ORANGE WATER AND SEWER AUTHORITY

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

MEMORANDUM

TO: **Natural Resources and Technical Systems (NRTS) Committee**
Dave Moreau (Chair)
Terri Buckner
Quinton Harper
Ruchir Vora
John Young (*ex officio*)

THROUGH: Ed Kerwin

FROM: Ruth Rouse

DATE: April 21, 2016

SUBJECT: April 25, 2016 NRTS Committee Meeting

The NRTS Committee will meet on Monday, April 25 at 5:30pm in the OWASA Boardroom. Mary Tiger, Sustainability Manager, will present information for the development of the Energy Management Plan.

The meeting will cover the following topics.

1. Update on energy use trends
2. Review and discuss revised project charter
3. Discuss path forward for development of OWASA's Energy Management Program and Plan
4. *If time allows, review OWASA energy use compared to industry benchmarks*

We look forward to seeing you on April 25, 2016.

Ruth C. Rouse

Ruth Rouse, AICP
Planning and Development Manager

c: OWASA Board of Directors
Robert Epting, OWASA General Counsel

Attachment - Revised Draft Project Charter

A. General Information

Project Title:	***ENERGY MANAGEMENT PLAN, Revised Version* - DRAFT**
Project Description:	This charter is a continuation and revision of the initial Energy Management Plan Charter approved by the OWASA Board of Directors on January 22, 2015. As originally stated, this project will result in development of an Energy Management Plan (EMP) that will provide strategic direction for OWASA's energy management, energy efficiency, and renewable energy decisions, actions, and investments. This plan presented in this Charter modifies the original Charter in three significant ways: 1. The timeline for completion of the EMP has been updated. 2. The methodology for developing the EMP has been adjusted to request significant input from the Board of Directors and stakeholders on the criteria to be used to evaluate clean energy opportunities. 3. The methodology for updating EMP has been adjusted to allow for ongoing clean energy opportunity (i.e. annual) evaluation and implementation planning. The EMP will be the primary document that describes the policies, procedures, employee education and awareness, and actions and investments that together comprise our ***energy management program***. It is through our program that we will proactively manage our use of energy and pursue our clean energy goals and objectives.
Project Purpose:	OWASA uses a lot of energy to operate the community's water, wastewater, and reclaimed water systems, and to run related support facilities, vehicles, and equipment. Most of the energy we use is in the form of electricity, which powers the many motors and pumps we use to move and treat water and wastewater. We are committed to being efficient in our use of this energy. At its June 25, 2015 meeting, the OWASA Board of Directors received a **Technical Memorandum** that provided a baseline assessment of OWASA's energy use, a presentation of energy management strategies implemented (as of June 2015), and potential goals and objectives for OWASA's energy management. At that meeting, the Board of Directors approved the following draft framing objectives for incorporation into OWASA's Energy Management Plan: 1. Reduce use of purchased electricity by 35% by the end of Calendar Year 2020 compared to the Calendar Year 2010 baseline. 2. Reduce use of purchased natural gas by 5% by Calendar Year 2020 compared to the Calendar Year 2010 baseline. 3. Beneficially use all WWTP biogas by 2022, provided the preferred strategy is projected to have a positive payback within the expected useful life of the required equipment.

	4. Formally engage local governments and partners in discussion about potential development of a biogas-to-energy project at the Mason Farm WWTP. 5. Seek proposals for third-party development of renewable energy projects on OWASA property, such as rooftop solar at the Administration Building. **Value Added to OWASA and our Customers:** The proposed EMP will be OWASA's first formal, comprehensive energy management plan. It will help ensure and communicate OWASA's continuous improvement and progress towards energy management goals and objectives. It will serve as a single point of reference for information about our historical energy use, energy management program, and implementation plan. Our customers will benefit from engagement and awareness of the program, as well as cost-effective energy efficiency actions and returns on investments. **Aligns With Strategic Plan:** Preparation of the EMP is Strategic Initiative #5 of OWASA's Strategic Plan for Fiscal Years 2014-2017. This project also complements the proposed development of a Water Conservation Plan, which is a goal in Strategic Initiative #1 of the Strategic Plan. **Benefits to Be Realized:** The Energy Management Program described in the Plan will define a process that continually and consistently identifies and evaluates energy management, energy efficiency, and renewable energy strategies for meeting our goals and objectives against a criteria set-forth by the OWASA Board of Directors.

B. Project Objectives:

The OWASA Energy Management Program and Plan will address the following objectives, which are organized along the three pillars of sustainability: social performance, environmental performance, and financial performance. This program will require a balancing of these multiple and sometimes competing objectives. Staff requests Board and stakeholder guidance in translating and prioritizing these objectives into criteria for evaluating energy management strategies.

Social Performance: Our Energy Management Program will impact the people and communities we serve.

1) Strategies will be evaluated against their impacts on the community.
2) We will inform and engage our customers and stakeholders in our energy planning efforts.
3) We will inform and involve our employees in our energy management efforts and ensure their safety in its implementation.

Environmental Performance: Our Energy Management Program will help us preserve natural resources; conserve energy, water, and other natural resources; minimize waste and pollution emissions, and reduce our environmental impacts.

4) We will seek to reduce our energy use per million gallons per day of water, wastewater, and reclaimed water used in our community compared to our 2010 baseline energy use (or other baseline year as determined appropriate and for which historical data is available).
5) Energy management, energy efficiency, and renewable energy alternatives will be evaluated against their relative effect on energy use and greenhouse gas (GHG) emissions.

6) Where practical, we will pursue energy management strategies that enhance the reliability and resiliency of our water, wastewater, and reclaimed water facilities and operations.

Financial Performance: The economic well-being of our customers and our community depend on our ability to manage energy services, use, and costs so that we can ensure high quality and reliable services at an acceptable financial cost to our customers.

7) Energy management, energy efficiency, and renewable energy alternatives will be evaluated against their relative life-cycle financial costs (capital and operating and maintenance costs).
8) To ensure that the selected strategies are cost-effective for our community, the selected mix of measures will have a positive financial payback.
9) We will seek direct and indirect support for our program, such as: federal, state, and foundation grants; energy utility incentives and rebates; revenues from renewable energy credits and carbon trading; etc.

C. Assumptions

1) Energy savings and associated cost savings will be developed only for measures for which direct savings can be estimated.
2) Unless there is a very high level of certainty that we will receive supplemental funding support from other parties, all payback calculations will assume that all project costs are funded solely by OWASA.
3) No major structural changes are assumed for our energy rates, and energy rate increases will be assumed to be in-line with general inflation.
4) GHG emission estimates will not include indirect emissions such as those associated with employee travel in personal vehicles, or with the manufacture and transport of goods purchased by OWASA.
5) The following renewable energy strategies will not be further evaluated in the Plan because they are technically and/or economically infeasible for OWASA at this time:
    a) Wind power
    b) Hydropower retrofits at our reservoirs
    c) In-pipeline turbines for hydropower generation
    d) Solar drying for wastewater solids
    e) Build a solar photovoltaic system using customer funds
    f) Geothermal systems for heating and cooling

D. Project Scope and Key Tasks

Our Energy Management Program involves the following seven basic steps.

1) Establish organizational commitment, including goals and objectives for energy management program set by the Board *(commitment and draft framing objectives have been established)*
2) Develop a baseline of energy use *(10-year baseline assessment has been completed)*
3) Evaluate the system
4) Identify clean energy opportunities
5) Evaluate and prioritize opportunities for implementation against Board-defined criteria
6) Create an implementation plan that sets forth the proposed actions, timetable, resource requirements, and expected outcomes for the upcoming year
7) Provide for monitoring and reporting level of progress in achieving performance objectives

Steps 3 through 7 will need to be completed to draft the first Energy Management Plan. It is proposed that those steps (3-7) will be repeated on an annual basis to ensure continuous improvement, and to maintain an up-to-date Implementation Plan. In the first year (and on an as-need basis after that), staff requests that the Board define criteria against which clean energy opportunities will be evaluated.

E. Project Milestones

NOTE: Milestone dates are shown for tasks included in the 12 Month Board Meeting Schedule; delivery dates may be adjusted with Board approval.

Milestones	Deliverables	Date
Natural Resources and Technical Systems (NRTS) Committee review of Project Charter, Revised Version	Draft Charter for EMP Project	April 2016
Board review and approval of Project Charter, Revised Version	Final Charter for EMP Project	May 2016
Staff and NRTS Committee (or Community Engagement Committee) develop draft evaluation criteria to be used in evaluating projects and stakeholder engagement plan to be used in seeking input on criteria	Draft evaluation criteria and community/stakeholder engagement plan	June-July 2016
Board review and approval of draft criteria and stakeholder engagement plan	Draft evaluation criteria and community/stakeholder engagement plan	August - September 2016
Community/Stakeholder engagement on draft criteria	TBD	October 2016
Board review of stakeholder feedback and approval of evaluation criteria	Final criteria to be used in evaluating clean energy opportunities	November 2016
Staff and NRTS Committee evaluation of clean energy opportunities for calendar year (CY) 2017	Draft Energy Management Plan and 2017 Implementation Plan	January 2017
Public review of Draft Energy Management Plan and 2017 Implementation Plan	TBD	January 2017
Board review and approval of Energy Management Plan and CY17 Implementation Plan	Approved Energy Management Plan and 2017 Implementation Plan	February 2017

F. Impact Statement

Potential Impact	Systems / Units Impacted
May affect timing of certain asset rehabilitation and replacement decisions	Several
May impact capital improvements and capital equipment plans and costs, and our financial plan	Engineering and Planning Finance (financial plan)
Staff work on applications for funding assistance (grants, rebates, etc.)	Office of Executive Director and possibly other Departments

G. Stakeholder Engagement/Communication

It is OWASA's goal to provide the community and stakeholders with timely information about projects, programs, and policies that are important to them and offer them meaningful opportunities to give their feedback so that we can continue to improve.

The evolution of our Energy Management Program and the development of our accompanying Energy Plan presents an opportunity to engage OWASA's stakeholders in the criteria used to evaluate energy management, energy efficiency, and renewable energy opportunities. Staff and the NRTS Committee (and/or Community Engagement Committee) will develop a community/stakeholder engagement plan to solicit feedback on the criteria that staff will use to evaluate projects on an annual basis.

Additionally, the development of an Energy Management Plan will provide a single-source of information about OWASA's energy management program and investments. We will inform our customers/stakeholders when the draft EMP is available for review, and provide them opportunities to comment on the plan. Comments received will be considered as we finalize the plan.

Where specific energy management projects have the potential to directly affect customers and/or stakeholders, we will inform them of those projects and provide additional opportunities for review and comment (following Community Engagement Planning Procedures).

H. Strategy to Complete

Staff will prepare the Energy Management Plan document, incorporating best practices and guidance from Federal and State agencies and professional associations. The Plan will include a description of OWASA's Energy Management Program (how staff intends to track and report progress, evaluate the system and collect data, identify clean energy opportunities throughout the coming year, and evaluate those opportunities) as well as an implementation plan for those opportunities identified this year.

Staff will work with the Board of Directors (and its committees as specified) to ensure the Board has the information needed to set policy level goals and objectives, review the best strategies for meeting those goals and objectives, and make decisions regarding the funding and implementation of the plan.

Proactive and effective project management and communications will be required of each project team member to ensure success.

I. Project Partners

Potential Partner	Expected Role
Duke Energy	Provide historical energy use and cost data for our facilities; potential funding support from energy efficiency incentives program; assistance with education and outreach
PSNC/Scana Energy	Provide historical energy use and cost data for our facilities; potential funding support through energy efficiency incentives program; assistance with education and outreach

NC Energy Office U.S. Environmental Protection Agency U.S. Department of Energy	Technical assistance; potential funding support
NC Clean Energy Technology Center NC Waste Reduction Partnership UNC Energy Services Advanced Energy	Technical assistance; possible no-cost/low-cost audits of lighting/HVAC at certain facilities
The Towns of Carrboro and Chapel Hill, Orange County, Chapel Hill Carrboro City Schools, and the University of North Carolina at Chapel Hill	Partnership in pursuit of clean energy projects that will result in economies of scale and community alignment

J. Roles and Responsibilities

Role	Name	Responsibility
Sponsor	Board of Directors	Approves project objectives; goals and objectives for energy management plan; scope of stakeholder engagement, resources necessary to complete project on time and on budget. Makes final decision on energy management strategies to be implemented.
Technical Preview	NRTS Committee	Workshops evaluation criteria and stakeholder engagement plan, provides general guidance and feedback regarding draft work products, technical findings, policy issues and recommendations, etc.
Project Manager and Task Leader	Mary Tiger, Sustainability Manager	Project Management Role: Leads staff in the planning, development, and completion of the project. Provides direction to Task Leaders as needed. Serves as staff liaison with NRTS Committee and Board of Directors. Works with project team to identify and quickly resolve issues. Task Leader Role: Profile system, energy use and costs; document efforts and progress to date; evaluate alternative strategies; prepare draft and final plan document; manage consulting services for the project; coordinate staff and consultant meetings and communications.
Project Advisor	Patrick Davis, Utility Advisor	Provides feedback on Energy Management Plan, Program, and strategies; provides technical assistance
Task Leader	Mary Darr, Director of Engineering and Planning	Provides project management support and guidance for the Project Manager and other Task Leaders as needed.
Task Leader	Adam Haggerty, Asset Manager	Work with staff to incorporate EMP findings and recommendations into our comprehensive asset management plan; capital improvements program; and annual O&M budget.

Subject Matter Expert	Stephen Winters, Director of Finance and Customer Service	Finance and budget, including considerations on long-term financial plan.
Subject Matter Expert	Todd Taylor, General Manager of Operations	System operating considerations; energy requirements; and general assessment of energy savings opportunities and feasibility.
Subject Matter Expert	Ken Loflin, Water Supply and Treatment Manager	Water system operating considerations; energy requirements; and general assessment of energy savings opportunities and feasibility.
Subject Matter Expert	John Kiviniemi, Wastewater Treatment and Biosolids Recycling Manager	Wastewater system operating considerations; energy requirements; and general assessment of energy savings opportunities and feasibility.
Subject Matter Expert	James Dodson, Maintenance Coordinator	Technical information and assistance regarding equipment performance and condition; help coordinate consultant's site visits for facility evaluations.
Subject Matter Expert	Greg Feller, Public Affairs Administrator	Help develop community engagement plan and information for customers/stakeholders and employees.

K. Resources

Resource	Estimated Costs
In-house staff support services	Staff time
Information and assistance from other utilities regarding their experience and lessons learned with energy management plans and strategies	$0
Advanced technical assessments, such as assessment of energy performance of our largest pumps and motors, completed by a qualified consultant	$75,000 (estimated based on planning-level guidance we received from two consulting firms)
If possible, no-cost and low-cost technical assistance services offered through our energy utilities, Federal and State agencies; water and wastewater professional associations, the NC Waste Reduction Partnership program, etc.	TBD
NRTS Committee and Board of Directors	Board and staff time

L. Project Risks

Risk	Mitigation Strategy
Incomplete or inaccurate information	Quality control throughout the work.
Desire to over-study potential alternatives	Focus will especially be on near-term strategies that we can implement on our own.
Other priorities result in delayed completion of project	EMP development should be deferred only if there are major unforeseen circumstances.
Insufficient funding to implement selected strategies	Potential strategies will be fully evaluated and selected only if they are financially viable. Investments will be phased as needed to meet financial objectives. Grant funding will be pursued.

M. Approvals

The signatures of the people below document approval of the formal Project Charter. The project manager is empowered by this charter to proceed with the project as outlined in the charter.

Name	Signature or Date of Board Approval, if Applicable	Date
Board of Directors		
Ed Kerwin		
Mary Tiger		