

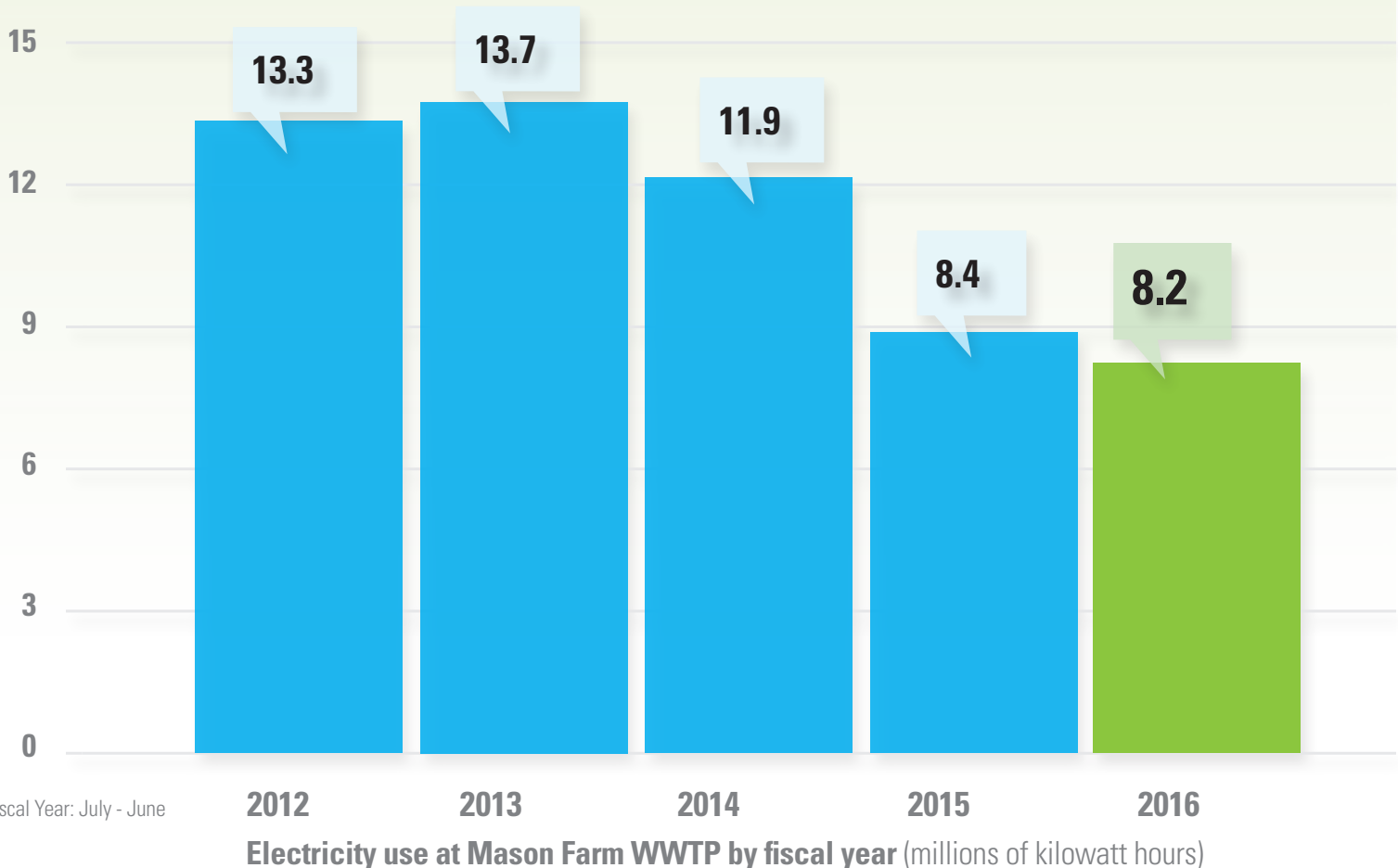


Orange Water and Sewer Authority, 400 Jones Ferry Road, Carrboro, NC 27510

Highlights

- We surpassed the water quality standards for our **Mason Farm Wastewater Treatment Plant (WWTP)**. The phosphorus level in our treated wastewater was **37% below** the regulatory limit and nitrogen was **70% below** the limit. Limiting phosphorus and nitrogen is important for water quality because they promote excessive growth of algae, which reduces water quality and makes water more difficult and expensive to treat for drinking purposes.
- In 2015, our **WWTP** staff earned the **National Association of Clean Water Agency's (NACWA's) Platinum Peak Performance Award** for **100%** permit compliance over five consecutive years.
- We recycled an average of **3.51** dry tons of "biosolids" per day. Biosolids are particles which are separated from wastewater, treated and recycled to enhance soil on farms, etc. A dry ton is the weight of solids without considering the weight of water that remains with biosolids after they are partly dewatered.
- Our Class A biosolids meet the U.S. Environmental Protection Agency's (EPA's) standards for "Exceptional Quality." Our biosolids have very low levels of pathogens and metals, as shown in this report.
- About **68%** of our treated wastewater solids, or "biosolids," were recycled at approved farms and **32%** were composted at a facility in Chatham County.

Improvements at our Mason Farm WWTP reduced electricity required to treat wastewater by about 40% over the last five years



Causes of Overflows From Sewers

If a sewer is damaged, wastewater flow in a sewer is blocked or if the flow exceeds a pipe's capacity, an overflow results. Overflows usually occur at a manhole "upstream" of the blockage.

What can block a sewer pipe and cause an overflow?

- Accumulations of fat, oil and grease. Fat and grease should be disposed of with refuse taken to a landfill and used cooking oil should be recycled;

- Tree and shrub roots, which can enter a crack in a pipe then grow inside a sewer; and
- Trash or debris such as clothing and towels.

In **2015-16**, our wastewater system handled about **3.1 billion** gallons, or about **8.6 million gallons** per day. The estimated volume of the one wastewater spill (**1,875 gallons**) was a fraction of one percent of total wastewater.

Our Work to Prevent Wastewater Overflows

- We periodically clean sewers to remove blockages by fat, oil, grease, roots, debris, etc. and we inspect sewers with video cameras to find blockages, damage, cracks and leaks.
- In **2015-16** we cleaned about **131 miles** of sewers, or **39%** of the system; and inspected about **13.5 miles** of sewers with videocameras. We used a chemical to remove roots in **24.7** miles of sewers.
- We also test for leaks, cracks and unauthorized connections to our sewers by putting non-toxic smoke into the pipes to see where smoke comes out.
- We fix cracks in our sewers to keep rainwater and groundwater from getting in and exceeding a sewer's capacity, thus causing an overflow.
- We put special dishes under manhole covers to help keep out stormwater.
- In some places, we reseat sewers with a special plastic. This relining helps keep out stormwater and groundwater, which can cause wastewater overflows by exceeding the capacity of a sewer.
- We normally mow and clear our easements once a year to help keep tree and shrub roots from growing into and blocking our sewers; and to maintain safe, timely access for normal maintenance and emergency responses to overflows.
- We repair, renew and replace sewers to ensure adequate capacity, structural integrity and reliable operation. Renewal or replacement is done where repair is impractical or repair costs would be excessive. In **2015-16**, we renewed **2.5 miles** of sewers at a cost of \$1.4 million.



Please Help Prevent Overflows

Proper disposal of fat, oil and grease

Please dispose of household fat and grease with trash that goes to a landfill and recycle cooking oil at the:

**Orange County Household Hazardous Waste Program,
1514 Eubanks Road,
Chapel Hill, NC 27516**

919.932.2989 or

recycling@county.orange.nc.us

Restaurants and related businesses are required to install grease traps and to have them pumped out on a regular basis.

Tree and shrub roots can grow into sewers and cause overflows

Please help us keep clear access through OWASA easements. Before planting trees or shrubs, installing a fence, etc. in an OWASA easement, please contact us at **919.537.4292** or **info@owasa.org**.

Keeping trash and debris out of sewers

Our sanitary sewer system is not designed to handle trash and debris, which can cause blockages and overflows. For example, baby wipes and other hygienic wipes, even those called "flushable," should not be flushed.

Reporting wastewater overflows and odor

If you notice an overflow from OWASA sewer or a private sewer service line, please contact us immediately at **919.968.4421** at any time so that we can stop the overflow from our sewer, or contact the property owner if a private pipe is leaking.

Where necessary, **sewer replacement** is part of our overall approach to preventing wastewater overflows.



Biosolids Treatment and Recycling

Biosolids are solids separated from wastewater for treatment at our WWTP. Biosolids are recycled as a soil additive because biosolids include phosphorus and nitrogen, which improve the fertility of soil; and other organic matter which holds moisture and improves soil structure.

We treat the solids in a biological process called “digestion” in which solids are heated to about 140 degrees to kill pathogens. Biosolids treatment takes about 45 days.

In accord with direction by the OWASA Board of Directors on October 8, 2015, our objective is:

- To recycle about **75%** of our biosolids in liquid form on farms approved by the State, and
- To dewater and recycle about **25%** of the biosolids with other organic material at a private composting facility in Chatham County which produces a soil additive for agriculture and landscaping.

Our **Class A** biosolids meet federal standards for “**Exceptional Quality.**” Our biosolids have very low levels of pathogens and metals, as shown below.

Substance	EPA Limit for Exceptional Quality Biosolids	OWASA (July 2015– June 2016) Average unless otherwise noted
Fecal Coliform Bacteria	1,000 CFU per gram	103 CFU (maximum)
Mercury	17 ppm	0.45 ppm
Cadmium	39 ppm	0.89 ppm
Arsenic	41 ppm	1.14 ppm
Lead	300 ppm	7.3 ppm
Copper	1,500 ppm	287 ppm
Zinc	2,800 ppm	802 ppm
Nickel	420 ppm	13.75 ppm
Molybdenum	n/a	6.09 ppm
Selenium	36 ppm	2.14 ppm

PPM = parts per million. One part per million is like a penny in \$10,000. CFU = colony forming units.



We are renovating **two** of our **four** tanks where wastewater solids are treated to convert them into recyclable biosolids.

Our Reclaimed Water System

Reclaimed water (RCW) is highly treated wastewater which can be used for non-drinking purposes including cooling tower make-up water at chiller plants, irrigation and flushing non-residential toilets. Using reclaimed water reduces the need to draw water from our reservoirs. From July 2015 through June 2016, the University and UNC Healthcare used about **258 million gallons** of RCW, or about **33%** of the University's overall water use.

Quality of Our Treated Wastewater*

We test for phosphorus and nitrogen because they promote the growth of algae, which use up oxygen in water when they decompose. Excessive algae can increase the cost and difficulty of water treatment.

Water Quality Measure	Standard	OWASA's Results in 2015-16	Notes
Phosphorus	Maximum of 10,188 lbs. for the year	6,723 lbs.	Full compliance; 37% below the limit
Nitrogen	Maximum of 409,448 lbs. for the year	124,493 lbs.	Full compliance; 70% below the limit

* Results from laboratory testing.

Treated wastewater not reused in our reclaimed water system is returned to the environment at Morgan Creek near Finley Golf Course. Morgan Creek flows to Jordan Lake, which is a water supply for the Towns of Cary, Apex and Morrisville and Chatham County and Durham County. OWASA has a State-approved allocation of Jordan Lake water which we can use in severe droughts and operational emergencies.

SAFE Disposal of Medication

If medications are flushed down a toilet or otherwise get into the sewer system, pharmaceuticals may get into a creek, river or lake that is a water supply or aquatic habitat. Wastewater treatment plants, septic systems and drinking water treatment plants are not designed to remove pharmaceutical compounds. Medication should not be flushed.

The Chapel Hill and Carrboro Police Departments have drop boxes for safe disposal of liquid and pill medications that are expired, unused, or unwanted. Liquid medications must be in the original container. Pills must be in the original container or a zip lock bag. New and used needles are not accepted.



Chapel Hill Police Headquarters

828 Martin Luther King Jr. Boulevard; drop box days and hours: Monday-Friday, 9 AM to 5 PM. More information: 919.968.2760.

Carrboro Police Department

100 North Greensboro Street (Century Center), Monday-Friday, 8:30 AM to 5 PM; more information: 919.918.7397.

To Learn More About Wastewater and Biosolids Management

Please contact us at **919.968.4421** or info@owasa.org, or visit owasa.org, click on **What We Do** and then click on **Wastewater Management**.

To arrange a tour of our WWTP for your neighborhood or civic group, class, etc., please contact us at **919.537.4289** or info@owasa.org to arrange a time and date for a tour, which normally takes an hour or less.



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

Orange Water and Sewer Authority

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