



ORANGE WATER AND SEWER AUTHORITY

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

January 23, 2018

Mayor Pam Hemminger
Town of Chapel Hill
405 Martin Luther King Jr.
Boulevard
Chapel Hill, NC 27514

Mayor Lydia Lavelle
Town of Carrboro
301 West Main Street
Carrboro, NC 27510

Chair Mark Dorosin
Orange County Board of
Commissioners
Post Office Box 8181
Hillsborough, NC 27278

Dear Mayor Hemminger, Mayor Lavelle and Chair Dorosin:

We are pleased to submit this annual report on our services, projects and initiatives in calendar year 2017.

Water Supply

The North Carolina [Drought Monitor](#) currently classifies central North Carolina including Orange County as being in a moderate drought. The OWASA Board and staff are closely monitoring conditions and we continue to encourage wise use of water resources.

As of January 17th, our reservoirs (Cane Creek Reservoir, University Lake and Quarry Reservoir) were 63% full, which is lower than normal for this time of year. Since 1990, the lowest level for our reservoirs on January 17th was 41% full in 2008, during our last severe drought.

We have a Water Shortage Response Plan and a Drought Response Operating Protocol which guides our decisions to ensure we work proactively with the community in response to increasingly severe drought conditions. Each year, we want to see our water supply capacity at 100% by the spring, so we anticipate improvement within the next month or so. If not, we will take action to seek additional conservation from our customers and consider our Jordan Lake supply option.

Advanced Metering Infrastructure/Agua Vista

Significant progress was made last year on our Advanced Metering Infrastructure (AMI) project called Agua Vista to include:

- Wrapping up vendor selection and contract negotiations.
- Executing the installation contract with our preferred vendor.
- Installing a portion of the network infrastructure.
- Substantial completion of software integration.

- Staff training.
- Development of the community engagement plan and materials.
- Upgrading a small quantity of meters with OWASA staff to reinforce training and test processes.
- Processed a small quantity of bills utilizing AMI reading data.

The key benefits of the project are:

- To improve customer access to water use information,
- To make for more efficient and effective billing,
- To allow early detection of possible water leaks, and
- To enhance operational efficiency.

Key activities for 2018 will include finishing the installation of the network infrastructure, completing a field readiness test with the installation subcontractor to review their processes, begin system-wide meter upgrades, and launching the customer portal.

[Sewers for the Historic Rogers Road Area](#)

Sewer installation began in the fall of 2017. About 2,950 feet of sewer pipe has been installed to date. This is approximately 15% of the 19,000 feet of pipe that will be installed. The project is on schedule for completion in summer 2018.

[Financial Management](#)

Fiscal Year (FY) 2018 is the sixth consecutive year with no increase in our monthly water and wastewater rates. We received an unmodified opinion from our independent auditors that our financial statements fairly present our financial position. We continue to meet our financial performance objectives, including the metric we use to measure the affordability of our services. The average household in our area uses about 4,000 gallons per month of water and sewer service; the annual cost of service at this level, \$70.66 per month, is less than 1.5% of median household income.

The table below shows revenues and expenditures for FY 2017.

	FY 2017
Water and Sewer Revenue	\$34,532,508
Net Other Revenue	2,781,816
Operating Expenses	21,173,235
Depreciation and OPEB	9,402,322
Net Income	6,738,767

Affordability Outreach Program

2017 marked the second full year of OWASA's formal Affordability Outreach Program. We continue to engage with over 20 social service agencies from across the county to increase community awareness of options to manage and reduce OWASA bills and empower low-income customers and the local agencies that serve them with information and tools to manage and reduce OWASA bills. Some of our notable efforts in 2017 include:

- A revenue-neutral transition from a seasonal water rate structure to a uniform water rate structure for multi-family, master-metered customers to help with month-to-month water bill budgeting for sub-metered tenants.
- The launch of a neighborhood conservation challenge (Save2Gain) in partnership with Chapel Hill Public Housing.
- Promotion and completion of water use assessments to identify water saving strategies for low-income customers, working through the local agencies that serve them.
- The implementation of a pay-by-text option for interested customers.

We continue to promote the on-bill contributions to the Care to Share customer assistance program in our Blue Thumb customer newsletter, public events (like our Open Houses), and website. In Fiscal Year 2017, the program raised over \$5,400 in on-bill contributions from 1,038 customers. We also promote direct contributions to the Inter-Faith Council.

In 2018, OWASA will consider a reduction in our service availability fees (renamed system development fees) for all new connections to OWASA's water and sewer system, as well as the creation of a new, low tier for homes that are 800 square feet or less. Additionally, the OWASA Board of Directors will receive and discuss a proposal for Year 3 of the Affordability Outreach Program Plan at our February 8, 2018 Work Session.

Fluoridating drinking water

On October 9, 2017, OWASA resumed fluoridation of drinking water to promote dental health and in accord with recommendations of the US Centers for Disease Control, US Environmental Protection Agency, US Public Health Service, NC Division of Public Health and the Orange County Board of Health. Fluoridation resumed following completion of improvements to the safety and reliability of the fluoride feed system at the Jones Ferry Road Water Treatment Plant.

In February 2018, the Orange County Board of Health is scheduled to consider OWASA's request for the Health Department to facilitate a County-wide process for periodic review of drinking water fluoridation.

Drinking water quality

In 2017, we again met all Federal and State standards for the quality of our drinking water, including requirements to test for over 150 substances.

As part of our regulatory monitoring, we test every three years for lead in tap water at 30 homes built between 1983 and 1985. The results from this testing in 2017 were that 90% of samples tested below the detectable level of 3 parts per billion (ppb). In 29 of the water samples, lead was below the detectable level of 3 ppb. We found lead in one sample at a level of 4 ppb, which is below the Federal action level of 15 ppb.

We continue to offer drinking water quality testing to all of our customers free of charge.

Quality of our treated wastewater and biosolids

In July 2017, we received the Platinum Peak Performance Award from the National Association of Clean Water Agencies for seven consecutive years of meeting all standards for the quality of our treated wastewater. Our treated wastewater has phosphorus and nitrogen levels well below the limits set by the State for our Mason Farm Wastewater Treatment Plant.

We also continue to meet all standards for the quality of the treated wastewater solids, and our Class A biosolids (the solid residue from wastewater treatment) meet federal environmental standards for “exceptional quality.” We recycled our biosolids primarily to enhance the soil on approved farmlands in Orange, Chatham and Alamance Counties. Some biosolids are recycled at a private composting facility in Chatham County which makes a soil additive for landscaping.

Energy management

In April 2017, the Board adopted an [Energy Management Plan](#) that included a suite of strategies to help us work towards our Board-set energy management goals to:

- Reduce our use of purchased electricity by 35% by 2020 compared to a 2010 baseline.
- Reduce our use of purchased gas by 5% by 2020 compared to a 2010 baseline.
- Beneficially use all Mason Farm Wastewater Treatment Plant biogas by 2022, provided the preferred strategy is projected to have a positive payback within the expected life of the required equipment.
- Formally engage local governments and partners in discussion about potential development of biogas-to-energy projects at the wastewater treatment plant.
- Seek proposals for third-party development of renewable energy projects on OWASA property.

This plan is a key milestone to improve the environmental impact of our operations, reduce costs, and improve reliability. It represents our first formal, comprehensive, organization-wide evaluation of ways we can better manage energy across all our facilities. On February 22, 2018, the Board will receive and discuss an update to the Energy Management Plan.

Diversity and Inclusion Program

We are proceeding with our [Implementation Plan for the Employee Diversity and Inclusion Program](#). Our consultant, VISIONS, Inc., has trained a Diversity Leadership Group, Diversity Recruitment Group and a Diversity Resource Group as well as the OWASA Board of Directors.

An organizational assessment has been conducted and results will be reviewed with employees soon.

Key activities for 2018 are completion of organization assessment and additional training for OWASA staff.

Infrastructure investments

Capital investments, including debt payments for capital projects, account for about half of our costs. In 2017, we invested about \$13.6 million to renew, replace and improve our infrastructure to maintain the reliability and quality of our services and the structural integrity of facilities.

Key accomplishments in 2017

- Replacement of aging water mains on parts of East Rosemary and Henderson Streets, in coordination with Town of Chapel Hill street resurfacing.
- Substantial completion of work to replace an aging water main on Hillsborough Street from East Rosemary Street to Martin Luther King Jr Boulevard, again in coordination with an upcoming Town roadway project.
- Rehabilitation of a deteriorating section of a pressurized sewer in the Hamilton Road and Prestwick Road area, an extremely high priority project in that this pipe carries nearly half of the wastewater flow of the entire service area.
- Installation of a new water main from our water storage tank on Hilltop Street to improve system pressures in the Hilltop/McCauley neighborhood.
- Completion of needed electrical, controls, and monitoring improvements to the wastewater pump station in the Piney Mountain neighborhood (off of Mt. Sinai Road)
- Received approval for nearly \$15 million in low-interest loans from the NC Division of Water Infrastructure to serve the design and construction of six capital projects.

Key projects planned in 2018

- Completion of rehabilitation and improvements to the wastewater pump station near Cleland Drive, our largest remote wastewater pump station.
- Completion of an assessment at our treatment plants to identify and assess risks that would prevent OWASA from providing services that meet or exceed federal, state, local quality requirements.
- Replacement of filter media and rehabilitation and improvements to the filtration system used at the Jones Ferry Water Treatment Plant.
- Installation of and enhancements to security systems at various remote water supply and storage facilities.
- Completion of work in the Heritage Hills Neighborhood, including replacement of water mains on portions of Brandywine and Lexington Roads, and rehabilitation of sewer mains and manholes throughout the neighborhood.

New System Development Fees

As explained in my December 18, 2017 letter (attached), the OWASA Board expects to take action to lower our one-time fees for new water and sewer connections effective July 1, 2018. We currently refer to these fees as Service Availability Fees. They will be called System Development Fees in the future.

For single-family residences, depending on the house size, these fees will be reduced by 25-36% (even more for our proposed new lower tier for small homes). For example, under current rates, a new 1,300 square foot home would be charged a System Development Fee of \$3,862 to connect to the water and sewer system. Under the revised rates, the same new connection would be charged a System Development Fee of \$2,472.

40th Anniversary Celebrations

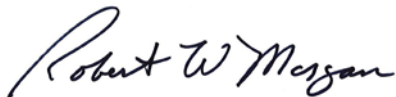
We held an open house on October 21st at the Cane Creek Reservoir and an open house on Saturday, November 4th at our 400 Jones Ferry Road facilities in Carrboro. These events were well received by the public.

OWASA Water Wagon

In 2017, we built and debuted a Water Wagon to serve chilled drinking water from our water treatment plant at public events. The Water Wagon is powered by solar panels and provides the opportunity for community members to fill their water bottles, drink directly from the fountains, and even give water to their dogs. We are excited about this new platform for engaging with the community.

We would be happy to provide you more detailed information on the items above or other topics of interest as desired. Please feel free to contact Ed Kerwin, Executive Director (ekerwin@owasa.org or 919-537-4211), or me.

Sincerely,



Robert Morgan, Chair
OWASA Board of Directors

Attachments

c: Mr. David Andrews, Carrboro Town Manager
Ms. Bonnie Hammersley, Orange County Manager
Mr. Roger L. Stancil, Chapel Hill Town Manager
OWASA Board of Directors
Ed Kerwin, OWASA Executive Director



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December 18, 2017

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Post Office Box 8181
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Subject: OWASA System Development Fees

Dear Mayor Hemminger, Mayor Lavelle, and Chair Dorosin,

In our continuing effort to provide affordable and high-value services to our current and future customers and in response to a new law passed by the North Carolina General Assembly (NC House Bill 436/Session Law 2017-138), OWASA is recalculating the upfront costs for new connections to our water and sewer system. In general, the purpose of these fees is to recover the cost of capacity needed to serve new customers. Although in the past we have referred to them as service availability fees, the new law refers to them as system development fees.

The legislation provides us with a choice on which cost-of-service methodology we use to recalculate our system development fees. The choice lies in whether or not to incorporate projected costs of system expansion into the fee. In a system with few expansion-related expenses on the horizon, such as ours, we propose to not include these projected costs and to set the fee to only reimburse OWASA for past expenditures made to provide capacity for demand. Due to discounts required by the legislation, either method would reduce connection fees; the method we are proposing will reduce them more.

The extent of the reduction will depend on the property type and size of either home or meter, as briefly summarized below.

Residential Customers, Individually-Metered: System development fees for new connections for residential properties are based on anticipated water use using heated square-footage of the home as a proxy for water use. Depending on the house size, system development fees will be reduced by 25-36% under the proposed fees. For example, under current rates, a new 1,300 square foot home would be charged \$3,862 to connect to the water and sewer system. Under the revised rates, the same new connection would be charged \$2,472.

In addition to what is required by law, it is proposed that we add a new “low-tier” for system development fees to further reduce connection costs for very small homes. Currently, <1,300 square feet is the smallest tier and lowest fee for this property type.

The new “low-tier” is proposed to be <800 square feet. The combination of the new methodology and new tier will result in a 47% reduction of system development fees for these very small homes.

Multi-family Residential and Nonresidential: System development fees for new master-metered multi-family and non-residential properties are also based on anticipated water use using meter size as a proxy for water use. Depending on the meter size, system development fees will be reduced by 14-18% under the proposed fees for these property types.

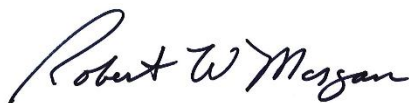
The OWASA Board of Directors discussed the issue at our [December 14, 2017 Work Session](#) and will decide on the methodology used to calculate the revised system development fees at our January 25, 2018 meeting. We do not anticipate community opposition to the proposed methodology.

Once the methodology is determined on January 25th, we will publicize our analysis and calculations and incorporate the consideration of the revised fees into our annual budget and rates schedule, including a public hearing. The law requires that the new system development fees be in-place by July 1, 2018.

We recognize that this letter provides a level of detail that we generally do not proactively share with you, but we believe it is important to provide you with an explanation of our process and advanced notification of changes that will impact water and sewer service affordability in our community.

On behalf of the entire OWASA Board of Directors, we welcome your feedback, thoughts and questions.

Sincerely,



Robert Morgan, Chair
Board of Directors

c: Mr. Roger Stancil, Chapel Hill Town Manager
Mr. David Andrews, Carrboro Town Manager
Ms. Bonnie Hammersley, Orange County Manager
OWASA Board of Directors
Ed Kerwin, OWASA Executive Director

**MONTHLY SUMMARY OF CALLS AND E-MAILS TO OWASA
FROM NEIGHBORS REPORTING ODOR
FROM THE MASON FARM WASTEWATER TREATMENT PLANT**

January-2002 to December-2016 History and 2017 present

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 Events
January	11	3	9	0	8	3	8	1	3	3	4	0	3	0	0	0
February	7	5	2	0	8	0	4	1	0	3	3	0	4	0	0	1
March	9	0	7	1	10	4	1	1	0	2	8	0	0	1	0	0
April	9	2	4	0	9	3	1	1	2	1	1	0	0	0	0	0
May	6	0	2	5	8	3	2	5	4	0	1	3	0	0	0	0
June	4	1	1	1	5	1	8	8	1	2	2	0	0	0	0	0
July	1	0	2	0	0	2	6	3	2	4	0	0	2	0	0	0
August	1	0	4	3	11	2	9	0	1	1	2	0	2	2	0	0
September	2	5	2	2	9	3	1	1	5	1	1	0	3	0	0	0
October	2	6	1	1	8	8	2	0	3	3	2	2	3	0	0	0
November	0	0	1	7	2	6	7	1	1	4	0	1	0	0	0	0
December	3	3	2	5	8	10	2	1	1	6	3	5	0	0	0	1
TOTALS	55	25	37	25	86	45	51	23	23	30	27	11	17	3	0	2

An “odor event” is defined as: One or more odor reports received during a 24 hour period from WWTP neighbor(s). Each odor event shall be considered to be “verified” unless OWASA determines conclusively that an alternative source other than the WWTP created the odor.

**LOG OF CALLS AND E-MAILS TO OWASA
FROM NEIGHBORS REPORTING ODOR IN THE MASON FARM
WASTEWATER TREATMENT PLANT (WWTP) AREA**

January 2017 – December 2017

Date call received	Time call received	Location
January 2017	1/27/17	1002 Highland Woods Determined to be a collection system odor event – NOT WWTP odor
February 2017	2/12/17	1016 Highland Woods
March 2017	No Reported Odors	N/A
April 2017	No Reported Odors	N/A
May 2017	No Reported Odors	N/A
June 2017	No Reported Odors	N/A
July 2017	No Reported Odors	N/A
August 2017	No Reported Odors	N/A
September 2017	No Reported Odors	N/A
October 2017	10/3/17 & 10/20/17	1002 Highland Woods Determined to be a collection system odor event – NOT WWTP odor
November 2017	No Reported Odors	N/A
December 2017	12/19/17	1002 Highland Woods

**SUMMARY OF ON-SITE HYDROGEN SULFIDE (H₂S)
ODOR MONITORING**

Month and year	Headworks Monitor			UNC Monitor			Digester Monitor			Switchgear Monitor		
	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)
October 2017	0.0009	0.0000	0.1031 ¹	0.0000	0.0000	0.0000 ²	0.0000	0.0000	0.0000 ³	0.0011	0.0000	0.0225 ⁴
November 2017	0.0005	0.0000	0.0562 ⁵	0.0000	0.0000	0.0000 ⁶	0.0000	0.0000	0.0000 ⁷	0.0010	0.0000	0.0137 ⁸
December 2017	0.0001	0.0000	0.0635 ⁹	0.0000	0.0000	0.0000 ¹⁰	0.0000	0.0000	0.0000 ¹¹	0.0009	0.0000	0.0107 ¹²

Monitor Locations:

Headworks Monitor (#1) – Monitor located at Headworks Facility

Digester Monitor (#2) – Monitor located between Digester #1 and Digester #4

UNC Monitor (#3) – Monitor located at Primary Sludge PS

Switchgear Monitor (#4) – Monitor located at Switchgear Building

¹ Maximum reading October 9, 2017

² Maximum reading zero all of October 2017

³ Maximum reading zero all of October 2017

⁴ Maximum reading October 25, 2017

⁵ Maximum reading November 2, 2017

⁶ Maximum reading zero all of November 2017

⁷ Maximum reading zero all of November 2017

⁸ Maximum reading November 30, 2017

⁹ Maximum reading December 19, 2017

¹⁰ Maximum reading zero all of December 2017

¹¹ Maximum reading zero all of December 2017

¹² Maximum reading December 30, 2017

DISTRIBUTION OF OWASA E-MAILS ABOUT OFF-SITE ODOR ELIMINATION

December 31, 2017

Highland Woods	Paul Neebe
	Mary Turner
	Malcolm Forbes
	Natalia Lebedeva
	Gary Richman
	Gail Wood
	Robert and Melissa Porter
	Robin Casey
	Joseph Clancy
	Ann Schwab
	Seth Kingsbury
	Amanda Kingsbury
	Freeman and Angela Kirby
	Reed Johnson
	Kay Johnson
	Rex Bartles
	Lisa Bartles
	Ann Alexander
	Nortin Hadler
	Carol Hadler
	Frank P. Rexford
	Scott Brees
	Kendall Brees
	Rainer Blaesius
	Elisabeth Schweins
	Susannah Shearer
	Fred Hall
	Lawanda Rainey-Hall
	Katie Jamieson
	Richard Harrill
	Angel Smith
	Jordon Sharome
	Cameron Williams
	Marian Rice
	Janet McLamb
	Michael Henning
	Benjamin Duan-Porter
Finley Forest	Matthew Mauck
	Adam Kimplead
	Cindy Underwood
	Dan Puckett
	David J. Polewka

Distribution of OWASA E-mails About Off-Site Odor Elimination

December 31, 2017

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Laurel Hill	Kathryn Conard Michael Sharpe Julie Maness Bob Wendell Carol David Pat Evans Ewan Rodewald and Sharon Hodge Marcella Grendler Kay Goldstein Ann Wilson Louis Fogleman
St. Thomas More Church and School Morgan Creek area	St. Thomas More Church staff Ellen Johnson Aldersgate United Methodist Church Betsy Malpass Hanson Malpass Jeannie Cox Laura King Moore Jeanne Langley AW Carr Marilyn and Don Hartman Robert Huls
Ronald McDonald House Family House	Shelly Day Greg Kirkpatrick, Executive Director Janice Ross, Operations Manager Matt Hapgood
Reserve	Steve McPhail James F. Howard Steven and Susan Frye Doug Longman Barbara and Edward Paradise Jeanne and David Jarrett Nadine O'Malley Mark Witcher Ralph Abrahams Kathy Abrahams
Bayberry Drive area UNC	William Ware Johnny Randall, NC Botanical Garden Jennifer Peterson, NC Botanical Garden Phil Barner, Energy Services Director Margaret Holton, Water, Sewer & Stormwater Coordinator Mary Beth Koza, Director, Environment, Health and Safety Ross Fowler, Finley Golf Course Michael Wilkinson, golf pro

Distribution of OWASA E-mails About Off-Site Odor Elimination

December 31, 2017

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	Andrew Sapp, Men's Golf Coach
	UNC Tennis Center
	UNC parking
	Mike McFarland, University Communications
	Scott Ragland, News Services
	Linda Convisor, Director of Local Relations
	UNC Farm (Faculty Staff Recreation Association)
	Frank Maynard, Athletics/ Finley Golf Course
	Robert Costa, Athletics/ Finley Golf Course
	Mark Steffer, Athletics/ Finley Golf Course
	Jeff McCracken, Public Safety
	Kate Luck
UNC Healthcare	Mel Hurston
	Karen McCall
	Keith Morris
Town of Chapel Hill	Roger Stancil, Town Manager
	Florentine A. Miller, Deputy Town Manager
	Ralph Karpinos, Town Attorney
	Lance Norris, Public Works Director
	Chris Roberts, Town Engineer
	Richard Terrell, Public Works Operations Superintendent
	Catherine Lazorko, Public Information Officer
	Jeanne Brown, Assistant to the Mayor
	Phil Mason, Planner
	Sabrina Oliver, Town Clerk
	Amy Harvey, Public Affairs and Communications
	Chris Blue, Police Chief
	Bryan Walker, Captain/Police Information
	Josh Mecimore, Police Information Officer
	Allison Weakley
	Kiel Harms
	Ran Northam
	Ross Tompkins
City Schools	Bill Mullin
	Todd LoFrese, Assistant Superintendent for Support Services
	Jeff Nash, Community Relations
	Crystal Jones
	Chris Liles
	Darlene Ryan
Other Utilities	Indira Everett, Duke Energy
	Brenda Duke, Duke Energy
	Steve Small, Duke Energy
	Billy Miller, PSNC
	Time Warner Cable
Orange County	Orange 911 Center Supervisor on duty

Distribution of OWASA E-mails About Off-Site Odor Elimination

December 31, 2017

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Other	Connie Pixley, Environmental Health Supervisor Bill Ferrell, Meadowmont Community Association Chamber of Commerce Michael Hughes Post Office
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