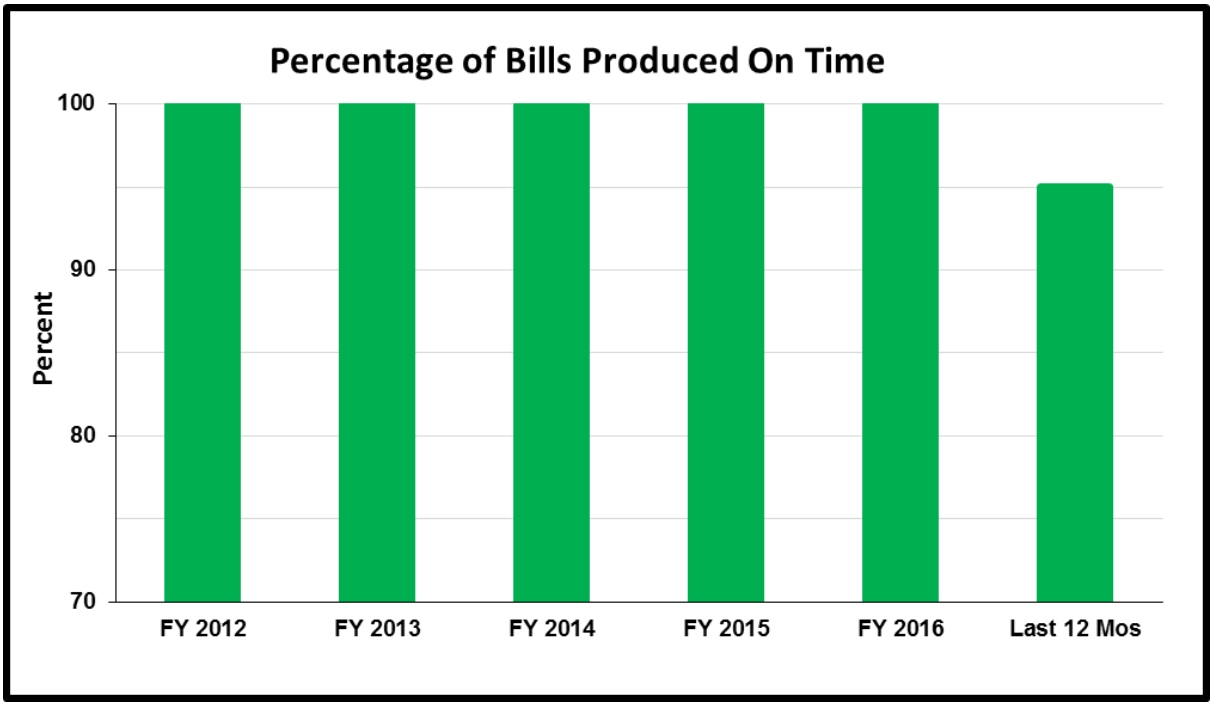
higher rate of larger non-residential meters that were set over this period of time. Averages for residential meters set remain at about 9 or 10 per month and this has been steady over the past several years.

Customer Accounts and # of Service Initiations



This KPI is an indication of Customer Service workload, as well as a record of system growth as measured by the number of customers. A service initiation occurs when a customer opens an account. As the graph shows, service initiations volume is highest during the summer months when students move in/out.

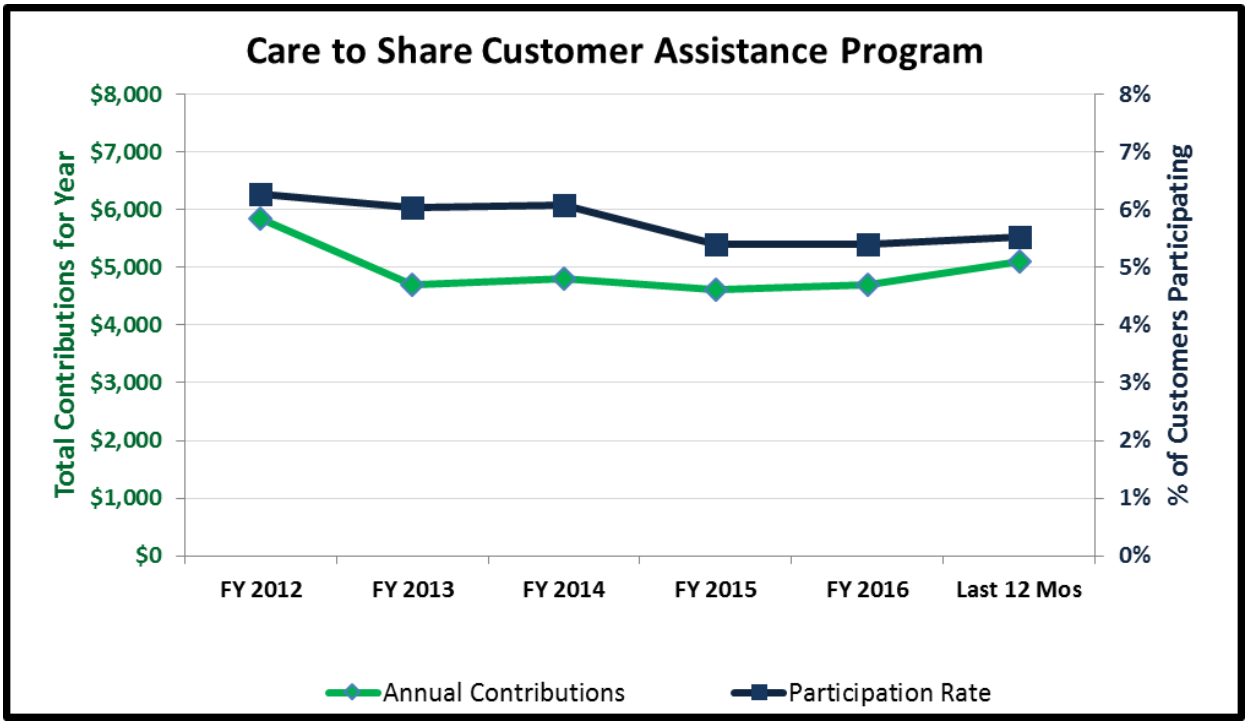
Percentage of Bills Produced on Time



This graph shows the percentage of bills that were produced and sent to customers "on-time", meaning according to the bill processing calendar that we maintain. The calendar may be affected by changes to the meter reading schedule, such as when the meter reading staff are in training or working on other special projects.

Recommended Change: An alternative and perhaps more meaningful customer service metric would be the number of billing errors compared to the number of bills produced. Billing errors are issues that require staff to recalculate (rebill) an original bill. We maintain a number of checks to prevent these billing errors. If the Board agrees to revising this metric, we will need to evaluate how best to compile the data.

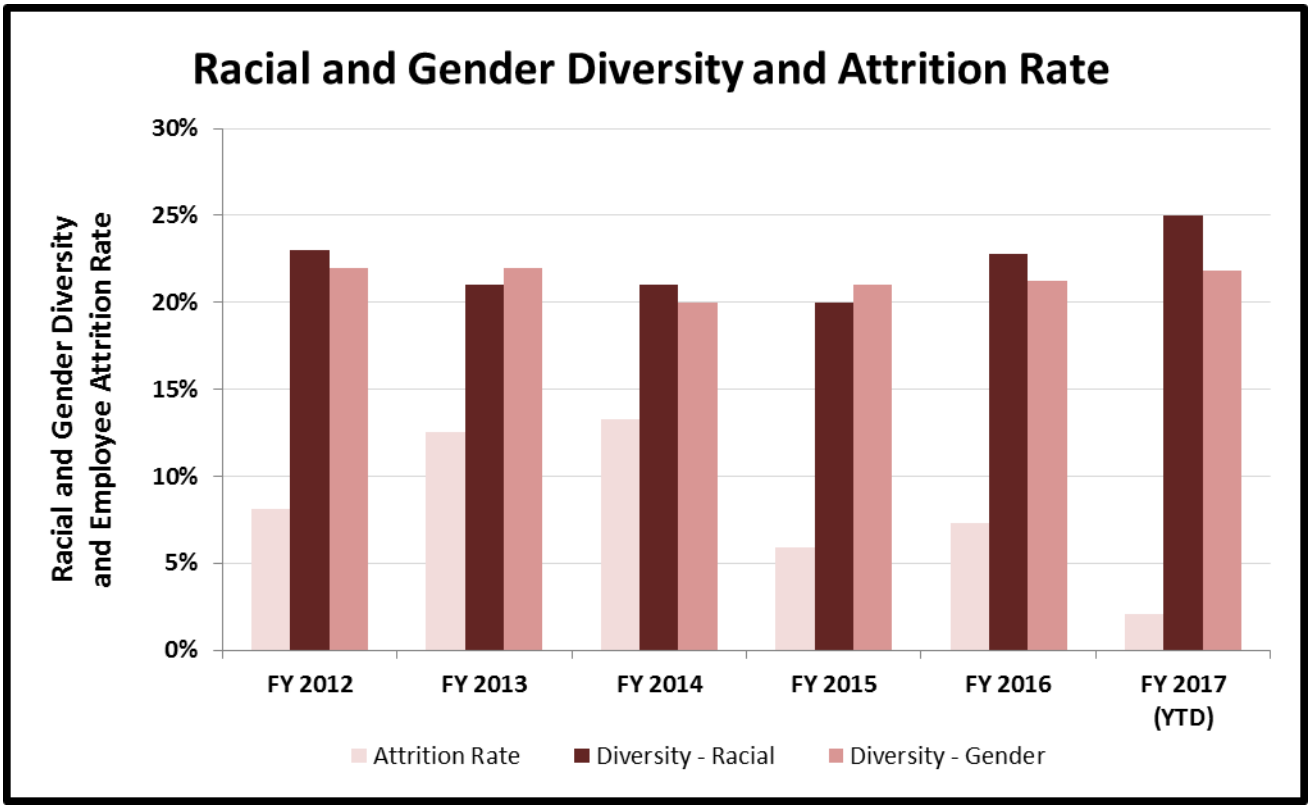
Care to Share Customer Assistance Program



The Care to Share Customer Assistance Program provides water and sewer bill assistance to OWASA customers to help them avoid service cutoff and a $45 reconnection fee. OWASA customers can voluntarily contribute to this program on their monthly OWASA bill payment through either a fixed amount or by rounding up their bill to the nearest whole dollar. The Interfaith Council (IFC) for Social Services administers bill payment assistance, and OWASA is able to reimburse them from the funds collected via Care to Share bill contributors. Currently, these bill contributions are only able to cover about 1/3 of the bill assistance provided by the IFC.

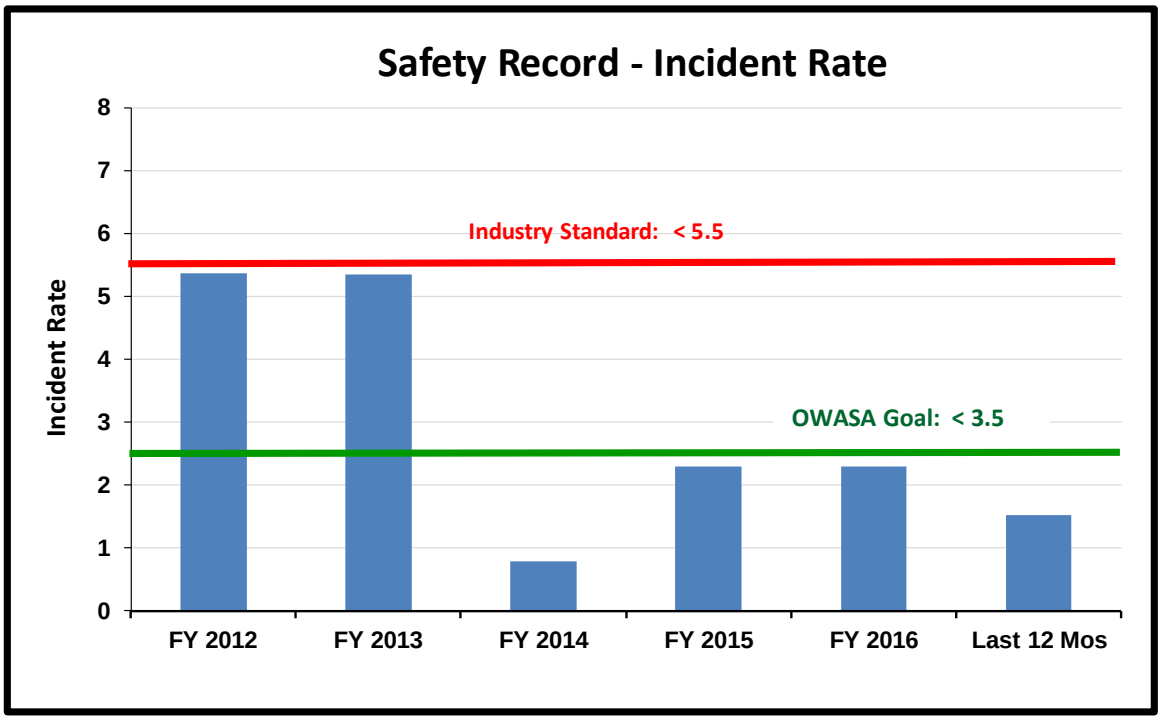
This graph tracks rolling annual contributions, as well as the % of customers contributing to Care to Share on their monthly bill. It doesn't include the contributions made to Care to Share outside of bill contributions.

Racial and Gender Diversity and Attrition Rate



As recognized in our Mission Statement, OWASA values our employees as our most important resource, and we provide them competitive compensation and a safe and rewarding work environment. The above chart indicates the work force composition of racial and gender diversity at the end of each fiscal year. It includes attrition percentages which are defined as positions vacated except in the case of transfer, promotion, or demotion.

Safety Record – Incident Rate

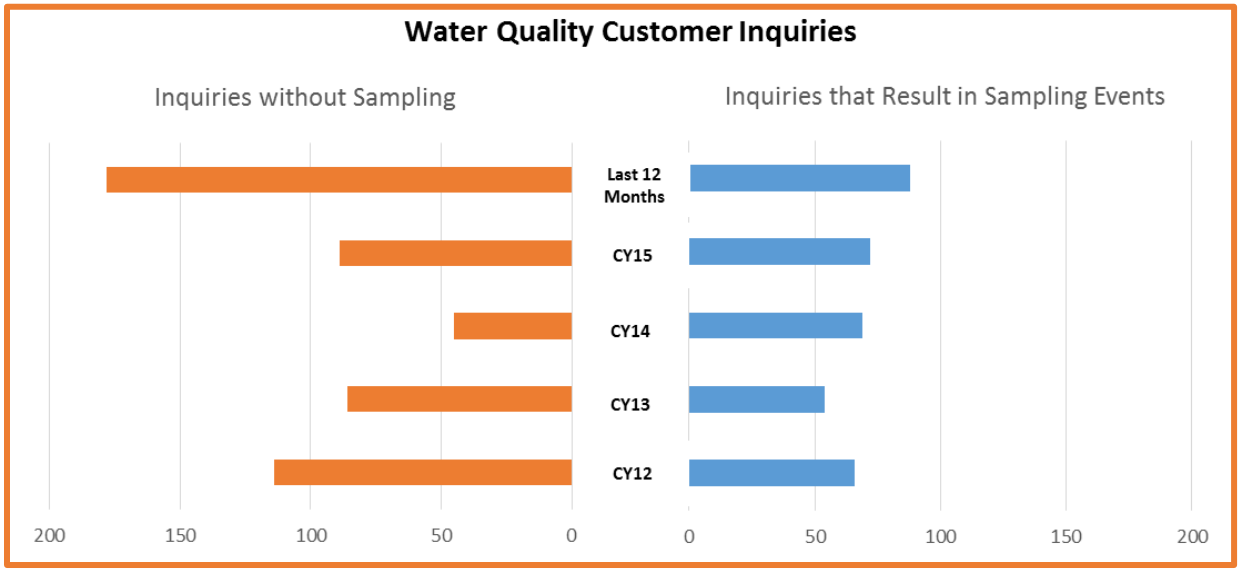


Occupational Safety and Health Administration (OSHA) incidence rates are one of the more common methods of measuring safety performance. Incident rates show the relative level of recordable injuries and illnesses within the organization. Based on the Bureau of Labor and Statistics most recent data, we compare OWASA with the standard incident rate for NAICS Code 2213 (Water, Sewage, and Other Systems).

New KPIs

In addition to the modifications proposed to existing KPIs, staff proposes the addition of the following actual and conceptual KPIs. We welcome the Board's thoughts and questions on the usefulness of including these metrics on the KPI report.

Water Quality Customer Inquires



We encourage our customers to contact OWASA if they have any questions or concerns about the quality of their drinking water and take these inquiries very seriously. The inquiries we receive range from questions about boil water advisories, discoloration, our annual switch to free chlorine during the month of March, dezincification, and more as well as requests for water quality or lead and copper testing. Some of these questions are answered with a phone call or email and others warrant sampling by WTP Laboratory staff. The number of inquiries we receive can increase following greater visibility of water quality issues at the local or national level, as well as greater awareness of OWASA and the services we provide. OWASA has highlighted these services in several recent Blue Thumb articles as well as press releases and our annual Water Quality Report Card.

Energy Management

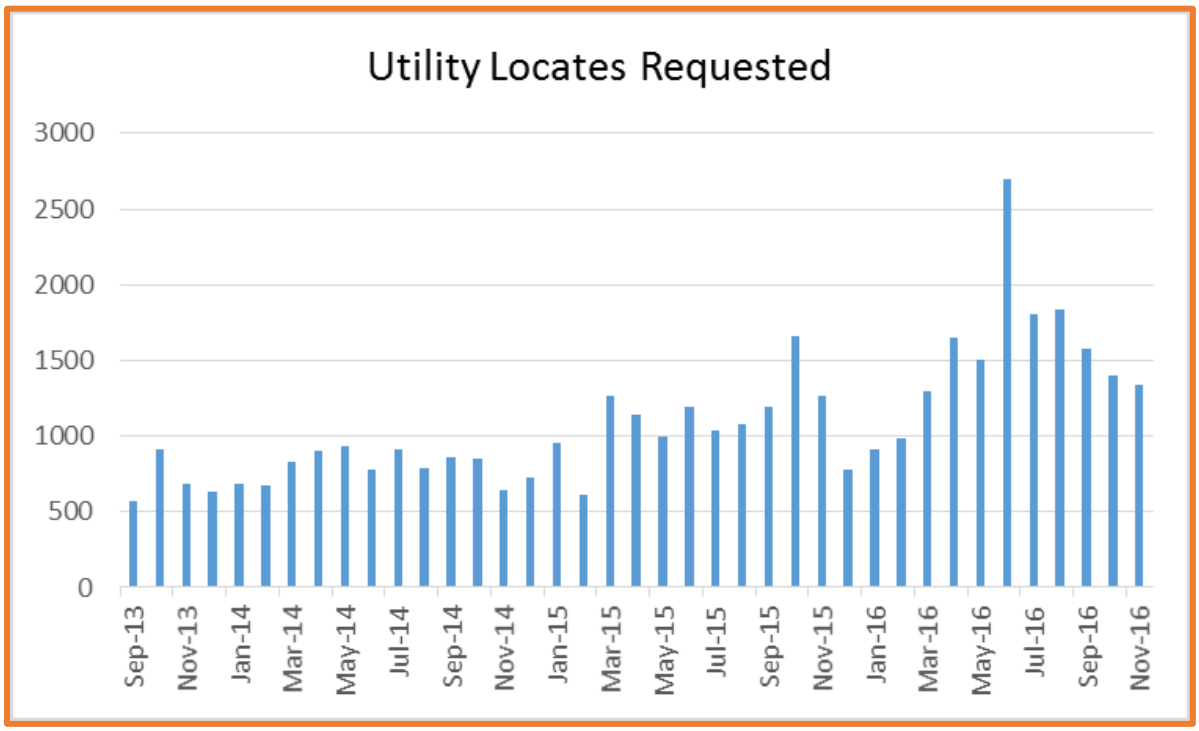


In 2015, the Board of Directors set the draft framing goals and objectives for energy management at OWASA to (a) reduce our use of purchased electricity from 2010 levels by 35% by 2020 and (b) reduce our use of purchased natural gas from 2010 levels by 5% by 2020. The two graphs above show our progress towards these goals. OWASA's Energy Management Program is underway and detailed updates will be provided to the Board in the annually updated Energy Management Plan. Context for trends in energy use will also be provided in this plan (e.g. energy use per thousand gallons treated, heating degree days, etc.)

Inflow and Infiltration (I&I)

In addition to wastewater, inflow from rainfall and infiltration from groundwater (I&I) contribute to demands placed on our wastewater collection and treatment system. Just as it is economically unjustifiable to eliminate all main breaks in the drinking water distribution system, it is also economically unjustifiable to prevent all I&I from entering the collection system. However, industry standard metrics for allowable levels of I&I in a sanitary sewer system are very rare. We are working with a consulting firm to identify a meaningful and achievable method for measuring I&I and will update the Board of Directors once a strategy is developed for measuring and tracking I&I.

Temporary KPI: Locates



The installation of fiber broadband network in our service area will drastically impact the number of water and sewer pipe locates we are asked to provide. We experienced this in a limited area in 2015 when AT&T installed their fiber broadband network. We are in the early stages of a much larger fiber installation by Google. During this work, we propose to track and report the number of locates requested and completed on a monthly basis to provide the Board of Directors and community an indication of the change in workload.

Agenda Item 10:

Discuss Draft Executive Director's Performance Goals

Purpose:

Discussion and guidance by the Board of Directors on the Draft Executive Director Performance Goals.

Information:

- Draft Executive Director Performance Goals

December 8, 2016

DRAFT OWASA Executive Director Performance Goals
For the period of October 2016 to September 2017
December 2, 2016

Under the Executive Director's leadership, the OWASA staff works together to ensure the organization's Mission is reliably and sustainably met. The Board of Directors acknowledges that the Executive Director will continue to use his judgement on the best use of his time to benefit the organization. While there are many goals and objectives for which the Executive Director is ultimately responsible, to include working with the OWASA Team to deliver high-quality and reliable services, the Board of Directors and Ed Kerwin agree to these key focus areas (for Ed Kerwin) through September 2017.

Human Resource Objectives

Diversity and Inclusion

1. Considering input from employees, peers, Board Members, and other resources, update the Draft Diversity and Inclusion Plan for review with the OWASA Board in February 2017. The Plan will include specific tasks and targeted completion dates for staff and/or consultant(s). Following Board acceptance/approval, implement plan and report progress semi-annually.

   Working closely with Stephane Glasgow, staff, consultant(s) and other resources, Ed Kerwin will have the lead role for this initiative during the first year.

Employee Pay

2. Complete the analysis and provide the Board a plan with options by April 2017 to provide employees at all levels of the organization the opportunity to move more quickly through their pay ranges based on performance. Note: before the Board makes a final decision regarding this initiative, it is suggested that employee feedback be invited. The intent is to move forward with the initiative beginning next Fiscal Year.

DRAFT

Employee Safety

3. Establish an annual safety assessment event for all employees to measure the effectiveness of the safety program and to identify opportunities for improvement.

   Stephanie Glasgow has the lead role for this objective. Ed Kerwin's focus will be working with staff to further improve the organization's culture that safety is our #1 priority.

Operations/Business Objectives

Advanced Metering Infrastructure (AMI)

4. Recommend Board approval of an AMI vendor contract by April 2017. System deployment is anticipated to take about two years from the issuance of the notice to proceed following the contract award and will be managed by staff with the assistance of our consultant. The Board will receive regular communications from staff regarding project status to include performance on key metrics and progress towards milestones. Staff will make recommendations to the Board regarding any new policies and/or policy revisions related to the new system.

   Working with Stephen Winters and Dan Przybyl, Todd Taylor has the lead role for this project. Ed Kerwin's focus will be on processes, performance and resources for a highly successful project.

Energy Management Plan

5. Implement Energy Management Program by May 2017 and Provide Support for Plan for Achieving Energy Management Goals and Objectives.

   Mary Tiger has the lead role for this project. Ed Kerwin's focus will be working with staff to improve the organization's culture to be more energy aware and achieve outcomes set forth in the plan.

DRAFT

Community Engagement Objectives

OWASA's 40th Anniversary Events

6. Plan and conduct open house events for the community in the spring of 2017 as proposed to the Board on November 10, 2016.

AMI Community Engagement Plan (CEP)

7. Implement CEP for AMI.

   Todd Taylor has the lead role for this project. Ed Kerwin's focus will be to make sure the necessary processes and resources are in place for a highly successful community engagement for this project.

DRAFT

Agenda Item 11:

Review Board Work Schedule

Purpose:

a) Request(s) by Board Committees, Board Members and Staff
b) Review the draft agenda and discuss expectations for the January 12 and 26, 2017 meetings
c) Review and update the 12 Month Board Meeting Schedule
d) Review Pending Key Staff Action Items

Information:

- Draft agenda for the January 12, 2017 work session
- Draft agenda for the January 26, 2017 meeting
- Draft 12 Month Board Meeting Schedule
- Pending Key Staff Action Items from Board Meetings

December 8, 2016

Agenda
Work Session of the OWASA Board of Directors
Thursday, January 12, 2017, 6:00 P.M.
OWASA Community Room

The Board of Directors appreciates and invites the public to attend and observe its meetings. For the Board's Work Session, public comments are invited on only items appearing on this agenda. Speakers are invited to submit more detailed comments via written materials, ideally submitted at least three days in advance of the meeting to the Clerk to the Board via email or US Postal Service (aorbich@owasa.org/400 Jones Ferry Road, Carrboro, NC 27510).

Public speakers are encouraged to organize their remarks for delivery within a four minute time frame allowed each speaker.

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

Discussion

1. Update on Employee Health and Dental Insurance for next Fiscal Year (Stephanie Glasgow)
2. 2016 Biosolids Management Report (John Kiviniemi)
3. Fiscal Year 2018 Budget Calendar and Assumptions (Stephen Winters)
4. Discuss Employee Benefit Data from Benchmark Organizations (Stephanie Glasgow)
5. Discussion of Board Officers Nomination and Election Process (John Young)
6. Review Board Work Schedule (John Young/Ed Kerwin)
   a. Request(s) by Board Committees, Board Members and Staff
   b. January 26, 2017 Board Meeting
   c. February 9, 2017 Work Session
   d. 12 Month Board Meeting Schedule
   e. Pending Key Staff Action Items

Summary of Work Session Items

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

DRAFT

Agenda
Meeting of the OWASA Board of Directors
Thursday, January 26, 2017, 7:00 P.M.
Chapel Hill Town Hall

In compliance with the "Americans with Disabilities Act," interpreter services 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.

The Board of Directors appreciates and invites the public to attend and observe its meetings. Public comment is invited either by petition upon topics not on the Board's agenda, or by comments upon items appearing on the Board's agenda. Speakers are invited to submit more detailed comments via written materials, ideally submitted at least three days in advance of the meeting to the Clerk to the Board via email or US Postal Service (aorbich@owasa.org/400 Jones Ferry Road, Carrboro, NC 27510).

Public speakers are encouraged to organize their remarks for delivery within the four minute time frame allowed each speaker.

Announcements

1. Announcements by the Chair
   A. 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.
2. Announcements by Board Members
3. Announcements by Staff

Petitions and Requests

1. Public
2. Board
3. Staff

CONSENT AGENDA

Information and Reports

1. Quarterly Report on Attendance at Board and Committee Meetings (Andrea Orbich)
2. Semiannual Status Report for Various Capital Improvement Projects (Vishnu Gangadharan)

Action

3. *(If Needed) Approve Long Range Water Supply Plan – Goals and Objectives (Ruth Rouse)*
4. Minutes of the December 8, 2016 Work Session of the Board of Directors (Andrea Orbich)
5. Minutes of the January 12, 2017 Work Session of the Board of Directors (Andrea Orbich)

REGULAR AGENDA

Information and Reports

6. 2016 Lake Recreation Report (Kenneth Loflin)
7. Financial Report for the Six-Month Period Ended December 31, 2016 (Stephen Winters)

Discussion

8. Discuss Scope and Schedule for Evaluating Future Rate Changes (Stephen Winters)

Summary of Board Meeting Action Items

9. Executive Director will summarize the key action items from the Board meeting and note significant items for discussion and/or action expected at the next meeting

DRAFT

Updated 12/5/16

OWASA Board of Directors – 12 Month Board Meeting Schedule (December 5, 2016)

Month	Board Meetings		Committee & Other Meetings
	Work Session	Business Meeting	
December 2016	***Approve AMI System CEP*** Decision on MFMM Rate Structure Approve Update to Cross Connection Control Ordinance ***Update on the Affordability Plan & Year 2*** Discuss Key Performance Indicators ED Draft Performance Goals *12/8/2016*	*Holiday - no meeting*	
January 2017	FY 18 Budget Calendar and Assumptions () Employee Health and Dental Insurance Update () Discuss Employee Benefit Data from Benchmark Organizations Discussion of Board Officers Nomination/ Election Process CY 16 Biosolids Report *1/12/2017*	***Approve LRWSP – Goals and Objectives (if needed)*** Annual Lakes Recreation Report (regular agenda) () Q2 Financial Report () CIP Semiannual Report () Discuss Scope and Schedule for Evaluating Future Rate Changes *1/26/2017*	
February 2017	***Discuss AMI Opt-out Option*** ***Overview of Land Management*** Discuss draft Diversity and Inclusion Plan CS - General Counsel Interim Review () *2/9/2017*	***Approve AMI Opt-out Option (if needed)*** OWASA turns 40 CS - General Counsel Interim Review () *2/23/2017*	
March 2017	***Discuss LRWSP – Demands & Yield*** ***Discuss Draft Energy Management Plan*** FY 18 Draft Budget & Rates () Set date for Public Hearings – FY 18 Budget & Rates () Award the Rogerson Drive Force Main Rehabilitation Contract CS – ED Interim Review () *3/9/2017*	***Approve Energy Management Plan*** Award the Gravity Sewer Rehabilitation Contract FY 18 Draft Budget & Rates () CS – ED Interim Review () *3/23/2017*	
April 2017	***Review AMI System Procurement Contract*** FY 18 Draft Budget and Rates () Authorize staff to publish proposed rates () Appointment of the Nominating Committee () Employee Health and Dental Insurance Update Award the Rogerson Drive Pump Station Rehabilitation Contract Award the Eastowne, Eubanks and Meadowmont 1 Pump Station Improvements Contract *4/13/2017*	***Approve AMI System Procurement Contract*** ***Approve LRWSP – Demands & Yield*** Discuss Options to Advance Employee Pay Based on Performance Q3 Financial Report () Appoint Audit Firm () *4/27/2017*	*40th Anniversary Open House at the Cane Creek Reservoir (tentative for 4-8-2017)* *40th Anniversary Open House at Jones Ferry Road Facilities (tentative for 4-22-2017)*
May 2017	Discuss Employee Health and Dental Insurance Renewal () Discuss Employee Merit Pay for FY 18 () Award the Brandywine Drive Water Main Replacement Contract *5/11/2017*	Public Hearings – FY 18 Budget and Rates () Approve Employee Health and Dental Insurance Renewal (if needed) () Award the Water Treatment Plant Filter Media and Backwash Improvements Contract *5/25/2017*	
June 2017	Approve FY 17 Budget and Rates () Approve Employee Merit/Cost of Labor Pay Increases for FY 17 () Award the Hillsborough Street Water Main Replacement Contract Election of Officers () *6/8/2017*	TBD *6/22/2017*	

Current and Pending Key Projects and Stages – in ***bold italics***

OWASA Board of Directors – 12 Month Board Meeting Schedule (December 5, 2016)

July 2017	TBD *7/13/2017*	TBD *7/27/2017*	
August 2017	Award the Dobbins Drive Water and Sewer Main Replacement Contract Award the Administration Building HVAC Replacement Contract CS – General Counsel Review () 8/10/2017	Preliminary 12 Month Financial Report () CIP Semiannual Report () EEO/Affirmative Action Report () CS – General Counsel Review () 8/24/2017	
September 2017	CS – ED Review () *9/14/2017*	Annual Report and Financial Audit () Approve General Counsel Engagement () CS – ED Review () *9/28/2016*	
October 2017	CS – ED Review () 10/12/2017	Q1 Financial Report () Strategic Trends Report () CS – ED Review () 10/26/2017	
November 2017	TBD 11/9/2017	*Holiday - no meeting*	

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. It also does not reflect meetings at which the Board will discuss and act on the update of the Strategic Plan.

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 (e.g., continuing our comprehensive asset management work).

The schedule implies that the following Strategic Plan initiatives would be addressed beyond the 12 month period. The Board may conclude that one or more of the following initiatives are 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.
- Improve effectiveness as a learning organization is considered a longer-term priority.
- Water Conservation Plan will be prepared concurrent with update of the Long-Range Water Supply Plan.

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.

OWASA Board of Directors – 12 Month Board Meeting Schedule (December 5, 2016)

Abbreviations Used in Draft Schedule:

( )	Recurring agenda item (generally these are "required" items)
AMI	Advanced Metering Infrastructure
CE	Community Engagement
CEP	Community Engagement Plan
CIP	Capital Improvements Program
COLA	Cost of Labor Adjustment
CS	Closed Session of the Board
CY	Calendar Year
ED	Executive Director
FY	Fiscal Year
JLP	Jordan Lake Partnership
LRWSP	Long-Range Water Supply Plan
MST	Mountains-to-Sea Trail
MFMM	Multi-Family Master Meter
NRTS	Natural Resources/Technical Services
Q	Quarter
SOW	Scope of Work
TBD	To Be Determined
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

Current and Pending Key Projects and Stages

Project	Strategic Initiative	Project Lead	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-16	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17
AMI	6	Taylor	CEP				Contract							
Total Compensation Study		Glasgow	*Schedule To Be Determined*											
MFMM Rate Structure Study	4	Winters	If applicable											
LRWSP	1	Rouse		Goals & Objectives		Demand & Yield	Demand & Yield							
Energy Plan	5	Tiger												

Stages	Committee Discussion	Feasibility Study	Board Review	Community Engagement	Action	Procurement	Implementation

Updated 12/5/16

Pending Key Staff Action Items from Board Meetings

Date	Action Item	Target Board Meeting Date	Person(s) Responsible	Status
11-3-2016	Update draft Diversity and Inclusion Plan for discussion at a future Board meeting.	2-9-2017	Kerwin Staff	An update was provided at the November 10, 2016 work session. "Working draft" of updated plan was provided to the Board on November 17, 2016.
10-27-2016	Address the Board's feedback in preparing the October 2017 Strategic Trends Report.	10-26-2017	Rouse	In progress
10-13-2016	Prepare employee benefit comparison data with other benchmark organizations.	1-12-2017	Glasgow	Board discussion scheduled for January 12, 2017
10-13-2016	Complete the analysis and provide the Board a plan with options by April 2017 to provide employees at all levels of the organization the opportunity to move more quickly through their pay ranges based on performance.	4-27-2017 (tentative)	Glasgow Kerwin	In progress.
9-22-2016	Proceed with community engagement tasks as it pertains to chloramine use and customer considerations about their private plumbing systems.	N/A	Young Taylor Loflin Feller	Latest issue of the Blue Thumb included information on chloramine-resistant flappers in toilets. A draft letter to local governments partners is under review. Additional information has been posted to the website.
9-8-2016	Propose the scope and schedule for evaluating other rate considerations that may impact all customer classes. For example, the basis for determining monthly service charge for all customer classes.	1-26-2017	Winters	Staff is developing a proposal for the Board to consider.

Pending Key Staff Action Items from Board Meetings

Date	Action Item	Target Board Meeting Date	Person(s) Responsible	Status
9-8-2016	Schedule a Board follow-up discussion about when forestry management may be scheduled for discussion and possible future action.	2-9-2017	Rouse Young	In progress. "Overview of Land Management" is included on the Board's calendar for 2/9/17. Staff suggests that this item address general land management, which includes an overview of OWASA's land resources, their purpose, and forest management.
6-9-2016	Provide update on the monitoring and evaluation of Jordan Lake water quality.	TBD	Rouse	Staff will provide an email summary of water quality data on Jordan Lake.
4-28-2016	Consider educational and public access opportunities at the Cane Creek mitigation tract.	TBD	Rouse Feller	Low priority. In calendar year 2016, staff will work with our Partners to develop a plan regarding public access and educational opportunities on the Cane Creek Mitigation Tract. Staff will provide an update to the Board of Directors at a work session in early CY 2017 (to coincide with overview of forest management work session item).