ORANGE WATER AND SEWER AUTHORITY

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

AGENDA
MEETING OF THE OWASA BOARD OF DIRECTORS
THURSDAY, JANUARY 22, 2015, 7:00 P.M.
OWASA COMMUNITY ROOM

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 three-to-five minute time frame allowed each speaker. Additional time may be allowed at the discretion of the Board of Directors.

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
   A. Update on the January 13, 2015 Natural Resources and Technical Systems Committee Meeting (Terri Buckner)
3. Announcements by Staff

Petitions and Requests

1. Public – Stephen Smith, UNC Bass Fishing Team
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 (Stuart Carson)

Action

3. Resolution Honoring John W. Greene, Jr. and Expressing Deepest Sympathies to his Family (Ed Kerwin)
4. OWASA's 2012 Local Water Supply Plan and Water Shortage Response Plan Update Submitted to the NC Department of Environment and Natural Resources, Division of Water Resources (Ruth Rouse)

5. Approval of the Minutes of the December 11, 2014 Meeting of the Board of Directors (Andrea Orbich)
6. Approval of the Minutes of the December 11, 2014 Work Session of the Board of Directors (Andrea Orbich)
7. Approval of the Minutes of the January 8, 2015 Work Session of the Board of Directors (Andrea Orbich)

REGULAR AGENDA

Information and Reports

8. Financial Report for the Six Month Period Ended December 31, 2014 (Stephen Winters)

Discussion and Action

9. Approval of the Charter for the Energy Management Plan (Patrick Davis)
10. Discussion and Decision on Potential Objectives and Timetable to Conduct a Customer Survey (Steve Dear/Ed Kerwin)

Summary of Board Meeting Action Items

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

WORK SESSION

12. The Board of Directors will convene in a Work Session in OWASA's Board Room to Review and Discuss Board Work Session Format (John Young)

Public Petition

From: Stephen Smith <stephenjsmith5@gmail.com>
Date:12/11/2014 10:18 PM (GMT-05:00)
To: boardmembers <boardmembers@owasa.org>
Subject: UNC Bass Fishing team

Board Members,

I am coming to you today to offer a great opportunity to OWASA as well as ask for a favor in return. I hope my ideas and request will be heard and strongly considered by all board members.

To begin, my name is Stephen Smith and I am a junior at UNC-CH. I am the Vice President of the newly formed competitive bass fishing team. For those who are not familiar, the realm of competitive bass fishing is one which is practically void of a substantial luck factor at the professional level and truly requires a combination of finely-tuned skills, proper equipment, and application of biological and hydrological knowledge to be successful. It represents not only a rapidly growing sport, but a massive consumer industry as the the tournament format is offered to all levels of anglers. The professional level has begun to produce multimillionaire anglers due to the massive cash prizes and opportunity for sponsorships, and college students are catching on. College bass fishing has been recognized recently in the NY Times and other prominent media as being the fastest growing college sport in the world with cash prizes over $10,000. With the prestige and reputation attached to our name alone, Carolina has the opportunity to make a big splash this year in the college circuits and be a legitimate contender for national championships this upcoming spring season.

Being close to OWASA's University Lake, many of my fellow teammates, as well as myself, have had a lot of practice here. We also have been given permission to store team boats on the UNC owned property on the lake where the crew team also has a shed. I believe this presents a great opportunity for our team to have a home lake where we can hold practices and refine our techniques for upcoming tournaments throughout the spring. Much of the top tier competition we will face practices every day on lakes close to their campuses and are constantly aiming to gain an edge. In addition, U-lake gives us a close place to practice other essential skills like loading a boat in and out of the water and learning basic boat care and maintenance, a vital aspect. I am aware, however, that U-lake does not normally open for use until mid-March, and this is primarily why I am seeking the help of the board.

My request is as follows: have U-lake open to our 13-man team indefinitely starting in January, allowing us to have bass boats on the water any given day of the week. I understand where some concerns would arise and I have given these thought. Firstly, the use of any combustible engine or outboard motor would always be prohibited, we would only deploy electric trolling motors to navigate the lake. Second, we would have our team adviser, a trusted UNC faculty member, supervising all practices to ensure absolute coherence with lake policies and enforce any rules. This would negate the need for extra OWASA staff to be hired. Third, our practice schedule would likely only permit fishing U-lake twice a week at most with less than 8 anglers on the water at any given time during a practice. This way the lake receives minimal fishing pressure.

Beyond addressing these concerns, I believe the granting and upholding of this request can be contingent on specific services that our team can provide to the lake. Being a team sport that

advocates and practices catch-and-release fishing (fish are kept in live-wells during tournaments but released after weigh-in), the health and sustainability of the fishery at U-lake is very important to us. We would be more than inclined to conduct a number of maintenance and/or data collecting tasks in conjunction with our weekly practices. This could include recording the size, weight, general health, and location of all fish caught, testing and measuring water parameters, using our sonar units to help create a more accurate topographical map of the lake's bottom, doing weekly trash clean-ups on and around the water, etc. Any data or findings could be relayed to relevant staff at OWASA. This would be valuable labor for OWASA that would come at essentially no cost.

Please consider my request and everything involved with it that I have stated above. Besides being an excellent opportunity for the future of U-lake, granting this request would immensely help our team efforts and could be the boost that helps put UNC on the map for elite college fishing teams. Also, be sure to check us out this spring as several of the tournaments will be aired on national TV! Thank you for your time and your consideration and I hope to hear something back soon.

Stephen Smith, VP UNC Bass Team

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Stephen J Smith
The University of North Carolina at Chapel Hill, 2015
BA Economics
Chinese Minor
stephenjsmith5@gmail.com | Cell: (704) 900-4260

Meeting Summary
Natural Resources and Technical Systems Committee
January 13, 2014, 5:30 p.m.
OWASA Boardroom

Committee Members:	Terri Buckner (Chair), Heather Payne, Dave Moreau, Ruchir Vora
Board Members:	Michael Hughes
Staff:	Mary Darr, Kenneth Loflin, Ed Kerwin, Johnny Riley, Todd Taylor, Ruth Rouse
Visitors:	Will Rickman, Stephen Smith, Joel Bulkley

Major Items Discussed

Ken Loflin provided a brief overview of recreation on the lake. OWASA has had agreement with UNC crew team to use University Lake.

Bob Epting provided a legal perspective on the use of University Lake by UNC. OWASA has a 40-year lease agreement with UNC for University Lake and 100 feet of land around the perimeter of the lake. This lease allows for use of the lake by UNC. Bob indicated that staff did check, and that the UNC Bass Fishing Team is sanctioned by UNC. The lease agreement requires us to work with the team, but it does not outline how frequently they could access or the conditions. Conditions to protect the lake as a public water supply and the safety of other users can be included in any license agreement that OWASA enters into with the petitioners.

Bob recommended that the Committee recommendation to the Board of Directors should be to direct staff to work with the petitioner to develop a mutually acceptable agreement, which is the normal petition process. This license agreement would then be brought back to the Board of Directors at a later meeting, which could be the next business meeting.

Committee members asked the representative of the bass fishing team questions. He provided the following information:

- Bass fishing is becoming a big sport and some team members plan to make a career out of it.
- They will practice catch and release.
- They would primarily use the lake during weekdays when the lake is not open to the public; on weekends, they would expect to be treated as anyone else from the public. In other words, they would not expect to pose a problem with the number of vessels allowed on the lake (21 allowed at one time).
- They would agree not to trailer their boats to the lake; they would use only their trolling engines. However, they would like to be able to store their full-size tournament boats and trailers at University Lake to help control costs.

- Team will use Jordan Lake to practice in an area more similar to tournament fishing, but would like some use of University Lake. They understand OWASA's concerns and can be flexible on how they use University Lake.
- Team would be open to performing service activities such as providing data on the fish they catch or picking up trash. The Committee members requested that OWASA's lake warden develop suggestions for service activities.

Discussion about the bass team petition outlined the following issues which should be addressed in the license agreement:

- Staffing – OWASA would not need additional staff if the team uses their own boats and crew docks.
- Conflicts with other users – This could be addressed by having scheduled practices when the lake is closed to the public (as stipulated above).
- Aquatic weeds – OWASA has concerns about the use of trailered boats; boat trailers often carry nuisance aquatic weeds, and this would need to be addressed.
- Gas motors – Gas motors will not be allowed on the lake, even if not being used

Next Meeting

Andy will send out a doodle poll for the week of February 16 for the next NRTS Committee meeting to discuss OWASA baseline energy use and goals for the Energy Management Plan.

The meeting was adjourned at approximately 6:25 PM.

Prepared by:

Ruth C. Rouse

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Ruth Rouse, AICP
Planning and Development Manager

ORANGE WATER AND SEWER AUTHORITY - QUARTERLY REPORT

ATTENDANCE AT BOARD AND COMMITTEE MEETINGS

BOARD OF DIRECTORS	OCTOBER 2014	NOVEMBER 2014	DECEMBER 2014
JOHN A. YOUNG CHAIR	October 9 Board WS (Meeting) October 23 Board (Meeting) October 29 CE (Meeting)	November 13 Board WS (Excused)	December 2 CE (Meeting) December 9 HR (Meeting) December 11 FC (Meeting) December 11 Board BBM & WS (Meeting)
MICHAEL HUGHES VICE CHAIR	October 9 Board WS (Meeting) October 23 Board (Meeting) October 29 CE (Meeting)	November 13 Board WS (Meeting)	December 2 CE (Excused) December 9 HR (Meeting) December 11 FC (Meeting) December 11 Board BBM & WS (Meeting)
HEATHER PAYNE SECRETARY	October 9 Board WS (Meeting) October 23 Board (Meeting)	November 13 Board WS (Meeting)	December 11 FC (Meeting) December 11 Board BBM & WS (Meeting)
TERRI BUCKNER	October 9 Board WS (Meeting) October 23 Board (Meeting) October 29 CE (Meeting)	November 13 Board WS (Meeting)	December 2 CE (Meeting) December 9 HR (Meeting) December 11 Board BBM & WS (Meeting)
STEVE DEAR	October 9 Board WS (Meeting) October 23 Board (Meeting) October 29 CE (Meeting)	November 13 Board WS (Excused)	December 2 CE (Meeting) December 9 HR (Excused) December 11 FC (Meeting) December 11 Board BBM & WS (Meeting)
QUINTON HARPER	October 9 Board WS (Meeting) October 23 Board (Excused) October 29 CE (Excused)	November 13 Board WS (Meeting)	December 2 CE (Meeting) December 11 FC (Meeting) December 11 Board BBM & WS (Meeting)
DAVE MOREAU	October 9 Board WS (Meeting) October 23 Board (Meeting)	November 13 Board WS (Meeting)	December 11 FC (Meeting) December 11 Board BBM & WS (Meeting)
RUCHIR VORA	October 9 Board WS (Meeting) October 23 Board (Excused)	November 13 Board WS (Meeting)	December 9 HR (Meeting) December 11 Board BBM & WS (Meeting)

JANUARY 22, 2015

BOARD OF DIRECTORS	OCTOBER 2014	NOVEMBER 2014	DECEMBER 2014
AMY WITSIL	October 9 Board WS (Meeting) October 23 Board (Meeting)	November 13 Board WS (Meeting)	December 9 HR (Meeting) December 11 FC (Meeting) December 11 Board BBM & WS (Meeting)
TOTAL MEETINGS HELD:	**3**	**1**	**4**

Board – Board of Directors
BBM – Brief Business Meeting
FC – Finance Committee
HR – Human Resources Committee
CE – Community Engagement Committee
NRTS – Natural Resources/Technical Systems Committee
WS – Work Session

ORANGE WATER AND SEWER AUTHORITY

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

TO: Board of Directors

THROUGH: Ed Kerwin

FROM: F. Stuart Carson, P.E.

DATE: January 15, 2015

SUBJECT: Semiannual Status Report for Various Capital Improvement Projects

SUMMARY

This semiannual status report provides information on active or recently completed capital improvement projects through December 2014. It includes:

- Attachment A – a graph showing the original Capital Improvements Program (CIP) budget and actual spent amounts for the first six (6) months of Fiscal Year (FY) 2015. Through December 2014, OWASA spent 34% of the FY 2015 CIP budget. Currently, we are projecting that we will spend 85% of the CIP budget during all of FY 2015.

- Attachment B – a worksheet showing the status of FY 2015 CIP projects' schedules and budgets for their current milestones (e.g. study, design, construction) and entire projects using a green/yellow/red "stoplight" format.

- Attachment C – narratives explaining the reasons for the red "stoplights" in Attachment B.

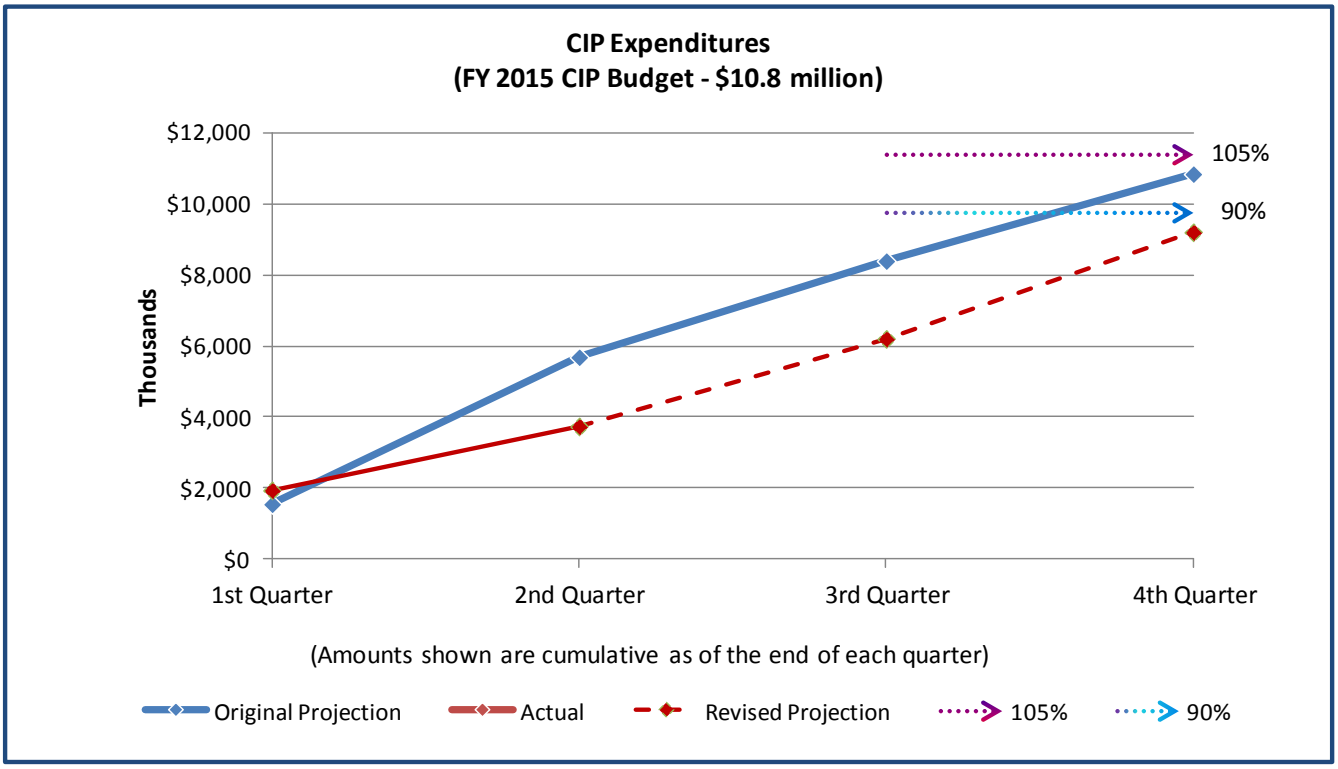
- Attachment D – an OWASA Service Area Map depicting the FY 2015 CIP project locations.

Customers may visit our web site (www.owasa.org) for information about our current major CIP projects and our FY 2015 - 2019 CIP book that provides additional information about the CIP and projects planned for the next five fiscal years.

If you have any questions regarding these projects please contact me at (919) 537-4247.

F. Stuart Carson, P.E.
Engineering Manager - Capital Improvement Projects

Attachments



The Board-approved total CIP budget amount for FY 2015 is $10,842,000. 34% of the budget was spent during the first two quarters of FY 2015. The largest new project for the FY 2015-2019 CIP budget period is the Advanced Meter Infrastructure (AMI) System project. However, subsequent to Board approval of the FY 2015 budget, the approach to the AMI System project changed. As a result, staff currently is expecting to spend approximately $50,000 on that project in FY 2015 instead of the $1,225,000 budgeted. The AMI System project's status is discussed further in Attachment C. Another major project, the Mason Farm Wastewater Treatment Plant (WWTP) Aeration System and Odor Control Improvements project was completed in fall 2014 less than 3% over budget and ahead of schedule to meet OWASA's odor control obligations to the Town of Chapel.

Our fiscal year expenditure goal is 90% to 105% of the approved CIP budget. Currently, considering the change in plans for the AMI System project and changes to other projects discussed in Attachment C, we expect to spend 85% of the FY 2015 CIP budget.

CIP Project Updates

CIP No.	Project Name	Status Update (1/15/15)				
		Current Milestone	Schedule Status		Budget Status	
			Current Milestone	Entire Project	Current Milestone	Entire Project
270-20	Cane Creek Reservoir Dock Replacement (grading/access)	Construction				
270-21	Cane Creek Reservoir Dam Repairs (concrete joints caulking)	Construction				
270-26	Cane Creek Reservoir and University Lake Permanganate Feed Systems Evaluation	Design				
272-29	Water Treatment Plant SuperPulsator Upgrades/Rehabilitation	Construction				
275-15	Water Main - Road Improvement Projects	Construction				
275-20	Water Main Rehabilitation/Replacement Program					
275-20	*Ridgewood Lane*	Design				
275-20	*The Glen* ***(Crew Project)***	Construction				
275-20	*Porthole Alley* ***(Crew Project)***	Design				
275-20	*Ridge Road - Manning to Stadium Drive*	Construction				
275-20	*Columbia St 24" Valve Replacement*	Construction				
275-20	*Purefoy Road*	Design				
275-20	*Prince Street*	Construction				
275-20	*Briarbridge Lane*	Construction				
275-70	S. Estes Dr Water Main replacement	Construction				
275-73	Distribution System Pressure Monitors	Pending				
275-76	Advanced Meter Infrastructure (AMI) System	Study				
275-77	Galvanized Water Main Replacement Projects					
275-77	*North Greensboro*	Pending				
275-77	*Dogwood Court*	Pending				
275-77	*West Main Street*	Pending				
275-77	*Hillsborough St*	Pending				
276-17	Sanitary Sewer Condition Evaluation	Study				
276-18	Sanitary Sewer Service Area Rehab (Phase 1)	Construction				
276-45	Bolinwood Drive Interceptor	Design				
276-47	Little Creek Interceptor	Design				
276-51	Tom's Creek and Morgan Creek Aerial Crossings Replacements	Construction				
276-53	Gravity Sanitary Sewer Creek Crossings Upgrades	Design				
276-54	Rogers Road Sanitary Sewer Service Preliminary Engineering Services	Study				
276-55	Easement Acquisition Program	Study				
277-31	Rogerson Drive Pump Station Rehabilitation	Design				
278-11	Mason Farm WWTP Rehabilitation/Recapitalization Projects					
278-11	*Mason Farm WWTP Hypochlorite Facility Rehabilitation*	Construction				
278-11	*Mason Farm WWTP Hot Water Line Replacement*	Construction				
278-40	Mason Farm WWTP Aeration and Odor Improvements	Construction				
278-45	Mason Farm WWTP Nitrified Recycling	Pending				
278-46	Comprehensive Coatings Program	Construction				
278-48	WWTP Biosolids Facilities and Recycling Study/Rehabilitation	Study				
278-52	Mason Farm WWTP Digester #1 and #2 Rehabilitation	Design				
278-54	Mason Farm WWTP Intermediate Pump Stations (IPS) Rehab	Pending				
278-56	Mason Farm WWTP SCADA System Upgrade	Construction				
280-06	Administration Building Chiller Replacement	Construction				
280-13	Comprehensive Asset Management Plan (CAMP) Development	Study				

Notes:

Schedule - Green: Ahead or on schedule Yellow: Behind schedule (not urgent) Red: Behind schedule (urgent)	Budget - Green: w/in 5% (+/-) of budget Yellow: w/in 5-10% (+/-) of budget Red: not w/in 10% (+/-) of budget

Explanations for any **red "stoplights"** in this worksheet are provided in Attachment C to this Seminannual Status Report.

RED "STOPLIGHTS" EXPLANATIONS

1. WTP SuperPulsator Upgrades/Rehabilitation (CIP# 272-29, *not included in FY 2015 CIP*)

Construction schedule and entire project budget: This project was expected to be completed in FY 2014 and, thus, was not included in the FY 2015 CIP. It was substantially complete at the end of FY 2014. The contractor recently completed the installation of some additional safety features at the request of OWASA staff. These items were not included in the original design; however they were added to enhance worker safety when accessing the basins. Project closeout, including record drawings, will be completed in winter FY 2015.

The overall project budget is indicated in red as the total construction costs ended up being $252,000 more than the planning level budget. As reported in more detail in the July 2014 Semiannual Report, the increase was primarily due to differences in equipment costs between preparation of the planning level budget and bidding. The current phase, construction, is indicated as green as the work has been completed within the funds allocated via the construction contract.

2. Ridge Road Water Main Rehabilitation (CIP# 275-20, CIP Page 33)

Construction and entire project budgets: This project was expedited into the CIP following approval of the FY 2014 CIP budget due to a roadway restoration project initiated by the Town of Chapel Hill. Approximately $359,000 of design and construction costs was spent in FY 2014. The FY 2015 budget included approximately $570,000 to complete this project. It was completed in September 2014 with a total project cost of $1,020,000, resulting in a FY 2015 budget overrun of approximately $91,000. This overrun was attributable to higher than anticipated construction bids in comparison to the engineer's final estimate (which was used as the basis for budgeting).

3. Columbia Street 24-inch Valve Replacement (CIP# 275-20, *not included in FY 2015 CIP*)

Construction and entire project budgets: This project was expected to be completed in FY 2014 and, thus, was not included in the FY 2015 CIP. The valve replacement project was subtantially complete in December 2014.

The location of the valve near a highly congested and heavily traveled intersection adjacent to UNC's campus, the need to dig down on the valve with large construction equipment because of its unusual depth (approximately 12 feet) in order to determine whether the valve could be repaired or needed replacing, installation and removal of a new valve that proved to be defective, and coordination of the work to accommodate UNC's schedule all contributed to the the work taking much longer to complete than initially envisioned. Final completion of the project will occur in January 2015 with the reinstallation of the traffic control wiring loop in the roadway and final pavement restoration/striping.

4. Prince Street Water Main Replacement (CIP# 275-20, CIP Page 33)

Construction and entire project budgets: Preliminary design determined that the existing 2-inch diameter pipe needed to be replaced with a 6-inch diameter pipe rather than with a new 2-inch diameter pipe as assumed in the FY 2015 budget. This change resulted in the project's construction costs being approximately $32,000 more than budgeted. The OWASA construction crew completed the project in October 2014.

5. South Estes Drive and Willow Drive Water Main Replacement (CIP# 275-70, CIP Page 38)

Construction budget: Construction is complete and the final construction cost is marked red as the final costs were more than 10% under budget. We are awaiting the consultant's final invoice; however, we expect the final entire project costs to be between 5% and 10% under budget. In addition to being completed under budget, the construction work was completed on schedule.

6. Advanced Metering Infrastructure (AMI) System (CIP# 275-76, CIP Page 42)

Study budget: The approach to this project changed significantly following the adoption of the FY 2015 budget. Currently, OWASA is in the process of hiring a qualified consultant to assist in completing a feasibility study to determine how best to proceed with metering the distribution system. The consultant is expected to be under contract during FY 2015; however, the majority of the study is expected to be completed in FY 2016. The proposed FY 2016 CIP budget will include revised schedule and budget estimates for consideration by OWASA's Board of Directors.

7. Gravity Sewer Condition Evaluation (CIP# 276-17, CIP Page 48)

Study and entire project budgets: This project consists of an ongoing, prioritized program to inspect and evaluate the condition of gravity sewer mains thoughout the system. The budget overrun represents inspection work which was originally projected to be billed towards the end of FY 2014 but which was not completed until early FY 2015.

8. Service Area Rehabilitation/Replacement Projects (CIP# 276-18, CIP Page 49)

Construction and entire project budgets: Staff expects to extend a unit price construction contract awarded in July 2014 to Pipeline Utilities in order to address additional known sewer rehabilitation needs identified by CIP #276-17. OWASA's Executive Director approved additional expenditures on this project for FY 2015 since funds are available that will not be spent on the AMI System (see Item 6 above).

9. Little Creek Interceptor (CIP# 276-47, CIP Page 52)

Design budget: A design phase overrun of approximately $34,000 is due to design requirements not included in the initial budgetary estimate, including unanticipated easement acquisition services, access road design, additional permitting and contractor prequalification requirements, and unforeseen additional design elements. This project is currently budgeted for completion in FY 2015, but additional permitting and contractor prequalification requirements have delayed the project schedule by approximately 3 months.

10. WWTP Replacement Projects – Hypochlorite Facility Rehabilitation (part of CIP# 278-11, Page 80)

Construction schedule, construction and entire project budgets: Staff identified this project in FY 2013 and received approval to transfer unspent funds from other FY 2013 CIP projects to complete an evaluation and design in FY 2013. The FY 2014 CIP budget included funds to construct. However, design was not completed until FY 2014 and was considerably more detailed, and expensive, than was originally anticipated.

The construction project was awarded in July 2014 for appoximately $493,000 which is approximately $218,000 over the FY 2015 budget. This project is approximately 10 months behind the original schedule and its total project cost is approximately $309,000 over budget. Construction is on schedule to be complete in spring 2015.

11. WWTP Replacement Projects – Process Hot Water Lines Replacement (part of CIP# 278-11, Page 80)

Construction and entire project budgets: No funds were included in FY 2015 for this project because, at the time that budget was set, staff thought the project would be completed in FY 2014. This project was completed in fall 2015 and provided for a permanent replacement of the failed hot water line serving the digester facility (which required an aboveground engineered design due to the severe congestion in the area and other design considerations).

Funds were expended in FY 2015 for design, construction, and procurement costs. The Hot Water Lines Replacement Project and the Generator Buildings Louvers Replacement Project (included as part of CIP# 278-11 in the FY 2015 CIP) were designed under a single engineering services contract for approximately $30,000.

12. Comprehensive Coatings Program (CIP# 278-46, Page 83)

Construction and entire project budgets: This is a multi-year program to rehabilitate coating systems on vertical assets, including process piping, at OWASA's WWTP, WTP, pump stations, and other facilities. The assets needing rehabilitation were identified by OWASA's WTP and WWTP managers and staff. OWASA's Executive Director approved additional expenditures in FY 2015 for assets slated for rehabilitation in FY 2016 since funds are available that will not be spent on the AMI System (see Item 6 above).

13. WWTP Biosolids Facilities and Recycling Study/Rehabilitation (CIP# 278-48, Page 84)

Study budget: At the time of budgeting, staff and consultant were in the initial stages of evaluation of the current and future options for biosolids management, and it was conservatively anticipated that significant additional consultant assistance might be required in FY 2015. Approximately $100,000 was included in the FY 2015 budget. However, the results of subsequent evaluation completed in early FY 2015 rendered much of the anticipated evaluation scope unnecessary. Although scope of future consultant assistance is not fully defined, staff currently expects a budget surplus of approximately $45,000.

14. Administration Building Chiller Replacement (CIP# 280-06, Page 101)

Construction and entire project budgets: This project is being eliminated from the CIP. The chiller replacement work is being postponed and will be included in a more comprehensive and integrated improvements approach to the entire OWASA Administration Building's Heating, Ventilation, and Air Conditioning (HVAC) system. The proposed FY 2016 CIP will include a recommended preliminary budget and schedule for the comprehensive HVAC system improvements project.

After reviewing a FY 2014 Admininstration Building HVAC controls study proposal provided by a consulting engineer, OWASA decided to request knowledgable UNC staff to take a look at the HVAC system. OWASA staff met with UNC staff in July 2014. In November 2014, UNC staff provided

recommendations to OWASA for immediate, near term, and long term tasks to be completed subject to budgeting constraints and long term energy efficiency goals.

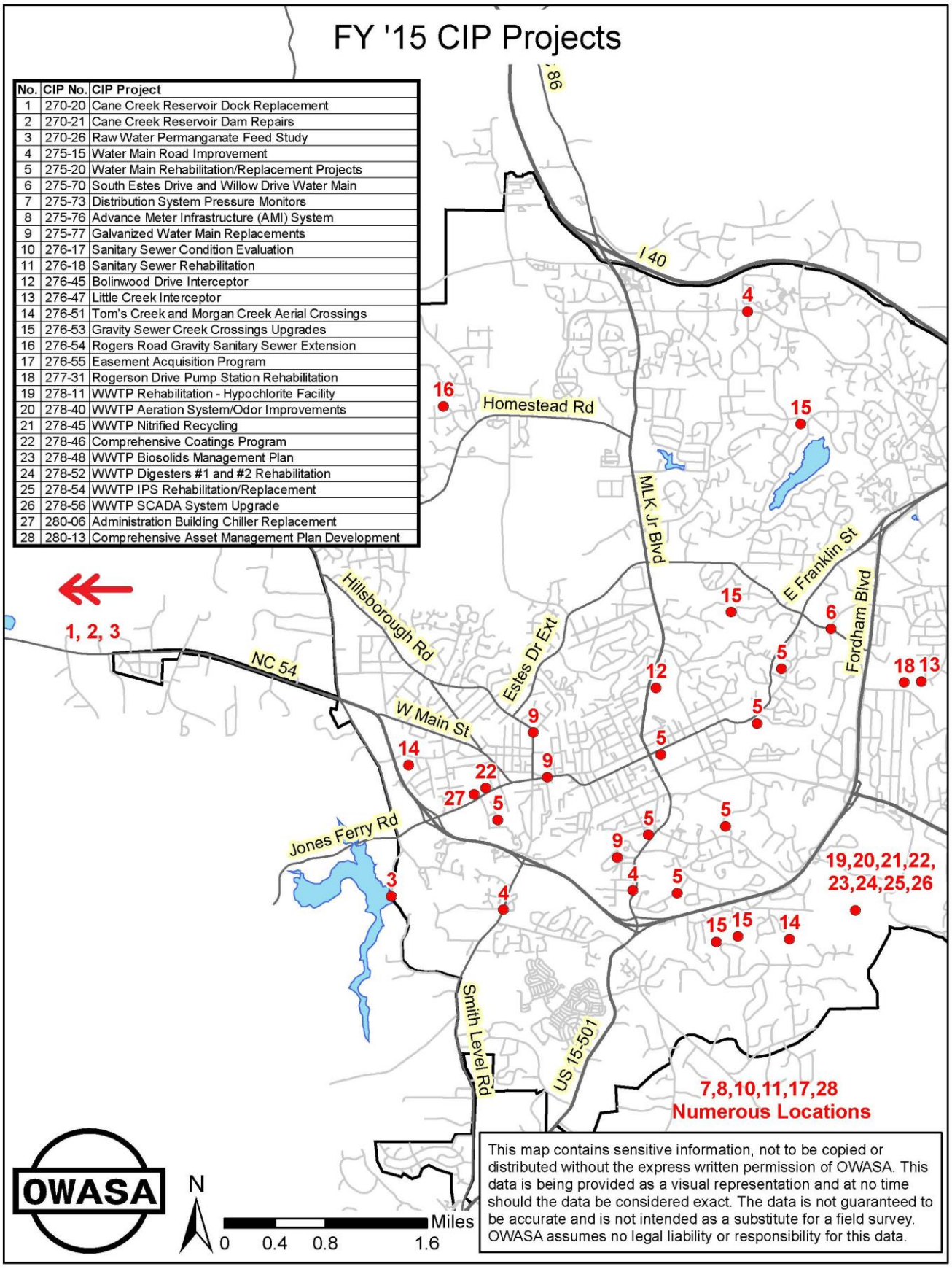
The overarching recommendation is for a total system replacement that will allow updating of obsolete system components and gains in energy efficiency available with more modern components and control equipment. OWASA is preparing a RFQ to be advertized in spring 2015 for engineering services to perform the study that will provide the basis of design, and preliminary budgets, for proposed improvements. The study is expected to be complete in early FY 2016.

15. Comprehensive Asset Management Plan Development (CIP# 280-06, Page 105)

Study and entire project budgets: Staff has determined that significantly less funds for consulting services are needed than was budgeted in FY 2015 to complete a Comprehensive Asset Management Plan (CAMP) renewal and replacement strategy. Currently, the CAMP strategy development is on schedule to be complete by the end of FY 2015.

FY '15 CIP Projects

No.	CIP No.	CIP Project
1	270-20	Cane Creek Reservoir Dock Replacement
2	270-21	Cane Creek Reservoir Dam Repairs
3	270-26	Raw Water Permanganate Feed Study
4	275-15	Water Main Road Improvement
5	275-20	Water Main Rehabilitation/Replacement Projects
6	275-70	South Estes Drive and Willow Drive Water Main
7	275-73	Distribution System Pressure Monitors
8	275-76	Advance Meter Infrastructure (AMI) System
9	275-77	Galvanized Water Main Replacements
10	276-17	Sanitary Sewer Condition Evaluation
11	276-18	Sanitary Sewer Rehabilitation
12	276-45	Bolinwood Drive Interceptor
13	276-47	Little Creek Interceptor
14	276-51	Tom's Creek and Morgan Creek Aerial Crossings
15	276-53	Gravity Sewer Creek Crossings Upgrades
16	276-54	Rogers Road Gravity Sanitary Sewer Extension
17	276-55	Easement Acquisition Program
18	277-31	Rogerson Drive Pump Station Rehabilitation
19	278-11	WWTP Rehabilitation - Hypochlorite Facility
20	278-40	WWTP Aeration System/Odor Improvements
21	278-45	WWTP Nitrified Recycling
22	278-46	Comprehensive Coatings Program
23	278-48	WWTP Biosolids Management Plan
24	278-52	WWTP Digesters #1 and #2 Rehabilitation
25	278-54	WWTP IPS Rehabilitation/Replacement
26	278-56	WWTP SCADA System Upgrade
27	280-06	Administration Building Chiller Replacement
28	280-13	Comprehensive Asset Management Plan Development



AGENDA ITEM

- RESOLUTION HONORING JOHN W. GREENE, JR. AND EXPRESSING DEEPEST SYMPATHIES TO HIS FAMILY

BACKGROUND

- The life of John W. Greene, Jr., ended on January 4, 2015, unexpectedly and without opportunity for those who worked with him to express their affection and respect.

- The Board of Directors and staff of Orange Water and Sewer Authority desires to recognize and record their sadness at his passing, as well as their high regard for his life in service to the Chapel Hill, Carrboro and southern Orange County community.

ACTION NEEDED

- Adopt the Resolution Honoring John W. Greene, Jr. and present the Resolution to his family at a date to be determined.

January 22, 2015

RESOLUTION HONORING JOHN W. GREENE, JR.
AND EXPRESSING DEEPEST SYMPATHIES TO HIS FAMILY

WHEREAS, the life of **JOHN W. GREENE, JR.** upon this Earth ended on January 4, 2015, unexpectedly and without opportunity for those who loved and worked with him, and benefitted from his human kindness and professional service, finally to express to him their affection and respect; and

WHEREAS, the Board of Directors and staff of Orange Water and Sewer Authority (OWASA) desires to recognize and record their sadness at his passing, as well as their high regard for his life in service to this community; and

WHEREAS, John came to work for OWASA as Field Engineer in 1981, after which, during thirty-two years of exemplary service, he worked as Assistant Chief Engineer before becoming the Director of Engineering and Planning in 1991, and in 1998 became the General Manager of Operations until his retirement in 2013; and

WHEREAS, as General Manager of Operations, John bore responsibility for maintaining a daily, continuous supply of water, and wastewater collection and treatment services, to all of the Chapel Hill, Carrboro and University of North Carolina service community, and for ensuring safe and environmentally-sound operation of the community's water, wastewater, and reclaimed water systems; and

WHEREAS, in 2008, the North Carolina American Water Works Association-Water Environment Association (NC AWWA-WEA) named **JOHN W. GREENE, JR.** the recipient of the Raymond E. "Red" Ebert Award for Excellence to recognize his professional career in water and wastewater engineering and management; further, during his career, he served as a Board Trustee of the NC AWWA-WEA, and as a member of the Board of Directors of the Upper Cape Fear River Basin Association, and continued as both student and teacher in the North Carolina Collection and Distribution School and the NC Wastewater Operator's School; and

WHEREAS, through John's leadership, expertise, and dedication to continuous improvement, OWASA has achieved many important accomplishments, including the Partnership for Safe Water's Award for Excellence in Drinking Water Treatment and Directors Award for Distribution System Optimization, the Association of Metropolitan Water Agencies' Platinum Award for Utility Excellence, and many other awards; and

WHEREAS, John was never one to call attention to himself and his accomplishments, and he will be remembered for his many exceptional qualities such as: his sense of duty and dedication to public service, his love for his family and community, his willingness to help others, his ability to remain calm during times of stress, his sense of humor and depth of wisdom, and his practical, common sense; and

WHEREAS, we remember **JOHN W. GREENE, JR.**'s life and work among us, his unselfish leadership, his decent kindness and his due respect towards all, as his continuing legacy, and

resolve to strive together in like manner, to strengthen this organization, and to serve our community;

NOW, THEREFORE, BE IT RESOLVED:

That the Board of Directors of the Orange Water and Sewer Authority, acting through its Members, John A. Young, Michael M. Hughes, Heather Payne, Terri Buckner, Stephen (Steve) Dear, Quinton Harper, David (Dave) Moreau, Ruchir Vora and Amy Witsil, expresses its gratitude and respect for the life and service of **JOHN W. GREENE, JR.**, and expresses its deepest sympathies to his family upon his passing.

Adopted this 22nd day of January, 2015.

_____
John A. Young, Chair

ATTEST:

_____
Heather Payne, Secretary

AGENDA ITEM

- OWASA'S 2012 LOCAL WATER SUPPLY PLAN AND WATER SHORTAGE RESPONSE PLAN UPDATE SUBMITTED TO THE NC DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER RESOURCES

PURPOSE

- To approve OWASA's 2012 Local Water Supply Plan (LWSP) and 2014 update to its Water Shortage Response Plan (WSRP)

BACKGROUND

- North Carolina General Statute 143-355(l) requires that local water systems prepare a local water supply plan that meets State requirements, and to update that plan every five years (or more frequently as may be required by the NC Division of Water Resources (DWR)).
- Session Law 2008-143 (the "2008 Drought Bill") ratified in July 2008 requires public water supplies to develop a WSRP, and that the WSRP is to be submitted and updated at five year intervals.
- OWASA's 2007 LWSP was approved by the DWR in 2012 and subsequently approved by the OWASA Board of Directors.
- OWASA's 2012 LWSP was approved by the DWR in November 2014, and the agency has indicated that for OWASA to be fully compliant with the General Statute that the Board of Directors must formally approve the Plan through resolution.
- OWASA's WSRP was approved by the Board of Directors in November 2010.
- Staff recommends updating the WSRP to include the Drought Response Operating Protocol (DROP) adopted by the Board of Directors in January 2013.
- The DROP is consistent with the 2010 WSRP and DWR has stated that including the DROP in the WSRP is considered a minor change to the document.
- The Board of Directors received information on the LWSP and WSRP at their December 11, 2014 work session and supported including the resolution for possible action on the January 22, 2015 consent agenda.

ACTION NEEDED

- Staff recommends adopting the Resolution to approve OWASA'S 2012 Local Water Supply Plan and Water Shortage Response Plan Update Submitted to the NC Department of Environment and Natural Resources, Division of Water Resources.

January 22, 2015

ORANGE WATER AND SEWER AUTHORITY

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

MEMORANDUM

TO: Board of Directors

THROUGH: Ed Kerwin

FROM: Ruth Rouse

DATE: January 16, 2015

SUBJECT: OWASA's 2012 Local Water Supply Plan and Water Shortage Response Plan Update Submitted to the NC Department of Environment and Natural Resources, Division of Water Resources

BACKGROUND

North Carolina General Statute 143-355(l) requires that local water systems prepare a local water supply plan (LWSP) that meets State requirements, and to update that plan every five years (or more frequently as may be required by the North Carolina Division of Water Resources (DWR)). Session Law 2008-143 ("2008 Drought Bill") ratified in July 2008 requires public water supplies to develop a water shortage response plan (WSRP), and that the WSRP is to be submitted and updated at five year intervals.

OWASA has a State-approved LWSP (2007 plan approved in 2012) and WSRP (2010). Since our LWSP requires State approval prior to formal approval by the Board of Directors, the timetable for final approval of our plan is affected by the DWR's staffing levels and priorities. The following timeline shows the history of our most recently approved LWSP, the status of our LWSP update request, and our approved WSRP.

OWASA's 2007 Local Water Supply Plan	
June 2008	2007 LWSP Submitted to NC DWR
June 2012	2007 LWSP Approved by NC DWR
August 2012	2007 LWSP Approved by Board of Directors
OWASA 2012 Local Water Supply Plan	
March 2013	Draft 2012 LWSP Submitted to NC DWE
November 2014	2012 LWSP Approved by NC DWR
OWASA Water Shortage Response Plan	
March 2010	Preliminary Draft Submitted to NC DWR
September 2010	Draft Submitted to NC DWR
September 2010	WSRP Approved by NC DWR
November 2010	WSRP Approved by Board of Directors

On November 20, 2014 NC DWR approved our 2012 Local Water Supply Plan. The LWSP now must be approved by resolution of the Board of Directors. Staff recommends Board approval of the 2012 plan.

Although Board review and approval of the WSRP is not required until November 2015, staff recommends that the Board also approve the WSRP at this time in order to provide for concurrent review and approval of these two plans. The WSRP was modified to include a reference to the Drought Response Operating Protocol (DROP), which was adopted by the Board of Directors in January 2013. The DROP was developed to describe procedures and criteria that OWASA will use for making water supply and demand management decisions during extended droughts. DWR has concluded that including the DROP in the WSRP is a minor change, since the DROP is consistent with the WSRP and therefore public review and comment is not necessary.

The Board of Directors received information on the LWSP and WSRP at their December 11, 2014 work session and supported including the resolution for possible action on the January 22, 2015 consent agenda.

STAFF RECOMMENDATION

Staff recommends that the Board of Directors adopt the Resolution to approve OWASA'S 2012 Local Water Supply Plan and Water Shortage Response Plan Update Submitted to the NC Department of Environment and Natural Resources, Division of Water Resources.

Ruth C. Rouse

Ruth C. Rouse, AICP
Planning and Development Manager

Attachments:

Attachment 1: OWASA 2012 Local Water Supply Plan
Attachment 2: Draft Water Shortage Response Plan
Attachment 3: Draft Resolution to approve OWASA'S 2012 Local Water Supply Plan and Water Shortage Response Plan Update Submitted to the NC Department of Environment and Natural Resources, Division of Water Resources

Orange Water and Sewer Authority

2012

The Division of Water Resources (DWR) provides the data contained within this Local Water Supply Plan (LWSP) as a courtesy and service to our customers. DWR staff does not field verify data. Neither DWR, nor any other party involved in the preparation of this LWSP attests that the data is completely free of errors and omissions. Furthermore, data users are cautioned that LWSPs labeled **PROVISIONAL** have yet to be reviewed by DWR staff. Subsequent review may result in significant revision. Questions regarding the accuracy or limitations of usage of this data should be directed to the water system and/or DWR.

1. System Information

Contact Information

Water System Name:	Orange Water and Sewer Authority	PWSID:	03-68-010
Mailing Address:	400 Jones Ferry Road Carrboro, NC 27510	Ownership:	Authority
Contact Person:	Ruth Rouse	Title:	Planning & Development Manager
Phone:	919-537-4214	Fax:	919-968-4464

Distribution System

Line Type	Size Range (Inches)	Estimated % of lines
Asbestos Cement	6-12	42.00 %
Cast Iron	4-24	5.00 %
Ductile Iron	4-42	50.00 %
Polyvinyl Chloride	2-12	3.00 %

What are the estimated total miles of distribution system lines? 380 Miles
How many feet of distribution lines were replaced during 2012? 10,370 Feet
How many feet of new water mains were added during 2012? 2,276 Feet
How many meters were replaced in 2012? 1,096
How old are the oldest meters in this system? 28 Year(s)
How many meters for outdoor water use, such as irrigation, are not billed for sewer services? 270
What is this system's finished water storage capacity? 8.000 Million Gallons
Has water pressure been inadequate in any part of the system since last update? No

Some large meters are re-built periodically rather than replaced.

Programs

Does this system have a program to work or flush hydrants? Yes, Annually
Does this system have a valve exercise program? Yes, Annually
Does this system have a cross-connection program? Yes
Does this system have a program to replace meters? Yes
Does this system have a plumbing retrofit program? No
Does this system have an active water conservation public education program? Yes
Does this system have a leak detection program? No

Valves exercised in conjunction with unidirectional flushing.

Water Conservation

What type of rate structure is used? Increasing Block, Seasonal
How much reclaimed water does this system use? 0.710 MGD For how many connections? 11
Does this system have an interconnection with another system capable of providing water in an emergency? Yes

Reclaimed water is used primarily by UNC-Chapel Hill and UNC Hospitals in the cooling towers of chilled water facilities. Some reclaimed water is used to irrigate university athletic fields.

2. Water Use Information

Service Area

4.4

Sub-Basin(s)	% of Service Population	County(s)	% of Service Population
Haw River (02-1)	100 %	Orange	99 %
		Durham	1 %

What was the year-round population served in 2012? 80,288

Has this system acquired another system since last report? No

Current population = 2010 population + (number of 2011 and 2012 residential connections) * 2.26 persons per connection. Or 79,400 + (286+107)*2.26 = 80,288. 2010 population derived from US Census data for Towns of Carrboro (19, 582) and Chapel Hill (57,233) plus 2,599 residents in 1,130 housing units located outside the municipal boundaries but inside OWASA's service area.

Water Use by Type

Type of Use	Metered Connections	Metered Average Use (MGD)	Non-Metered Connections	Non-Metered Estimated Use (MGD)
Residential	18,420	3.610	0	0.000
Commercial	1,104	0.910	0	0.000
Industrial	0	0.000	0	0.000
Institutional	579	1.720	0	0.000

How much water was used for system processes (backwash, line cleaning, flushing, etc.)? 0.070 MGD

Residential: Approx 70% of all residential use is through approx 18,400 individually metered accounts. Approx 30% of all residential use occurs through 570 master-metered accounts.
Institutional - apprx 400 UNC metered connections plust local schools, churches, etc in service area.
WTP process water (filter backwash) is treated in a sidestream process and then recycled back through the WTP. Approx 0.07 mgd is discharged to our wastewater collection system. All other process water is recycled.

Water Sales

Purchaser	PWSID	Average Daily Sold (MGD)	Days Used	MGD	Contract Expiration	Contract Recurring	Required to comply with water use restrictions?	Pipe Size(s) (Inches)	Use Type
Chatham County - North	03-19-126	0.000	0	0.000		No	No	16	Emergency
City of Durham	03-32-010	0.000	0	0.000	2029	No	Yes	16	Emergency
Town of Cary	03-92-020	0.000	0		2029	No	Yes		Emergency
Town of Hillsborough	03-68-015	0.000	0	0.000		Yes	No	16	Emergency

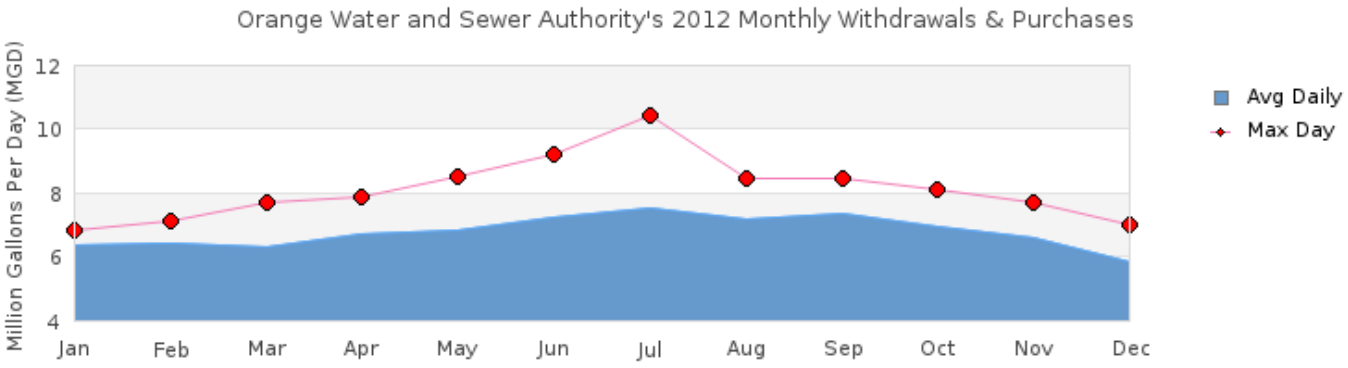
There is a mutual aid agreement between OWASA and Hillsborough that was signed in 1988. There is a section which indicates that once Cane Creek Reservoir completed, OWASA expects to be able to provide maximum of 2 mgd during the original term of the agreement (5 years; renews automatically each year unless terminated).

The agreements with Cary and Durham have expiration dates. OWASA would need to develop new agreements to extend.

3. Water Supply Sources

Monthly Withdrawals & Purchases

	Average Daily Use (MGD)	Max Day Use (MGD)		Average Daily Use (MGD)	Max Day Use (MGD)		Average Daily Use (MGD)	Max Day Use (MGD)
Jan	6.350	6.850	May	6.850	8.500	Sep	7.360	8.430
Feb	6.430	7.100	Jun	7.250	9.190	Oct	6.940	8.130
Mar	6.320	7.700	Jul	7.500	10.430	Nov	6.590	7.720
Apr	6.710	7.870	Aug	7.190	8.480	Dec	5.860	7.010



Surface Water Sources

Stream	Reservoir	Average Daily Withdrawal		Maximum Day Withdrawal (MGD)	Available Raw Water Supply		Usable On-Stream Raw Water Supply Storage (MG)
		MGD	Days Used		MGD	* Qualifier	
Cane Creek	Cane Creek Reservoir	4.599	273	8.700	8.500	SY50	2,909.000
Morgan Creek	University Lake	3.451	353	7.932	2.000	SY50	449.000

* Qualifier: C=Contract Amount, SY20=20-year Safe Yield, SY50=50-year Safe Yield, F=20% of 7Q10 or other instream flow requirement, CUA=Capacity Use Area Permit

Surface Water Sources (continued)

Stream	Reservoir	Drainage Area (sq mi)	Metered?	Sub-Basin	County	Year Offline	Use Type
Cane Creek	Cane Creek Reservoir	31	Yes	Haw River (02-1)	Orange		Regular
Morgan Creek	University Lake	30	Yes	Haw River (02-1)	Orange		Regular

What is this system's off-stream raw water supply storage capacity? 200 Million gallons

Are surface water sources monitored? Yes, Weekly

Are you required to maintain minimum flows downstream of its intake or dam? Yes

Does this system anticipate transferring surface water between river basins? No

Yield calculations for the system do not reflect 50-yr recurrence frequency for individual reservoirs, but are based on the following considerations of the entire University Lake/Cane Creek Reservoir/Quarry System:
Drought of Record conditions (2001-02)
Expected 2060 storage capacity (adjusted for projected sediment accumulation)
20 percent of total storage capacity is held in reserve for extreme drought or other emergency condition (i.e. system yield is based on 80% of actual storage capacity projected to be available through 2060.

Water Purchases From Other Systems

Seller	PWSID	Average Daily Purchased (MGD)	Days Used	Contract			Required to comply with water use restrictions?	Pipe Size(s) (Inches)	Use Type
				MGD	Expiration	Recurring			
Chatham County - North	03-19-126	0.000	0	0.000		No	No	16	Emergency
City of Durham	03-32-010	0.000	0	0.000	2029	No	Yes	16	Emergency
Town of Cary	03-92-020	0.000	0		2029	No	Yes		Emergency
Town of Hillsborough	03-68-015	0.000	0	0.000		Yes	Yes	16	Emergency

Water from Cary must be obtained through Cary-Durham and Durham-OWASA interconnections.
OWASA and Chatham County systems are interconnected, but no written transfer or mutual aid agreements are in place. Interconnections with Cary/Durham were tested in December 2012 and January 2013; approx 7 MG transfered from Cary to OWASA via Durham in December 2012 and approximately 7 MG sent back to Durham in January 2013.

The agreements with Cary and Durham have expiration dates. OWASA would need to develop new agreements to extend.

Water Treatment Plants

Plant Name	Permitted Capacity (MGD)	Is Raw Water Metered?	Is Finished Water Ouput Metered?	Source

4.6

Jones Ferry Road WTP	20.000	Yes	Yes	Cane Creek Reservoir and University Lake

Did average daily water production exceed 80% of approved plant capacity for five consecutive days during 2012? No

If yes, was any water conservation implemented?

Did average daily water production exceed 90% of approved plant capacity for five consecutive days during 2012? No

If yes, was any water conservation implemented?

Are peak day demands expected to exceed the water treatment plant capacity in the next 10 years? No

4. Wastewater Information

Monthly Discharges

	Average Daily Discharge (MGD)		Average Daily Discharge (MGD)		Average Daily Discharge (MGD)
Jan	7.506	May	7.682	Sep	8.908
Feb	7.706	Jun	7.264	Oct	7.925
Mar	8.347	Jul	7.517	Nov	7.339
Apr	7.787	Aug	7.674	Dec	7.136

How many sewer connections does this system have? 19,419

How many water service connections with septic systems does this system have? 932

Are there plans to build or expand wastewater treatment facilities in the next 10 years? No

Wastewater Permits

Permit Number	Permitted Capacity (MGD)	Design Capacity (MGD)	Average Annual Daily Discharge (MGD)	Maximum Day Discharge (MGD)	Receiving Stream	Receiving Basin
NC0025241	14.500	14.500	7.732	15.471	Morgan Creek	Haw River (02-1)

Wastewater Interconnections

Water System	PWSID	Type	Average Daily Amount		Contract Maximum (MGD)
			MGD	Days Used	
Durham	03-32-010	Discharging	0.100	365	0.000
Durham	03-32-010	Receiving	0.100	365	0.000

5. Planning

Projections

	2012	2020	2030	2040	2050	2060
Year-Round Population	80,288	92,700	107,000	121,200	135,500	149,700
Seasonal Population	0	0	0	0	0	0
Residential	3.610	4.230	4.930	5.490	6.030	6.570
Commercial	0.910	1.240	1.440	1.610	1.770	1.920
Industrial	0.000	0.000	0.000	0.000	0.000	0.000
Institutional	1.720	2.010	2.340	2.610	2.870	3.120
System Process	0.070	0.100	0.110	0.120	0.140	0.150
Unaccounted-for	0.449	0.740	0.860	0.960	1.050	1.150

Demand projections derived from development assumptions detailed in OWASA's 2010 Long-Range Water Supply Plan (demand projections not a direct function of the population estimates). Projections are consistent with those presented in the 2012 Triangle Regional Water Supply Plan, Volume I - Regional Needs Assessment report prepared for the Jordan Lake Partnership.

Future Supply Sources

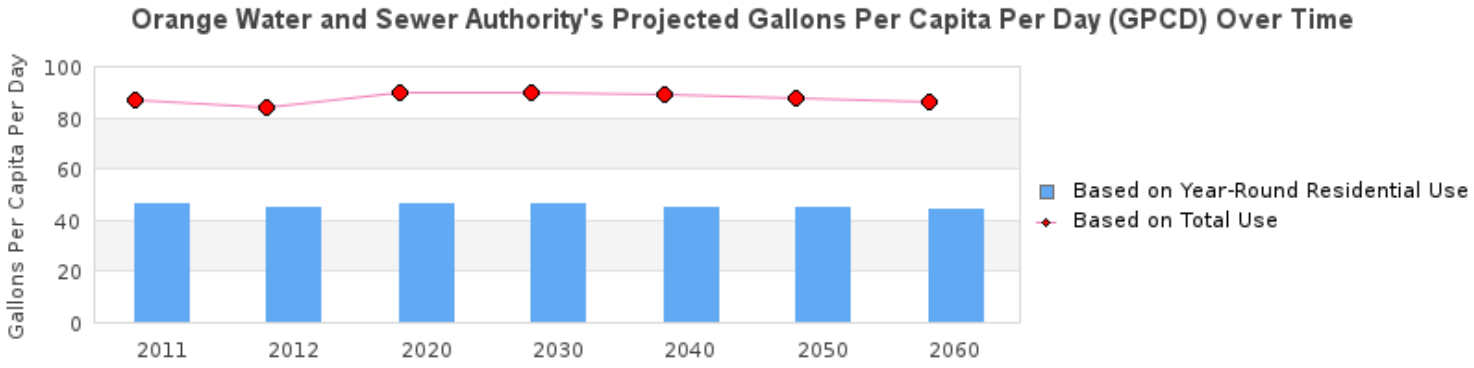
Source Name	PWSID	Source Type	Additional Supply	Year Online	Year Offline	Type
B. Everett Jordan Reservoir	03-68-010	Surface	5.000	2016		Regular
Expanded Quarry Reservoir (+1.3 BG storage)	03-68-010	Surface	2.100	2035		Regular

4.7

Jordan Lake to be used as "insurance policy" for severe drought conditions especially until the expanded Quarry Reservoir is available in approx 2035. For the foreseeable future, access to Jordan Lake will likely be via water transfers from OWASA's 5% storage allocation withdrawn and treated by the Town of Cary and transferred to OWASA via existing Cary-Durham and Durham-OWASA interconnecitons.

Demand v/s Percent of Supply

	2012	2020	2030	2040	2050	2060
Surface Water Supply	10.500	10.500	10.500	10.500	10.500	10.500
Ground Water Supply	0.000	0.000	0.000	0.000	0.000	0.000
Purchases	0.000	0.000	0.000	0.000	0.000	0.000
Future Supplies		5.000	5.000	7.100	7.100	7.100
Total Available Supply (MGD)	10.500	15.500	15.500	17.600	17.600	17.600
Service Area Demand	6.759	8.320	9.680	10.790	11.860	12.910
Sales	0.000	0.000	0.000	0.000	0.000	0.000
Future Sales		0.000	0.000	0.000	0.000	0.000
Total Demand (MGD)	6.759	8.320	9.680	10.790	11.860	12.910
Demand as Percent of Supply	64%	54%	62%	61%	67%	73%



The purpose of the above chart is to show a general indication of how the long-term per capita water demand changes over time. The per capita water demand may actually be different than indicated due to seasonal populations and the accuracy of data submitted. Water systems that have calculated long-term per capita water demand based on a methodology that produces different results may submit their information in the notes field.

Your long-term water demand is 45 gallons per capita per day. What demand management practices do you plan to implement to reduce the per capita water demand (i.e. conduct regular water audits, implement a plumbing retrofit program, employ practices such as rainwater harvesting or reclaimed water)? If these practices are covered elsewhere in your plan, indicate where the practices are discussed here.

Are there other demand management practices you will implement to reduce your future supply needs? Please see OWASA's DWR-approved Water Shortage Response Plan (November 2010).

What supplies other than the ones listed in future supplies are being considered to meet your future supply needs? N/A

How does the water system intend to implement the demand management and supply planning components above? Implementation steps are described in OWASA's 2010 Long-Range Water Supply Plan.

Additional Information

Has this system participated in regional water supply or water use planning? Yes, OWASA is an active member of the Jordan Lake Partnership.

What major water supply reports or studies were used for planning? OWASA's Long-Range Water Supply Plan (2010) evaluated demands and potential sources. Final report and appendices are available at: http://www.owasa.org/whatwedo/2010Long-RangeWaterSupplyPlan.aspx

Please describe any other needs or issues regarding your water supply sources, any water system deficiencies or needed improvements (storage, treatment, etc.) or your ability to meet present and future water needs. Include both quantity and quality considerations, as well as financial, technical, managerial, permitting, and compliance issues:

The Division of Water Resources (DWR) provides the data contained within this Local Water Supply Plan (LWSP) as a courtesy and service to our customers. DWR staff does not field verify data. Neither DWR, nor any other party involved in the preparation of this LWSP attests that the data is completely free of errors and omissions. Furthermore, data users are cautioned that LWSPs labeled **PROVISIONAL** have yet to be reviewed by DWR staff. Subsequent review may result in significant revision. Questions regarding the accuracy or limitations of usage of this data should be directed to the water system and/or DWR.

4.8

WATER SHORTAGE RESPONSE PLAN

JANUARY 22, 2015

Orange Water and Sewer Authority

Carrboro, North Carolina







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

ORANGE WATER AND SEWER AUTHORITY

WATER SHORTAGE RESPONSE PLAN

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APPENDIX A – OWASA WATER CONSERVATION STANDARDS

APPENDIX B – EXAMPLES OF MAILINGS TO CUSTOMERS

APPENDIX C - DROUGHT RESPONSE OPERATING PROTOCOL

APPENDIX D – RESOLUTIONS APPROVING OWASA'S WATER SHORTAGE RESPONSE PLAN

SECTION 1.

PURPOSE AND BACKGROUND

This Water Shortage Response Plan (WSRP) describes the actions Orange Water and Sewer Authority (OWASA) will take during a water shortage condition due to drought or special operational constraints, including the measures that OWASA will implement to reduce potable water use during such shortage conditions. This plan has been prepared as required by North Carolina General Statute (NCGS) 143-355(l).

That statute requires most public water systems in the State to have a State-approved WSRP as a component of their Local Water Supply Plan. State regulations governing water use during droughts and water emergencies (15A NCAC 02E .0607) and Session Law 2008-143 passed in July 2008 set forth specific items that must be included in local WSRPs.

OWASA's WSRP is generally organized along the lines of the North Carolina Division of Water Resources' (DWR) *Water Shortage Response Plan (WSRP) Guidelines* issued in January 2009. This plan meets the following criteria as required by the State, including:

- ✓ tiered levels of water conservation measures or other response actions based on the severity of a water shortage condition;
- ✓ each tier is based on increased severity of drought or water shortage condition and represents increasingly stringent conservation measures;
- ✓ specific measurements of available water supply, water demand and system conditions that OWASA *must use* to determine the severity of water shortage conditions and to initiate water use reduction measures and the movement between various water shortage stages;
- ✓ procedures that will be followed to ensure compliance with the provisions of the plan;
- ✓ procedures for affected parties to review and comment on the plan prior to final adoption;
- ✓ procedures to receive and review applications for variances from specific requirements, and the criteria that will be used to evaluate such requests;
- ✓ general method for evaluating the effectiveness of the plan; and
- ✓ procedures for reviewing and revising the plan, which must be done at a minimum of every five years concurrent with the update of the state-required Local Water Supply Plan.

DWR is responsible for reviewing all Water Shortage Response Plans to ensure they meet the State's minimum requirements.

This plan is only one part of OWASA's long-term water conservation and demand management efforts. The OWASA Board of Directors approved a Long-Range Water Conservation and Demand Management Goal and Objectives in April, 2005. OWASA's primary strategies for achieving its long-term conservation goals and objectives, and which are complementary to this WSRP but not described in this document, are:

- ✓ implementing aggressive conservation pricing structures, including increasing block water rates for residential customers, year-round water rates for all irrigation use, and seasonal water rates applicable to all other customers;

- ✓ promoting the use of reclaimed water for non-drinking purposes;

- ✓ treating and recycling drinking water treatment plant process water back to the head of the water plant; and

- ✓ providing education and awareness, including targeted water use audits for customers, technical assistance to developers, etc.

Additionally, water demands by OWASA's existing and future customers will be shaped by factors outside the control of OWASA, including but not limited to:

- ✓ Session Law 2007-546 (Senate Bill 668), "*An Act to Promote the Conservation of Energy and Water Use in State, University, and Community College Buildings*;"

- ✓ changes in water use efficiency standards of the NC Plumbing Code, as suggested in the North Carolina Department of Environment and Natural Resources' report titled "*Recommendations for Water Efficiency Standards for Water-Using Fixtures in Residential and Commercial Buildings*" (January 2009); and

- ✓ changes in climate, precipitation, and/or land use, which would affect rates and patterns of inflows into OWASA's water supply reservoirs, as well as customer demands.

Additional information about OWASA's comprehensive water conservation efforts is available on OWASA's website at www.owasa.org; by e-mail to info@owasa.org; by phone at 919-968-4421; by fax to 919-968-4464; or by mail to OWASA, 400 Jones Ferry Road, Carrboro, NC 27510.

SECTION 2.

AUTHORIZATION

OWASA's Executive Director is responsible for: (a) declaring a Water Shortage as described in this Plan; (2) enacting the applicable provisions of this WSRP; and (3) overseeing implementation of the Plan. In the Executive Director's absence, OWASA's General Manager of Operations is responsible for such actions.

As required by NCGS 143-355, OWASA will implement the provisions of this Plan whenever the trigger conditions established herein (and/or as they may be revised from time to time in accordance with Section 10 of this plan) occur.

Following is the contact information for the above-listed individuals as of the date of this plan:

PRIMARY RESPONSIBILITY
Ed Kerwin, or Successor
Executive Director
Orange Water and Sewer Authority
400 Jones Ferry Road
Carrboro, NC 27510

Telephone: 919-537-4211
E-Mail: ekerwin@owasa.org

ALTERNATE
Todd Taylor, or Successor
General Manager of Operations
Orange Water and Sewer Authority
400 Jones Ferry Road
Carrboro, NC 27510

Telephone: 919-537-4216
E-Mail: ttaylor@owasa.org

SECTION 3.

NOTIFICATION OF EMPLOYEES AND CUSTOMERS

OWASA will, as soon as possible, notify its employees, customers, and the public if and when a Water Shortage declaration is issued as described in Sections 4 and 5. Such notification will be provided via several methods, including but not limited to the following:

1. OWASA's Executive Director (or designee) will notify the following officials and agencies:

   - ✓ OWASA Board of Directors;
   - ✓ OWASA General Counsel;
   - ✓ Managers of the Towns of Carrboro and Chapel Hill, and Orange County; and
   - ✓ Division of Water Resources and the Public Water Supply Section within the NC Department of Environment and Natural Resources.

2. The Executive Director (or designee) will inform all OWASA employees of changes in Water Shortage stages and conservation requirements applicable to OWASA customers. This will be communicated via one or more methods, including but not limited to:

   - ✓ e-mail through the OWASA Local Area Network;
   - ✓ presentations at staff and crew meetings; and
   - ✓ memoranda or other written materials.

   Employees will be reminded of their role and responsibility and applicable procedures for monitoring and responding to potential or actual violations of applicable water use restrictions. If an employee observes such an event, he/she will be instructed to attempt to inform the customer of the restrictions in effect, the observed violation, the need for corrective action by the customer, and consequences of repeat violations.

3. OWASA's Public Affairs Administrator (or designee) will contact the news media (including newspapers, television, and radio) and provide them with information about the applicable declaration, associated requirements, water rate surcharges if applicable, etc. Such notifications may be made by e-mail, website postings, news releases, telephone, etc. News releases will include the name(s) and contact information of the OWASA staff member(s) that will be primarily responsible for addressing media inquiries.

   As in the past, OWASA will make extensive use of e-mail, the media, the OWASA website, etc. to provide information to its customers about the need to conserve water, the use restrictions in effect, and water rate surcharges if applicable.

4. The Public Affairs Administrator (or designee) will be responsible for updating the OWASA website in a timely manner regarding current information on the status of local water supply and demands, Water Shortage declarations, conservation requirements, and water rate surcharges if applicable.

5. The Public Affairs Administrator (or designee) will assist OWASA staff in responding to customer inquiries.

6. The Public Affairs Administrator (or designee) will contact local law enforcement personnel about the applicable water conservation requirements in effect during the declared Water Shortage.

7. If feasible, OWASA will notify residential and non-residential customers of water restrictions via media and e-mail. In addition, OWASA staff may provide targeted information to the following customers:

    - ✓ The University of North Carolina at Chapel Hill;
    - ✓ UNC Hospitals;
    - ✓ Chapel Hill-Carrboro City Schools;
    - ✓ multi-family residential property owners/managers/residents;
    - ✓ irrigation customers;
    - ✓ hotels, motels, and restaurants; and
    - ✓ others as appropriate.

8. OWASA may place informational signs at high-visibility locations, such as the OWASA Administration Building, local town halls, entranceways to Carrboro and Chapel Hill, etc.

SECTION 4.

WATER SHORTAGE RESPONSE PROGRAM

The cornerstones of OWASA's water shortage response strategy are:

1. Water Conservation Standards, including year-round water use restrictions;

2. OWASA's water rate surcharges that are implemented during a declared water shortage and increase as the severity of the shortage increases; and

3. Public education and awareness, including provisions for voluntary issuance of a water shortage advisory by OWASA during unusually dry periods.

Water Conservation Standards

OWASA has established Water Conservation Standards that apply to the use of OWASA drinking water by all customers. The current Standards, which went into effect in June 2009, include year-round water use restrictions and four tiers of increasingly strict requirements depending on the severity of water shortage conditions.

The Water Conservation Standards are summarized in Table 4-1. The full text of the current Standards is included as Appendix A.

To complement and support OWASA's water shortage response program, the Town of Carrboro, Town of Chapel Hill, and Orange County enacted local water conservation ordinances which incorporate all of OWASA's Water Conservation Standards. The applicable provisions of the local ordinances go into effect upon a request by OWASA and subsequent proclamation by the chief elected official of each jurisdiction.

(The implementation and associated enforcement actions under the local water conservation ordinances is outside the direct control of OWASA. OWASA works very closely with the local governments to coordinate monitoring and enforcement efforts to promote compliance with applicable use restrictions.)

Table 4-1.

SUMMARY OF KEY CONSERVATION STANDARDS FOR OWASA DRINKING WATER *

Effective June, 2009

Water Use	Year-Round	Stage 1	Stage 2	Stage 3	Emergency
Spray Irrigation of **Turf / Grass** (on designated days of the week as noted)	3 days per week, up to 1 inch per week, 6 pm - 10 am only ** Odd Addresses: Tu/Th/Sat Even Addresses: Sun/W/F	1 day per week, up to 1/2 inch per week, 6 pm - 10 am only ** Odd Addresses: Tues. Even Addresses: Thurs.	X**	X**	X
Spray Irrigation of **Non-Turf Plant Materials** (on designated days of the week as noted)	3 days per week, up to 1 inch per week, 6 pm - 10 am only ** Odd Addresses: Tu/Th/Sat Even Addresses: Sun/W/F	3 days per week, up to 1 inch per week, 6 pm - 10 am only ** Odd Addresses: Tu/Th/Sat Even Addresses: Sun/W/F	1 day per week, up to 1/2 inch per week, 6 pm - 10 am only ** Odd Addresses: Tues. Even Addresses: Thurs.	X***	X
Drip irrigation, underground drip emitters, soaker hose, hand-watering, and other non-spray methods allowed *at any time* or frequency	✓	✓	✓	✓	X
Washing of Building Exteriors **Before Painting**	✓	✓	✓	X	X
General Cleaning of Building Exteriors, Paved Areas, Etc.	✓	✓	X	X	X
Filling, Refilling, or Topping Off Ornamental Ponds, Fountains, etc.	✓	✓	X	X	X
Vehicle Washing	✓	✓	Only at commercial or institutional facilities where at least 50% of the water is being recycled, or is from a non-potable source or well	X	X
Filling, Refilling, or Topping Off of Swimming Pools and Backyard-Scale Facilities to Support Wildlife	✓	✓	✓	✓	X
Flushing or Pressure Testing New Water Lines	✓	✓	✓	✓	Only if captured and returned to system

Year-Round Requirements, Regardless of Water Shortage Condition

> Automatic controllers and rainfall or soil moisture sensors required on all irrigation systems
> "Wasteful" water use* prohibited at all times
> Water leaks must be repaired within 10 days of discovery and/or notification by OWASA
> Water may be served in restaurants and other dining facilities only at customer's request
> Hotel/motel linens may only be changed upon customer changeover, every 5 days, or upon customer request

Symbols and Notes

* *For the actual text of OWASA's Water Conservations Standards, please use the following link:* http://www.owasa.org/conservationandeducation/ConservationStandardsMarch26_2009.aspx

✓ *Water use is allowed.*

X *Water use is not allowed.*

** *Restrictions may not apply to public purpose athletic fields, recreational fields, or public purpose botanical sites operated in compliance with OWASA-approved Water Conservation Plans.*

*** *Restrictions may not apply to public purpose botanical sites operated in compliance with OWASA-approved Water Conservation Plans.*

Water Rate Surcharges During Declared Water Shortages

In 2007, OWASA adopted water rate surcharges to be imposed during declared water shortages. The surcharges were implemented during the 2007-2008 drought and resulted in a substantial reduction in water use.

Based on that experience, OWASA refined the surcharges in 2008 to apply more equitably to all customer classes throughout all drought stages.

Table 4-2 summarizes the water rate surcharges included in OWASA's October 1, 2010 schedule of rates and fees. When the surcharges are implemented, the applicable water rates in effect are increased by the factors shown in the table. The OWASA Board of Directors, at its discretion, may from time to time revise the water rate surcharges following a public hearing on OWASA's rates, fees and charges.

Table 4-2.

WATER RATE SURCHARGES IN DECLARED WATER SHORTAGES

Individually-Metered Residential Accounts						**Non-Residential and Irrigation-Only**
Block:	Res. Block 1	Res. Block 2	Res. Block 3	Res. Block 4	Res. Block 5	
Use Level: (gallons)	1,000 to 2,000	3,000 to 5,000	6,000 to 10,000	11,000 to 15,000	16,000 and up	
Stage 1	No surcharge	No surcharge	1.25 times normal Block 3 rate	1.5 times normal Block 4 rate	2 times normal Block 5 rate	1.15 times seasonal and irrigation-only rate
Stage 2	No surcharge	1.25 times normal Block 2 rate	1.5 times normal Block 3 rate	2 times normal Block 4 rate	3 times normal Block 5 rate	1.25 times seasonal and irrigation-only rate
Stage 3 and Emergency	No surcharge	1.5 times normal Block 2 rate	2 times normal Block 3 rate	3 times normal Block 4 rate	4 times normal Block 5 rate	1.5 times seasonal and irrigation-only rate

Calculating OWASA's Water Rates With Water Shortage Surcharges in Effect

Based on the water rates in effect as of October 1, 2014 (and which will be revised at the discretion of the OWASA Board of Directors), here are a couple illustrations of how OWASA's water rates change when water rate surcharges are in effect.

Example 1: *The Block 3 water rate for individually-metered residences is $7.83 per 1,000 gallons of water use (use between 6,000 and 10,000 gallons). When the Stage 1 water rate surcharge is in effect, the Block 3 rate would increase to $9.7875 per 1,000 gallons (an increase of 25%).*

Example 2: *The Peak Season (May – October) water rate for all non-residential and non-irrigation customers is $7.91 per 1,000 gallons of water use. Under Stage 3 surcharges, the Peak Season water rate would increase to $11.865 per 1,000 gallons (an increase of 50%).*

Public Education and Awareness

A comprehensive public education and awareness program is an essential component of OWASA's WSRP and water conservation efforts. During a drought or other shortage condition, the demand reductions achieved will depend primarily on how successful the education and awareness program is at gaining customer cooperation. That effort will be more successful if the public is informed about why conservation is necessary, the severity of the shortage, rate surcharges in effect, actual demand during the shortage and expected demand reductions, and how customers can achieve those reductions.

OWASA's public education and awareness program:

- ✓ provides for timely and regular notification to customers about the severity of a water shortage situation and why conservation is necessary;

- ✓ includes a variety of means to inform customers (electronic news releases to media, community organizations, and to customers who have shared their e-mail addresses; local and regional print and broadcast media; the OWASA website; direct mailings; signs and bus placards; newspaper articles and ads; etc.);

- ✓ provides information about what OWASA is doing to maintain a safe and adequate water supply and what specific measures customers can take to conserve water;

- ✓ provides the community with updates on the effectiveness of water conservation efforts; and

- ✓ includes information in Spanish on our website and for regional Latino media, local agencies serving the Hispanic community, etc.

Appendix B includes examples of brochures that OWASA mailed to customers during Stage 1 and Stage 2 of the 2007/2008 drought, and an example of an ad that was placed in a local newspaper during that drought.

OWASA's Board of Directors adopted a Drought Response Operating Protocol (DROP) in January 2013 (Appendix C). The DROP states that OWASA shall declare a Water Shortage Advisory no later than when the total water storage in the reservoirs drops to within 10 percent of the mandatory Stage 1 triggers as shown in Section 5 of this Plan. At such time, OWASA will communicate with the Carrboro Board of Aldermen, Chapel Hill Town Council, Orange County Board of Commissioners and the University of North Carolina at Chapel Hill about the potential need for water use restrictions and possible water purchases from neighboring utilities should the situation worsen. OWASA will also provide public notice to its customers and other stakeholders about the likelihood for water use restrictions.

Major Water Conservation Initiatives of OWASA

Following the extreme droughts of 2001-2002 and 2007-2008, OWASA implemented a number of important strategies to reduce and manage customer demands throughout the year, including:

1. Implementing a permanent process water recycling system at the Jones Ferry Road Water Treatment Plant. This has reduced average daily raw water withdrawals by about 7% since the fall of 2002.

2. Establishing seasonal water rates for all customers beginning in 2002 and subsequently implemented a five-tiered increasing block rate structure for all individually-metered residential customers beginning in 2007.

3. Implementing a new reclaimed water system to initially serve the University of North Carolina at Chapel Hill. This system reduces drinking water demands by approximately 0.65 million gallons a day (mgd).

4. Continuing water conservation education and awareness efforts for OWASA customers, including information and technical assistance for customers interested in implementing cost-effective conservation measures.

As a result of these strategies and the conservation efforts by OWASA customers, average day water sales in the OWASA service area are about the same now as they were in 1991 despite about a 60% increase in OWASA's customer base during that period.

Together, these measures have reduced the community's risk to droughts and other water shortage conditions, thereby reducing the need for additional restrictions during such events. It is, however, essential that OWASA have a water shortage response program in place to respond to such events because the potential for a water shortage due to drought or other event always exists.

SECTION 5.

MANDATORY WATER SHORTAGE RESPONSE TRIGGERS

As required by NCGS 143-355, OWASA has established a set of specific measurements of available water supply and demand conditions to: assess the severity of water shortage conditions during extended droughts; guide the initiation of water use reduction measures; and guide the transition between the various water shortage stages described in this Plan. The measurements and rationale are explained below.

From time to time, it may be necessary to implement water use restrictions in response to certain drinking water system emergencies, such as water main breaks, water quality problems, planned and unplanned maintenance events, natural disasters, etc. OWASA's water shortage response strategy for operational emergencies is also described below.

OWASA staff continually monitors and evaluates the operational status of water supply, treatment, and distribution system components to ensure that customer demands can be met at any given time. Staff also tracks customer demands and the amount of raw water supply remaining in each supply source on a daily basis. USGS streamflow gaging data are monitored closely to determine conditions and trends in inflows to the reservoirs. This and other information is used to guide OWASA's water shortage response strategy.

Triggers for Implementing Water Shortage Response Stages During Extended Droughts

OWASA's drought management decisions are guided primarily by the estimated level of risk that usable reservoir storage will decline to 20 percent (approximately 700 million gallons [MG]) or less during the next 12 months. At a raw water demand level of 7.5 mgd, 700 MG of raw water supply on-hand would meet customer needs for approximately three months during an extreme drought, thus providing time to implement emergency water supply augmentation and conservation measures.

Water supply risk is determined from OWASA's Reservoir Optimization Model (OWASA-ROM), which includes a statistical analysis of 82 years of actual and simulated streamflow records (1926-2007) for the Cane Creek/University Lake/Quarry Reservoir supply system. The model simulates what reservoir storage levels would be under various levels of annual average-day demand, storage volume remaining at a given time of the year, and historical streamflows and evaporation rates.

The average-day demand for the year is adjusted to reflect historical monthly demand ratios for the OWASA system. The model reflects OWASA's operating protocols and the capacities of existing raw water pumping and transmission facilities. It simulates reservoir inflows, levels and demands on a daily time-step, and evaluates the reliability of the system to meet demands while maintaining a minimum emergency storage reserve target of 20% of total capacity as a margin of safety.

OWASA-ROM has been used to estimate the total reservoir storage volumes (percent remaining) that correspond to approximately 2% (2 years in 82), 10% (8 years in 82) and 20% (16 years in 82) probabilities that reservoir storage will be drawn down to 20% or less of storage during the following 12 months under various annual average-day demand levels and assuming no other action taken to reduce demands and/or augment the supply.

In the late fall, winter and early spring, when inflows are typically higher and demand lower, reservoir storage can drop to relatively low levels before the risk of drawdown to 20% or less during the following 12 months becomes significant. From late spring through fall, when demand rises and inflows decline, the level of risk for a given demand increases.

This analysis has been used to establish the trigger levels that will automatically result in OWASA's implementation of the various Water Shortage stages and associated restrictions.

Figures 5-1 through 5-4 show the trigger levels that will apply to the implementation of successive Water Shortage response stages under annual average-day demands of 7.0, 8.0, 9.0, and 10.0 mgd, respectively. (OWASA projects average-day raw water withdrawals will be about 7 mgd in Fiscal Year 2015.)

OWASA's Executive Director will declare the appropriate Water Shortage stage within five (5) working days after the trigger has been reached (assuming storage remains at or below the applicable level). However, OWASA may declare a Water Shortage or implement stages before the specific trigger is reached (sooner than the applicable Figure would indicate) if other factors indicate such an action is appropriate or required upon approval by the Board of Directors.

Staff will provide regular informational reports to the Board during extended droughts. Other factors that will be considered when determining whether to declare a Water Shortage before a specific trigger is reached include but are not be limited to:

- regional water supply and demand conditions and forecasts;
- likelihood of obtaining raw or finished water from other utilities;
- Drought Advisory issued by the NC Drought Management Advisory Council; and
- long-term weather forecasts.

It is also possible that Water Shortage response stages may not necessarily be implemented sequentially if water supply and/or demand conditions change rapidly.

If and when OWASA determines a Water Shortage stage is in effect, it will clearly explain to its customers and the public the basis for the decision, including the estimated risk that the local water supply could be drawn down to very low levels (at or below 20% of total storage) over the following 12 months.

Figure 5-1

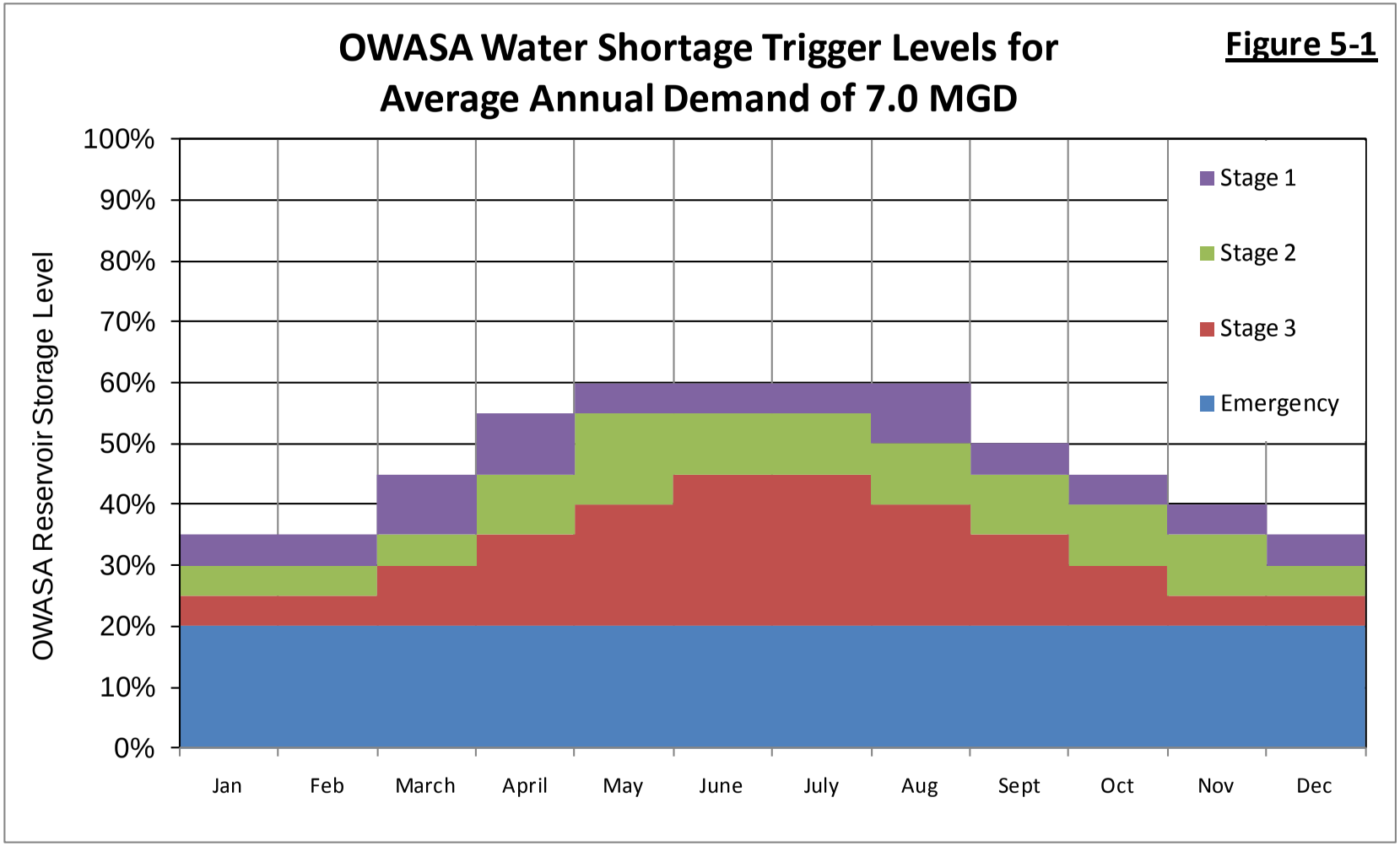
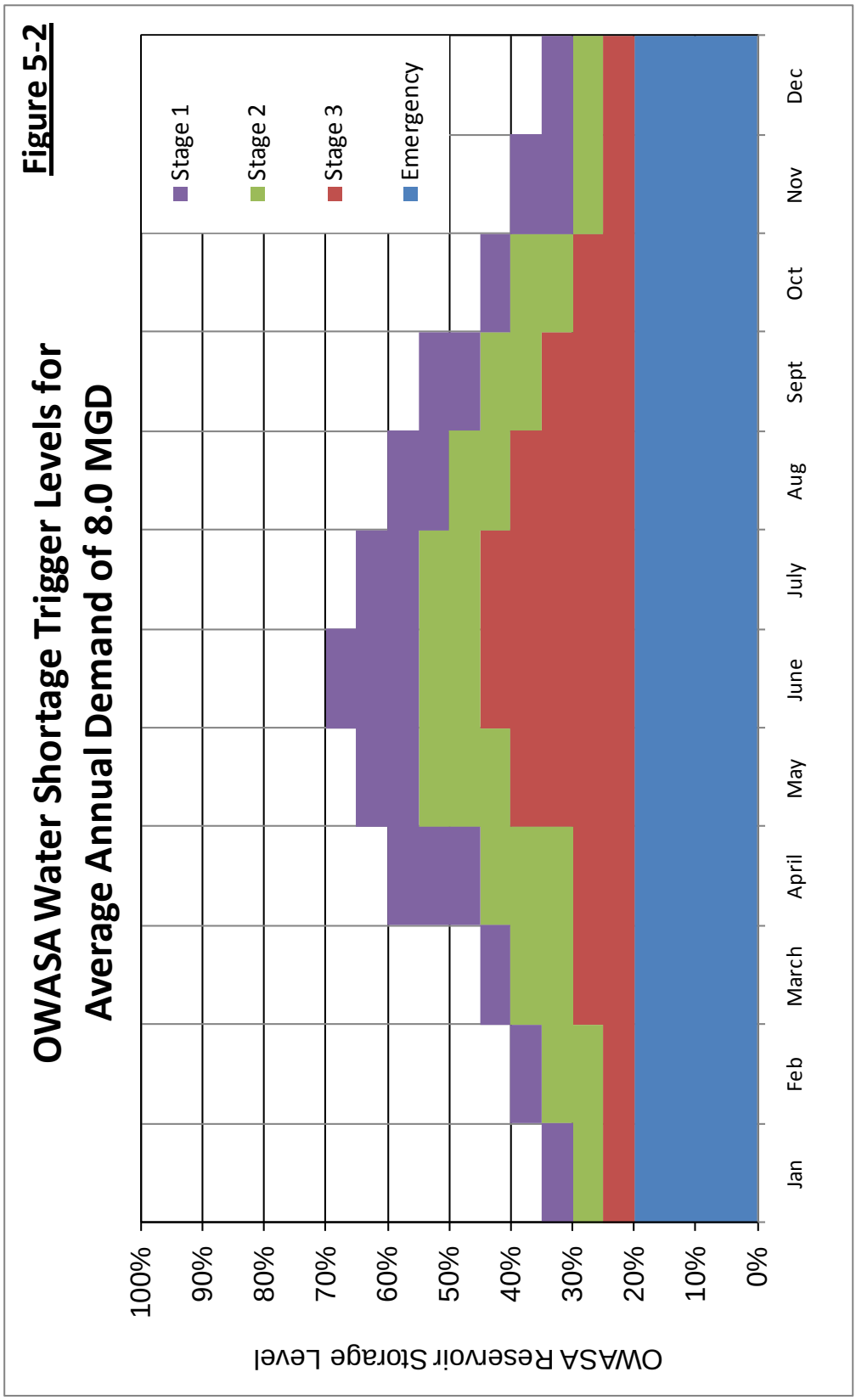

OWASA Water Shortage Trigger Levels for Average Annual Demand of 7.0 MGD
OWASA Reservoir Storage Level
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Stage 1
Stage 2
Stage 3
Emergency

Figure 5-2


OWASA Water Shortage Trigger Levels for Average Annual Demand of 8.0 MGD
Stage 1
Stage 2
Stage 3
Emergency
OWASA Reservoir Storage Level
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

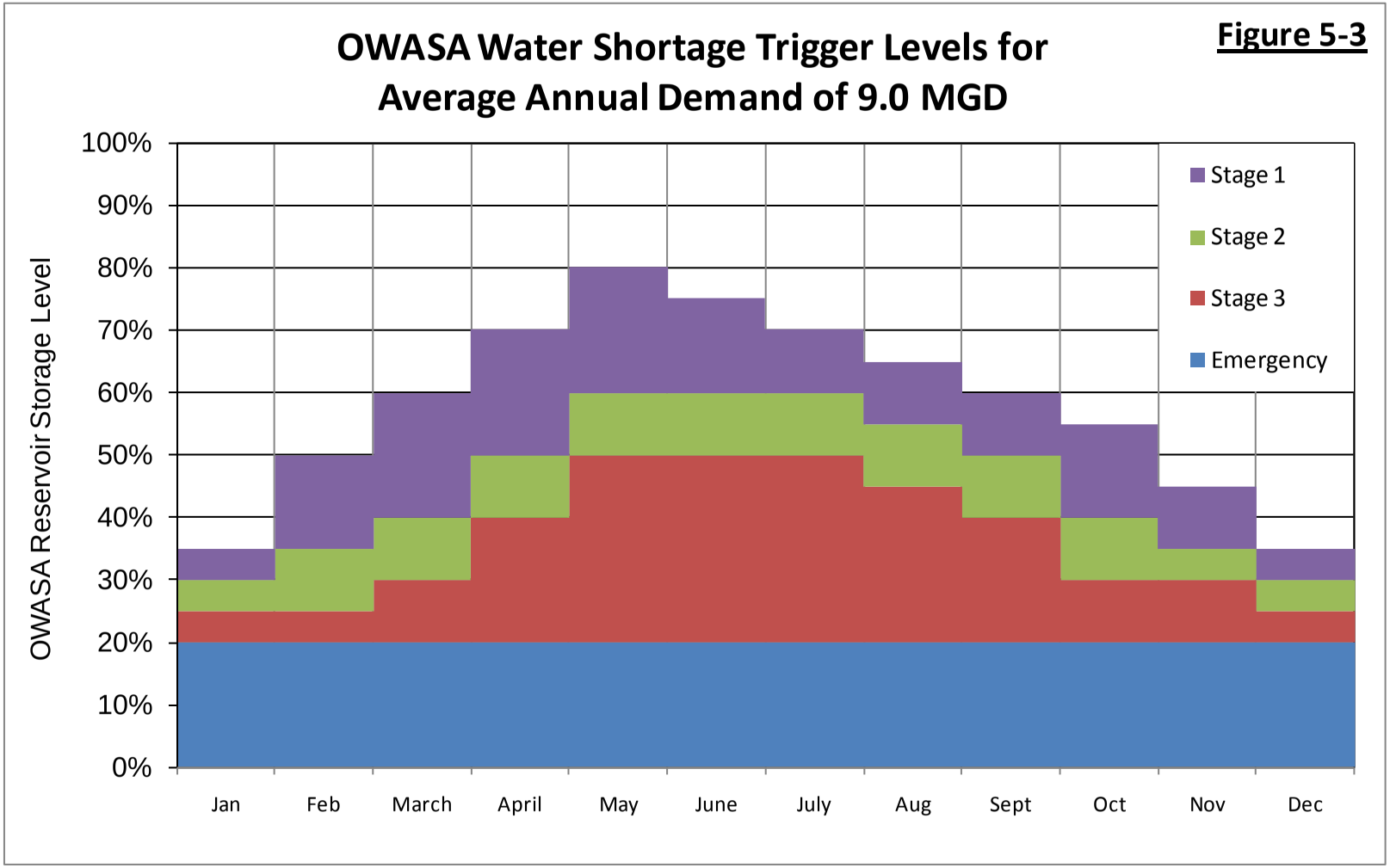
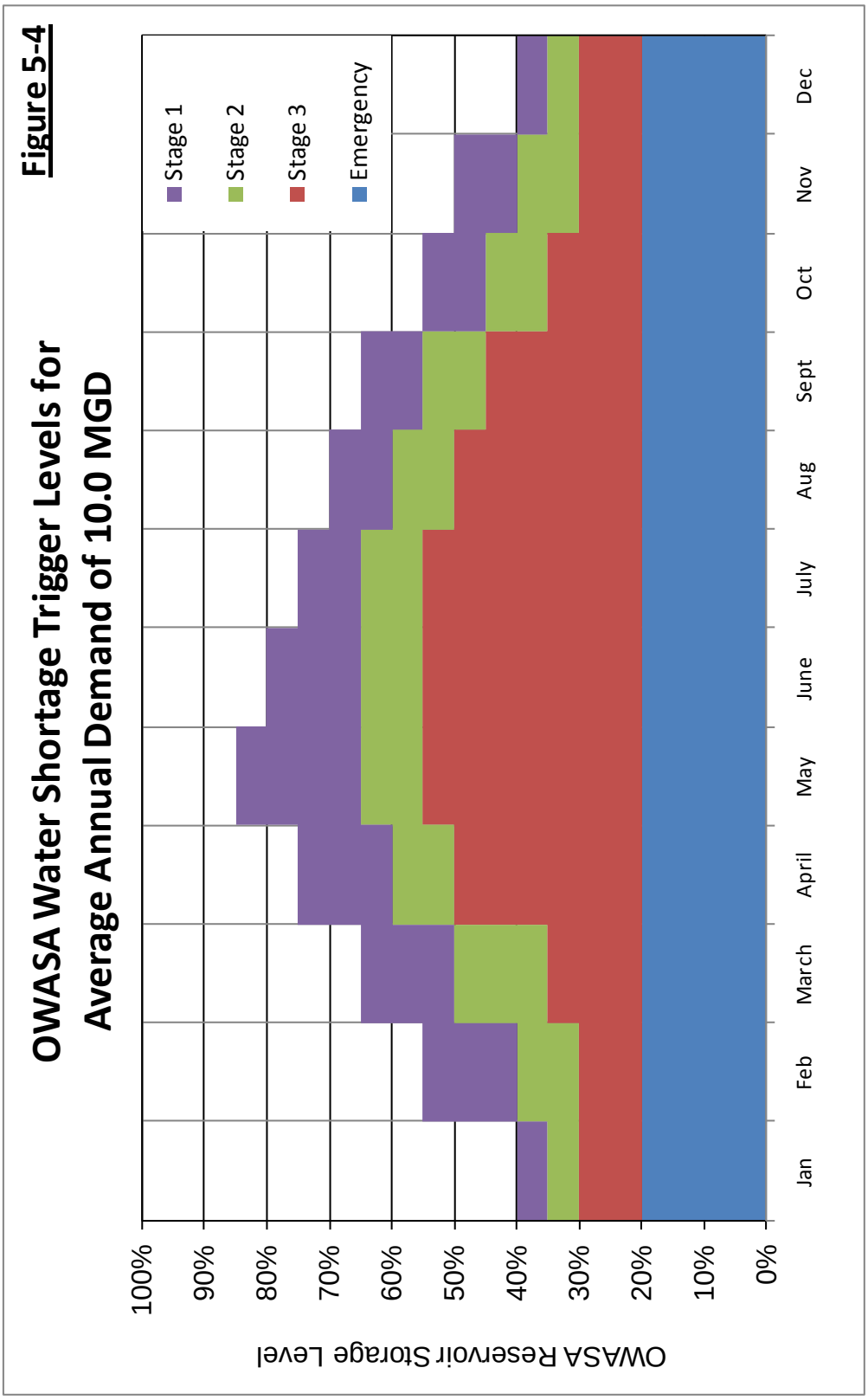

OWASA Water Shortage Trigger Levels for Average Annual Demand of 9.0 MGD
Figure 5-3
OWASA Reservoir Storage Level
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec
Stage 1
Stage 2
Stage 3
Emergency

Figure 5-4


OWASA Water Shortage Trigger Levels for Average Annual Demand of 10.0 MGD
Stage 1
Stage 2
Stage 3
Emergency
OWASA Reservoir Storage Level
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Jan
Feb
March
April
May
June
July
Aug
Sept
Oct
Nov
Dec

Triggers for Rescinding Water Shortage Response Stages During Extended Droughts

For a Water Shortage stage to be rescinded, the water supply storage volume must be at least ten percent (10%) above the specified Water Shortage initiation trigger for the applicable stage. However, OWASA's Executive Director may delay the rescission of a Water Shortage stage depending on water supply and demand conditions, extended weather forecast, regional water supply conditions and outlook, and other factors.

As with initiation, rescission of Water Shortage stages may not always occur sequentially, depending on how quickly supply and/or demand conditions change.

Water Shortage Response Triggers for Operational Emergencies

OWASA may occasionally need to implement mandatory water use restriction to address abnormal operating conditions – other than extended droughts – when current demand cannot be met. Such events include, but are not limited to:

- production problems at the Jones Ferry Road Water Treatment Plant;
- pump, tank, or pipeline failures;
- raw or treated drinking water quality problems;
- planned or unplanned maintenance events; and
- natural disasters.

OWASA may declare a Water Supply Shortage or Emergency whenever customer demand – as averaged over three consecutive days – exceeds 85 percent of OWASA's capability of treating and delivering water. The stage and duration of such a Water Supply Shortage or Emergency shall be guided by the degree to which customer demands approach or exceed OWASA's capacity to meet those demands, and by the degree to which conservation efforts successfully reduce short-term demands.

Operational emergencies are typically characterized by the need for rapid response by OWASA and its customers, and may require major curtailment of water use in a short period of time.

Non-drought water emergencies are unique because of the potential lack of preparation time and the need for immediate and potentially large-scale demand reductions. Because each emergency scenario is different, no single strategy can meet OWASA's needs during all emergency scenarios.

If OWASA's Executive Director determines that an emergency operating condition exists, he/she may implement a Water Shortage response stage and associated mandatory water use restrictions that he/she deems necessary and appropriate given the nature, extent, and expected duration of the emergency condition.

The Water Shortage response stage initially selected may be quickly modified as operating conditions are further assessed and there is a better understanding of the length of time that may be needed to restore normal operating and/or demand conditions.

SECTION 6.

ENFORCEMENT

OWASA does not have statutory authority to establish water conservation ordinances; therefore, as described in Section 4, it has established Water Conservation Standards applicable to all OWASA customers. The Standards include year-round mandatory water use restrictions as well as a system of increasingly stringent restrictions for different stages of a declared water shortage.

OWASA does not have statutory authority to directly impose civil or criminal penalty provisions for violations of its Conservation Standards. The Standards provide for the temporary disconnection of water service to any customer that repeatedly violates the Standards.

Upon learning of an actual, reported, or suspected violation, OWASA staff will contact the customer by phone, in person, and/or in writing to inform them of:

- ✓ the restrictions in effect;
- ✓ the nature of the actual, reported, or suspected violation;
- ✓ the need for corrective action by the customer; and
- ✓ the potential consequences of continued violations, including temporary disconnection of service for non-compliance with the Standards and the potential for citation by local government law enforcement officers.

In addition to OWASA's authority and approach to enforcing its Standards, the Carrboro, Chapel Hill and Orange County ordinances include civil penalty provisions for violations of their respective conservation ordinances, which, as noted before, are based on the OWASA Standards.

SECTION 7.

PROCEDURES FOR REVIEW OF VARIANCE REQUESTS

OWASA's Water Conservation Standards allow exemptions only for the following water uses during declared Water Shortages:

- ✓ Public purpose athletic fields and public purpose botanical sites are exempt from certain irrigation restrictions provided that an OWASA-approved site-specific Water Conservation Plan is in place.

- ✓ Car washes are exempt from certain restrictions provided that at least 50% of their water has been recycled, is from a non-potable water source, or is supplied from a well.

(Exemptions from water use restrictions do not include exemptions for water rate surcharges.)

Customers may request a variance from the Water Conservation Standards by submitting a letter or e-mail to OWASA's Executive Director (or designee) specifically describing the nature and reason for the requested variance and the customer's specific plan to reduce water use or to maintain a high level of water use efficiency during the declared shortage.

A decision to approve or deny individual variance requests will be provided to the customer within two weeks of receipt of the request, after careful consideration of the following criteria:

- ✓ purpose and necessity for use of drinking water;
- ✓ social and economic importance/hardship imposed by compliance with the Standards;
- ✓ the prevention of structural damage impact;
- ✓ expected duration of the use for which the variance is requested;
- ✓ expected direct and indirect impact on water demands; and
- ✓ practicality of options for alternative water sources.

Required Water Conservation Plans may be submitted at any time and will be reviewed and either approved or denied by OWASA within six weeks of receipt. To be considered for approval, a Water Conservation Plan must include:

1. Estimated amount of water use per day during both an average winter month and an average summer month for various purposes, including drinking water, basic sanitation, process water, irrigation, and other major uses specific to the customer

2. Description of alternate water sources available

3. Description of existing measures or high-efficiency fixtures in place to reduce water use

4. Measures that could be taken during each Water Shortage Response Stage for which a variance is requested in order to meet the percentage reductions in Table 8-1.

5. Description of the impact to the customer (e.g. reduced production, reduction of business hours, employment impacts, structural damage, etc.) of meeting the Table 8-1 water use reduction percentages during each Water Shortage Response Stage for which a variance is requested.

6. Proposed alternative measures to be taken during each Water Shortage Response Stage for which a variance is requested, and the resulting expected percentage reduction in water use for the categories listed in item 1, under both average winter and average summer conditions.

SECTION 8.

EXPECTED AND ACTUAL EFFECTIVENESS OF THIS PLAN

Because OWASA revised its Water Conservation Standards in June 2009 and no drought has occurred subsequent to that date, there is no actual data or experience regarding the effectiveness of these Standards. However, based on customer response to water use restrictions and other measures in place during the 2001-2002 and 2007-2008 droughts, OWASA has the following water use reduction objectives associated with the Water Shortage Response Stages in the Standards:

Table 8-1.

Expected/Targeted Water Use Reductions for OWASA's Water Shortage Stages

Water Shortage Response Stage	Target Reductions Relative to Normal* Water Use
Stage 1	10%
Stage 2	15%
Stage 3	20%
Emergency	To be Determined

* Normal Water Use is the level of customer demands that would be expected to occur during the time of the year that the Water Shortage Response Stage is in effect.

OWASA will periodically evaluate the effectiveness of its Water Shortage response actions through several methods, including but not limited to:

- ✓ comparing actual demand reductions achieved to the objectives of the Water Conservation Standards, as well as demand information for the same period for prior years;
- ✓ monitoring the frequency, severity, and duration of declared Water Shortage conditions;
- ✓ identifying any situations where action should have been taken but was not required under this plan;
- ✓ monitoring the number, type and recurrence of violations of applicable water use restrictions, and any required enforcement actions; and
- ✓ reviewing the inquiries and feedback received from customers during declared Water Shortages.

SECTION 9.

PUBLIC REVIEW AND COMMENT

In accordance with State law, OWASA's draft 2010 WSRP was issued for public review and comment and all comments received were considered prior to the OWASA Board of Directors' formal approval of the WSRP.

The core components of this Plan – OWASA's Water Conservation Standards, Water Shortage response stages, and associated water use restrictions – were adopted by OWASA in June 2009 following an extensive public review and comment process that included stakeholder meetings, review and comments from local governments and the Chapel Hill–Carrboro Chamber of Commerce, and a formal public hearing. Notice of the proposed Standards and restrictions was provided in the local newspaper and on OWASA's website.

The draft 2010 WSRP was made available for public review and comment for two weeks in advance of final consideration by the OWASA Board of Directors. Public review and comment was invited by:

- ✓ posting the draft on OWASA's website (www.owasa.org);
- ✓ providing copies for public review at OWASA's main office and the Chapel Hill Public Library;
- ✓ providing notice in the local newspaper of the draft plan's availability and the deadline for submitting written and/or verbal comments; and
- ✓ issuing electronic news releases announcing the availability of, and inviting comments on, the draft plan.

OWASA invited interested persons to submit written comments via e-mail or letter, and/or verbal comments at the public meeting when the draft was considered by the OWASA Board of Directors. Following consideration of the public comments, the OWASA Board of Directors formally approved OWASA's WSRP on November 11, 2010 (Appendix D).

This update of the WSRP includes minor updates such as contact information changes. It also includes a summary of OWASA's Drought Response Operating Protocol which was approved by the Board of Directors on January 10, 2013, which was developed to align with the 2010 WSRP. The DROP made no modifications to the trigger graphs included in Section 5 of this Plan. This version of the WSRP was presented to the Board at a work session on December 11, 2014 and approved by the Board of Directors along with OWASA's Local Water Supply Plan at its January 22, 2015 meeting (Appendix D).

SECTION 10.

FUTURE REVIEW AND REVISION OF OWASA'S WSRP

In accordance with State requirements, OWASA will review the local WSRP, and revise it where necessary, as follows:

- ✓ concurrent with the update of OWASA's Local Water Supply Plan as required per NCGS 143-355(l), which occurs a minimum of once every five years;
- ✓ following the rescission of all mandatory water use restrictions that were imposed during an event that required declaration of a Stage 1, Stage 2, Stage 3, or Emergency Water Shortage condition; and/or
- ✓ at any time as deemed necessary to reflect changes in water supply and demand conditions, new information regarding the effectiveness of conservation management practices including the water use restrictions in OWASA's Water Conservation Standards, experience gained with implementation of the plan, and other factors.

Prior to the OWASA Board's final consideration of any proposed major revisions to the local WSRP, OWASA will provide its customers and the public an opportunity to review and comment on the proposed revisions. Information about proposed revisions and requests for comments on such proposals will be provided via OWASA's website, e-mail communications, news releases, notices of availability published in the local newspaper, etc. The draft plan will be available at OWASA's main office building and on our website (www.owasa.org) for public review.

The Executive Director (or designee) will be responsible for initiating all major WSRP updates, and for ensuring that OWASA customers and the public have the opportunity to comment on the plan and any proposed changes prior to final approval by the OWASA Board of Directors.

It has been OWASA's practice to meet with representatives of organizations such as the Chamber of Commerce, green industry, and local governments to receive information, comments, and suggestions regarding the effectiveness of existing water use restrictions and potential changes to those restrictions. OWASA will continue this practice as part of future evaluations and major updates of this plan.

APPENDIX A

OWASA WATER CONSERVATION STANDARDS

Orange Water and Sewer Authority
Water Conservation Standards
(Approved March 26, 2009)

Article I – Purpose and Definitions

I. A. Purpose

These Water Conservation Standards are enacted by the Orange Water and Sewer Authority (OWASA) for the purposes of:

1. Reducing the rate of increase in overall water use through year-round water conservation practices that will help maximize the community's existing and planned water supply sources and help reduce seasonal peak day demands that result in the need for costly expansion of water treatment, storage, and transmission facilities. Such year-round practices shall include:

    a. Reducing indoor water waste by encouraging the installation and maintenance of ultra-low flow toilets, faucet aerators, low-flow showerheads and similar devices, as well as other creative and commonsense indoor conservation practices.

    b. Reducing irrigation and irrigation-related water waste without sacrificing landscape quality through the cultivation of lower water use plants; improved landscape design and planting practices; more efficient watering practices; and improved irrigation system design and maintenance.

    c. Increasing the use of non-potable water, as permitted by appropriate public health regulations, for irrigation and other uses that do not require water of potable quality.

2. Providing an orderly process for reducing community-wide water demands during periods of drought or other naturally occurring causes of water shortages.

3. Providing an orderly process for reducing community-wide water demands during periods of water shortages due to natural disaster (other than drought), major OWASA facilities failure, or other unexpected and sudden loss of water supply, treatment, or distribution capacity that constitutes a water supply emergency.

I. B. Definitions

For the purpose of these Standards, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

AUTOMATIC CONTROLLER. A mechanical or electronic device capable of operating an irrigation system and its component valve stations according to a pre-determined schedule of irrigation frequency and duration.

CISTERN. A tank or container, typically located underground, for the storage and subsequent reuse of rainwater collected from rooftops or other impervious surfaces that would have otherwise evaporated or drained off the premises.

DRIP IRRIGATION. The application of irrigation water through drip emitter devices at low pressure, volume, and velocity near or at ground level in order to minimize runoff and evaporative losses. Drip irrigation emitters are typically used for irrigating non-turf vegetation and release water in the range of 0.04 to 0.40 gallons per minute.

EVEN-NUMBERED PROPERTIES. Properties with street addresses that end in even-numbered digits, or other properties so designated for the purposes of these Standards through special arrangements with OWASA.

GRAYWATER. Wastewater removed from household wash basins, bathtubs, or showers. Graywater may only be reused in accordance with practices approved by applicable regulatory agencies.

HAND WATERING. The application of water for irrigation purposes through a hand-held hose or watering container.

HARVESTED WATER. Precipitation or irrigation runoff collected, stored and available for reuse for irrigation purposes.

IRRIGATION SYSTEM. Any permanently installed system of pipes, hoses, or other conveyance devices and appurtenances that provides water to living plant material through spray heads or other emission devices located at, above, or below the ground surface. For the purposes of these Standards, a sprinkler, soaker hose, or other device connected to its water source via a moveable above-ground garden hose is not considered to be an irrigation system.

LANDSCAPE AREA. That portion of a parcel that contains turf or non-turf vegetation.

LOW-PRECIPITATION BUBBLER. An irrigation head which typically operates within six inches of ground level and delivers water at a rate of less than 0.45 gallons per minute within a radius of less than two feet of the head. Low-precipitation bubblers are typically used for irrigating non-turf vegetation.

MICRO SPRAY. The application of irrigation water through small, low volume sprayer heads in order to minimize runoff losses. Micro sprays are typically used for irrigating non-turf vegetation. Individual micro spray heads typically operate less than 12 inches above ground level and typically deliver water in the range of 0.10 to 0.50 gallons per minute within a radius of five feet or less of the head.

MULCH. A protective covering of organic material, such as sawdust, wood chips, compost, or other vegetative matter, spread on the ground to reduce evaporation and increase water retention.

ODD-NUMBERED PROPERTIES. Properties with street addresses that end in odd-numbered digits, or other properties so designated for the purposes of these Standards through special arrangements with OWASA.

OVERALL WATER DEMAND. The total water demand for any given month, as projected by OWASA.

OWASA. The Orange Water and Sewer Authority.

POTABLE WATER. Treated water provided by OWASA that is suitable for drinking, cooking, and other domestic use. Water that is collected indoors in containers from indoor faucets or spigots that would otherwise be discharged into drainpipes while a user awaits the warming of the water for dishwashing, other washing, shaving, bathing, or showering is not considered to be potable water for the purposes of these Standards.

PRECIPITATION RATE. The amount of water applied per unit of time, usually expressed in inches per hour.

PUBLIC PURPOSE ATHLETIC OR RECREATIONAL FIELD. An athletic or recreational field owned or leased by a public or not-for-profit entity and which is (a) operated for the use of the public pursuant to general invitation, and (b) not operated for the purpose of profit. For purposes of this definition, a golf course is not considered to be a public purpose athletic field or recreational field.

PUBLIC PURPOSE BOTANICAL SITE. A landscaped area which is owned or leased by a public or not-for-profit entity in which a variety of plants are grown to be categorized and documented for scientific purposes and/or which may also be open to the public for entertainment and educational purposes.

PUBLIC RIGHT-OF-WAY. The area of land owned or maintained by municipal, county, or state government primarily for the use of the public for the movement of people, goods, vehicles, or storm water. For the purposes of these Standards, the public right-of-way shall include curbs, streets, sidewalks, and storm water drainage inlets, but shall not include adjacent landscaped areas that also may be located within the legally delineated public right-of-way.

RAIN BARREL: A tank or container, typically located on the ground beneath a roof drainage system, that captures and stores rainwater for subsequent reuse.

RAW WATER. Water drawn from a reservoir or other water source before treatment.

RECLAIMED WATER. Highly treated effluent from a wastewater treatment plant that can be safely used for non-potable purposes approved by applicable regulatory agencies.

RUNOFF. Water that is not absorbed by the soil or landscape to which it is applied. Runoff occurs when water is applied too quickly (application rate exceeds infiltration rate), particularly if there is a severe slope. These Standards do not apply to stormwater runoff which is created by natural precipitation rather than human-caused or applied water use.

SERVICE AREA. The geographic area in which OWASA provides or is authorized to provide water and/or sewer service.

SHUT-OFF NOZZLE. A device attached to the end of a hose that completely shuts off the flow, even if left unattended.

SOAKER HOSE. A flexible hose designed to emit a trickle of water along its entire length, either through numerous small-diameter (less than 1/32-inch) perforations or through the permeable material of its composition.

SPRAY IRRIGATION. The application of water to landscaping by means of a device, other than a hand-held hose or watering container, that projects water through the air in the form of small particles or droplets.

SPRINKLER HEAD. A device that projects water through the air in the form of small particles or droplets.

UNDERGROUND SYSTEM. An irrigation system with emitters installed beneath the ground surface.

WATER CONSERVATION PLAN (OWASA-APPROVED). A written document submitted by the owner or operator of a public purpose athletic field, recreational field, and/or a public purpose botanical site and approved by OWASA's Executive Director or his/her designee that specifies the conservation measures and irrigation operating modes that will be employed year-round at those public purpose facilities and the specific practices that will be employed to achieve Stage 1, 2, and 3 Water Shortage conservation goals enumerated in these Standards.

WATER WASTE. The non-beneficial use of OWASA potable water. Non-beneficial uses include but are not restricted to:

a. Landscape water applied in such a manner, rate and/or quantity that it overflows the landscaped area being watered and runs onto adjacent property or public right-of-way; or landscape water applied during periods of rainfall or when soil moisture is already adequate.

b. The use of water for washing vehicles, equipment, or hard surfaces, such as parking lots, aprons, pads, and driveways in such quantities to flow onto adjacent property or the public right-of-way.

c. Water applied in sufficient quantity to cause ponding on impervious surfaces.

d. Water lost through plumbing leaks that can be readily identified and corrected.

WATERING BAG. A container used to hold and slowly dispense water around the base of a tree or shrub. These are commonly called "Gators."

XERISCAPING. An approach to landscape design and maintenance that uses small amounts of water but sustains a traditional look through the proper conditioning of soil, the selection of appropriate drought-tolerant plants, generous use of mulch, efficient use of water, and other proven techniques.

Article II – Water Waste Prohibited, Penalties for Violating Standards

II. A. Water Waste Prohibited

No person, party, or entity shall use, cause, waste, or permit to be wasted any OWASA-supplied potable water in violation of the Standards set out herein.

II. B. Penalties

OWASA may discontinue water service to any customer where, after notice of a prohibited use is delivered to the service address, OWASA-supplied potable water continues to be used or wasted in violation of the Water Conservation Standards set out herein.

Article III – Year-Round Requirements, Policy and Practice

III. A. Exterior Use

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

   a. Spray irrigation shall not occur more than three days per week. Even-numbered properties may be irrigated with spray systems only on Sundays, Wednesdays, and/or Fridays. Odd-numbered properties may be irrigated with spray systems only on Tuesdays, Thursdays, and/or Saturdays. All spray irrigation shall occur only between the hours of 6:00 p.m. and 10:00 a.m., and shall apply no more than one inch of water in any given week. These restrictions shall not apply to properties using underground, drip irrigation, micro spray, low precipitation bubblers, soaker hoses, hand watering, tree or shrub watering bags, or where watering of containerized plants and commercial plant stock in trade is maintained for resale.

b. All irrigation systems shall be equipped with automatic controllers that activate the system according to a desired frequency and duration, and shall also be equipped with rain or soil moisture sensors that will prevent irrigation during periods of rainfall or when there is sufficient moisture in the ground for plant health and survival.

c. All hoses used for hand watering, vehicle washing, or other allowable outdoor uses shall be equipped with shutoff nozzles.

d. No exterior use of OWASA-supplied potable water shall result in the flow of water onto adjacent property or public right-of-way, and all irrigation systems shall be designed and maintained to prevent to the extent practicable water from flowing onto paved or other impervious surfaces.

e. Outdoor water leaks on property or facilities of OWASA customers shall be repaired within ten (10) days of discovery by the customer and/or notification by OWASA.

2. Owners of public purpose athletic fields, recreational fields, and/or public purpose botanical sites shall not be subject to the year-round limitations of III.A.1.a-e if those facilities are operated in compliance with an OWASA-approved Water Conservation Plan that specifies the conservation measures and irrigation operating modes to be employed at that facility year-round and during successive stages of a declared water shortage.

3. Unless superseded by the declaration of a Water Supply Shortage or Emergency, the year-round requirements of III.A.1.a and III.A.1.b above shall not apply to the following:

a. Outdoor irrigation necessary for the establishment of newly sodded or seeded lawns and for the establishment of new non-turf plant materials within the first 45 days of planting, provided that such irrigation occurs only between the hours of 6:00 p.m. and 10:00 a.m.

b. Irrigation necessary for one day only where treatment with an application of chemicals requires immediate watering to preserve an existing landscape or to establish a new landscape, provided that such irrigation occurs only between the hours of 6:00 p.m. and 10:00 a.m.

c. Water used to control dust or to compact soil when alternate methods are not available.

d. Visually supervised operation of watering systems for short periods of time to check system condition and effectiveness.

e. Water used for construction or maintenance activities where the application of water is the appropriate methodology and where no other practical alternative exists.

f. Water used for firefighting, firefighter training, fire hose testing, fire pumper testing, and other emergency situation mitigation purposes.

g. For situations in which there is no practical alternative, OWASA-supplied potable water may be used for other special purposes, such as washing out garbage trucks, cleaning up hazardous or unsanitary materials, etc., or for other purposes necessary to protect public health, safety, and welfare – provided that such water is used in the least quantity needed to accomplish the task.

III. B. Interior Use

1. The following indoor or interior use requirements shall apply to all customers using OWASA-supplied potable water:

   a. Restaurants and dining facilities shall serve water only upon request of the customer.

   b. Hotels, motels, and other facilities providing sleeping accommodations shall change bed linens only upon request of the customer, or upon customer changeover, or every five days for long-term customers.

   c. Indoor water leaks on property or facilities of OWASA customers shall be repaired within ten (10) days of discovery by the customer and/or notification by OWASA.

2. Unless superseded by the declaration of a Water Supply Shortage or Emergency, the year-round requirements of III.B.1. above shall not apply to the following:

   a. Visually supervised operation and flushing of plumbing systems for short periods of time to check system condition and effectiveness.

   b. Water used for construction or maintenance activities where the use of water is the appropriate methodology and where no other practical alternative exists.

III. C. Year-Round Policy and Practice

1. It shall be OWASA's policy and practice to publicize periodically water conservation methods, including but not limited to, methods of conserving water both indoors and outdoors; methods of collecting and storing harvested water in appropriate devices, such as rain barrels and cisterns; as well as information about the availability, feasibility and allowable uses of reclaimed water from OWASA. It shall be OWASA's policy to strongly encourage and promote the following voluntary conservation measures year-round, regardless of water supply conditions:

a. Operate dishwashers and clothes washers only when loaded to their maximum capacity or at water level settings appropriate for the size of the load.

b. Where not otherwise required, install ultra-low flow toilets, tank dams, flow restrictors (aerators) and low-flow showerheads.

c. Repair and maintain plumbing systems to prevent water leaks.

d. Use harvested rainwater and/or reclaimed water for indoor and outdoor purposes where allowable and practical.

Article IV – Determination of a Water Supply Shortage or Emergency

IV. A. Drought Condition Shortage

OWASA's drought response strategy and Water Supply Shortage declarations will be guided primarily by the risk that OWASA's water supplies will decline to 20 percent or less of total storage capacity within the next 12-month period. A Stage One Water Shortage declaration will generally correspond to a two percent (or greater) risk that reservoir levels will decline to 20 percent or less of total storage capacity within the next 12 months; provided, however, that in making such a determination, OWASA will also consider the actual and projected severity of the ongoing drought relative to historical droughts included in OWASA's water supply simulation models; existing and anticipated demand, including expected customer response to water use restrictions; availability of supplemental supplies, including water purchases from neighboring communities; regional water supply conditions, including, but not limited to, the concurrent drought response status of neighboring jurisdictions; guidance or directives from the State of North Carolina; and other elements of reasonable professional judgment and management.

More severe Water Supply Shortage Stages will subsequently be declared if the risk level increases and/or if other factors indicate that further action is needed. Similarly, OWASA will reduce the severity of, or rescind, a Water Supply Shortage declaration as the risk level and related factors improve.

IV. B. Water Treatment, Storage, or Distribution Capacity Shortage

In addition to conditions caused by drought, OWASA may declare a Water Supply Shortage or Emergency whenever customer demand – as averaged over three consecutive days – exceeds 85 percent of OWASA's capability of treating and delivering water. The stage and duration of such a Water Supply Shortage or Emergency shall be guided by the degree to which customer demands approach or exceed OWASA's capacity to meet those demands, and by the degree to which conservation efforts successfully reduce short-term demands.

IV. C. Disasters and Catastrophic Equipment or Plant Failure Shortage

Any other circumstances, including service losses caused by equipment or facility failure, human error, deliberate act, weather, or other natural disaster, which constrain OWASA's water supply, treatment, or distribution capacity to less than that reasonably needed by its customers, shall constitute a Water Supply Shortage up to and including a Water Supply Emergency, requiring immediate action by OWASA.

Article V – Required Actions Under Water Supply Shortage or Emergency Conditions

In the event of a water supply shortage, OWASA shall, using its best professional judgment, determine which of the following stages is the most appropriate response to the estimated level of risk considering factors in IV.A above.

V. A. Stage One (1) Water Shortage

In the event that OWASA declares a Stage One Water Shortage, OWASA shall advise the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners of its declaration and shall request that they issue Proclamations of a Stage One Water Supply Shortage. Upon OWASA's declaration of a Stage One Water Shortage, the following actions shall be taken with the goal of reducing overall water demand by ten (10) percent:

1. Spray irrigation of turf grass using OWASA-supplied potable water shall not occur more than one day per week with a maximum of one-half inch of water applied to plant material in any given week. Odd-numbered properties shall be allowed to spray irrigate only on Tuesdays; even-numbered properties shall be allowed to spray irrigate only on Thursdays. Spray irrigation of turf grass shall occur only between the hours of 6:00 p.m. and 10:00 a.m. Owners of public purpose athletic fields, recreational fields, and/or public purpose botanical sites shall not be subject to the limitations of this subsection V.A.1 if those facilities are operated in compliance with an OWASA-approved Water Conservation Plan.

2. Spray irrigation of non-turf plant materials may occur up to three days per week as provided under the year-round requirements specified in Section III.A.1.a.

3. Irrigation of non-turf plant materials by underground, drip irrigation, micro spray, low precipitation bubblers, soaker hose systems with automatic shutoffs, or by hand held hoses or watering cans may occur at any time or frequency.

Notwithstanding the restrictions specified in Sections V.A.1 through V.A.3, the protection of public health, safety, and welfare may, under special circumstances, require the use of limited amounts of OWASA-supplied potable water for such purposes as washing out garbage trucks, cleaning up hazardous or other materials. Such uses shall be permitted during declared Water

Shortages or Emergencies, provided that other practical alternatives are not available and water is used in the least practical amount.

V. B. Stage Two (2) Water Shortage

In the event that OWASA declares a Stage Two Water Shortage, OWASA shall advise the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners of its declaration and shall request that they issue Proclamations of a Stage Two Water Supply Shortage, if not already issued. Upon OWASA's declaration of a Stage Two Water Shortage, the following actions shall be taken with the goal of reducing overall water demand by fifteen (15) percent:

1. Spray irrigation of turf grass with OWASA-supplied potable water shall not be permitted, except at public purpose athletic and recreational fields and public purpose botanical sites operating under OWASA-approved Water Conservation Plans.

2. Spray irrigation of non-turf plant materials shall not occur more than one day per week according to the schedule specified in Section V.A.1 and in quantities of no more than ½ inch per week, except at public purpose botanical sites operating under OWASA-approved Water Conservation Plans.

3. Irrigation of non-turf plant material by underground, drip irrigation, micro spray, low precipitation bubblers, soaker hose systems with automatic shutoffs, tree or shrub watering bags, or by hand held hoses or watering cans may occur at any time or frequency.

4. No OWASA-supplied potable water shall be used to re-fill ornamental fountains, ponds, and like devices; provided, however, that OWASA water may be used to fill and re-fill bird baths and other backyard-scale facilities used to support wildlife.

5. No OWASA-supplied potable water shall be used for washing vehicles, except at commercial or institutional car washes in which at least 50 percent of the water has either been recycled, is from a non- potable source, or is supplied by a well.

6. No OWASA-supplied potable water shall be used for cleaning or washing exterior building surfaces, decks, or paved areas, such as sidewalks, driveways, roadways, and parking lots. This restriction shall not apply to the cleaning of exterior building surfaces or decks prior to painting or re-painting.

7. No OWASA-supplied potable water shall be used for fire department training or equipment testing unless required by State or Federal regulations.

Notwithstanding the restrictions specified in Sections V.B.1 through V.B.7, the protection of public health, safety, and welfare may, under special circumstances, require the use of limited amounts of OWASA-supplied potable water for such purposes as washing out garbage trucks, cleaning up hazardous or other materials. Such uses shall be permitted during declared Water

Shortages or Emergencies, provided that other practical alternatives are not available and water is used in the least practical amount.

V. C. Stage Three (3) Water Shortage

In the event that OWASA declares a Stage Three Water Shortage, OWASA shall advise the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners of its declaration and shall request that they issue Proclamations of a Stage Three Water Supply Shortage, if not already issued. Upon OWASA's declaration of a Stage Three Water Shortage, the following actions shall be taken with the goal of reducing overall water demand by twenty (20) percent:

1. The use of OWASA-supplied potable water for heating and/or cooling purposes shall be reduced in all but the most essential facilities to the extent practical in consideration of indoor air quality standards, weather conditions, and health and safety requirements.

2. No OWASA-supplied potable water shall be used for irrigation of turf grass, except for public purpose athletic and/or recreational fields and public purpose botanical sites operating under water conservation plans that have been approved by OWASA's Executive Director or by his/her designee.

3. No OWASA-supplied potable water shall be used for irrigating non-turf plant material unless applied (a) via hand held hoses or watering cans, watering bags, drip irrigation or soaker hoses, or (b) at public purpose botanical sites operating under OWASA-approved Water Conservation Plans.

4. OWASA-supplied potable water may be used to fill, re-fill, or top off swimming pools, or to fill or re-fill bird baths and other backyard-scale facilities used to support wildlife. OWASA supplied potable water shall not be used for any other outdoor purposes, except for emergency fire suppression or other activities necessary to maintain public health, safety, or welfare.

5. No bulk sale of potable OWASA water shall occur except for the wholesale transmission of potable OWASA water to neighboring communities, or for other purposes necessary to maintain public health, safety, or welfare.

6. No OWASA-supplied potable water may be used for washing any vehicles.

7. No OWASA-supplied potable water may be used for pressure washing building exteriors.

8. No OWASA-supplied potable water may be used for fire department training or equipment testing.

Notwithstanding the restrictions specified in Sections V.C.1 through V.C.8, the protection of public health, safety, and welfare may, under special circumstances, require the use of limited amounts of OWASA-supplied potable water for such purposes as washing out garbage trucks,

cleaning up hazardous or other materials. Such uses shall be permitted during declared Water Shortages or Emergencies, provided that other practical alternatives are not available and water is used in the least practical amount.

V. D. Water Supply Emergency

In the event that OWASA declares a Water Supply Emergency, OWASA shall so advise the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners and shall request the issuance of a Proclamation of a Water Supply Emergency. In addition to those applicable measures listed above for a Stage Three Water Shortage, the following actions shall be taken upon OWASA's declaration of a Water Supply Emergency:

1. No OWASA-supplied potable water may be used for any outdoor purposes other than emergency fire suppression or other activities necessary to maintain public health, safety, or welfare.

2. No OWASA-supplied potable water shall be used to fill, refill or top off the water level in any private or public purpose swimming pool.

3. No OWASA-supplied potable water shall be used for the flushing or pressure testing of new distribution lines unless that water is returned to the OWASA water supply system through methods approved by OWASA. This restriction shall not apply to the testing of in-building fire control sprinkler systems

4. The use of OWASA-supplied potable water for heating and/or cooling purposes shall be reduced in all but the most essential facilities to the extent practical in consideration of indoor air quality standards, weather conditions, and health and safety requirements.

5. Water service may be discontinued or reduced to designated users or in designated portions of the OWASA service area in order to preserve the availability of water for essential public health and safety requirements, such as fire protection, hospitals, clinics, and other critical community needs.

APPENDIX B

EXAMPLE OF MAILINGS TO CUSTOMERS

As discussed in Section 4 of the WSRP, during a declared Water Shortage OWASA uses several methods to inform its customers of the consideration and implementation of water use restrictions in a shortage, including but not limited to:

- paid media advertising;
- e-mails using our distribution list for local and University officials, customers who have shared their e-mail addresses, etc.;
- news releases (by e-mail);
- reports and announcements in televised and other public meetings of the OWASA Board;
- posters in public facilities such as municipal offices; and
- website postings including water supply/demand/rain data that are updated on weekdays (and e-mailed to interested parties)

Following are examples of two information brochures that OWASA mailed directly to its customers during the 2007/2008 drought, and an example of an ad that was placed in a local newspaper during that drought.

(The water use restrictions and water rate surcharges have been revised since that drought.)

IMPORTANT NOTICE

ADDITIONAL WATER USE RESTRICTIONS IN EFFECT DUE TO STAGE ONE WATER SHORTAGE

IMPORTANTE BOLETÍN INFORMATIVO SOBRE RESTRICCIONES EN EL USO DEL AGUA (NIVEL I); PARA SOLICITAR UNA TRADUCCÍÓN EN ESPAÑOL, LLAME AL 537-4221 O ENVIE UN CORREO ELECTRÓNICO A WEBMASTER@OWASA.ORG.

On September 27th, the OWASA Board of Directors declared a Stage One Water Shortage with the goal of reducing the community's water demand by at least 10%. We request and very much appreciate your help in conserving our drinking water during this extreme drought and throughout the year.

The extended dry weather has resulted in steady declines in our reservoir levels, and there has been essentially no water flow since early August in the creeks and streams that drain to the Cane Creek Reservoir and University Lake. Drinking water demand in September averaged about 11 million gallons per day (MGD), compared to the previously projected demand of about 9.6 MGD for September.

The Stage One mandatory water use restrictions listed below will be in effect until further notice.

Stage One Water Shortage Use Restrictions for OWASA Customers

- **Spray irrigation is limited to one day per week, and is allowed only before 9:00 AM and after 8:00 PM. Irrigation is limited to 1/2 inch per week. At even-numbered addresses, spray irrigation is allowed only on Tuesdays; at odd-numbered addresses, only on Thursdays.** These restrictions do not apply to watering of containerized plants and commercial plants for sale at local nurseries and businesses.
- Spray irrigation is defined as "The application of water to landscaping by means of a device that projects water through the air in the form of small particles or droplets." You can measure irrigation with a small container such as a tuna can. If you have an irrigation system, you may wish to have the control system adjusted and soil and rain sensors checked by a company that installs or maintains irrigation systems.
- Spray irrigation systems are required to have automatic timer systems and rain or soil moisture sensors, and hoses for outdoor use are required to have automatic shut-offs.
- Water waste is prohibited. Water waste includes using so much water that it runs onto adjacent properties or street rights-of-way or causes ponding on impervious surfaces; failing to fix leaks; and irrigation during rainfall or when soil moisture is already adequate.
- **If water use by an individually-metered residential customer or by an individually-metered single family residential irrigation-only customer exceeds an average of 1,000 gallons per day during any monthly billing cycle, OWASA MAY TERMINATE SERVICE.**
- The previous exemption for watering new plants, sod, seeding and reseeding of lawns is no longer in effect. That means the maximum amount of water that can be applied to a new lawn or landscaped area is limited to a total of one-half inch per week.
- Watering with a hand-held hose or watering can or with underground, drip irrigation, micro spray, soaker hose or low precipitation "bubbler" watering systems is allowed on any day of the week and at any time of day, but is limited to the maximum of one-half inch of water per week.
- No OWASA water may be used to re-fill ornamental fountains, ponds, and like devices.
- No OWASA water may be used for routine cleaning or washing of paved areas such as sidewalks, decks, driveways, roadways, or parking lots. (However, pressure cleaning of exterior building surfaces is allowed under the Stage One restrictions.)
- Hotels, motels, etc. shall change bed linens only upon request of the customer, upon customer changeover or every five days for long-term customers.
- Restaurants shall serve water only upon request.

OWASA customers are strongly encouraged to conserve in other ways, such as:

- Taking shorter showers, not letting faucets run unnecessarily, and flushing the toilet only when necessary.
- Installing low-flush toilets and low-flow showerheads and faucet aerators where they are not already in place as required by current plumbing codes.
- Using rain barrels, cisterns, etc. to store rainwater for irrigation and other suitable purposes. Rain barrels are available at some retail outlets and local Boy Scout Troop #42 (telephone: 942-4830).
- Dishwashers and clothes washers should be used only with full loads or with water level settings appropriate for the load size.

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OWASA

400 Jones Ferry Road
Carrboro, NC 27510

IMPORTANT NOTICE: WATER USE RESTRICTIONS

WATER RATE SURCHARGES TO BEGIN IN NOVEMBER FOR HIGH RESIDENTIAL WATER USE (11,000 OR MORE GALLONS PER MONTH)

In addition to declaring the Stage One Water Shortage, the OWASA Board decided that surcharges for high residential water use will go into effect on November 1st. The surcharges are set forth in OWASA's schedule of rates and fees for water and sewer service as approved in June, 2007.

As previously announced, OWASA's new rates effective on October 1st will include increasing block water rates for individually-metered residential customers:

	Volume of Use	Water Rate
Block 1	1 – 2,999 gallons per month	$1.98 per 1,000 gallons
Block 2	3,000 – 5,999 gallons per month	$4.70 per 1,000 gallons
Block 3	6,000 – 10,999 gallons per month	$5.53 per 1,000 gallons
Block 4	11,000 – 15,999 gallons per month	$7.46 per 1,000 gallons
Block 5	16,000 or more gallons per month	$13.05 per 1,000 gallons

(The typical residential OWASA customer uses about 6,000 gallons per month; water use over 10,000 gallons per month is very likely for outdoor purposes such as irrigation)

On November 1st, under the Stage One Water Shortage surcharges, the Block 4 water rate will increase to $11.19 per 1,000 gallons (1.5 times the normal Block 4 rate) and the Block 5 water rate will increase to $26.10 per 1,000 gallons (2 times the normal Block 5 rate). The surcharges are intended to strongly discourage high water use.

During a Stage One Water Shortage, there are no surcharges on water rate blocks 1 through 3 and there are no surcharges for non-residential and multi-family master-metered customers, who will pay seasonal water conservation rates rather than block rates. Additional and higher surcharges would apply if the OWASA Board declares a more severe water shortage.

THANK YOU VERY MUCH FOR YOUR HELP!

We sincerely appreciate your assistance in helping to conserve our essential drinking water supply during this extended drought and throughout the year. We welcome and encourage you to contact us for information about ways to conserve water, or to report actual or possible water leaks, water waste or water use that is not consistent with the conservation requirements.

Your conservation efforts now will help to reduce our community's risk in the event the current drought continues in the months ahead.

TO CONTACT OWASA

Please call us at 968-4421; send e-mail to webmaster@owasa.org; visit our website, www.owasa.org; send a fax to 968-4464 or visit or write to us at 400 Jones Ferry Road, PO Box 366, Carrboro, NC 27510

OWASA is the community-owned, non-profit public water and sewer agency serving the Carrboro-Chapel Hill community.

WATER CONSERVATION:

part of our community's SUSTAINABLE quality of life

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STAGE 2 WATER SHORTAGE DECLARED; WATER USE RESTRICTIONS TIGHTENED

IMPORTANTE BOLETÍN INFORMATIVO SOBRE RESTRICCIONES EN EL USO DEL AGUA (NIVEL 2); PARA SOLICITAR UNA TRADUCCÍÓN EN ESPAÑOL, LLAME AL 537-4221 O ENVIE UN CORREO ELECTRÓNICO A WEBMASTER@OWASA.ORG.

On October 18th, the OWASA Board declared a Stage Two Water Shortage with the goal of reducing water demand by at least 15%. The decision to declare the Stage Two Water Shortage was due to factors including:

As a result of the ongoing exceptional drought, reservoir levels and total water storage on hand have continued to decline and there has been no inflow to OWASA's reservoirs for more than two months.

The U.S. Drought Monitor rates the drought as "Exceptional," and continuation of the drought into 2008 is forecast.

The Cane Creek Reservoir and University Lake, which are the Carrboro-Chapel Hill-southeast Orange County community's primary public water sources, were about 50% full as of October 22, 2007.

Water demand in early and mid-October was well above the Stage One Water Shortage goal of 8.2 million gallons per day or less.

STAGE TWO WATER USE RESTRICTIONS

Spray irrigation with OWASA drinking water is not permitted, except by people regularly engaged in the sale of plants, who are allowed to irrigate their commercial stock in trade.

Irrigation by underground, drip irrigation, micro-spray, low precipitation bubblers, soaker hose systems with automatic shutoffs, or by hand held hoses or watering cans is limited to a maximum of one-half inch of water applied to plant material in any given week.

Water waste, which includes the following, is prohibited.

- Landscape watering applied in such a manner, rate and/or quantity that it overflows the landscaped area being watered and runs onto adjacent property or public right-of-way; or landscape water applied during periods of rainfall or when soil moisture is already adequate.
- The use of water for washing vehicles, equipment, or hard surfaces, such as parking lots, aprons, pads, driveways, or other surfaced areas, in such quantities to flow onto adjacent property or the public right-of-way.
- Water applied in sufficient quantity to cause ponding on impervious surfaces.
- Water lost through plumbing leaks that can be readily identified and corrected.

Water use by individually metered residential customer accounts and by individually metered single-family residential irrigation-only accounts is limited to no more than an average of 800 gallons per day during any monthly billing cycle beginning after the declaration of the Stage Two Water Shortage and ending while such restrictions are still in effect. **OWASA MAY TERMINATE SERVICE FOR WATER USE OVER THE 800 GALLON PER DAY LIMIT.**

Water shall not be used for washing vehicles, except at commercial or institutional car washes where at least 50 percent of the water is recycled.

Water shall not be used for filling or re-filling empty swimming pools. OWASA drinking water may be used to top off operating swimming pools.

Water shall not be used to re-fill ornamental fountains, ponds, and like devices.

Water shall not be used for the routine cleaning or washing of exterior building surfaces, decks or paved areas such as sidewalks, driveways, roadways, and parking lots. This restriction shall not apply to the pressure cleaning of exterior building surfaces or decks before painting or re-painting that is necessary to protect or maintain the physical integrity of the structure.

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OWASA

400 Jones Ferry Road
Carrboro, NC 27510

IMPORTANT NOTICE: STAGE TWO WATER SHORTAGE AND WATER USE RESTRICTIONS

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Permit #251

(continued from other side)

Restaurants and dining facilities shall serve water only on request of the customer.

Hotels, motels, and other facilities providing sleeping accommodations shall change bed linens only upon request of the customer, or upon customer changeover, or every five days for long-term customers.

The operation of dishwashers and clothes washers only when loaded to their maximum capacity, or at water level settings appropriate for the size of the load being washed; and installation of ultra-low flush toilets, tank dams, faucet aerators and low-flow shower heads are strongly encouraged if not already required.

Water leaks must be repaired within 10 days of notification by OWASA.

STAGE TWO SURCHARGES TO BEGIN IN NOVEMBER FOR HIGH RESIDENTIAL WATER USE

Stage Two surcharges for high water use by individually-metered residential customers will go into effect on November 1st. (Previously, Stage One water surcharges had been approved to go into effect on November 1st.)

OWASA's current block water rates are:

OCTOBER 1 BLOCK WATER RATES

Block 1	1 – 2,999 gallons per month	$1.98 per 1,000 gallons
Block 2	3,000 – 5,999 gallons per month	$4.70 per 1,000 gallons
Block 3	6,000 – 10,999 gallons per month	$5.53 per 1,000 gallons
Block 4	11,000 – 15,999 gallons per month	$7.46 per 1,000 gallons
Block 5	16,000 or more gallons per month	$13.05 per 1,000 gallons

A typical residential OWASA customer uses about 5,500 gallons per month.

ON NOVEMBER 1:

The block 3 water rate will increase to $8.295 per 1,000 gallons.
The block 4 water rate will increase to $14.92 to per 1,000 gallons.
The block 5 water rate will increase to $39.15 per 1,000 gallons.

The surcharges are intended to strongly discourage high water use. During a Stage Two Water Shortage, there are no surcharges on water rate blocks 1 and 2 and there are no surcharges for non-residential and multi-family master-metered customers, who will pay seasonal water conservation rates rather than block rates. Additional and higher surcharges would apply in more severe water shortage conditions.

THANK YOU VERY MUCH FOR YOUR HELP!

We sincerely appreciate your assistance in helping to conserve our essential drinking water supply during this extended drought and throughout the year. We welcome and encourage you to contact us for information about ways to conserve water, or to report actual or possible water leaks, water waste or water use that is not consistent with the conservation requirements. Your conservation efforts now will help to reduce our community's risk in the event the current drought continues in the months ahead.

TO CONTACT OWASA

Please call us at 968-4421; send e-mail to webmaster@owasa.org; visit our website, www.owasa.org; send a fax to 968-4464 or visit or write to us at 400 Jones Ferry Road, PO Box 366, Carrboro, NC 27510.

OWASA is the community-owned, non-profit public water and sewer agency serving the Carrboro-Chapel Hill community.

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THE DROUGHT AND OUR WATER SUPPLIES

How much water do we have now?

As of Thursday, November 29th, our Cane Creek Reservoir, University Lake and Stone Quarry Reservoir were about 47% full with a total of 1.665 billion gallons. Based on average water demand of 7.6 million gallons per day in the last 30 days, we have an estimated 6 to 7 months of supply assuming no rainfall.

Since we have several months of supply on hand, why is conservation important?

- We are in a severe drought as is much of the southeast U.S. and rainfall continues to be well below normal. There is essentially no water flow in the streams and creeks that feed our reservoirs.
- The National Weather Service has forecast that the drought will continue into 2008 due to La Niña conditions in the Pacific.
- Although winter and early spring rains would refill our reservoirs under normal conditions, we cannot assume that will happen in 2008. We need to continue conserving to help ensure that we will have an adequate supply in 2008.

What are the current water use restrictions?

Stage Two restrictions on use of OWASA drinking water include a ban on spray irrigation (except by businesses that regularly sell plants, which may water their inventory). However, we strongly recommend using water only for essential purposes.

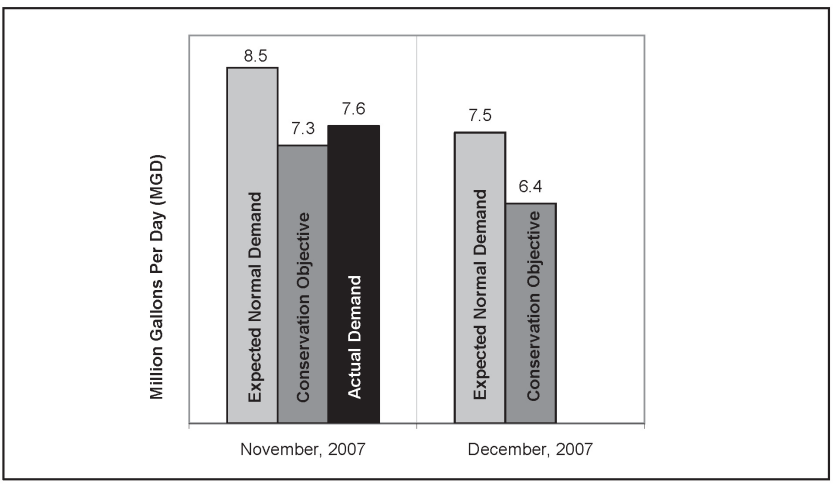
For a complete list of current restrictions or if you have any questions or comments, please contact OWASA at 968-4421 or webmaster@owasa.org, or visit our website, www.owasa.org.

Are water rate surcharges in effect?

Yes. Stage Two water rate surcharges have been in effect since November 1 for water use at or above 6,000 gallons per month at individually-metered residences. The average single-family residential customer in our community uses about 5,500 gallons per month. (The current surcharges do not apply to non-residential customers or master-metered multi-family locations.) For more detailed information, please contact OWASA at 968-4421 or by e-mail to webmaster@owasa.org, or visit our website, www.owasa.org.

What is our present water conservation objective?

Our objective for December is 6.4 million (or fewer) gallons per day or 15% below normal demand for December. Demand in November averaged about 7.6 million gallons per day, so more conservation is needed.



What are the most important conservation opportunities?

- Based on a national study of water use, about 31% of indoor residential water use is for toilet flushing. Therefore, flush less often and reduce an old toilet's flush volume by putting a container of water in the tank or installing a quick-closing flapper available free from OWASA at 400 Jones Ferry Road, Carrboro.

  Consider replacing old toilets with one that uses only 1.28 gallons (a "high efficiency" toilet) or 1.6 gallons (the plumbing code standard since 1994) per flush. Toilets installed before 1980 typically use 5 or more gallons per flush and toilets installed in the 1980s and early 1990s likely use 3.5 gallons per flush. New toilets may pay for themselves in a few years!
- About 25% of indoor residential water use is for clothes washing and 2% is for washing dishes. Wash clothes and dishes only when there is a full load. If you are ready to replace your clothes washer, choose a water- and energy-efficient front-loading model. Water-efficient dishwashers are also available. Please visit the EPA's WaterSense website, www.epa.gov/owm/water-efficiency/pp/het.htm, for information on independently certified water-saving fixtures, appliances, etc.
- Showers and baths account for 21% of indoor residential water use. Take short showers and install water-saving showerheads if you do not already have them. We give away low flow showerheads at our office in Carrboro.
- Faucet use totals about 18% of indoor residential water use. Don't leave the water running when it is not needed while you wash your hands, etc.
- Regularly check plumbing pipes, hoses and fixtures for leaks. Toilets are a very common place for leaks. To check a toilet, put food dye in the tank and do not flush for 15 to 20 minutes. If dye appears in the bowl, there is a leak, probably at the flapper.
- Cease non-essential outdoor use of OWASA drinking water if you have not already.

Questions or comments?

If you have questions or comments, or to report water waste, please call us at 968-4421, send e-mail to webmaster@owasa.org or visit our website, www.owasa.org.

Orange Water and Sewer Authority
400 Jones Ferry Road, Carrboro, NC
968-4421; webmaster@owasa.org; www.owasa.org

WATER CONSERVATION: part of our community's SUSTAINABLE quality of life

APPENDIX C

DROUGHT RESPONSE OPERATING PROTOCOL

RESOLUTION ADOPTING A DROUGHT RESPONSE OPERATING PROTOCOL

WHEREAS, OWASA is responsible for providing current and future customers with a reliable, sustainable, and cost-effective supply of high quality drinking water at all times and is committed to making the highest and best use of our local water resources; and

WHEREAS, OWASA's role with respect to growth is explicitly addressed in its *Mission Statement:* "We will manage our responsibilities in a manner consistent and compatible with the adopted growth management policies and land use plans of the Town of Carrboro, the Town of Chapel Hill, and Orange County"; and

WHEREAS, OWASA's water use efficiency, conservation, and reclaimed water programs, which are key components of its sustainable resource management strategy, have successfully and consistently reduced water consumption during the past ten years among all customer groups; and

WHEREAS, notwithstanding these significant community-wide achievements in water use reduction, OWASA's University Lake, Cane Creek, and Quarry Reservoir supplies will be increasingly susceptible to shortages during extended periods of severe drought, especially until the expanded Quarry Reservoir is available in the mid 2030s; and

WHEREAS, it is OWASA's duty to proactively plan and prepare for water supply shortages due to extended periods of severe drought; and

WHEREAS, OWASA's *Water Shortage Response Plan* (November 11, 2010), as approved by the North Carolina Division of Water Resources, includes Response Triggers for a range of supply and demand conditions and describes the actions that OWASA will take during periods of water shortages; and

WHEREAS, community members and elected officials from Carrboro and Chapel Hill have requested clarification of the procedures and criteria that OWASA will use for making water supply and demand management decisions during extended periods of severe drought, including provisions to assure prompt and complete public notice of potential Water Supply Shortage declarations, water purchases, and/or the use of OWASA's Jordan Lake water supply storage allocation.

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

OWASA shall use the *Drought Response Operating Protocol* text and graph attached hereto as its procedures and criteria for making water supply and demand management decisions during periods of extended drought, including provisions for public notice of potential Water Supply Shortage declarations, water purchases, and/or use of OWASA's Jordan Lake water supply storage allocation.

Adopted this 10th day of January 2013.

Alan E. Rimer, P.E., Chair

ATTEST:

Amy Wilsil, Secretary

DROUGHT RESPONSE OPERATING PROTOCOL
JANUARY 10, 2013

Purpose

To describe the procedures and criteria that OWASA will use for making water supply and demand management decisions during an extended drought, including provisions for public notice of potential Water Supply Shortage declarations, water purchases, and/or use of OWASA's Jordan Lake water supply storage allocation. The protocol outlined below will provide OWASA's customers, local elected boards, and the overall Carrboro-Chapel Hill-UNC community with timely notice of a potential water shortage due to extended drought and the opportunity to reduce water consumption in order to avoid and/or minimize the need for more severe water use restrictions or emergency actions.

The statistically derived drought responses described below were based on the risk of depleting OWASA's existing Cane Creek/University Lake/Quarry Reservoir system to the Emergency Storage level. Those risks do not assume that Jordan Lake is part of OWASA's existing or primary water supply portfolio (University Lake, Cane Creek Reservoir, and Quarry Reservoir); instead, Jordan Lake is only an "insurance policy" for use during extended drought or operational emergencies.

Protocol

1. OWASA shall monitor OWASA's water supply and demand conditions, short-and long-term weather forecasts, regional water supply conditions, and other factors which may affect the risk of a water supply shortage due to drought.

2. The attached graph, which is a modified version of the 7 million gallon per day (mgd) "trigger table"* in OWASA's State-approved *Water Shortage Response Plan*, shall guide OWASA's drought response decisions when raw water demands are at an annual average of 7 mgd. (When annual average demands are greater than 7 mgd, the corresponding trigger table graphs from the *Water Shortage Response Plan* shall be used.) Any drought-related Water Supply Shortage declaration at storage levels above those indicated on the trigger table, and/or any decision to purchase water from a neighboring jurisdiction (and/or to use OWASA's Jordan Lake allocation) during a drought, shall be made only upon approval by the OWASA Board of Directors.

3. OWASA shall declare a Water Shortage Advisory no later than when the total water stored in the reservoirs drops to within 10% of the mandatory Stage 1 trigger. (This Advisory stage is represented by the black dashed line on the attached graph). At or around that time, OWASA will initiate communications with the Carrboro Board of Aldermen, Chapel Hill Town Council, Orange County Board of Commissioners, and the University of North Carolina at Chapel Hill – and shall give public notice to customers and other stakeholders – regarding the likelihood that Stage 1 water use restrictions will go into effect, and that it may be necessary to begin purchasing water from the City of Durham and/or Town of Cary if current drought conditions continue or worsen. OWASA will carefully consider the advice and feedback from the elected boards. The OWASA Board of Directors will continue to exercise its sole responsibility and authority for decisions about water shortage declarations and water purchases, consistent with this Protocol. As in the past, OWASA will expand its standard conservation messaging before declaring the Water Shortage Advisory in order to encourage

* *The graph is based on an average daily raw water demand of 7 mgd. Trigger levels for greater or lesser demands will be correspondingly higher or lower than those depicted here.*

and to give the community as much opportunity as possible to intensify its water saving practices.

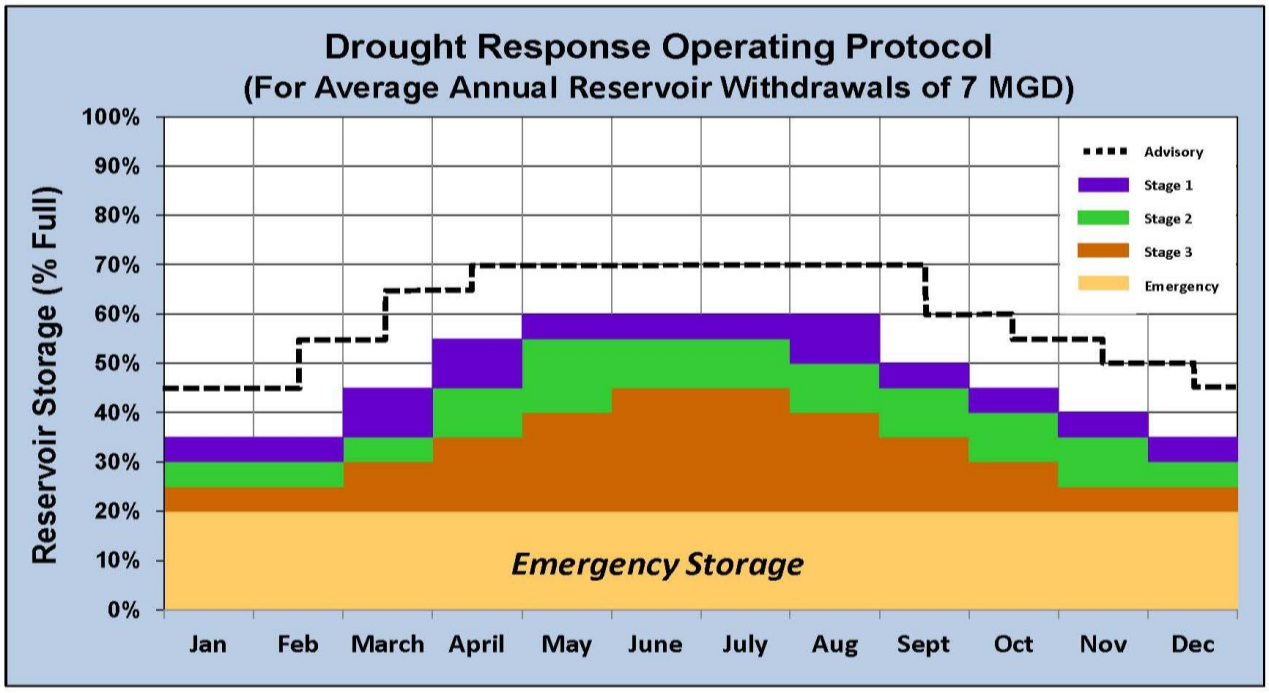
4. When total water storage in OWASA's reservoirs system declines to the purple block on the attached graph, OWASA must declare a Stage 1 Shortage as required by its State-approved *Water Shortage Response Plan*. OWASA may, at its own discretion, initiate Stage 1 use restrictions – with or without corresponding drought rate surcharges – earlier than indicated on the graph, but not later. The OWASA Board may authorize purchases from other utilities and/or obtain water through its Jordan Lake allocation only when total water storage in University Lake, Cane Creek Reservoir, and the Quarry Reservoir is below the Mandatory Stage 1 Shortage trigger, but no sooner. Board approval for such a declaration or purchase decision shall not be required, however, during an operational emergency as determined by OWASA's Executive Director per OWASA's *Water Shortage Response Plan*. Operational emergencies are typically characterized by the need for rapid response and may require the curtailment of water use and/or purchases in a short period of time. Examples of such emergencies include, but are not limited to:

    - Production problems at the Jones Ferry Road Water Treatment Plant
    - Failure of pumps, storage tanks, or pipelines
    - Raw or treated drinking water quality problems
    - Planned or unplanned maintenance events
    - Natural disasters.

5. During an extended drought, OWASA staff will initiate discussions with the Board of Directors regarding the need and timing of commencing water purchases or other prudent actions as total water in storage approaches the mandatory Stage 1 trigger levels shown on the attached graph; however, no purchase or use of OWASA's Jordan Lake allocation shall be made without explicit approval by the Board of Directors (except during Operational Emergencies as described above in Paragraph 4). Restrictions shall, and purchases may, continue until storage returns to levels above the mandatory Stage 1 trigger. Water use restrictions shall continue until storage returns to the "rescission" levels specified in the *Water Supply Shortage Response Plan*.

6. OWASA shall provide regular updates to the community and to the local elected boards throughout the drought as described in Paragraph 3 above. The OWASA Board and staff shall be available to attend meetings of the local governments to provide information about supply and demand conditions and to provide any information or answer questions elected officials may have.

7. The OWASA Board shall review this protocol (a) concurrently with its review of OWASA's State-approved *Water Shortage Response Plan* (as required in conjunction with Local Water Supply Plan updates that must be submitted to the NC Division of Water Resources at least once every five years); (b) following any drought during which mandatory water use restrictions were implemented; and/or (c) at any time deemed necessary to reflect changes in water supply and demand conditions or other new information, such as when the expanded Quarry Reservoir comes on line.



These responses are based on the risk of depleting OWASA's existing Cane Creek/ University Lake/Quarry Reservoir system to the Emergency Storage level and are consistent with the Response Triggers of OWASA's State-approved Water Shortage Response Plan. Those risks do not consider Jordan Lake to be part of OWASA's existing or primary water supply (University Lake, Cane Creek, and Quarry Reservoirs), but only as an "insurance policy" for use during extended drought or emergency conditions.

Water Shortage Advisory: Aggressive public awareness/education effort, including direct communication with the Carrboro, Chapel Hill, and Orange County elected boards and the University of North Carolina at Chapel Hill. A Water Shortage Advisory may be intitiated earlier at OWASA's discretion.

Stage 1 Shortage: Mandatory use restrictions -- with or without rate surcharges -- may be intitiated earlier at OWASA's discretion, but not later. The OWASA Board may authorize purchases of water from other utilities and/or obtain water through its Jordan Lake allocation only when total water storage in University Lake, Cane Creek Reservoir, and the Quarry Reservoir is below this Mandatory Stage 1 trigger, but not sooner. Board approval for such a declaration or purchase decision shall not be required, however, during an operational emergency as determined by the Executive Director per OWASA's *Water Shortage Response Plan.*

Stage 2 Shortage: May be intitiated earlier at OWASA's discretion, but not later.

Stage 3 Shortage: May be intitiated earlier at OWASA's discretion, but not later.

Water Supply Emergency: Emergency actions will be taken to obtain supplemental water to ensure the protection of public health, safety and welfare. If Cane Creek/University Lake/Quarry Reservoir storage declines to this level, such actions would likely include the installation of temporary facilities to pump water from the Haw River to the Cane Creek Reservoir.

APPENDIX D

RESOLUTIONS APPROVING OWASA'S WATER SHORTAGE RESPONSE PLAN

RESOLUTION APPROVING OWASA'S WATER SHORTAGE RESPONSE PLAN

WHEREAS, North Carolina General Statute 143-355(l) requires that each unit of local government that provides public water services or plans to provide such services shall, either individually or together with other such units of local government, prepare and submit a Water Shortage Response Plan; and

WHEREAS, as required by said statute and in the interest of sound local water supply planning and management, OWASA has developed a Water Shortage Response Plan; and

WHEREAS, the proposed Plan incorporates the Water Conservation Standards approved by OWASA in 2009 following an extensive public input process; and

WHEREAS, the OWASA Board of Directors finds that the Water Shortage Response Plan meets the requirements of North Carolina General Statute 143-355(l) and that said Plan will provide appropriate guidance for the future management of OWASA's water supplies, as well as useful information to the North Carolina Department of Environment and Natural Resources (NCDENR) for the development of a State water supply plan as required by statute;

NOW, THEREFORE, BE IT RESOLVED:

1. The Board of Directors hereby approves and adopts the *OWASA Water Shortage Response Plan* dated November 11, 2010 and attached hereto and made part of this Resolution.

2. The Executive Director shall submit OWASA's plan to NCDENR's Division of Water Resources, and copies shall be provided to the managers of the Town of Carrboro, Town of Chapel Hill, and Orange County.

3. In accordance with State law and sound water resources planning and management practice, the Board of Directors intends that the *OWASA Water Shortage Response Plan* shall be reviewed and revised, as necessary, at least once every five years or as otherwise required by law, to reflect changes in relevant water supply and demand data and projections.

Adopted this 11th day of November, 2010.

Alan Rimer, Vice Chair

ATTEST:

Braxton Foushee, Secretary

RESOLUTION APPROVING OWASA'S 2012 LOCAL WATER SUPPLY PLAN AND WATER SHORTAGE RESPONSE PLAN UPDATE SUBMITTED TO THE NC DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER RESOURCES

WHEREAS, North Carolina General Statute (NCGS) 143-355(1) requires that each unit of local government that provides public water services or plans to provide such services shall, either individually or together with other such units of local government, prepare and submit a Local Water Supply Plan that must be revised at least once every five years; and,

WHEREAS, 15A NCAC 02E 0.0606 requires each such unit of local government to develop a Water Shortage Response Plan for incorporation into its Local Water Supply Plan; and,

WHEREAS, in March 2013 Orange Water and Sewer Authority (OWASA) staff submitted a draft 2012 Local Water Supply Plan to the Department of Environment and Natural Resources, Division of Water Resources (DWR) in accordance with NCGS 143-355(1); and,

WHEREAS, on November 20, 2014, DWR approved OWASA's 2012 Local Water Supply Plan; and,

WHEREAS, on April 8, 2010 the OWASA Board of Directors adopted a *Long-Range Water Supply Plan*, *Final Report* (subsequently revised through January 25, 2013) that was developed by OWASA staff and consultants to serve as the Board's principal guide for future water supply policy and investment decisions; and,

WHEREAS, said *Long-Range Water Supply Plan* (as revised through January 25, 2013) is consistent with OWASA's 2012 Local Water Supply Plan originally submitted to DWR in March 2013 (as updated annually through April 2014); and,

WHEREAS, the 2012 Local Water Supply Plan cannot be considered compliant with NCGS 143-355(1) until DWR receives a Resolution of Approval by the OWASA Board of Directors; and

WHEREAS, OWASA submitted and DWR approved OWASA's Water Shortage Response Plan in September 2012; and

WHEREAS, in November 2010, the OWASA Board of Directors approved OWASA's Water Shortage Response Plan; and

WHEREAS, the OWASA Board of Directors adopted a Drought Response Operating Protocol in January 2013 to describe procedures and criteria OWASA will follow for making water supply and demand management decisions; and

WHEREAS, the Drought Response Operating Protocol is consistent with the Water Shortage Response Plan; and

DRAFT

WHEREAS, OWASA would like to update its Water Shortage Response Plan to include the Drought Response Operating Protocol; and

WHEREAS, OWASA desires to update its Water Shortage Response Plan on the same schedule as obtaining a Resolution of Approval for the Local Water Supply Plan by the OWASA Board of Directors and has accordingly updated its Water Shortage Response Plan to include the Drought Response Operating Protocol.

NOW, THEREFORE, BE IT RESOLVED BY THE OWASA BOARD OF DIRECTORS THAT:

1. OWASA's 2012 Local Water Supply Plan as submitted to DWR in March 2013 is hereby approved for the purposes of NCGS 143-355(l) and the OWASA Board intends that this plan shall be revised to reflect changes in relevant data and projections at least once every five years or as otherwise requested by DWR, in accordance with the statute and sound planning practice; and,

2. OWASA's Water Shortage Response Plan as updated in January 2015 is hereby approved for the purposes of NCGS 143-355(l) and the OWASA Board of Directors intends that this plan shall be reviewed and revised as needed, which will be at least once every five years; and,

3. Not inconsistent with the requirements of NCGS 143-355(l) and 15A NCAC 02E 0.0600 OWASA's 2010 *Long-Range Water Supply Plan Final Report* (as revised through January 25, 2013) or its update remains the principal guide for future water supply policy and investment decisions of the Orange Water and Sewer Authority.

DRAFT

Adopted this 22nd day of January, 2015.

_____
John A. Young, Chair

ATTEST:

_____
Heather Payne, Secretary

RESOLUTION APPROVING OWASA'S 2012 LOCAL WATER SUPPLY PLAN AND WATER SHORTAGE RESPONSE PLAN UPDATE SUBMITTED TO THE NC DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER RESOURCES

WHEREAS, North Carolina General Statute (NCGS) 143-355(1) requires that each unit of local government that provides public water services or plans to provide such services shall, either individually or together with other such units of local government, prepare and submit a Local Water Supply Plan that must be revised at least once every five years; and,

WHEREAS, 15A NCAC 02E 0.0606 requires each such unit of local government to develop a Water Shortage Response Plan for incorporation into its Local Water Supply Plan; and,

WHEREAS, in March 2013 Orange Water and Sewer Authority (OWASA) staff submitted a draft 2012 Local Water Supply Plan to the Department of Environment and Natural Resources, Division of Water Resources (DWR) in accordance with NCGS 143-355(1); and,

WHEREAS, on November 20, 2014, DWR approved OWASA's 2012 Local Water Supply Plan; and,

WHEREAS, on April 8, 2010 the OWASA Board of Directors adopted a *Long-Range Water Supply Plan, Final Report* (subsequently revised through January 25, 2013) that was developed by OWASA staff and consultants to serve as the Board's principal guide for future water supply policy and investment decisions; and,

WHEREAS, said *Long-Range Water Supply Plan* (as revised through January 25, 2013) is consistent with OWASA's 2012 Local Water Supply Plan originally submitted to DWR in March 2013 (as updated annually through April 2014); and,

WHEREAS, the 2012 Local Water Supply Plan cannot be considered compliant with NCGS 143-355(1) until DWR receives a Resolution of Approval by the OWASA Board of Directors; and

WHEREAS, OWASA submitted and DWR approved OWASA's Water Shortage Response Plan in September 2012; and

WHEREAS, in November 2010, the OWASA Board of Directors approved OWASA's Water Shortage Response Plan; and

WHEREAS, the OWASA Board of Directors adopted a Drought Response Operating Protocol in January 2013 to describe procedures and criteria OWASA will follow for making water supply and demand management decisions; and

WHEREAS, the Drought Response Operating Protocol is consistent with the Water Shortage Response Plan; and

WHEREAS, OWASA would like to update its Water Shortage Response Plan to include the Drought Response Operating Protocol; and

WHEREAS, OWASA desires to update its Water Shortage Response Plan on the same schedule as obtaining a Resolution of Approval for the Local Water Supply Plan by the OWASA Board of Directors and has accordingly updated its Water Shortage Response Plan to include the Drought Response Operating Protocol.

NOW, THEREFORE, BE IT RESOLVED BY THE OWASA BOARD OF DIRECTORS THAT:

1. OWASA's 2012 Local Water Supply Plan as submitted to DWR in March 2013 is hereby approved for the purposes of NCGS 143-355(l) and the OWASA Board intends that this plan shall be revised to reflect changes in relevant data and projections at least once every five years or as otherwise requested by DWR, in accordance with the statute and sound planning practice; and,

2. OWASA's Water Shortage Response Plan as updated in January 2015 is hereby approved for the purposes of NCGS 143-355(l) and the OWASA Board of Directors intends that this plan shall be reviewed and revised as needed, which will be at least once every five years; and,

3. Not inconsistent with the requirements of NCGS 143-355(l) and 15A NCAC 02E 0.0600 OWASA's 2010 *Long-Range Water Supply Plan Final Report* (as revised through January 25, 2013) or its update remains the principal guide for future water supply policy and investment decisions of the Orange Water and Sewer Authority.

Adopted this 22nd day of January, 2015.

_____
John A. Young, Chair

ATTEST:

_____
Heather Payne, Secretary

ORANGE WATER AND SEWER AUTHORITY

MEETING OF THE BOARD OF DIRECTORS

DECEMBER 11, 2014

The Board of Directors of the Orange Water and Sewer Authority (OWASA) held a regular business meeting on Thursday, December 11, 2014, beginning at 6:15 PM in the OWASA Community Room, 400 Jones Ferry Road, Carrboro.

Board Members present: John A. Young, Chair; Michael M. Hughes, P.E., Vice Chair; Heather Payne, Secretary; Terri Buckner; Stephen (Steve) Dear; Quinton Harper; David (Dave) Moreau; Ruchir Vora; and Amy Witsil.

OWASA staff present: Ed Kerwin; Denise Battle; Mary Darr; Patrick Davis; Monica Dodson; Greg Feller; Kenneth Loflin; Andrea Orbich; Kevin Ray; Ruth Rouse; Kelly Satterfield; Todd Taylor; Stephen Winters; and Robert Epting of Epting and Hackney.

Others present: Ben Poulson, Associate Director of Energy Services, and Meg Holton, Water, Wastewater, and Stormwater Manager, University of North Carolina at Chapel Hill; and members of Chapel Hill Boy Scout Troop 39 – Patrick T. Deegan, Chris Kelly, Diane Meyer, Brich Kelly, Amit Parikh, Shilpa Shah, Elijah Meyer and Preston Croswell.

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

* * * * * * * * * *

MOTIONS ACTED UPON

1. BE IT RESOLVED THAT the Orange Water and Sewer Authority adopt the Resolution to Accept Conservation Easement on Parcel in Cane Creek Watershed. (Resolution so titled attached hereto and made a part of these minutes. Motion by Michael Hughes, second by Heather Payne and unanimously approved.)

2. Michael Hughes made a motion to approve the Minutes of the October 23, 2014 Meeting of the Board of Directors; second by Heather Payne, and unanimously approved.

3. Michael Hughes made a motion to approve the Minutes of the October 23, 2014 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Heather Payne, and unanimously approved.

4. Michael Hughes made a motion to approve the Minutes of the November 13, 2014 Work Session of the Board of Directors; second by Heather Payne, 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 the same at this time. David Moreau requested recusal from voting on the bonds because he is an OWASA bondholder.

Committee Meeting

Steve Dear said that the Community Engagement Committee met on December 2, 2014 to discuss the overall framework for community engagement. Mr. Dear said that an extensive discussion was held on the current community engagement program as well as the possibility of authorizing staff to draft a scope and process for a customer research program. This topic will be discussed further as an item in tonight's work session.

Michael Hughes said the Human Resources (HR) Committee met on December 9, 2014 to discuss the annual performance review period of the Executive Director. Mr. Hughes said the HR Committee agreed to recommend to the Board that the October 1st to September 30th is the preferred annual performance review period for the Executive Director. This topic will be discussed further in tonight's work session.

Heather Payne said the Finance Committee met prior to the Board meeting tonight to review the process for issuing a Request for Proposals for audit services and the Board's policy regarding financial reserves. Ms. Payne said the Committee agreed that the Finance Committee Chair will sit on the selection panel for the audit firm interviews. She also reported that several Committee members indicated that they are comfortable with reserves as currently stipulated in OWASA's Financial Management Policy. However, some members favor considering reducing the minimum reserve target amounts. The Committee voted to continue with the level of reserve minimums identified in the current Financial Management Policy at least until Fiscal Year 2016 budget deliberations.

PETITIONS AND REQUESTS

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

ITEM ONE: ADDITIONAL CONSERVATION EASEMENT ON A PARCEL IN THE CANE CREEK WATERSHED

Michael Hughes made a motion to approve the Resolution to Accept Conservation Easement on Parcel in Cane Creek Watershed; second by Heather Payne, and unanimously approved. Please see Motion No. 1 above.

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ITEM TWO: MINUTES

Michael Hughes made a motion to approve the Minutes of the October 23, 2014 Meeting of the Board of Directors; second by Heather Payne, and unanimously approved. Please see Motion No. 2 above.

ITEM THREE: MINUTES

Michael Hughes made a motion to approve the Minutes of the October 23, 2014 Closed Session of the Board of Directors for the Purpose of Discussing a Personnel Matter; second by Heather Payne, and unanimously approved. Please see Motion No. 3 above.

ITEM FOUR: MINUTES

Michael Hughes made a motion to approve the Minutes of the November 13, 2014 Work Session of the Board of Directors; second by Dave Moreau, and unanimously approved. Please see Motion No. 4 above.

WORK SESSION:

Following the meeting, the Board convened in a work session to discuss:

- community engagement research;
- an update on State-required water supply planning documents (Local Water Supply Plan and Water Shortage Response Plan);
- Draft Schedule for Employee Total Compensation Study through June 2015; and
- Draft Charter for Development of an Energy Management Plan.

The meeting was adjourned at 8:00 PM.

Respectfully submitted,

Andrea Orbich
Executive Assistant/Clerk to the Board

Attachments

DRAFT

ORANGE WATER AND SEWER AUTHORITY

WORK SESSION OF THE BOARD OF DIRECTORS

DECEMBER 11, 2014

The Board of Directors of the Orange Water and Sewer Authority (OWASA) held a Work Session on Thursday, December 11, 2014, starting at 6:15 PM in OWASA's Community Room at 400 Jones Ferry Road, Carrboro.

Board Members present: John A. Young, Chair; Michael M. Hughes, P.E., Vice Chair; Heather Payne, Secretary; Terri Buckner; Stephen (Steve) Dear; Quinton Harper; David (Dave) Moreau; Ruchir Vora; and Amy Witsil.

OWASA staff present: Ed Kerwin; Mary Darr; Patrick Davis; Greg Feller; Stephanie Glasgow; Andrea Orbich; Ruth Rouse; Stuart Carson; Todd Taylor; Stephen Winters; and Robert Epting, Esq., Epting and Hackney.

Others present: Ben Poulson, Associate Director of Energy Services, and Meg Holton, Water, Wastewater, and Stormwater Manager, University of North Carolina at Chapel Hill; and members of Chapel Hill Boy Scout Troop 39 – Patrick T. Deegan, Chris Kelly, Diane Meyer, Brich Kelly, Amit Parikh, Shilpa Shah, Elijah Meyer and Preston Croswell.

ITEM ONE: COMMUNITY ENGAGEMENT RESEARCH

After discussion, the Board agreed that the Community Engagement Committee and staff will meet in January to discuss objectives for a potential program of researching customer perceptions.

ITEM TWO: UPDATE ON THE STATE-REQUIRED WATER SUPPLY PLANNING DOCUMENTS

The Board received a report from staff on the need for Board approval of OWASA's State-required 2012 Local Water Supply Plan, which was recently approved by the State, and on the recommended concurrent approval of minor revisions to OWASA's State-required Water Shortage Response Plan. A resolution to approve the plans is scheduled for action at the Board's January 22, 2015 meeting.

ITEM THREE: DRAFT SCHEDULE FOR EMPLOYEE TOTAL COMPENSATION STUDY - THROUGH JUNE 2015

The Board discussed the schedule for a study of total compensation of OWASA employees. The process will include selecting a consultant and preparing the scope of work by late June, 2015.

ITEM FOUR: DRAFT CHARTER FOR AN ENERGY MANAGEMENT PLAN

The Board discussed the draft charter for preparation of an Energy Management Plan for OWASA. The draft charter, which has potential objectives, assumptions, approach, timetable,

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plans for engaging stakeholders, etc., will be on the Board's agenda for consideration and action on January 22, 2015. Staff will also include the proposed Community Engagement Plan for the project in the agenda materials.

ITEM FIVE: DRAFT EXECUTIVE DIRECTOR PERFORMANCE GOALS

The Board discussed the Executive Director's performance goals and the Board's schedule for performance evaluations and determined the preferred annual performance review period for the Executive Director will be October 1st to September 30th with an interim review in March/April.

ITEM SIX: REVIEW BOARD WORK SCHEDULE

The Board agreed that its January 8, 2015 work session will begin at 6:00 PM and that discussion of the work session format on January 8, 2015 will include Board-staff communications.

ITEM SEVEN: REQUEST(S) BY BOARD COMMITTEES, BOARD MEMBERS AND STAFF

There were none.

ITEM EIGHT: EXECUTIVE DIRECTOR WILL SUMMARIZE THE KEY ITEMS FROM THE WORK SESSION

Ed Kerwin said he would coordinate with Steve Dear a Community Engagement Meeting in January 2015 to discuss possible objectives for conducting customer research and develop specific recommendations. Mr. Kerwin will also extend his Executive Director Performance Goals through August 2015.

The meeting was adjourned at 8:00 PM.

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

JANUARY 8, 2015

The Board of Directors of the Orange Water and Sewer Authority (OWASA) met in a Work Session on Thursday, January 8, 2015, at 7:00 PM in OWASA's Community Room at 400 Jones Ferry Road, Carrboro.

Board Members present: John A. Young, Chair; Michael M. Hughes, P.E., Vice Chair; Heather Payne, Secretary; Terri Buckner; Stephen (Steve) Dear; Quinton Harper; David (Dave) Moreau; Ruchir Vora; and Amy Witsil.

OWASA staff present: Ed Kerwin; Denise Battle; Alex Braxton; Mary Darr; Patrick Davis; Monica Dodson; Greg Feller; Stephanie Glasgow; Alicia Grey; Randy Horton; John Kiviniemi; Andrea Orbich; Dan Przybyl; Ruth Rouse; Kelly Satterfield; Todd Taylor; Ronnie Weed; Stephen Winters; and Robert Epting, Esq., Epting and Hackney.

Others present: Myra Dotson, Ed King and Harry Phillips, Sewage Sludge Action Network; Tom O'Dwyer and Richard Paddock, Chapel Hill; Richard Crandall, Pittsboro; Orange County farmers: Raeford Thompson, Lester Ray (Twin Branch Farm), Warren Ray, Rubin Herndon, Dallas and Lou Ann Vaughan Myatt (Blue Moon Meadows); Bonnie Hammersley, Orange County Manager; Ben Poulson, Associate Director of Energy Services and Meg Holton, Water, Wastewater, and Stormwater Manager at the University of North Carolina at Chapel Hill; Peter Schuler and Alex Travaglia, Brown and Caldwell; Sean Fallon, McGill Environmental; and Tammy Grubb, Chapel Hill News.

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

ANNOUNCEMENTS

Ed Kerwin said that former General Manager of Operations, John W. Greene, Jr., passed away suddenly on January 4, 2015. The Board requested staff prepare a resolution for John's family honoring his service to the community at the January 22, 2015 meeting. John Young ask for a moment of silence for John Greene.

Without objection, John Young said that there will be a change in the Agenda: Item 2, Draft Biosolids Report (Part 1), will be considered first to accommodate the speakers present tonight, and followed by Item 1, Employee Health Insurance.

Steve Dear said the Community Engagement Committee met on January 7, 2015, and did not reach consensus on whether to recommend authorizing staff to design a customer survey to be done in 2015. (Please see Item Five below for related discussion.)

DRAFT

Terri Buckner said the Natural Resources and Technical Systems Committee will meet on Tuesday, January 13, 2015 at 5:30 PM in the OWASA Board Room to discuss a petition regarding lake recreation.

ITEM ONE: DRAFT BIOSOLIDS MANAGEMENT REPORT (PART 1)

The Board received a presentation from John Kiviniemi, Wastewater Treatment and Biosolids Recycling Manager, on the Draft Biosolids Management Report (Part 1). Following the presentation, the Board received comments from: representatives of the Sewage Sludge Action Network (Ed King and Myra Dotson) who opposed recycling of biosolids on farmland or through composting; farmers (Raeford Thompson, Lester Ray, Dallas Vaughn Myatt) who supported continuing land application of biosolids to enhance soil productivity; and Tom O'Dwyer, OWASA customer and local builder. Mr. O'Dwyer supports farmers' participation in OWASA's biosolids land application program and expressed his concerned that lower quality biosolids will be used by farmers if OWASA's Class A Exceptional Quality land application program is discontinued.

After discussion, the Board determined that OWASA will: 1) continue its current program which includes land application of liquid biosolids through calendar year 2015, and dewatering of biosolids for composting when needed to ensure reliable management of biosolids; and 2) continue to receive and analyze additional information about disposition of biosolids before making any changes to OWASA's existing program.

Steve Dear expressed concerned about whether land application of biosolids is safe and requested that the practice be described as risk-acceptable instead of "safe" as on page 3 of Draft Biosolids Management Report (Part 1).

ITEM TWO: EMPLOYEE HEALTH INSURANCE

The Board received and discussed information from Ellen Tucker of Hill Chesson & Woody, OWASA's health insurance consultant, about changes and trends in health insurance and a proposed process this spring to negotiate costs and consider options for coverage after the current one-year insurance contract ends in June 30, 2015.

Staff will propose a timetable for actions by the Board, staff and consultant including a process to inform and receive feedback from employees about changes which may be proposed this spring. The Board agreed that health insurance will be addressed by the full Board rather than referring this matter to the Human Resources Committee.

ITEM THREE: UPDATE ON IMPROVEMENTS FOR THE BILLING AND FINANCIAL MANAGEMENT SYSTEM

The Board received a presentation by Dan Przybyl, Director of Information Technology, and Denise Battle, Customer Service Manager, about progress in improving the financial management and billing system. The improvements, which will enhance service to customers and increase efficiency, are expected to be complete in August 2015.

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ITEM FOUR: REVIEW BOARD WORK SCHEDULE

Ed Kerwin reminded the Board that the January 22, 2015 meeting will be held in OWASA's Community Room at 7:00 PM.

ITEM FIVE: REQUEST(S) BY BOARD COMMITTEES, BOARD MEMBERS AND STAFF

Michael Hughes requested OWASA's consultant or staff provide an update on information learned from Phase I of the preliminary engineering study of sewer for the Rogers Road neighborhood. Ed Kerwin suggested, and the Board concurred, that Mr. Hughes meet with staff to be briefed on the project and then inform the Board if there is a need for a project update to the full Board.

Terri Buckner requested a follow up on the sub-metering primer from staff; staff will follow up with the Board via email.

Steve Dear requested the Board add an item for discussion and action on whether to authorize the design of a potential 2015 customer survey for the Board's consideration on January 22nd and requested staff to propose objectives for the survey. The Board concurred.

ITEM SIX: REVIEW OF BOARD WORK SESSION FORMAT

The Board deferred this matter to January 22, 2015 Board meeting.

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

Ed Kerwin summarized the key action items for staff as follows:

- Two items will be added to the January 22, 2015 agenda: a resolution for John Greene's family and a discussion and action item on a potential 2015 customer survey the Board;
- Staff will evaluate the schedule for the next biosolids management report in light of tonight's discussion and inform stakeholders of the Board's guidance to staff;
- A schedule will be developed for health insurance to ensure objectives are met;
- Staff will follow up with Michael Hughes regarding the preliminary engineering work for the Rogers Road neighborhood; and
- Staff will provide the Board on a primer on sub-metering.

The meeting was adjourned at 10:30 PM.

Respectfully submitted by:

Andrea Orbich
Executive Assistant/Clerk to the Board

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AGENDA ITEM

- FINANCIAL REPORT FOR THE SIX MONTH PERIOD ENDED DECEMBER 31, 2014

PURPOSE

- To inform the Board of Directors of OWASA's financial performance and fiscal position.

BACKGROUND

- The financial report consists of a Statement of Net Position, an Income Statement that includes a budget to actual comparison, graphical presentations of financial performance indicators and a Financial Management Policy Report Card.

- Highlights of the report include:

  - All financial performance targets were met.

  - Operating Revenues for the period were about $500,000 or 2.6% over budget.

  - Operating Expenses were about $380,000 or 4.1% less than budget.

  - Customer Fees (Service Availability Fees) exceeded budget for the period by approximately $385,000.

  - Net Income less Debt Service was 22.4% over budget or roughly $1.3 million.

  - Capital Improvement Program expenditures were about 35% less than projections for the period.

ACTION NEEDED

- Receive and discuss the Financial Report for the six month period ended December 31, 2014.

January 22, 2015

ORANGE WATER AND SEWER AUTHORITY

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

MEMORANDUM

TO: Board of Directors

THROUGH: Ed Kerwin

FROM: Stephen Winters, CPA

DATE: January 16, 2015

SUBJECT: Financial Report for the six month period ended December 31, 2014

Purpose

The financial report for the six month period ended December 31, 2014 is presented to inform the Board of Directors of OWASA's financial position and financial performance in relation to budget.

Contents

- Statement of Net Position
- Income Statement
- Graphs of Key Performance Indicators
- Financial Management Policy Report Card

Fiscal Performance

- As shown on page 10 of the financial report, all financial performance measurement targets are being met.
- Average potable water sales for the period was 6.34 million gallons per day (MGD), 6.42 was projected. Combined potable and reclaimed water sales for the period averaged 7.0 MGD versus a projection of 7.32.
- Total Operating Revenue was 2.6% or about $500,000 over budget.
- Revenue from new system connections was over budget by about $385,000. We allocate the budget for system connection or "Customer Fees" ratably throughout the fiscal year. The primary reasons for being over budget is that five large meters were installed in the first six months and the actual average revenue per meter was higher than the average used for budgeting.
- Total operating expenses for the period were approximately $380,000 or 4.1% under budget.
- Net Income less Debt Service for the period was approximately $1.3 million or 22.4% more than budget.
- Capital Improvement Program (CIP) expenditures were 35% or $2 million less than projected for the six month period. Year-to-date CIP expenditures were 34% of the full fiscal year budget. There were 18 CIP projects active during the first half of FY 2015.

  We forecast that CIP expenditures for the year will be approximately 85% of our FY 2015 budget. Our current year-end forecast amount is less than our target range of 90-105% primarily due to delays in initiating the implementation of the Advanced Meter Infrastructure (AMI) project and the construction of the Little Creek Sanitary Sewer Interceptor Replacement project. Lower than expected construction

contract amounts for the Tom's Creek and Morgan Creek Sanitary Sewer Aerial Crossings project also contributed.

The AMI project is being evaluated for implementation in a different manner than envisioned when the FY 2015 CIP budget was developed and will result in significantly less funds (approximately $1,200,000 less) being spent in FY 2015 than budgeted. The Little Creek Sanitary Sewer construction project will start later than envisioned due to changes in scope, associated permitting requirements, and new prequalification regulations: resulting in approximately $400,000 less being spent in FY 2015 than anticipated. The Tom's Creek and Morgan Creek job was contracted for approximately $550,000 less than budgeted.

Detailed information, including financial data, on active CIP projects that are significantly above/below budget and/or ahead of/behind schedule is provided in the Semi-annual CIP Status Report which is part of the agenda package for the January 22, 2015 board meeting.



Stephen Winters, CPA
Director of Finance and Customer Service

Orange Water and Sewer Authority

Financial Report
For the Six Month Period Ended
December 31, 2014

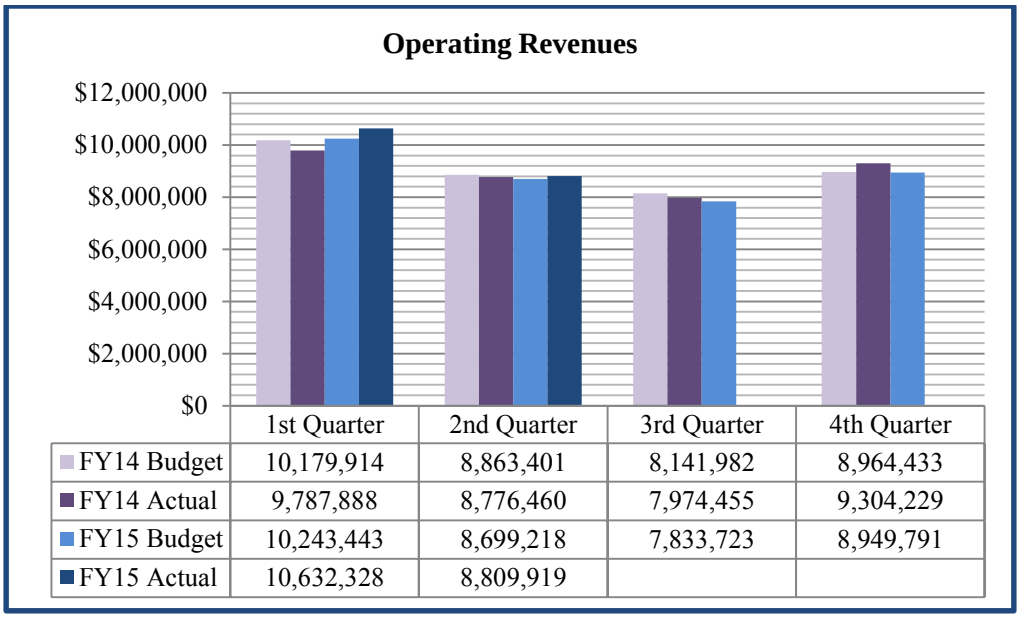
Orange Water and Sewer Authority
Statement of Net Position
December 31, 2014
(unaudited)

Assets	
Current Assets	
Cash	$18,764,130
Receivables	4,039,336
Inventory	989,697
Prepaid expenses	199,384
Restricted cash	4,468,742
Total Current Assets	28,461,289
Noncurrent Assets	
Capital Assets (net of depreciation)	271,018,274
Other Noncurrent assets	27,415,059
Total Noncurrent Assets	298,433,333
Total Assets	$326,894,622
Liabilities and Net Position	
Current Liabilities	
Accounts payable and accrued expenses	$1,670,312
Unearned income	687,017
Customer deposits	937,117
Total Current Liabilities	3,294,446
Noncurrent Liabilities	
Bonds payable	73,645,000
Other noncurrent liabilities	5,456,002
Total Noncurrent Liabilities	79,101,202
Net Position	
Contributed capital	113,727,240
Net Position at the beginning of the year	125,577,566
Year-to-date accrual basis net income	5,194,168
Total Liabilities and Net Position	$326,894,622
Net income reconciliation:	
Accrual basis net income	$5,194,168
Depreciation, other post-employment benefits, and interest expense	6,037,434
Modified accrual basis net income	$11,231,602

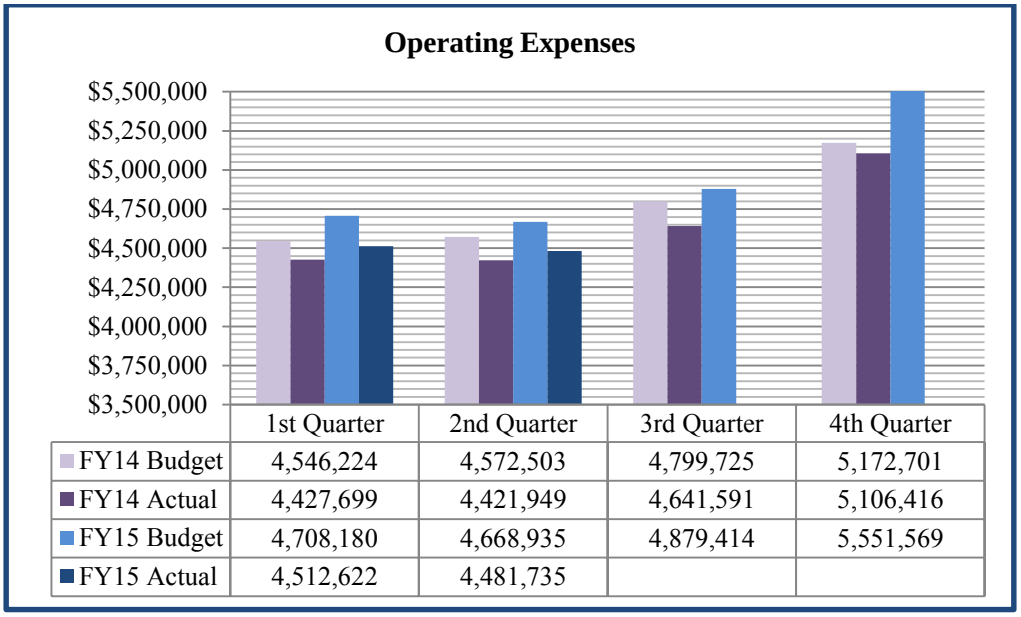
Orange Water and Sewer Authority
Income Statement
For the Six Month Period Ended December 31, 2014
(unaudited)

	Actual through December 31, 2014	Budget through December 31, 2014	Variance (effect on net change in Fund Balance)	Percent Variance
Operating Revenue:				
Water	$9,753,390	$9,569,651	$183,739	1.9%
Sewer	8,646,996	8,488,974	158,022	1.9
Reclaimed Water	229,199	261,415	(32,216)	(12.3)
Service Initiation Fees	91,320	111,391	(20,071)	(18.0)
Other	836,482	624,644	211,838	33.9
Refunds and Allowances	(115,140)	(113,409)	(1,731)	(1.5)
Total Operating Revenue	19,442,247	18,942,666	499,581	2.6
Non-operating Income:				
Customer Fees	776,400	391,186	385,214	98.5
Interest	7,312	27,294	(19,982)	(73.2)
Total Non-operating Income	783,712	418,480	365,232	87.3
Total Income	20,225,959	19,361,146	864,813	4.5
Operating Expense:				
General and Administrative	2,814,850	2,910,963	96,113	3.3
Water Supply and Treatment	2,176,131	2,272,492	96,361	4.2
Water Distribution	1,342,628	1,236,976	(105,652)	(8.5)
Wastewater Treatment	2,109,811	2,411,521	301,710	12.5
Wastewater Collection	550,937	545,156	(5,781)	(1.1)
Total Operating Expense	8,994,357	9,377,108	382,751	4.1
Net Income (modified accrual)	11,231,602	9,984,038	1,247,564	12.5
Debt Service	3,898,470	3,994,438	95,968	2.4
Net Income less Debt Service	7,333,132	5,989,600	1,343,532	22.4
Less: CIP Expenditures	3,685,432	5,686,000	2,000,568	35.2
Capital Equipment Expenditures	412,945	412,945	0	0.0
Net Change in Fund Balance	$3,234,755	$(109,345)	$3,344,100	3,058.3

Orange Water and Sewer Authority
Select Financial Data
For the Six Month Period Ended December 31, 2014

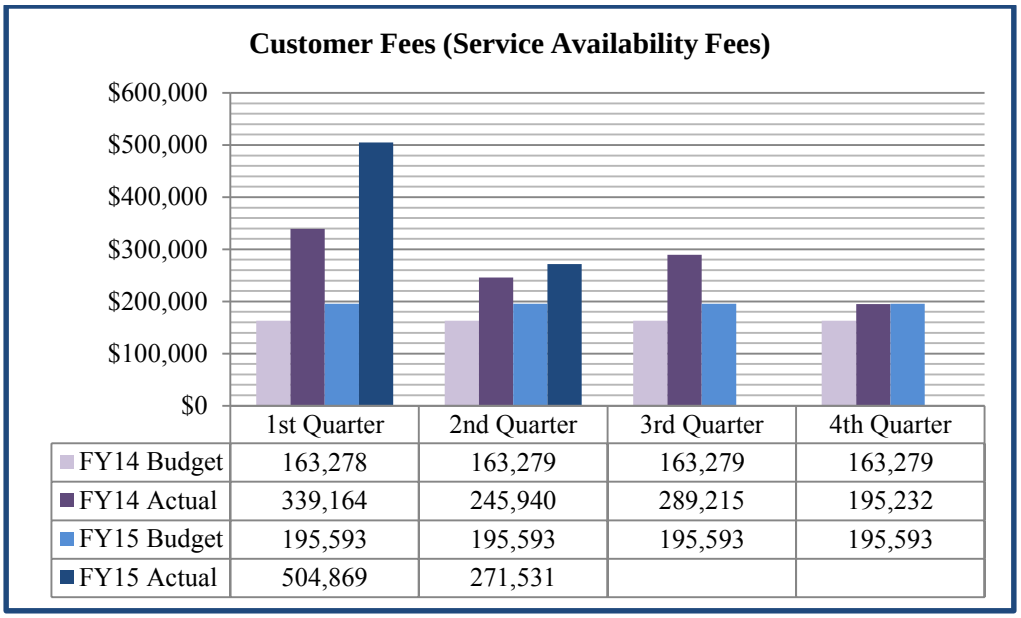


	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
FY14 Budget	10,179,914	8,863,401	8,141,982	8,964,433
FY14 Actual	9,787,888	8,776,460	7,974,455	9,304,229
FY15 Budget	10,243,443	8,699,218	7,833,723	8,949,791
FY15 Actual	10,632,328	8,809,919		

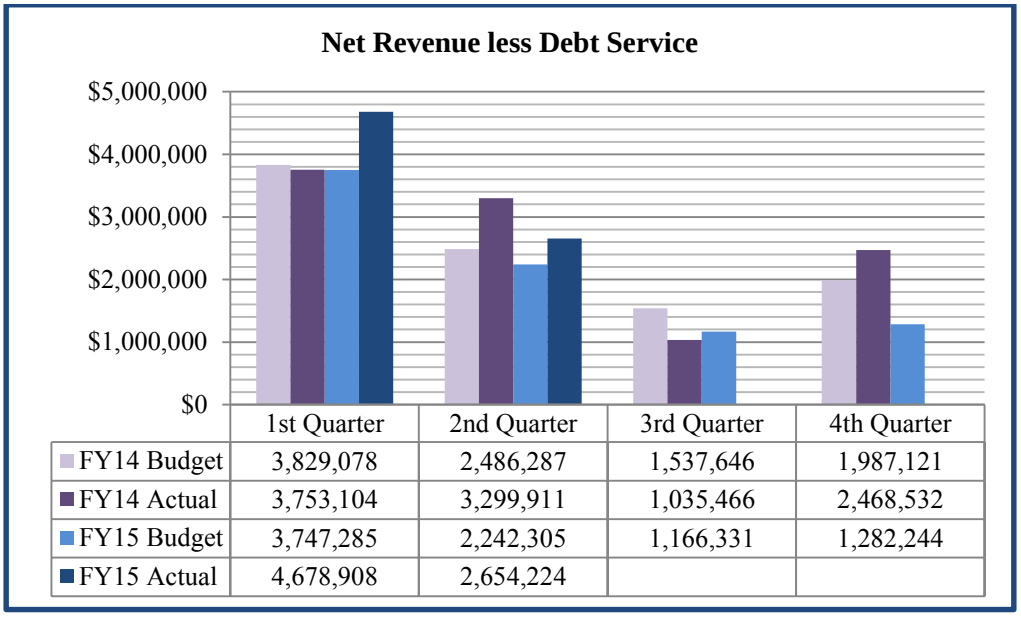


	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
FY14 Budget	4,546,224	4,572,503	4,799,725	5,172,701
FY14 Actual	4,427,699	4,421,949	4,641,591	5,106,416
FY15 Budget	4,708,180	4,668,935	4,879,414	5,551,569
FY15 Actual	4,512,622	4,481,735		

Orange Water and Sewer Authority
Select Financial Data
For the Six Month Period Ended December 31, 2014

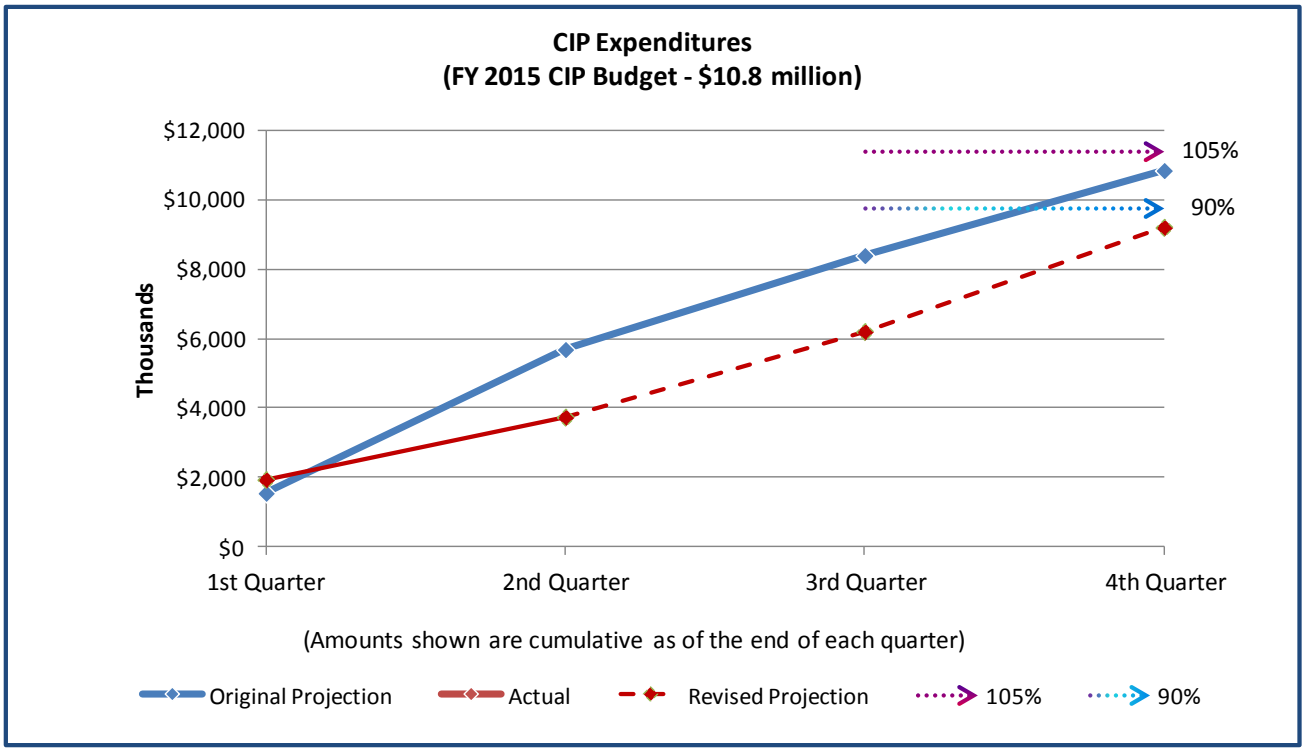


	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
FY14 Budget	163,278	163,279	163,279	163,279
FY14 Actual	339,164	245,940	289,215	195,232
FY15 Budget	195,593	195,593	195,593	195,593
FY15 Actual	504,869	271,531		



	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
FY14 Budget	3,829,078	2,486,287	1,537,646	1,987,121
FY14 Actual	3,753,104	3,299,911	1,035,466	2,468,532
FY15 Budget	3,747,285	2,242,305	1,166,331	1,282,244
FY15 Actual	4,678,908	2,654,224		

Orange Water and Sewer Authority
Select Financial Data
For the Six Month Period Ended December 31, 2014

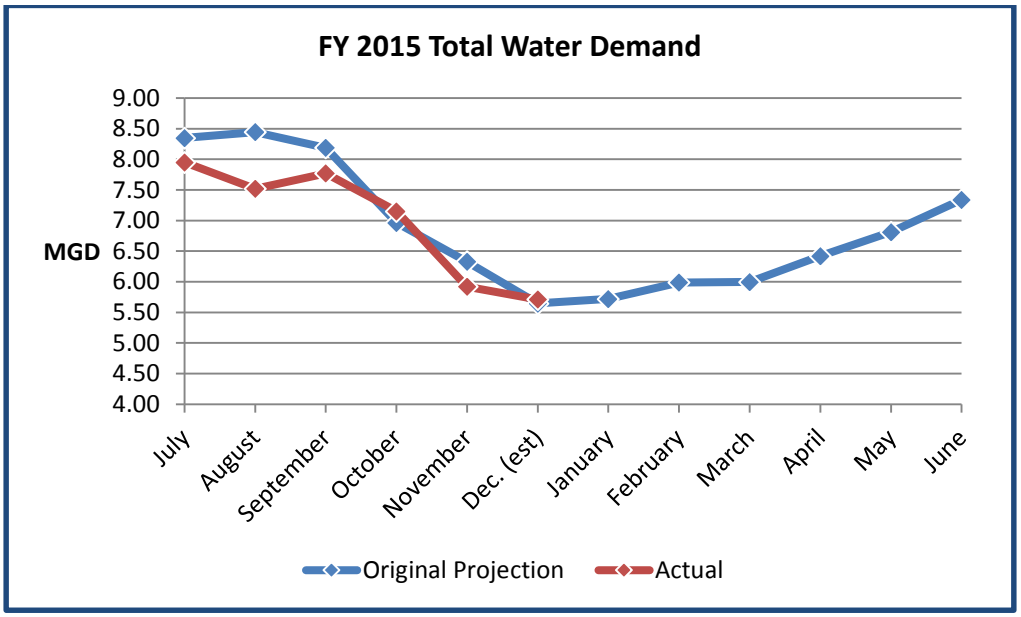


Orange Water and Sewer Authority
Select Financial Data
For the Six Month Period Ended December 31, 2014

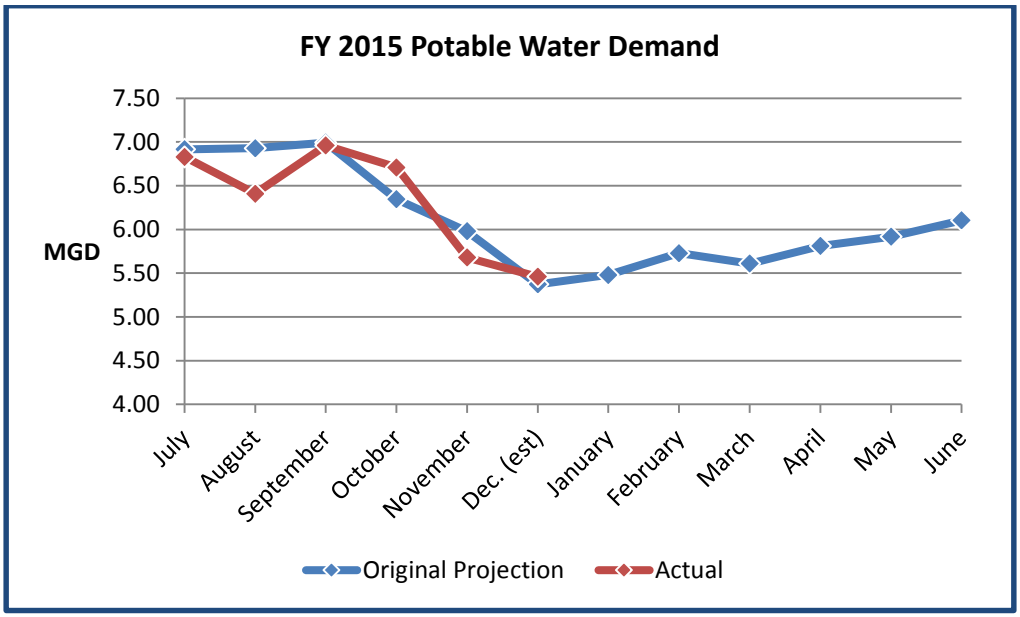
FY 2015 Water Sales Projection (Average Day)

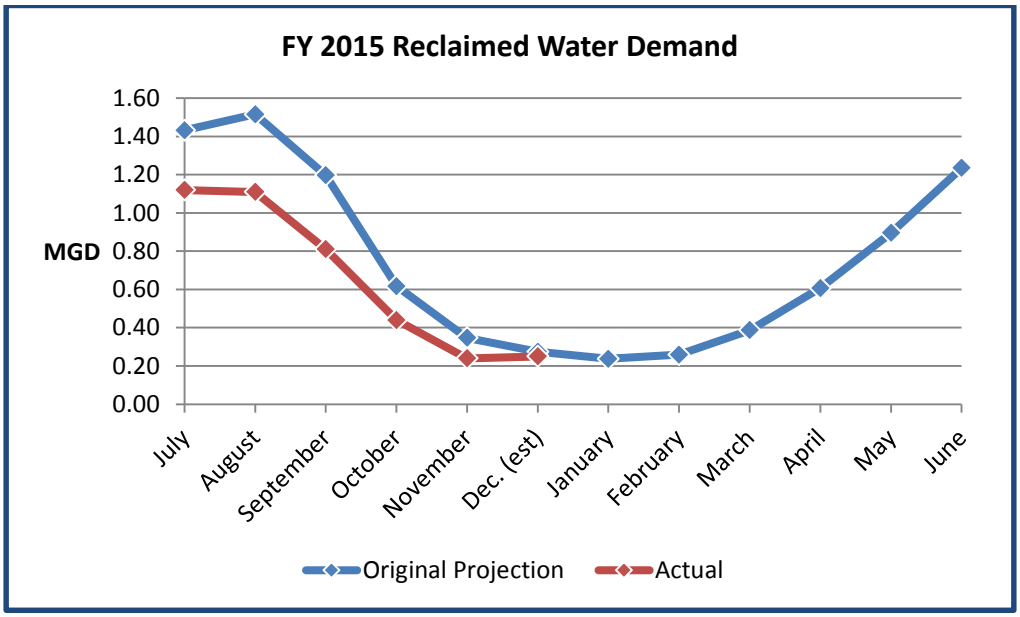
	Original FY 2015 Sales Projections		Actual FY 2015 Water Sales		Revised FY 2015 Sales Projections	
	PW	RCW	PW	RCW	PW	RCW
July	6.92	1.43	6.83	1.12	6.83	1.12
August	6.93	1.52	6.41	1.11	6.41	1.11
September	6.99	1.20	6.96	0.81	6.96	0.81
October	6.35	0.62	6.71	0.44	6.71	0.44
November	5.98	0.35	5.68	0.24	5.68	0.24
December	5.37	0.27	5.46	0.25	5.37	0.27
January	5.48	0.24			5.48	0.24
February	5.73	0.26			5.73	0.26
March	5.61	0.39			5.61	0.39
April	5.81	0.61			5.81	0.61
May	5.92	0.90			5.92	0.90
June	6.10	1.23			6.10	1.23
Average	6.10	0.75	6.34	0.66	6.05	0.63

Estimates shown in red

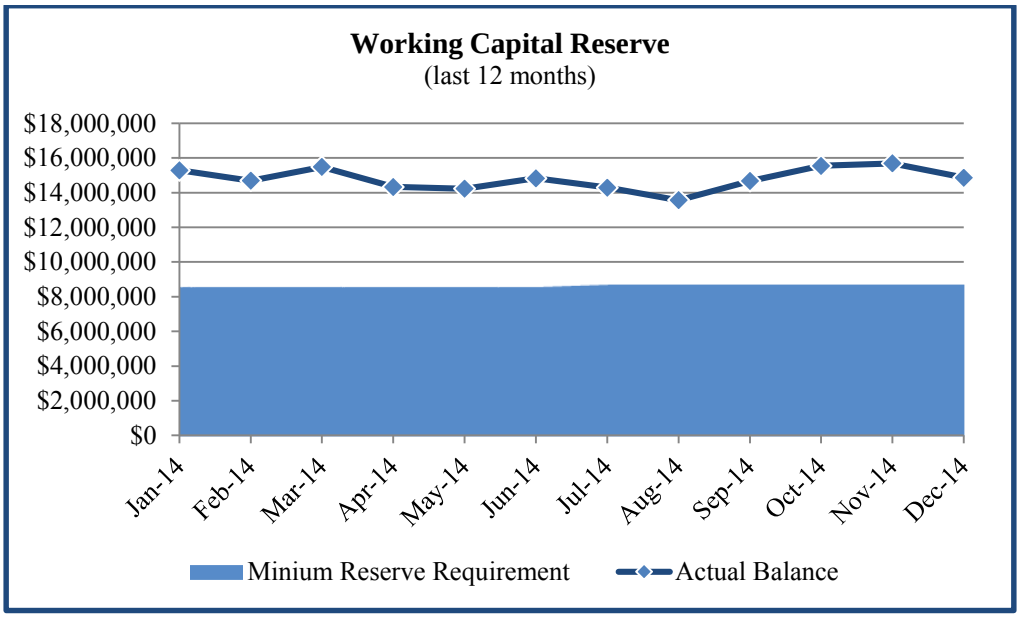


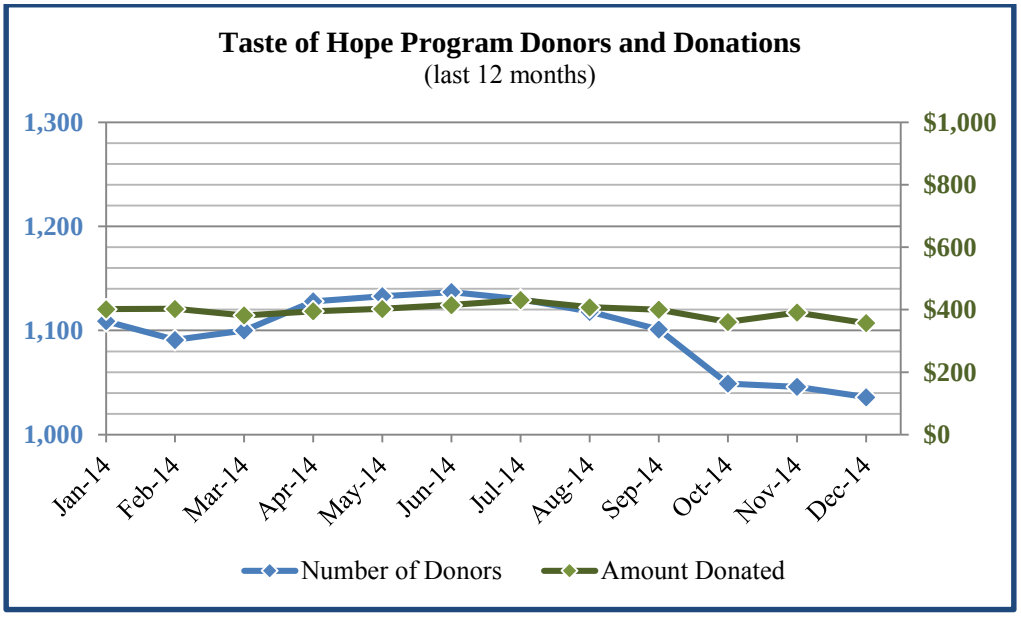
Orange Water and Sewer Authority
Select Financial Data
For the Six Month Period Ended December 31, 2014





Orange Water and Sewer Authority
Select Financial Data
For the Six Month Period Ended December 31, 2014





Orange Water and Sewer Authority
Financial Management Policy Report Card
For the Six Month Period Ended December 31, 2014

Measurement	Objective	FY14 Results	FY15 Goal	FY15 YTD Results
Working Capital Reserves	Greater of four months Operating expenses or 20% of succeeding three years CIP	$14.8M	$8.6M	$14.9M
Capital Improvements Reserve	2% of Net Capital Assets (Funding $400,000 per year until reach goal of approximately $6M)	$2M	$2.4M	$2.4M
Rate / Revenue Stabilization Reserve	5% of annual Water and Sewer Revenue (Funding $250,000 per year until reach goal of approximately $2M)	$1.25M	$1.5M	$1.5M
Debt Burden to Asset Value	Total Debt not more than 50% of Total Assets	27%	≤ 50%	25%
Sufficiency of Revenues above Debt Requirements	Annual Debt Service no more than 35% of Gross Revenue	22%	≤ 35%	20%
Cash Financing of Capital	Annual revenues and reserves provide at least 30% of CIP funding	100%	≥ 30%	100%
Debt Service Coverage Ratio	Annual Net Income not less than two times Annual Debt Service	2.3	2.0	2.0 [2]
Service Affordability Ratio [1]	Average annual OWASA bill not more than 1.5% of area median household income	1.42%	1.5%	1.42%

M = million

[1] Calculation based on median household income of $59,793 (per 2012 U.S. Census Bureau, the most recent information available) and average monthly household water use of 4,000 gallons

[2] Calculation based on the FY 2015 Annual Budget until full-year results are available.

AGENDA ITEM

- APPROVAL OF THE CHARTER FOR THE ENERGY MANAGEMENT PLAN

PURPOSE

- Obtain the Board of Directors' approval of the Charter for the Energy Management Plan project, and the proposed Community Engagement Plan for this effort.

BACKGROUND

- OWASA does not have a formal energy management plan, or specific goals and objectives for energy management and use of renewable energy. Development of an Energy Management Plan is Strategic Initiative #5 of OWASA's Strategic Plan for Fiscal Years 2014 – 2017.

- Staff prepared draft project charter which was discussed and supported (with requested revisions) by the Natural Resources and Technical Systems Committee on June 4, 2014; and discussed by the Board of Directors at the December 11, 2014 Work Session.

- As requested by the Board, a proposed Community Engagement Plan has been developed for the project, and is included as Attachment B to the Charter document.

ACTION NEEDED

- Discussion and decision about proceeding with development of the Energy Management Plan as described in the proposed Project Charter, including the proposed Community Engagement Plan for the project.

- Consistent with past practice, we do not believe a formal resolution is needed for this matter. However, we do recommend that the Board 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 Charter for the Energy Management Plan and the associated Community Engagement Plan, and authorizes staff to proceed with this project in accordance with the approach described in this documents."

January 22, 2015

ORANGE WATER AND SEWER AUTHORITY

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

MEMORANDUM

TO: Board of Directors

THROUGH: Ed Kerwin

FROM: Patrick Davis

DATE: January 16, 2015

SUBJECT: Approval of the Charter for the Energy Management Plan

Purpose

To obtain the Board of Directors' (a) approval of the Charter for the Energy Management Plan project and the proposed Community Engagement Plan for this effort, and (b) authorization to proceed with the project.

Background

Development of an Energy Management Plan is Strategic Initiative #5 of OWASA's *Strategic Plan for Fiscal Years 2014 – 2017*. We have never had a formal energy management plan, nor has OWASA ever established specific organizational goals and objectives for energy management and the use of renewable energy.

Staff prepared draft charter for this project which was discussed and supported (with requested revisions) by the Natural Resources and Technical Systems Committee on June 4, 2014. The revised draft charter was discussed by the Board of Directors at the December 11, 2014 Work Session. The Board requested that staff prepare a proposed Community Engagement Plan (CEP) for the project, and agreed to consider the Charter and associated CEP at the January 22, 2015 Board Meeting.

Attached for your consideration is the proposed Charter, which includes the proposed CEP (please see Attachment B of the document). The CEP follows the Board's guidance regarding the format and content for project-specific community engagement plans, and we believe it would provide timely and meaningful opportunities for interested stakeholders to receive information about the project, participate in the effort, and provide us feedback regarding the engagement process.

Staff Recommendations

Staff recommends proceeding with development of the Energy Management Plan as described in the proposed Project Charter, including the proposed Community Engagement Plan for the project. Consistent with past practice, we do not believe a formal resolution is needed for this matter. However, we do recommend that the Board 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 Charter for the Energy Management Plan and the associated Community Engagement Plan, and authorizes staff to proceed with this project in accordance with the approach described in this documents."*

Patrick Davis
Sustainability Manager

Attachment: Charter for the Energy Management Plan (including proposed Community Engagement Plan)

Project Charter

A. General Information

Project Title:	***ENERGY MANAGEMENT PLAN***
Project Description:	This project will result in development of an Energy Management Plan (EMP) that will provide strategic direction for OWASA's energy management, energy efficiency, and renewable energy decisions, actions, and investments.
Project Purpose:	OWASA uses more than 100 billion BTUs of energy each year to operate the community's water, sewer, and reclaimed water systems, and to run related support facilities, vehicles, and equipment. (Our energy use is equivalent to the total annual amount of energy used by more than 1,000 homes.) Most of the energy we use is in the form of electricity, which powers the many motors and pumps we use to move water and wastewater around, and to run blowers that provide air required in our treatment processes. We recognize the importance of controlling our energy costs, and being efficient in our use of energy. The EMP will document our goals and objectives (including targets) and ongoing strategies for: managing and conserving energy and related costs; increasing energy security and reliability; using renewable energy; and reducing our greenhouse gas emissions (GHGs). (As background, Attachment A provides a summary of electricity and natural gas use across our major functional areas for Fiscal Years 2007 through 2014.) **Value Added to OWASA and our Customers:** The proposed EMP will be OWASA's first formal, comprehensive energy management plan. It will serve as a single point of reference for information about our energy management program goals and objectives, selected strategies, and implementation plan. Our customers will benefit from cost-effective energy efficiency actions and returns on investments. **Aligns With Strategic Plan:** Preparation of the EMP is Strategic Initiative #5 of OWASA's Strategic Plan for Fiscal Years 2014-2017. This project also complements the proposed development of a Water Conservation Plan, which is a goal in Strategic Initiative #1 of the Strategic Plan. **Benefits to Be Realized:** Through preparation of the EMP, we will select the most cost-effective and practical energy management, energy efficiency, and renewable energy strategies for meeting our goals and objectives.

B. Project Objectives:

The EMP will address the following objectives, which are organized along the three pillars of sustainability: social performance, environmental performance, and financial performance. This project will require a balancing of these multiple and sometimes competing objectives.

Social Performance: Our EMP will impact the people and communities we serve.

1) Strategies will be evaluated against their impacts on the community.
2) We will inform and engage our customers and stakeholders in our energy planning efforts.

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3) We will inform and involve our employees in our energy management efforts.

Environmental Performance: Our EMP will help us preserve natural resources; conserve energy, water, and other natural resources; minimize waste and pollution emissions, and reduce our environmental impacts.

4) We will seek to reduce our energy use per million gallons per day of water, wastewater, and reclaimed water used in our community compared to our 2010 baseline energy use (or other baseline year as determined appropriate and for which historical data is available).
5) Energy management, energy efficiency, and renewable energy alternatives will be evaluated against their relative effect on energy use and GHG emissions.
6) Where practical, we will implement energy management strategies that enhance the reliability and resiliency of our water, wastewater, and reclaimed water facilities and operations.

Financial Performance: The economic well-being of our customers and our community depend on our ability to manage energy services, use, and costs so that we can ensure high quality and reliable services at an acceptable financial cost to our customers.

7) Energy management, energy efficiency, and renewable energy alternatives will be evaluated against their relative life-cycle financial costs (capital and operating and maintenance costs).
8) The selected set of strategies will represent a reasonable balance of financial considerations with our social and environmental performance objectives.
9) To ensure that the selected strategies are cost-effective for our community, the selected mix of measures will have a positive financial payback.
10) We will seek funding support for our program, such as: federal, state, and foundation grants; energy utility incentives; revenues from renewable energy credits and carbon trading; etc.

C. Assumptions

1) Technical analyses to inform the development of the initial EMP will be based primarily on desktop analyses using readily available data.
2) Energy savings and associated cost savings will be developed only for measures for which direct savings can be estimated.
3) Unless there is a very high level of certainty that we will receive supplemental funding support from other parties, all payback calculations will assume that all project costs are funded solely by OWASA.
4) No major structural changes are assumed for our energy rates, and energy rate increases will be assumed to be in-line with general inflation.
5) GHG emission estimates will not include indirect emissions such as those associated with employee travel in personal vehicles, or with the manufacture and transport of goods purchased by OWASA.
6) As discussed with the NRTS Committee on September 11, 2013, the following renewable energy strategies will not be further evaluated in the Plan because they are technically and/or economically infeasible for OWASA at this time:
    a) Wind power
    b) Hydropower retrofits at our reservoirs
    c) In-pipeline turbines for hydropower generation
    d) Solar drying for wastewater solids
    e) Build a solar photovoltaic system using customer funds
    f) Geothermal systems for heating and cooling

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D. Project Scope and Key Tasks

The scope of the project includes consideration of strategies that OWASA can pursue to manage its use of energy, and to use renewable energy instead of non-renewable energy sources. The EMP will have a 20-year planning horizon; however, the primary focus will be on the first 5 years.

The key proposed tasks to complete the EMP are:

1) Assess current energy use and costs (profile energy use across our facilities and functions; establish a baseline of use, energy intensity, costs, etc. which can be used to measure change)
2) Develop a baseline evaluation of GHG emissions associated with our use of energy at our facilities
3) Document our energy management, energy efficiency, and renewable energy strategies and results to date
4) Determine goals and objectives for our energy management program, including applicable reduction targets and timetables
5) Evaluate alternative energy management and energy efficiency strategies
6) Evaluate feasibility of alternative renewable energy strategies, including public/private partnership opportunities
7) Select the preferred strategies that will (either independently or in combination) meet the established goals and objectives
8) Create an action plan that sets forth the proposed actions, timetable, resource requirements, and expected outcomes
9) Describe plan for monitoring and reporting level of progress in achieving performance objectives
10) Finalize the EMP

E. Project Milestones

NOTE: Milestone dates are shown for tasks included in the 12 Month Board Meeting Schedule; completion dates for other tasks will be determined at as work progresses on this project and other priorities.

Milestones	Deliverables	Date
Natural Resources and Technical Systems (NRTS) Committee review of Project Charter	Draft Charter for EMP Project	June 2014
Board review and approval of Project Charter	Final Charter for EMP Project	Jan 2015
Baseline assessment of energy use; documentation of strategies to date; and information about potential goals and objectives	Technical Memorandum #1	Feb/Mar 2015
NRTS Committee review of Technical Memorandum #1	Recommended goals and objectives for EMP	Feb/Mar 2015
Board review of Technical Memorandum #1	Guidance for goals and objectives for EMP	April 2015
Staff evaluation of alternative management strategies	Technical Memorandum #2	June 2015

NRTS Committee review of Technical Memorandum #2	Preferred strategies for meeting goals and objectives	June 2015
Board review of Technical Memorandum #2	Guidance regarding preferred strategies for meeting goals and objectives	Sept 2015
Draft plan prepared incorporating input from TM #1 and #2	Draft EMP	TBD
NRTS Committee review of Draft EMP	Guidance regarding draft EMP; recommendation for Board	TBD
Board review of Draft EMP	Guidance and direction regarding draft EMP	TBD
Preparation of public review Draft EMP	Public Review Draft EMP	TBD
Public review and comment on Draft EMP	Compilation of public comments	TBD
Revisions to Draft EMP (if needed)	Revised Draft EMP	TBD
NRTS Committee review/recommendation	Committee report/recommendation	TBD
Board approval of final EMP	Final EMP	TBD
Board approval of EMP project funding and implementation	Funding decisions made in time to be incorporated into budget/CIP decisions	TBD

F. Impact Statement

Potential Impact	Systems / Units Impacted
May affect timing of certain asset rehabilitation and replacement decisions	Several
May impact capital improvements and capital equipment plans and costs, and our financial plan	Engineering and Planning Finance (financial plan)
Staff work on applications for funding assistance (grants, rebates, etc.	Office of Executive Director and possibly other Departments

G. Stakeholder Engagement/Communication

Staff has prepared a proposed community engagement plan to guide our efforts to provide stakeholders with timely and meaningful information about the project, opportunities to participate in the effort, and how they can provide feedback regarding our plans and the engagement process.

The engagement plan is included as Attachment B, and follows the guidelines approved by the Board in November 2014.

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H. Strategy to Complete

Staff will prepare the EMP document, incorporating best practices and guidance from Federal and State agencies and professional associations. The plan will also incorporate the findings and recommendations from technical evaluations by our consultants.

Staff will work with the Board of Directors (and its committees as specified) to ensure the Board has the information needed to set policy level goals and objectives, determine the best strategies for meeting those goals and objectives, and make decisions regarding the funding and implementation of the plan.

Proactive and effective project management and communications will be required of each project team member to ensure success.

I. Project Partners

Potential Partner	Expected Role
Energy and sustainability staff from local agencies	Provide technical advice; identify potential inter-local opportunities and implications; peer review of information
Duke Energy	Provide historical energy use and cost data for our facilities; potential funding support from energy efficiency incentives program; assistance with education and outreach
PSNC/Scana Energy	Provide historical energy use and cost data for our facilities; potential funding support through energy efficiency incentives program; assistance with education and outreach
NC Energy Office U.S. Environmental Protection Agency U.S. Department of Energy	Technical assistance; potential funding support
NC Waste Reduction Partnership UNC Energy Services Advanced Energy	Technical assistance; possible no-cost/low-cost audits of lighting/HVAC at certain facilities

J. Roles and Responsibilities

Role	Name	Responsibility
Sponsor	Board of Directors	Approves project objectives; goals and objectives for energy management plan; scope of stakeholder engagement, resources necessary to complete project on time and on budget. Provides guidance to NRTS Committee and/or staff as needed. Makes final decision on energy management strategies to be implemented.
Technical Preview	NRTS Committee	Provides general guidance and feedback regarding draft work products, technical findings, policy issues and recommendations, etc.

Project Manager and Task Leader	Patrick Davis, Sustainability Manager	Project Management Role: Leads staff in the planning, development, and completion of the project. Provides direction to Task Leaders as needed. Serves as staff liaison with NRTS Committee and Board of Directors. Works with project team to identify and quickly resolve issues. Task Leader Role: Profile system, energy use and costs; document efforts and progress to date; evaluate alternative strategies; prepare draft and final plan document; manage consulting services for the project; coordinate staff and consultant meetings and communications.
Task Leader	Mary Darr, Director of Engineering and Planning	Provides project management support and guidance for the Project Manager and other Task Leaders as needed.
Task Leader	Adam Haggerty, Asset Manager	Work with staff to incorporate EMP findings and recommendations into our comprehensive asset management plan; capital improvements program; and annual O&M budget.
Subject Matter Expert	Stephen Winters, Director of Finance and Customer Service	Finance and budget, including considerations on long-term financial plan.
Subject Matter Expert	Todd Taylor, General Manager of Operations	System operating considerations; energy requirements; and general assessment of energy savings opportunities and feasibility.
Subject Matter Expert	Ken Loflin, Water Supply and Treatment Manager	Water system operating considerations; energy requirements; and general assessment of energy savings opportunities and feasibility.
Subject Matter Expert	John Kiviniemi, Wastewater Treatment and Biosolids Recycling Manager	Wastewater system operating considerations; energy requirements; and general assessment of energy savings opportunities and feasibility.
Subject Matter Expert	James Dodson, Maintenance Coordinator	Technical information and assistance regarding equipment performance and condition; help coordinate consultant's site visits for facility evaluations.
Subject Matter Expert	Greg Feller, Public Affairs Administrator	Help develop community engagement plan and information for customers/stakeholders and employees.

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K. Resources

Resource	Estimated Costs
In-house staff support services	Staff time
Information and assistance from other utilities regarding their experience and lessons learned with energy management plans and strategies.	$0
Advanced technical assessments, such as assessment of energy performance of our largest pumps and motors, completed by a qualified consultant	$75,000 (estimated based on planning-level guidance we received from two consulting firms)
If possible, no-cost and low-cost technical assistance services offered through our energy utilities, Federal and State agencies; water and wastewater professional associations, the NC Waste Reduction Partnership program, etc.	TBD
NRTS Committee and Board of Directors	$0

L. Project Risks

Risk	Mitigation Strategy
Incomplete or inaccurate information	Quality control throughout the work.
Desire to over-study potential alternatives	Focus will especially be on near-term strategies that we can implement on our own.
Other priorities result in delayed completion of project	EMP development should be deferred only if there are major unforeseen circumstances.
Insufficient funding to implement selected strategies	Potential strategies will be fully evaluated and selected only if they are financially viable. Investments will be phased as needed to meet financial objectives. Grant funding will be pursued.

M. Approvals

The signatures of the people below document approval of the formal Project Charter. The project manager is empowered by this charter to proceed with the project as outlined in the charter.

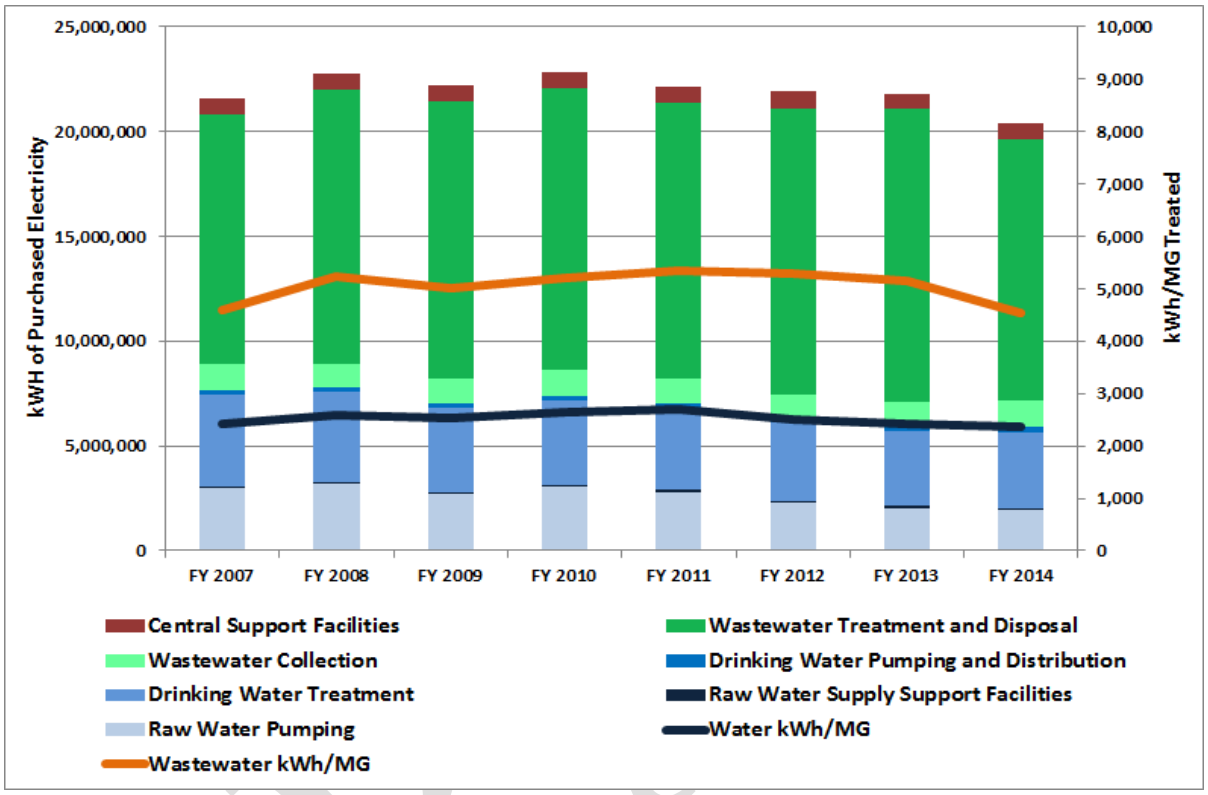
Name	Signature or Date of Board Approval, if Applicable	Date
Board of Directors		
Ed Kerwin		
Patrick Davis		

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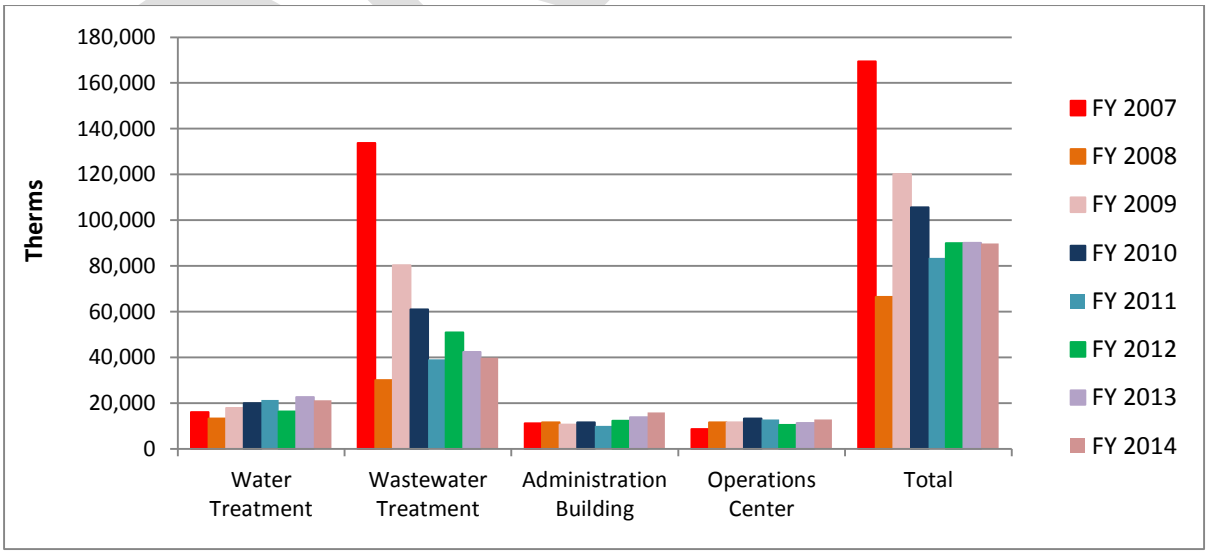
Attachment A

The following graphs show OWASA's annual use of purchased electricity and natural gas by major functional area for Fiscal Years 2007 through 2014. Electricity use intensity (kilowatt-hours used per 1,000 gallons) is shown for functions directly related to drinking water supply and treatment; and wastewater collection, treatment and disposal.

OWASA Use of Electricity By Major Functional Area of Operations: FY 2007 - 2014



OWASA Use of Natural Gas By Major Functional Area of Operations: FY 2007 - 2014



Proposed Community Engagement Plan for Energy Management Plan Project

Purpose

The Orange Water and Sewer Authority (OWASA) is developing an Energy Management Plan (EMP) to provide strategic direction for OWASA's energy management, energy efficiency, and renewable energy decisions, actions, and investments. The EMP will document our goals and objectives (including targets), and ongoing strategies for: managing and conserving energy and related costs; increasing energy security and reliability; using renewable energy; and reducing our greenhouse gas emissions (GHGs).

Our customers and the community we serve will be affected by and interested in our energy management efforts, decisions, and investments. Therefore, it is important that we provide stakeholders (a) timely information about the project, our efforts, and the strategies and investments we are considering, and (b) meaningful opportunities for them to have input in and provide feedback regarding this effort. The intent of this Community Engagement Plan is to describe our planned approach to achieve that.

The format and content of this plan follow the Community Engagement Guidelines approved by the OWASA Board of Directors in November 2014.

Outcomes/Objectives

1. ***Provide timely and clear information to stakeholders*** about our energy use and energy management efforts; what is proposed; how they might be affected; costs and benefits of strategies we are considering; how they might be affected; how they can participate in and provide comments on this effort; etc.
2. ***Seek stakeholder feedback and questions*** so that we can better understand their interest in, perspectives, and expectations regarding our energy management efforts.
3. ***Engage stakeholders in a dialogue*** by receiving and responding to their comments and questions, and providing additional information as needed.
4. ***Encourage action by our customers and other stakeholders*** where applicable, by empowering them with information about topics such as how their water conserving actions can help us reduce the amount of energy we use to meet their water demands.
5. ***Raise the awareness level of employees and gain their support for the plan***, as well-informed and supportive employees will be key to the success of the program. Involving employees will show that their opinions count, that they have a say in how things work, and that they are valued members of our team.
6. ***Gain support and buy-in for our efforts***, and gain the trust of stakeholders, including public officials.
7. ***Evaluate the effectiveness of our engagement efforts for this project*** through informal surveys of stakeholders, and through Board and staff reviews.

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Attachment B

Stakeholders

Stakeholder groups that we want to inform and engage include the following. Additional stakeholders may be identified and included once the project is underway.

- Interested OWASA customers
- System users that may not be OWASA accountholders
- Community organizations
    - Local government elected officials and staff
    - UNC and UNC Healthcare
    - Chamber of Commerce, including the Foundation for a Sustainable Community
    - Conservation/environmental organizations
    - Civic groups
- Energy-related companies serving our community, including our energy utilities and fuel suppliers (Duke Energy; PSNC/Scana Energy; Piedmont Electric Membership Cooperative)
- Energy and sustainability program staff from Carrboro, Chapel Hill, Orange County, Chapel Hill – Carrboro City Schools, and UNC/UNC Healthcare
- Other organizations with expertise in/support for sustainable energy management (NC Energy Office; Advanced Energy; Alternative Energy Corporation; Piedmont Biofuels; Strata Solar; YES Solar; etc.)
- Our employees, who will be key to the success of our energy management efforts

Core Messages

The engagement effort shall clearly convey the following messages to stakeholders:

- OWASA desires to increase the sustainability of its energy use through cost-effective investments, operational changes, policies, etc.
- OWASA believes that enhancing energy use sustainability and reducing our GHG emissions is beneficial to our community, State and nation, and an important priority in our community.
- Water conservation is a key means of reducing GHGs, because saving water means less fossil-fuel derived energy will be needed to pump and treat water and wastewater to meet the needs of our customers. Conversely, because a substantial amount of water is used for energy production, saving energy also enables better management of water resources.
- OWASA seeks to proactively inform and engage stakeholders as we develop of the Energy Management Plan, and we welcome and appreciate questions, comments, and suggestions regarding our energy management planning efforts, and our community engagement efforts.
- OWASA desires to inform the community on an ongoing basis in the future about its energy management initiatives and their results.

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Key Information

The following information will be provided to stakeholders as part of this engagement effort:

a. ***What is proposed?*** Development of an Energy Management Plan to increase the sustainability of our facilities and operations and reduce GHGs.
b. ***Who would be affected?*** OWASA customers may be affected depending on the cost to implement the future recommendations and the associated savings OWASA may achieve. There would be broad societal benefits associated with long-term reductions in GHGs.
c. ***What are the expected advantages and disadvantages (non-financial and financial) of alternative courses of action?*** This will be developed as the technical work proceeds.
d. ***What is the timetable for the project and stakeholder participation?*** The draft Plan is scheduled to be completed in Fiscal Year 2016.
e. ***What opportunities will stakeholders have to participate and let us know what they are thinking?*** They will be able to offer comments, questions, and suggestions throughout all phases of the project.
f. ***How can stakeholders get more information and be placed on the list to receive project updates, information and draft reports, meeting notices, etc.?*** Interested stakeholders can contact us by phone or e-mail to be placed on our distribution list. They can also visit our project webpage (to be developed)

Approach

Our communications approach includes multiple activities to inform and engage stakeholders throughout the project, and to evaluate the success of our engagement effort. We believe the proposed activities described below will be cost-effective and appropriate considering the level of staff effort required to support this engagement effort and the scope and importance of the Energy Management Plan project.

Four core strategies that will be common to our information, engagement, and evaluation efforts are:

1. Establish and publicize ***an energy management plan project webpage*** to convey information about the project; enable interested stakeholders to submit their questions, comments, and suggestions on-line.
2. Establish ***an e-mail distribution list*** that helps us convey project information and public participation opportunities to stakeholders in a timely and efficient way (through our Constant Contacts service).
3. Include ***informal surveys and feedback opportunities*** as a feature of our project website, public meetings on the project, presentations to stakeholder groups; etc.
4. Establish ***an informal technical advisory committee*** (TAC) to provide high-level technical input throughout the project. This will enable other professionals to share best practices in energy management as well as resources and successful methods they have used. The committee will include, but not be limited to, energy and sustainability managers from local public agencies (several local staff have agreed to participate on the proposed TAC).

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Attachment B

The ***information process*** will include a variety of methods for conveying project information to stakeholders, such as:

- a dedicated project webpage;
- e-mails to stakeholders on our distribution list;
- paper mailing(s) to stakeholders (such as newsletters);
- news releases, guest articles in local papers; etc.;
- outreach presentations to interested community groups, including elected officials;
- social media (Twitter; any other social media that OWASA may decide to use in the future); and
- announcements and presentations during televised Board meetings and other community meeting(s).

The ***engagement/dialogue process*** will include opportunities to ask questions, seek information, and provide comments and feedback via a variety of methods, such as:

- participation at meeting(s) of the Board of Directors or its Committee(s);
- e-mail, letter, or fax at any time to the staff and/or Board;
- participation at project-related community outreach meetings;
- face-to-face meetings (either one-on-one or small groups) upon request; and
- feedback forms on the project webpage.

We will strive to provide at least two to four weeks for distribution and review of applicable information before engagement/feedback opportunities at Board and Committee meetings when the project is discussed.

The ***evaluation process*** will include:

- informal surveys of stakeholders (offered on the webpage, at outreach meetings, etc.) to seek their feedback on the information and engagement opportunities we have provided;
- After Action Review by staff; and
- Board of Directors evaluation of the value of the engagement process for the project.

A summary table showing community engagement activities, target audiences, communication methods, etc. is provided on the following page.

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SUMMARY TABLE OF COMMUNITY ENGAGEMENT ACTIVITIES, TARGET AUDIENCES, AND METHODS FOR ENERGY PLAN PROJECT

ID	Description	Activity Type	Responsibility	Schedule	Target Audience	Communication Methods/Channels	Resources
1A	Project webpage established to support engagement process	Support	Staff	Feb 2015	Stakeholders	Project webpage on OWASA's website; includes automated features for accessing and downloading project information, submitting comments, questions and suggestions, and providing feedback regarding the engagement process	TBD
1B	Project stakeholder e-mail list established to support engagement process	Support	Staff	Feb 2015	Stakeholders	E-mail distribution through Constant Contacts *(this is proposed to be our primary method for notifying interested stakeholders of the availability of information about the project and opportunities for public input)*	TBD
1C	Technical Advisory Committee established to provide support	Engagement	Staff	Feb 2015	Local Agency Energy and Sustainability Managers	Staff-to-staff invitations to participate; TAC provides initial peer review of project information, technical analysis and recommendations, etc. prior to public release, where practical	TBD
1D	Outreach and engagement through at least two general project meetings with public; meetings with civic groups and other organizations, and presentations to local governing boards	Engagement	Board and Staff	TBD	Stakeholders Including Local Governing Boards	Letter requests to make presentations to local governing boards; presentations by the Board and staff (with consultant support if needed), followed by Q&A; feedback; evaluation	TBD
2	Project introduction - purpose, timetable, opportunities and methods for participation and feedback, etc.	Information	Staff	Mar 2015	Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings, community meetings, and via local media outlets; Twitter messages; local media outlets	TBD
3	Baseline assessment of energy use; information about our energy management accomplishments; consideration of potential goals and objectives	Information	Staff	Mar 2015	Board and Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings, community meetings, and via local media outlets; Twitter messages; local media outlets	TBD
		Engagement	Board and Staff	Mar - May 2015	Stakeholders	NRTS Committee and Board Work Session presentations and discussions; project webpage; project e-mail distribution; social media; electronic and paper mailings; Blue Thumb newsletter; local media outlets; opportunity for public to comment prior to Committee/Board giving direction to staff	TBD
4	Evaluation of alternative management strategies	Information	Staff	Summer 2015	Board and Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings and community meetings, and via Blue Thumb and local media outlets; Twitter messages	TBD
		Engagement	Board and Staff	Summer 2015	Stakeholders	NRTS Committee and Board Work Session presentations and discussions; project webpage; project e-mail distribution; social media; electronic and paper mailings; Blue Thumb newsletter; local media outlets	TBD

SUMMARY TABLE OF COMMUNITY ENGAGEMENT ACTIVITIES, TARGET AUDIENCES, AND METHODS FOR ENERGY PLAN PROJECT

ID	Description	Activity Type	Responsibility	Schedule	Target Audience	Communication Methods/Channels	Resources
5	Draft Plan	Information	Staff	TBD	Board and Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings and community meetings, and via Blue Thumb and local media outlets; Twitter messages	TBD
		Engagement	Board and Staff	TBD	Stakeholders	NRTS Committee and Board Work Session presentations and discussions; project webpage; project e-mail distribution; social media; electronic and paper mailings; Blue Thumb newsletter; local media outlets; opportunity for public to comment prior to Committee/Board giving direction to staff	TBD
6	Release of Final Plan	Information	Staff	TBD	Board and Stakeholders	Project webpage; project e-mail distribution; letters to local governments; announcements and invitations at Board meetings and community meetings, and via Blue Thumb and local media outlets; Twitter messages	TBD
		Engagement	Board and Staff	TBD	Stakeholders	NRTS Committee and Board Work Session presentations and discussions; project webpage; project e-mail distribution; social media; electronic and paper mailings; Blue Thumb newsletter; local media outlets; opportunity for public to comment prior to Committee/Board giving direction to staff	TBD
7	Seek and evaluate feedback regarding the effectiveness of the community engagement process	Measure Effectiveness	Staff	Through-out Project and at Completion	Stakeholders	Informal survey of stakeholders - survey instruments available through the project webpage, distributed through the project e-mail list, or distributed in paper form at public meetings or in-person meetings with staff; publication of the results on project webpage, with distribution through project e-mail list, and report to the Board	TBD
		Measure Effectiveness	Staff and Board	End of Project	Board	Informal survey of Board via e-mail (using Survey Monkey, or paper copy)	TBD
		Measure Effectiveness	Staff	End of Project	Staff and Board	Document findings from staff's After Action Review; communication of results to Board via e-mail; discussion of results with Board if requested	TBD

AGENDA ITEM

- DISCUSSION AND DECISION ON POTENTIAL OBJECTIVES AND TIMETABLE TO CONDUCT A CUSTOMER SURVEY

PURPOSE

- Decide whether to ask staff to develop a proposed scope, budget, timetable and related information for a customer survey to be conducted in calendar year 2015, and, if so, decide on objectives for the survey.

BACKGROUND

- On January 8, 2015, based on a request from the Community Engagement Committee, the Board of Directors requested that staff provide a report for tonight's meeting on the objectives and timing of a customer survey.

ACTION NEEDED

- Decide whether to ask staff to develop a proposal and objectives for a survey in 2015.

January 22, 2015

ORANGE WATER AND SEWER AUTHORITY

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

MEMORANDUM

TO: Board of Directors

FROM: Ed Kerwin

DATE: January 16, 2015

SUBJECT: Discussion and Decision on Potential Objectives and Timetable to Conduct a Customer Survey

Purpose:

To discuss and make a decision on possible objectives and timing of a customer survey.

Background:

On January 8, 2015, based on a request from the Community Engagement Committee, the Board of Directors requested that staff provide for the January 22nd Board meeting a report on the objectives and timing of a customer survey.

The Strategic Plan includes the following goals for Community Engagement:

- Engage stakeholders to understand their perceptions and expectations so that we make well-informed decisions about our services and so that we maintain their trust.
- Empower stakeholders with information so they use water wisely and protect water quality through proper use of our wastewater system.
- Provide stakeholders with timely information about projects, programs, and policies that are important to them and offer them meaningful opportunities to give their feedback so that we can continue to improve.

Potential Survey Objectives

Conducting a survey aligns with the Strategic Plan and will serve *"to gather information about stakeholders' perceptions and expectations to help enhance OWASA's ability to engage stakeholders and make well-informed decisions so that we maintain stakeholders' trust."*

Potential objectives include:

1. Learning about customers' perspectives, expectations and levels of satisfaction about:
    a. The quality of interactions with OWASA
    b. The quality, reliability and value of OWASA's services (both specific services and overall)
    c. OWASA's openness to feedback and new ideas

d. Whether customers trust us
e. The quality and level of OWASA's resource stewardship
f. The value of water
g. Water conservation
h. Proper use of our wastewater system/wastewater management services

2. Determining whether perceptions and expectations have changed since the 2012 Customer Survey.

3. Obtaining information to be used:
   a. In developing future Strategic Plans
   b. In making decisions about policies, plans, etc.
   c. For enhancing our Community Engagement program, such as topics to focus on and methods of engagement

Discussion of whether to do a survey in 2015 or defer to a later year

Reasons to Do the Survey in 2015	Reasons Not to Do the Survey in 2015
• The last customer survey was done in 2012 and it would be useful to see how perceptions have changed. • When we did the 2012 survey, our plan was to follow up with another customer survey three years later in order to try to assess the progress we have made on the key issues identified in the survey responses.	• A survey would be more useful after the community engagement process for Advanced Metering Infrastructure (AMI) is complete. • Deferring would enable us to include questions about additional projects such as updating the Long-Range Water Supply Plan, developing a Water Conservation Plan, etc. • We can gain some of the information we seek during project-specific community engagements (biosolids, AMI, etc.), especially if we ask selected non-project-specific questions in community engagements. • Engagement plans for several upcoming projects will likely include soliciting feedback from stakeholders. If so, conducting a survey in 2015 could lead to "survey fatigue" and low response rates. • To focus time and energy on other priorities.

Acton Requested:

Decide whether to ask staff to develop a proposed scope, budget, timetable and related information for a customer survey to be conducted in calendar year 2015, and, if so, decide on objectives for the survey.

Ed Kerwin
Executive Director

Agenda Item 12:

Review Board and Discuss Work Session Format

Purpose:

Review and discuss Board Work Session Format

Information:

- Work Session Purpose and Format
- Framework for OWASA Board and Committee Roles

WORK SESSION PURPOSE AND FORMAT

Accepted September 11, 2014

Introduction

On July 10, 2014, the Board agreed to change the structure of the first Board meeting of the month to a work session to facilitate open discussions about matters of importance. The work session format provides an efficient means to share information and for the Board to engage in meaningful dialogue on matters the full Board determines appropriate. The second Board meeting of the month will continue to be a business meeting where the Board considers an action item agenda for such things as approval of plans, awarding contracts, approving policies, receiving petitions and feedback from stakeholders, etc.

It is understood that the Board and staff will periodically evaluate the effectiveness of this approach and will consider further changes to ensure the Board has the information and time it needs to effectively govern the organization.

Purpose

Purposes of the work sessions may include:

1) Review the 12 month schedule of agenda items for the Board work sessions and business meetings.
2) Review in detail the agenda items scheduled for the next business meeting and the next work session to ensure expectations for information are clear.
3) Discussion by the Board and staff of issues (opportunities) on which there may be decision(s) in a future business meeting.
4) Information and/or status reports on initiatives, events, and projects.
5) Assignment of action items/tasks for Board committee(s) and/or staff.
6) A forum for Board Members and staff to suggest new initiatives for the Board's consideration.
7) Discussion and setting of priorities. Discussion of process and timetable for a given issue.
8) Evaluation and feedback on matters as may be determined by the Board.
9) Other as determined by the Chair or majority of the Board.

Date, Time and Location

Second Thursday of the month starting at 6:00 PM in the OWASA Community Room. The meeting start time may be adjusted.

Public Attendance and Comments

Work sessions are open to the public. The Board will receive relevant public comments on the Work Session agenda items and in accordance with its usual time limit on public comments.

Work Session Summary and Recordings

A summary of the work session will be prepared by staff and will include the Board's direction to committee(s) and/or staff, decisions about future meeting agendas, etc. The work session summary will be on the consent agenda for Board approval at a business meeting.

An audio recording will be made. The Board approved work session summary and audio recording will be posted on the OWASA website.

Agenda Preparation

Staff will provide the Executive Committee the draft agenda for the work session for their review and approval 10 days in advance.

Staff will provide the agenda materials electronically to the Board six days in advance. Staff will notify the public that the agenda materials are on OWASA's website at least three days in advance.

Work Session Agenda

1) Welcome and call to order by Chair
2) Announcements by the Chair and other Board Members and staff
3) Specific agenda item(s) for discussion:
    a. Presentation of information
    b. Open discussion
    c. Board direction to committee(s) and/or staff about issue scope; process; information needed; next steps; etc. (if applicable)
4) Request(s) to the full Board by Board committees, Board Members and staff for information, guidance, and/or to suggest initiatives for consideration by the Board. These requests will be discussed at current or future work sessions (or business meeting) as determined by the Chair or a majority of the Board.
5) Review the 12 month schedule of agenda items for Board work sessions and business meetings. Discuss in detail the expectations and information needed from staff, etc. for the agenda items for the next business meeting and the next work session.
6) (Optional) Discussion by Board and staff about the effectiveness of the work session.
7) Chair or Executive Director summarizes work session and resulting action items.

NOTE: Occasionally, the Board will hold only one meeting during the month, and it may occur on the date for the standing work session meeting (such as during November and December, when the second meeting of the month is cancelled due to the holidays). In such cases, the Board work sessions may be preceded by a brief business meeting (7:00 PM) to allow petitions from the public and to obtain Board decisions on action items that are time sensitive. Should a closed session of the Board be needed at such meetings, the Chair will determine when it will be scheduled.

FRAMEWORK FOR OWASA BOARD AND COMMITTEE ROLES

Accepted September 11, 2014

Purpose of the document

This document describes the boundaries between the roles of the full Board, Board committees, committee chairs, and individual Board members. Its intent is to complement the current OWASA bylaws, rather than alter or duplicate them. The document is intended as clarification of the select boundary areas only, not a complete description of roles and responsibilities.

Relationship between full Board and standing Board Committees

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.

Implementation:

1. Full Board regularly reviews proposed agenda topics for both Board work sessions and regular meetings

2. Board committees and committee chairs may propose additional topics for analysis and development of recommendations; Board determines (1) whether to invest Board, committee, and staff resources, and (2) which topics it prefers to explore as a full board

3. To facilitate Board decision-making, Board chair may propose how and when the Board and Board committees will address a particular topic

Relationship between full Board and the Executive Committee

The Executive Committee provides input to Board chair and Executive Director concerning draft agendas and 12-month calendar for the Board work sessions and regular meetings. With such input, Board chair approves the agenda for near-term Board meetings. The goal is to achieve alignment with Board consensus on the desired long-term agenda and to incorporate actions and discussion topics proposed by staff members.

The Executive Committee will also review Board practices, and opportunities for improving them, and provide relevant advice or recommendations for consideration by the chair or the full Board. (The full Board can also review Board practices.)

The Executive Committee also acts as a proxy for the full Board in situations where urgent and significant policy or operating decisions must be made AND when it is not feasible to convene a quorum of the Board.

Role of Board Committee Chairs

Committee chairs facilitate deliberation by their respective committees on topics referred to committees by the full Board. The chairs communicate committee analysis, meeting summaries, and recommendations to the full Board.

Committee chairs approve agendas for committee meetings. The goal is to achieve alignment with Board consensus on the desired long-term committee agenda and to incorporate discussion topics proposed by staff members. The committee chairs also consult with the Executive Director and members of staff to ensure satisfactory preparation of information and analysis for committee deliberations.

The Board chair may assign responsibility to a committee chair to consult directly with the Executive Director and members of staff to ensure satisfactory preparation for a full Board work session on a topic that is consistent with the committee's domain. The Board chair may also assign responsibility to a committee chair to guide and facilitate deliberation of the topic at the full Board's work session.

Committee chairs will survey their respective committee members to identify additional Board topics related to the domain of the committee; committee members may also recommend topics for consideration. Before investing Board, committee, or staff resources, the committee chair will review proposed topics with the full Board.

The Board chair may also establish an ad hoc committee of Board members to address a topic that does not fit the domain of standing Board committees.

Relationship Between Individual Board Members and Staff Members

Board members and OWASA staff are encouraged to maintain collaborative relationships each with the others, to share suggestions for problem solving, and to maintain positive working relationships.

Individual members of the Board, including members of the Executive Committee and committee chairs, are encouraged to make inquiries to or request information directly from the Executive Director or OWASA staff. Such requests should be made through the Executive Director if responding is likely to require substantial resources or staff time, in which case the Executive Director may ask that the request be made and coordinated through the Board Chair in order to assure it is consistent with the Board's adopted work plan and strategic goals.

Individual Board members including committee chairs should take care to be sure individual requests of the Executive Director or staff are necessary and appropriate to understanding or accomplishing the Board's adopted work plan.

The Board Chair may assign responsibility to an individual Board Member to address a particular topic that lies outside the domain of the standing committees. Example: partnering with Executive Director on facilitating development of a Board-approved strategic plan.