

Meeting Summary
Orange Water and Sewer Authority
Natural Resources and Technical Systems Committee
September 11, 2013 (5:30 p.m.)

Members Present

Terri Buckner (Chair), Stephen Dear, Michael Hughes, Heather Payne, Dana Raborn, Will Raymond, Amy Witsil, John Young, Alan Rimer (*ex officio*)

Staff Present

Ed Kerwin, Mary Darr, Pat Davis, John Greene, John Kiviniemi, Ken Loflin, Ruth Rouse

Visitors Present

None

Major Items Discussed

Future NRTS Meetings

It was decided to meet monthly starting in November; meetings will be the first Thursday of the month (later amended to first Wednesday of the month per 9/12/2013 email from the Committee Chair). The next topics to be discussed will be follow-up on Advanced Metering Infrastructure (AMI) and the Jordan Lake application.

Alan Rimer stated that NRTS has become a Committee of the Whole, but there is not public comment opportunity at NRTS meetings. He requested that the Committee Chair summarize discussion and decisions in detail at Board meetings. A Board Member's opinion could change at the Board meeting based on public comment.

Renewable Energy

Staff provided the Committee with information on renewable energy strategies and energy use. Major points made during the meeting included:

Energy Management background details

- OWASA will be preparing for formal energy management plan this year but, does not have any formal energy policy or targets at this time. However, energy use is an important consideration when evaluating operating and maintenance needs and capital projects.
- Energy rates in North Carolina are relatively low. Therefore, many renewable energy projects may not be economically competitive, and payback periods for energy efficiency projects could be long.
- The wastewater treatment plant uses the largest amount of electricity and natural gas at OWASA. The reclaimed water system increased energy use at WWTP, but decreased energy use at raw water supply, treatment and distribution facilities for a net decrease in energy consumption. The new blowers, mixers and aeration system being installed at the

WWTP are expected to decrease energy use at the WWTP by approximately 20 percent.

Renewable Energy

- While renewable energy is not always cost-effective, there are other reasons to consider implementation of renewable options including lower carbon emissions, virtually inexhaustible supply, and reliability during major storms. Plants fueled by renewable energy fared better during Superstorm Sandy.
- Staff summarized renewable energy strategies used by utilities and whether they could potentially be applied at OWASA.
 - Installed Solar Photovoltaic (PV) – economically infeasible for OWASA to finance and own a solar farm or install rooftop/parking Lot Solar PV - has potential conflicts with maintenance and access needs.
 - Partnership projects: OWASA could potentially lease land to a private entity that would finance, build, own and operate one, with OWASA retaining option to buy the system in the future.
 - Solar Drying of WWTP Solids – not recommended at this time; requires approximately 15,000 sq. ft. of facility per dry ton. OWASA does not have space at WWTP site to accommodate a 5 dry tons/day solar drying facility.
 - Solar Thermal – the applicability of this technology is site/project dependent; further evaluation needed to determine potential applicability to our operations. OWASA has installed solar hot water heaters in the Operations Center.
 - WWTP Biogas – OWASA uses some biogas produced through wastewater treatment process to run the boilers, and flares off the remaining. OWASA completed a feasibility study to evaluate combined heat and power options that many WWTPs are implementing. The payback period was 30 years; if we received high-strength wastes that could potentially cause odor problems and have operational challenges/risks, the payback period could be reduced to 14 years. At this time, the payback period is considered too long to be viable. OWASA has provided the biogas study to UNC for their review and comment to determine if they could use biogas from OWASA to heat their boilers.
 - Biogas to fuel vehicles – may be feasible, amount of fuel that could be produced exceeds amount that could be used by OWASA fleet; would likely need a partner (such as Chapel Hill Transit) to use the fuel.
 - Hydropower – economically infeasible at this time. Hazen & Sawyer evaluated hydropower feasibility, but there would be very little spill-over at OWASA's reservoirs. Flows and pressures in our major water lines are too small for in-line turbines/energy recovery.
 - Biodiesel – For several years, OWASA has been using a diesel fuel blend that is comprised of 20 percent biodiesel in its vehicles and equipment. We piloted the use of 100 percent biodiesel, but the quality of the fuel was unacceptable. This could be feasible in future when technology results in higher quality fuel.
 - Wind power – not feasible as there is low wind potential in the piedmont of North Carolina.
 - Sewer heat recovery – not considered feasible for OWASA at this time due to limited scale.
 - Geothermal – likely not feasible due to our constrained facility sites.
- Discussion around renewable energy included the following:
 - How should OWASA value and weight the financial and non-financial benefits of

renewable energy? Where possible, monetary and non-monetary values should be developed for natural resource, energy security, reliability and other benefits to help inform future evaluations and decisions.

- Duke Energy is preparing a proposed rate structure for customers wishing to meet their needs from renewable energy sources. This could serve as a basis for comparison for OWASA.
- Should we proceed to implement a renewable energy project, such as a solar PV "farm" on some of our land? The majority of the committee members believe much more information, evaluation, and public input is needed before proceeding.
- Renewable energy, biosolids and solid waste management, water supply and other issues should be discussed and evaluated on a regional basis to determine if some alternatives would be feasible through collaboration.
- Renewable energy will be included as one component of the Energy Management Plan that staff is preparing. The Board has identified that as a strategic topic issue.

Next Meeting

The next meetings will be held on Thursday, November 7 and Thursday, December 5 (later amended by email sent by Board Committee Chair dated 9/12/2013 to Wednesday, November 6 and Wednesday, December 4). Future topics are AMI and the Jordan Lake application.

Adjournment

The meeting was adjourned at approximately 7:15 p.m.



Meeting Summary Prepared by:

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