



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL

ENERGY SERVICES
DEPARTMENT

925 BRANCH STREET
CAMPUS BOX 1855
CHAPEL HILL, NC 27599-1855

January 28, 2011

Dear AASHE,

In response to a record 100-year drought in fiscal year 2003, an event repeated in 2007-2008, UNC-Chapel Hill examined opportunities to significantly reduce our potable water demand. In addition to water efficient fixtures and harvesting rainwater for reuse, UNC explored the feasibility of developing a reclaimed water system in partnership with the local water utility, Orange Water and Sewer Authority (OWASA).

Although reclaimed water had been used in many locations around the country, OWASA's wastewater had only been reused for small-scale irrigation. To ensure that reclaimed water from OWASA was suitable for use in cooling towers, UNC conducted multiple studies. Water samples were sent to a pilot plant for analyses related to water chemistry and corrosion. A highly respected faculty member in UNC's Environmental Sciences and Engineering department, Dr. Mark Sobsey, studied the potential risk associated aerosolized water from the cooling towers.

Before UNC and OWASA committed to our respective roles of financing and operating the reclaimed water system, a financial consultant specializing in utilities assessed the short and long term implications for the University and for OWASA. After several years of study, UNC and OWASA signed an agreement allowing the project to proceed. UNC financed over \$10 million of infrastructure, and supplemental funding came from State and Federal grants.

By 2009, the treatment, pumping, and storage facilities at OWASA's wastewater treatment plant and Phase I of the distribution network were complete, allowing the first uses to begin. After constructing Phase II of the distribution system, OWASA served UNC's entire summer 2010 cooling load using reclaimed water, translating to a 38% reduction in the University's potable water demand during the critical months of June through August. Overall, this one investment in reclaimed water reduced the University's potable water consumption by 25% per year! This is big!

In my role managing non-potable water systems for the campus, I work closely with OWASA staff as UNC and OWASA continue an active partnership to operate the system and plan and permit new reclaimed water uses. We are proud partners in sustaining our water and energy resources by matching varied water needs with appropriate water sources.

Sincerely,

Sally Hoyt, P.E.
Stormwater Engineer
Energy Services, UNC-Chapel Hill