

## Improvements at Mason Farm Wastewater Treatment Plant

reduce energy use and greenhouse gas emissions **30%**



**Ronnie Weed**, Operations Supervisor at **OWASA's Mason Farm Wastewater Treatment Plant**, at the controls for new energy efficient equipment expected to lower electricity costs by **\$120,000** or more annually.

OWASA recently completed **\$10.4 million** of improvements at its Mason Farm Wastewater Treatment Plant (WWTP) which

- Have lowered electricity use at the plant and related greenhouse gas emissions by **30%**. Electricity savings are projected to be \$120,000 or more annually. (Greenhouse gas emissions occur when fossil fuel is burned to generate electricity.)
- Will help reduce odor by covering 10 biological treatment tanks and adding devices to remove odor from air at the tanks.
- Will help OWASA meet future standards for the quality of treated wastewater recycled to Morgan Creek, a tributary of Jordan Lake.

"The work at our Mason Farm plant will reduce costs, and make our plant more environmental friendly and sustainable," said Todd Taylor, OWASA's General Manager of Operations. "The improvements in odor elimination also reflect our commitment to being a good neighbor to customers in neighborhoods around the plant."

The recent improvements are primarily financed with a 20-year no-interest loan of **\$6.56 million** from **NC Clean Water** funds. This loan will save a total of about **\$1.7 million** in interest compared to conventional debt (average of **\$85,000** annually).

OWASA also received a **Duke Energy** incentive of **\$168,000** to help pay for energy efficiency improvements.

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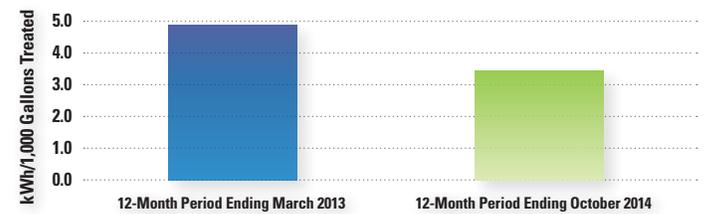
# How Did We Increase Energy Efficiency at the Mason Farm WWTP?

## The energy efficiencies result from installing:

- Equipment called “diffusers” to release small air bubbles into wastewater in the biological treatment tanks,
- New energy-efficient blowers to deliver air to the tanks, and
- More efficient mixers to suspend wastewater solids in the tanks. (Oxygen is necessary to support the microorganisms which remove pollutants from wastewater.)

## 30% reduction in electricity use at the Mason Farm Wastewater Treatment Plant

In the year before energy efficiency improvements began in March 2013, electricity use averaged 4.89 kilowatt-hours (kWh) per 1,000 gallons of wastewater treated. Energy efficiency improvements were completed in September 2014. In the year ending in October 2014, electricity use averaged 3.44 kWh.



# Reclaimed Water Use Also Reduces Electricity Use and Greenhouse Gas Emissions

OWASA and the University built a reclaimed water system which went into use in April 2009. The University paid the local construction cost of almost **\$15 million** and pays monthly for operating and maintenance costs.

The University uses reclaimed water instead of drinking water as cooling tower make-up water, to irrigate several athletic

fields and to flush toilets in some new buildings. Reclaimed water meets about **30%** of the University’s water demand and **10%** of the overall community’s water needs.

Providing reclaimed water to the University requires about **40% less** energy than the pumping and treatment necessary to provide drinking water.

## About our Mason Farm Wastewater Treatment Plant

The Mason Farm WWTP is on Old Mason Farm Road in southeast Chapel Hill near the NC Botanical Garden and Finley Golf Course. The WWTP treats an average of **8.3 million** gallons per day.



A cover and truss on a biological treatment tank.

## Wastewater treatment includes:

- Using settling tanks to separate solids from wastewater.
- Removing pollutants in a biological process.
- Disinfecting wastewater with ultraviolet light, which is very effective in killing pathogens.
- Pumping air into treated water before it is released into Morgan Creek to enhance water quality for fish, etc.
- Treating solids separated from wastewater by heating them and breaking them down.



Aerial view of the **Mason Farm WWTP**.

## Español

Este boletín informativo contiene información sobre los servicios de agua y alcantarillado de **OWASA**. Para obtener una traducción, por favor llame al **919.537.4221** o mande un correo electrónico a: **info@owasa.org**. ¡Muchas gracias!