



## Orange Water and Sewer Authority

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

October 31, 2019

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

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

Chair Penny Rich  
Orange County Board of  
Commissioners  
Post Office Box 8181  
Hillsborough, NC 27278

Dear Mayor Hemminger, Mayor Lavelle and Chair Rich:

We are pleased to submit this report on our services, projects and initiatives from September through October 2019. This report includes information on the following items:

1. US Drought Monitor of North Carolina: Orange County
2. Long Range Water Supply Plan
3. Rogerson Drive wastewater repair complete, water pipe project to begin soon
4. Solar lease installation
5. Diversity and Inclusion progress report
6. PFAS monitoring update
7. Forest management update
8. New rates in effect October 1
9. Comprehensive Annual Financial Report
10. Infrastructure investment

### **1. US drought monitor of North Carolina: Orange County**

In early October, the [US Drought Monitor of North Carolina](#) designated Orange County as being in moderate drought and as of the date of this report it is still “abnormally dry”. While low rainfall has affected some water supplies in the region, the water stored in OWASA’s reservoirs (University Lake and Cane Creek) are at near normal levels for the month of October – more than 80% full – thanks to above average rainfall earlier this year. Thus, in accordance with [OWASA’s Water Shortage Response Plan](#), no water use restrictions or advisories are needed at this time in the Carrboro-Chapel Hill service area beyond the [year-round restrictions](#) already in place.

OWASA always recommends wise use of water resources and we are reminding customers that the [Agua Vista web portal](#), where customers can track their personal water use, is a key conservation tool to identify customized water saving strategies. Our [OWASA Water Watch](#)



webpage also provides daily updates on local rainfall, and the community's water supply and water consumption. We will continue to monitor water supply and demand closely, and proactively keep the community informed on local drought conditions.

## **2. Long-range water supply plan**

Looking to the future, OWASA is evaluating supply and demand management options to meet the community's raw water needs in 2070. We anticipate completing this analysis in 2020. While our three local reservoirs (Cane Creek Reservoir, University Lake and Quarry Reservoir) will meet our needs under most circumstances, we want to ensure that we are prepared for uncertainties in our estimated supply and demands, a changing climate, and potential operational emergencies at one of our reservoirs. We will provide updates on our planning process in future reports.

## **3. Rogerson Drive wastewater repair complete, water pipe project to begin soon**

We have completed the replacement of about 1,300 feet of wastewater pipe on Rogerson Drive and Raleigh Road in Chapel Hill. Earlier this year, when responding to a wastewater overflow at Rogerson Drive, we discovered the pipe was corroding and embarked on the emergency replacement due to its criticality (it delivers approximately half of the community's wastewater flow to the Mason Farm Wastewater Treatment Plant). We are now in the process of restoring roads and landscaping we impacted during the work. We wish to express our thanks to neighbors in the area for their patience throughout the construction.

Over the next 18 to 24 months, we will remain active in the Rogerson Drive and Oakwood Drive area as we start to survey and ultimately construct new water pipes to ensure continued reliable water service to local homes and businesses long into the future. The water pipe replacement is not an emergency repair. Rather, it is a capital improvement project that we identified for replacement given the age of the pipe, to ensure system resiliency. We will work to minimize impacts and provide timely updates, including the continued coordination of Community Construction Briefings.

## **4. Solar lease installation**

In pursuit of our goal to reduce our purchased electricity by 35% by 2022 from 2010 levels, the Board of Directors has approved OWASA staff to finalize a solar lease agreement and engage in a design process for the installation of solar photovoltaic systems on five OWASA facilities – to generate and use renewable energy. Three systems are planned for OWASA's facilities at 400 Jones Ferry Road in Carrboro, one is planned near the public entryway of the Cane Creek Reservoir site in Orange County, and one on OWASA's biosolids land of Highway 54 in Orange County.

We are partnering with a private entity on the solar lease agreement. The private entity (Eagle Solar and Light) benefits from commercial incentives that bring down the cost of the solar build, which also enables cost savings for OWASA. Based on the proposal we received in response a Request for Proposals issued in July 2019, all five systems will collectively generate 1.1 MWhs of renewable electricity per year. This will offset over 800 metric tons of carbon emissions and move OWASA extremely close to our total energy reduction goal. As we move through the design and permitting process, we will engage with the community and share updates regularly.

## **5. Diversity and Inclusion progress report**

In March 2017, OWASA implemented an Employee Diversity and Inclusion (D&I) program with two primary goals: 1) Ensure the diversity of OWASA's workforce reflects the communities we serve, and 2) Provide an inclusive environment that supports each team member in contributing to their full ability towards OWASA's mission.

OWASA's Diversity Resource Group, Diversity Recruitment Group and Diversity Leadership Group have been engaging with employees across the organization to help achieve these goals. Key activities have included: ensuring all employees are notified of job openings and reminded of the employee referral program; engaging with diverse agencies and organizations to advertise OWASA jobs in diverse communities; developing recruitment plans that include local census data to identify under-represented groups; providing D&I training – such as Implicit Bias and Microaggression – for employees, managers and Board members; and publishing articles that highlight diversity in each employee newsletter.

Since 2015, our workforce minority representation has increased from 20.8% to 27.0% and female representation has increased from 20.8% to 25.4%.

## **6. PFAS monitoring**

OWASA's treated drinking water is safe and meets all Federal and State regulations and established health advisory levels. OWASA proactively monitors for PFAS through quarterly testing of our treated drinking water and raw water source at Cane Creek Reservoir.

PFAS, per- and polyfluoroalkyl substances, are considered an emerging contaminant. They are man-made chemicals being detected in trace amounts, including PFOA, PFOS and GenX. PFAS, used by industries, increase resistance to water and stains and can be found in everyday products such as clothing and cookware. As these products are washed or degrade, PFAS can enter wastewater systems and travel onward to lakes and rivers.

The EPA does not have formal PFAS regulations. Rather, EPA has a Health Advisory Level (HAL) of 70 parts per trillion (ppt) for PFOS and PFOA combined (a ppt is comparable to a grain of sand in an Olympic swimming pool).

As with previous quarters, our third quarter monitoring results (performed in August) detected low levels of PFOS and PFOA combined in our treated water sample: 14.7 ppt, this being far below the EPA's HAL of 70 ppt. Our results are consistent with studies showing powder activated carbon, which is used in our drinking water treatment process, is successful in the removal of some but not all PFAS in treated drinking water.

OWASA is committed to providing information to the community about PFAS as it becomes available. We share monitoring results on our [PFAS webpage](#), in our water quality report card, and in public education sessions. For example, in early October, during water month at the Chapel Hill Public Library, we hosted a public education session about drinking water, with a special focus on PFAS.

## **7. Forest management program**

OWASA owns approximately 2,400 acres of forested lands. The majority of these lands were purchased to protect Cane Creek Reservoir, a main water source for Carrboro and Chapel Hill, because protecting Cane Creek Reservoir's watershed helps safeguard water quality.

Throughout 2019, we have revitalized our [forest management program](#). We developed a new, incremental approach, which was approved by the Board of Directors, following a productive community meeting plus land tour with Cane Creek neighbors, as well as consultations with expert agencies. We developed a new vision:

*Protect water quality now and for future generations by following science-based principles to manage our forest lands so they are healthy, diverse, resilient, and sustainable.*

We have co-created seven [guiding principles](#) for forest management with the community. These include protecting water quality as our highest priority and mitigating adverse impacts on neighbors. A process for prioritizing tracts of land for management has also been established. We will use GIS and on-the-ground observations to score and rank individual forest stands according to four forest health criteria; conversations with our agency partners indicate that a healthy forest is the main factor in predicting long-term water quality protection.

Meaningful engagement with the community and partner agencies continues to be a guiding principle. To that end, we hosted a public education session at the Chapel Hill Public Library in October about forest management for water protection. We plan to host regular community meetings in Cane Creek. We also sent a letter dated October 1, 2019, to local governments which is attached for your information.

## **8. New rates in effect October 1**

On October 1, customer rates increased 5%, as approved by the Board of Directors in June. A 5% increase in monthly water and sewer rates will increase the average OWASA family's bill by

\$3.60 per month. The October rate increase helps provide funding for Fiscal Year 2020 expenditures, including \$26.4 million to replace and repair aging water and wastewater infrastructure for system reliability and resiliency. The complete [schedule of rates, fees and charges](#) is accessible on our website.

## **9. Comprehensive Annual Financial Report**

On September 26<sup>th</sup>, OWASA presented its [Comprehensive Annual Financial Report for Fiscal Year 2019](#) (July 1, 2018 to June 30, 2019) to the Board of Directors. We were pleased to report that OWASA served the Carrboro-Chapel Hill community in full compliance with federal and state standards for drinking water, treated wastewater, and reclaimed water quality. OWASA ended the year with a modified accrual based net income less debt service of about \$7.9 million which was 7% percent over budget. The resulting increase in financial reserves will be used for future capital improvement needs.

OWASA's auditor, Martin, Starnes & Associates, CPAs, P.A., presented their opinion that OWASA's financial statements presented fairly, in all material respects, the respective financial position of OWASA activities, in accordance with generally accepted accounting principles.

## **10. Infrastructure investment**

OWASA maintains 750 miles of water and wastewater pipes, the Jones Ferry Road Water Treatment Plant (WTP), the Mason Farm Wastewater Treatment Plant (WWTP), pump stations, and other infrastructure. Meeting the community's needs and increasing system resiliency requires ongoing rehabilitation of the water, wastewater, and reclaimed water systems. Capital investments, including debt payments for capital projects, account for about half of our costs. In this fiscal year, we expect to invest about \$25 million to renew, replace and improve infrastructure. Our five-year Capital Improvements Program (CIP) can be viewed [here](#).

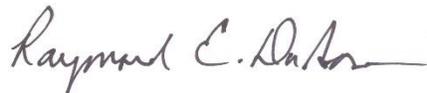
Key accomplishments:

- Completed the replacement of the water mains on Manning Drive between Ridge Road and Fordham Boulevard, as well as water mains on Honeysuckle Court and Jean Court.
- Began construction to replace water mains at the service road to Fordham Boulevard east of Scarlett Drive.
- Began construction to replace water and sewer mains on Dobbins Drive between Erwin Road and East Franklin Street.
- Completed the installation of piping to repair the Rogerson Drive Force Main at Raleigh Road near Rogerson Drive.
- Continued major construction activities on several large projects, including a \$1.7 million contract for pumping system improvements at the University Lake reservoir, a \$6.5 million construction project to upgrade the solids thickening facilities and rehabilitate the plant headworks structure at the WWTP, a \$2.5 million project to

rehabilitate the concrete at the WTP sedimentation basins, and a \$2.0 million project to improve electrical, HVAC, and controls at our largest wastewater pump station near Cleland Drive.

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,

A handwritten signature in cursive script that reads "Raymond C. DuBose".

Raymond DuBose, Chair  
OWASA Board of Directors

Attachments

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



## Orange Water and Sewer Authority

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October 1, 2019

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**Subject: Update on OWASA's Forest Management Program**

Dear Mayor Hemminger, Mayor Lavelle and Chair Rich:

At our [September 26, 2019](#) meeting, the OWASA Board authorized staff to proceed with implementation of our new incremental approach to forest management. By actively managing our forests, where needed, we will better protect long-term water quality conditions. Healthy, diverse forests are more resistant and resilient to stresses from drought, infestation, wildfire, storms, and the challenges associated with a changing climate.

To set the tone for a collaborative process grounded in community engagement – listening to community members, partner agencies, and technical experts – we hosted a Community Meeting and a Forest Walk and Talk Tour earlier this year. The Community Meeting for Forest Management took place at the Maple View Agricultural Education Center June 20, 2019, at which 60 people from the community, OWASA and third-party experts participated in small group dialogues to share questions, concerns and feedback on OWASA's new, incremental approach to Forest Management. Following the small group conversations, participants reconvened and reported back to the larger group the questions and comments documented in the small groups to ensure total transparency. This process planted the seed for open communication between the community and OWASA. Subsequently, some community members took part in a second dialogue in the form of a walking tour on Saturday, August 10, 2019 of OWASA's Cane Creek Mitigation Tract that has been managed. This tour enabled very practical discussions and hands-on learning together.

These conversations set the stage for us to develop our Vision and Guiding Principles for OWASA's Forest Management program. The Vision, Guiding Principles, and a set of clear strategies serve as a compass as we develop forest stewardship plans and identify actions to improve the health of our forests. This and other background on our Forest Management program can be viewed at <https://www.owasa.org/forest-management>.



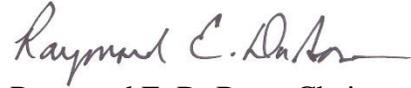
Update on OWASA's Forest Management Program

October 1, 2019

Page2

We are committed to continuing the dialogue and updating the community and officials throughout the process. If you would like more information or to receive a presentation about our program, we would be happy to provide it. Ruth Rouse, Planning and Development Manager, leads this project for us (919-537-4214 or rrouse@owasa.org).

Sincerely,



Raymond E. DuBose, Chair

OWASA Board of Directors

cc: Mr. David Andrews, Carrboro Town Manager  
Ms. Bonnie Hammersley, Orange County Manager  
Mr. Maurice Jones, Chapel Hill Town 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**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 Events
January	11	3	9	0	8	3	8	1	3	3	4	0	3	0	0	0	0	0
February	7	5	2	0	8	0	4	1	0	3	3	0	4	0	0	1	0	0
March	9	0	7	1	10	4	1	1	0	2	8	0	0	1	0	0	0	0
April	9	2	4	0	9	3	1	1	2	1	1	0	0	0	0	0	0	0
May	6	0	2	5	8	3	2	5	4	0	1	3	0	0	0	0	0	0
June	4	1	1	1	5	1	8	8	1	2	2	0	0	0	0	0	0	0
July	1	0	2	0	0	2	6	3	2	4	0	0	2	0	0	0	0	0
August	1	0	4	3	11	2	9	0	1	1	2	0	2	2	0	0	1	0
September	2	5	2	2	9	3	1	1	5	1	1	0	3	0	0	0	2	0
October	2	6	1	1	8	8	2	0	3	3	2	2	3	0	0	0	0	-
November	0	0	1	7	2	6	7	1	1	4	0	1	0	0	0	0	0	-
December	3	3	2	5	8	10	2	1	1	6	3	5	0	0	0	1	0	-
<b>TOTAL</b>	<b>55</b>	<b>25</b>	<b>37</b>	<b>25</b>	<b>86</b>	<b>45</b>	<b>51</b>	<b>23</b>	<b>23</b>	<b>30</b>	<b>27</b>	<b>11</b>	<b>17</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>

**January-2002 to December-2018 History and Present (2019)**

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 2019 – December 2019

<b>Date call received</b>	<b>Time call received</b>	<b>Location</b>
January 2019	No Reported Odors	N/A
February 2019	No Reported Odors	N/A
March 2019	No Reported Odors	N/A
April 2019	No Reported Odors	N/A
May 2019	No Reported Odors	N/A
June 2019	No Reported Odors	N/A
July 2019	No Reported Odors	N/A
August 2019	No Reported Odors	N/A
September 2019	No Reported Odors	N/A
October 2019	-	-
November 2019	-	-
December 2019	-	-

**SUMMARY OF ON-SITE HYDROGEN SULFIDE (H<sub>2</sub>S)  
ODOR MONITORING**

Month and year	Headworks Monitor			UNC Monitor			Digester Monitor			Switchgear Monitor		
	Average H <sub>2</sub> S Reading (ppm)	Minimum H <sub>2</sub> S Reading (ppm)	Maximum H <sub>2</sub> S Reading (ppm)	Average H <sub>2</sub> S Reading (ppm)	Minimum H <sub>2</sub> S Reading (ppm)	Maximum H <sub>2</sub> S Reading (ppm)	Average H <sub>2</sub> S Reading (ppm)	Minimum H <sub>2</sub> S Reading (ppm)	Maximum H <sub>2</sub> S Reading (ppm)	Average H <sub>2</sub> S Reading (ppm)	Minimum H <sub>2</sub> S Reading (ppm)	Maximum H <sub>2</sub> S Reading (ppm)
<b>July 2019</b>	0.0083	0.0000	0.1109 <sup>1</sup>	0.0009	0.0005	0.0103 <sup>2</sup>	0.0000	0.0000	0.0000 <sup>3</sup>	0.0017	0.0000	0.0166 <sup>4</sup>
<b>August 2019</b>	0.0006	0.0000	0.0317 <sup>5</sup>	0.0009	0.0005	0.0015 <sup>6</sup>	0.0000	0.0000	0.0000 <sup>7</sup>	0.0013	0.0000	0.0156 <sup>8</sup>
<b>September 2019</b>	0.0017	0.0000	0.0484 <sup>9</sup>	0.0006	0.0002	0.0127 <sup>10</sup>	0.0000	0.0000	0.0000 <sup>11</sup>	0.0016	0.0000	0.0215 <sup>12</sup>

**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.

<sup>1</sup> Maximum reading occurred on July 9, 2019

<sup>2</sup> Maximum reading occurred on July 5, 2019

<sup>3</sup> Maximum reading zero all of July 2019

<sup>4</sup> Maximum reading occurred on July 21, 2019

<sup>5</sup> Maximum reading occurred on August 26, 2019

<sup>6</sup> Maximum reading occurred throughout August 2019

<sup>7</sup> Maximum reading zero all of August 2019

<sup>8</sup> Maximum reading occurred on August 22, 2019

<sup>9</sup> Maximum reading occurred on September 18, 2019

<sup>10</sup> Maximum reading occurred on September 18, 2019

<sup>11</sup> Maximum reading zero all of September 2019

<sup>12</sup> Maximum reading occurred on September 12, 2019

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

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
	Matthew Mauck
Finley Forest	Adam Kimplead
	Cindy Underwood
	Dan Puckett
	David J. Polewka
	Kathryn Conard
	Michael Sharpe
	Julie Maness
Laurel Hill	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	St. Thomas More Church staff
Morgan Creek area	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
	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	Maurice Jones, 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
	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
	Bill Mullin
City Schools	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
	Connie Pixley, Environmental Health Supervisor
	Bill Ferrell, Meadowmont Community Association Chamber
Other	of Commerce
	Michael Hughes
	Post Office