



# ORANGE WATER AND SEWER AUTHORITY

*Quality Service Since 1977*

## **AGENDA**

### **MEETING OF THE OWASA BOARD OF DIRECTORS**

**THURSDAY, MARCH 23, 2006, 7:00 P.M.**

**CHAPEL HILL TOWN HALL**

In compliance with the "Americans with Disabilities Act," interpreter services are available with five days prior notice. If you need this assistance, please call the Clerk to the Board at 537-4217.

7:00 PM

#### **Announcements**

1. Announcements by the Chair
  - A. Any Board member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time.
2. Announcements by Board Members
  - A. Community Outreach Meeting on April 27, 2006 at Chapel Hill Town Hall (Mark Marcoplos)
3. Announcements by Staff
  - A. Change to Disinfection of Drinking Water with Chlorine instead of Chloramines in the month of March/Annual chlorine disinfection of drinking water in March will end on the 31<sup>st</sup> and chloramine disinfection will resume (John Greene)
  - B. OWASA Lakes will open for recreation on Saturday, March 25, 2006 (Lightning Brown Day) (John Greene)
  - C. Apple Chill Street Fair on Sunday, April 23, 2004 from 1:00 P.M. until 6:00 P.M. on Franklin Street in Chapel Hill (Greg Feller)
  - D. The American Water Works Association 2006 Public Communications Achievement Award (Ed Kerwin)

7:05 PM

#### **Petitions and Requests**

1. Public
2. Board
3. Staff

7:10 PM

#### **CONSENT AGENDA**

##### **Minutes** (Andrea Orbich)

1. Approval of Minutes for the February 9, 2006 Meeting of the Board of Directors
2. Approval of Minutes for the February 9, 2006 Closed Session of the Board of Directors for the purpose of discussing land acquisition and instructing Counsel and Staff regarding negotiations
3. Approval of Minutes for the March 9, 2006 Closed Session of the Board of Directors for the purpose of discussing land acquisition and instructing Counsel and Staff Potential Litigation

**REGULAR AGENDA**

**Discussion**

- 7:15 PM 4. Public Comment on Proposed Water Reuse System Project with the University of North Carolina at Chapel Hill (Mac Clarke)

**Discussion and Action**

- 7:45 PM 5. Resolution Reclassifying the Administrative Assistant Position to a Utility Manager Generalist Position (Ed Kerwin)  
7:55 PM 6. Resolution Amending the Personnel Policy to include Early Hires for Training and Knowledge Transfer (Ed Kerwin)

**Information and Reports**

- 8:05 PM 7. Status Report on Water Supply and Demand Conditions (Ed Holland)  
8:20 PM 8. Report from the Ad Hoc Community Outreach Committee (Mark Marcoplos)

**CLOSED SESSION**

- 8:30 PM 9. Following the meeting of the Board of Directors the Board will convene in Closed Session for the Purpose of Discussing Land Acquisition (Ed Holland/Robert Epting)

ORANGE WATER AND SEWER AUTHORITY

MEETING OF THE BOARD OF DIRECTORS

FEBRUARY 9, 2006

The Board of Directors of the Orange Water and Sewer Authority (OWASA) met in regular session on Thursday, February 9, 2006, in the Community Room at the OWASA Administration Building, 400 Jones Ferry Road, Carrboro.

Directors present: Michael A. (Mac) Clarke, Chair; Penny Rich, Vice Chair; Randy Kabrick, P.E., Secretary; Terri Buckner; Milton S. Heath, Jr.; Marge Anders Limbert; Mark Marcoplos; Gordon Merklein; and Laura Sandvik.

Others present: Ed Kerwin, Imtiaz Ahmad, Stuart Carson, Patrick Davis, Greg Feller, John Greene, Ed Holland, Andrea Orbich, and Kevin Ray OWASA staff; Robert Epting, Esquire, Epting and Hackney; Michael Burton, President of Burton and Associates; Meg Holton, Water, Wastewater, and Stormwater Manager, UNC; and Former Board Member Judy Weseman.

There being a quorum present, Chair Mac Clarke called the meeting to order.

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MOTIONS ACTED UPON

1. Randy Kabrick made a motion to adopt the minutes of the December 15, 2005, Special Meeting of the Board of Directors. The motion was seconded by Mark Marcoplos, and carried by unanimous vote.

2. Randy Kabrick made a motion to adopt the minutes of the January 26, 2006, Closed Session of the Board of Directors for the purpose of discussing land acquisition. The motion was seconded by Mark Marcoplos, and carried by unanimous vote.

3. Randy Kabrick made a motion to adopt the minutes January 26, 2006, Closed Session of the Board of Directors for the purpose of discussing a personnel matter. The motion was seconded by Mark Marcoplos, and carried by unanimous vote.

4. BE IT RESOLVED THAT the Orange Water and Sewer Authority adopt the resolution titled "Resolution Authorizing the Executive Director to Execute Lease Agreement on Behalf of Orange Water and Sewer Authority with the University of North Carolina at Chapel Hill for the Warden's House and Adjoining Property at University Lake." (Resolution so titled attached hereto and made a part of these minutes. Motion by Randy Kabrick, it was seconded by Mark Marcoplos, and carried by unanimous vote.)

5. BE IT RESOLVED THAT the Orange Water and Sewer Authority adopt the resolution titled "Resolution to Adopt a Policy on Reimbursement of Travel and Business-Related Expenses of the OWASA Board of Directors." (Resolution so titled attached hereto and

made a part of these minutes. Motion by Penny Rich, it was seconded by Milton Heath, and carried by unanimous vote.)

6. Laura Sandvik made a motion for the Board to go into a Closed Session for the purpose of discussing and instructing Counsel and Staff regarding negotiations. The motion was seconded by Penny Rich, and carried by unanimous vote.

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ITEM ONE: ANNOUNCEMENTS

CONFLICT OF INTEREST

Mac Clarke said any Board Member who knows of a conflict of interest or potential conflict of interest with respect to any item on the agenda tonight is asked to disclose the same at this time. There were none.

RESOLUTION OF APPRECIATION

Mac Clarke welcomed former Board Member Judy Weseman and presented her the Board's previously adopted Resolution of Appreciation for her service to OWASA and the community.

OWASA ORIENTATION FOR CHAPEL HILL TOWN COUNCIL MEMBERS

Mac Clarke said an OWASA Orientation with new Chapel Hill Town Council Members, Laurin Easthom and Bill Thorpe, was held on Monday, February 6, 2006 in the OWASA Boardroom.

COMMUNITY OUTREACH MEETING

Mac Clarke said that the Ad Hoc Community Outreach Committee met on February 8, 2006, to discuss the timing and content of the next Community Outreach meeting. It was agreed by the Committee to hold the meeting on April 27, 2006, at 7:00 P.M. at Chapel Hill Town Hall, which is also the same day as a regularly scheduled Board meeting. The Board agreed to start the Board meeting before the Community Outreach meeting.

PROPOSED WATER CONSERVATION RULE (N.C. HOUSE BILL 1215)

Mac Clarke said comments are being solicited by the State on the Proposed Water Conservation Rule and asked if the Board would like to submit a letter to the State regarding this rule; comments are due by March 6, 2006. The Board agreed that staff will work closely with Mac Clarke and Mark Marcoplos in drafting this letter and then e-mail the letter to the Board for final review before sending it to the State.

COMMITTEE MEETINGS

Ed Kerwin announced that the Human Resources Committee will meet on Thursday, February 23, 2006, at 5:30 P.M., in the First Floor Conference Room at the Chapel Hill Town Hall to discuss alternative employee compensation strategies.

AMERICAN WATER WORKS ASSOCIATION WATER SOURCES CONFERENCE

Patrick Davis briefly reported to the Board on a conference he attended in Albuquerque, New Mexico. Mr. Davis will e-mail the Board a more detailed report.

ITEM TWO: PETITIONS AND REQUESTS FROM THE PUBLIC, BOARD AND STAFF

Mac Clarke asked for petitions and requests from the public, the Board, and staff. There were none.

ITEM THREE: STATUS REPORT ON GRANT AGREEMENT WITH THE NORTH CAROLINA CLEAN WATER MANAGEMENT TRUST FUND

The Board received the status report on the Grant Agreement with the North Carolina Clean Water Management Trust Fund as an information item.

ITEM FOUR: REPORT ON PRIVATE SEWER SERVICE LATERAL REPAIRS

The Board received the report on the private sewer service lateral repairs as an information item.

ITEM FIVE: MINUTES

Randy Kabrick made a motion to adopt the minutes of the December 15, 2005, Special Meeting of the Board of Directors. The motion was seconded by Mark Marcoplos, and carried by unanimous vote. Please see Motion No. 1 above.

Randy Kabrick made a motion to adopt the minutes of the January 26, 2006, Closed Session of the Board of Directors for the purpose of discussing land acquisition. The motion was seconded by Mark Marcoplos, and carried by unanimous vote. Please see Motion No. 2 above.

Randy Kabrick made a motion to adopt the minutes of the January 26, 2006, Closed Session of the Board of Directors for the purpose of discussing a personnel matter. The motion was seconded by Mark Marcoplos, and carried by unanimous vote. Please see Motion No. 3 above.

ITEM SIX: RESOLUTION AUTHORIZING THE EXECUTIVE DIRECTOR TO EXECUTE A LEASE AGREEMENT ON BEHALF OF ORANGE WATER AND SEWER AUTHORITY WITH THE UNIVERSITY OF NORTH

CAROLINA AT CHAPEL HILL FOR THE WARDEN'S HOUSE AND  
ADJOINING PROPERTY AT UNIVERSITY LAKE

Mac Clarke said Robert Epting suggested the third "WHEREAS" of this resolution read:

"WHEREAS, UNC proposes to lease the Warden's House to OWASA upon the same terms and conditions as previously, and will provide a lease in appropriate form for such purposes, ~~as soon as the continuing transaction is approved by the N.C. Council of State. but the same has not yet been received;~~"

Randy Kabrick made a motion to adopt the resolution titled, "Resolution Authorizing the Executive Director to Execute a Lease Agreement on behalf of Orange Water and Sewer Authority with the University of North Carolina at Chapel Hill for the Warden's House and adjoining property at University Lake" with the noted change. The motion was seconded by Mark Marcoplos, and carried by unanimous vote. Please see Motion No. 4 above.

ITEM SEVEN: PRESENTATION OF PROPOSED SCOPE OF WORK FOR THE RATE  
STUDY

The Board received a verbal presentation of the proposed scope of work for the rate study from Michael Burton, President of Burton and Associates, who will be the rate study consultant for OWASA.

The Board agreed with the proposed scope of work and content of the rate study.

ITEM EIGHT: DISCUSSION OF 2006 PUBLIC COMMUNICATION PRIORITIES

Mac Clarke said public communications are a vital part of our activities with our customers, particularly with regards to the Meeting of the Waters Interceptor, the Reuse Pipeline, and now the rate study. Mr. Clarke stated the communication plan is good and more specifics will be provided as the year progresses.

Marge Anders Limbert said the plan is excellent, however, more information could be provided on the reuse piece so that people will understand how reuse water will be used and that no one would ever drink it.

Terri Buckner suggested adding a category of "sustainability."

Laura Sandvik said there should be an additional item on non-point source pollution and its impacts on our watershed.

ITEM NINE: TRAVEL AND EDUCATION POLICY FOR THE OWASA BOARD OF  
DIRECTORS

Penny Rich made a motion to adopt the resolution titled "Resolution to Adopt a Policy on Reimbursement of Travel and Business-Related Expenses of the OWASA Board of Directors."

**- DRAFT -**

The motion was seconded by Milton Heath, and carried by unanimous vote. Please see Motion No. 5 above.

ITEM TEN: VERBAL UPDATE ON THE NATURAL RESOURCES/TECHNICAL SYSTEM (NRTS) COMMITTEE ON BIOSOLIDS MANAGEMENT

Mark Marcoplos updated the Board on the NRTS Committee meeting held prior to the Board meeting regarding OWASA's biosolids management program and staff's report on the need to ensure adequate future capacity and options for processing biosolids so that they can be recycled or otherwise disposed throughout the year.

The Committee is scheduled to meet again on March 9, 2006, prior to the Board meeting and biosolids management will be an item for discussion at the Board meeting.

ITEM ELEVEN: CLOSED SESSION

Laura Sandvik made a motion for the Board to convene in a Closed Session for the purpose of discussing and instructing counsel and staff regarding negotiations and to discuss possible land acquisition. It was seconded by Penny Rich, and carried by unanimous vote. See Motion No. 6 above.

Mac Clarke said there is a possibility of returning to open session once the Closed Session is completed.

ITEM TWELVE: WATER REUSE SYSTEM CONTRACT

The Board voted to return to open session and opened the doors to the meeting. Mark Marcoplos made a motion that the Board of Directors endorses the draft Water Reuse System Contract with the University of North Carolina at Chapel Hill in principle, and to seek public feedback about the draft contract at the Board's March 23, 2006 regular meeting prior to considering final adoption of the Water Reuse System Contract. The motion was seconded by Milton Heath and carried by a unanimous vote.

There being no further business to come before the Board, the meeting was adjourned at 9:50 P.M.

Respectfully submitted,

**- DRAFT -**

Andrea Orbich  
Executive Assistant

Encs.

NOTE: Audiotapes are available at OWASA for listening.

**Draft**

ORANGE WATER AND SEWER AUTHORITY

CLOSED SESSION OF THE BOARD OF DIRECTORS

FEBRUARY 9, 2006

The Board of Directors of Orange Water and Sewer Authority met in Closed Session on Thursday, February 9, 2006 following the regularly scheduled meeting of Board of Directors meeting in the OWASA Community Room.

Directors present: Michael A. (Mac) Clarke, Chair; Penny Rich, Vice Chair; Randolph M. Kabrick, P.E., Secretary; Terri Buckner; Milton Heath Jr.; Marge Anders Limbers; Mark Marcoplos; Gordon Merklein; and Laura Sandvik.

Others present: Ed Kerwin, Imtiaz Ahmad, Patrick Davis, Ed Holland, and Kevin Ray, Orange Water and Sewer Authority; and Robert Epting Esquire, Epting and Hackney.

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**ITEM ONE**

The Board of Directors met in Closed Session for the purpose of discussing possible property acquisition.

**ITEM TWO**

The Board of Directors continued in Closed Session for the purpose of instructing Counsel and Staff regarding a pending claim that may lead to litigation.

The Board voted to return to open session.

**Draft**

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Ed Kerwin  
Executive Director

**Draft**

ORANGE WATER AND SEWER AUTHORITY

CLOSED SESSION OF THE BOARD OF DIRECTORS

MARCH 9, 2006

The Board of Directors of Orange Water and Sewer Authority met in Closed Session on Thursday, March 9, 2006 following the regularly scheduled meeting of Board of Directors meeting in the OWASA Community Room.

Directors present: Michael A. (Mac) Clarke, Chair; Penny Rich, Vice Chair; Randolph M. Kabrick, P.E., Secretary; Terri Buckner; Milton Heath Jr.; Marge Anders Limbers; Mark Marcoplos; Gordon Merklein; and Laura Sandvik.

Others present: Ed Kerwin, Imtiaz Ahmad, John Greene, Patrick Davis, Ed Holland, and Kevin Ray Orange Water and Sewer Authority; Robert Epting Esquire, Epting and Hackney; and Gary Phillips, Weaver Street Reality.

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**ITEM ONE**

The Board of Directors met in Closed Session for the purpose of discussing possible property acquisition.

**ITEM TWO**

The Board of Directors continued in Closed Session for the purpose of discussing two pending claims that may lead to litigation.

No action was taken.

**Draft**

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Ed Kerwin  
Executive Director

**AGENDA ITEM**

- PUBLIC MEETING TO RECEIVE THE PUBLIC'S QUESTIONS, COMMENTS AND FEEDBACK ON PLANS FOR THE PROPOSED WATER REUSE SYSTEM

**PURPOSES**

- To receive and consider questions, comments and feedback from customers, citizens, and the public regarding our plans to develop a water reuse system in partnership with the University.
- To present a draft resolution regarding the proposed Water Reuse System Contract with the University.

**BACKGROUND**

- OWASA and the University have developed a proposed "Contract Between Orange Water and Sewer Authority and the University of North Carolina at Chapel Hill Regarding Construction, Operation and Use of Water Reuse System," (the Water Reuse System Contract) dated March 23, 2006.
- The Water Reuse System Contract is consistent with the guiding principles agreed to in the Letter of Understanding approved by OWASA and the University in February, 2004.
- The Board of Directors approved the draft Water Reuse System Contract in principle and set March 23, 2006 as the date for a public meeting at which customers and the public can offer questions, comments, and suggestions regarding the proposed project.
- Notices of the March 23rd public meeting and requests for comments were published in The Chapel Hill News, distributed via e-mail to local media, local governments and several interested citizens and organizations. The Chair of the OWASA Board sent letters to the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners.

**ACTION NEEDED**

- Receive and consider questions, comments and feedback from customers, citizens, and the public.
- Discuss next steps.
- Consideration of the draft resolution regarding the Water Reuse System Contract.

March 23, 2006

## MEMORANDUM

**TO:** Board of Directors

**FROM:** Ed Kerwin

**DATE:** March 17, 2006

**SUBJECT:** Consideration of Proposed Water Reuse System Contract with the University Following Receipt of Public Questions, Comments and Feedback

### Purpose

On February 9, 2006 the OWASA Board of Directors approved in principle a proposed water reuse system contract with the University of North Carolina at Chapel Hill. The proposed contract is included as Attachment #1. The document is the result of negotiations with the University since November, 2004.

At the February 9th meeting, the Board also decided to seek comments from the public on March 23rd regarding plans for the water reuse system and the proposed contract.

Following consideration of the public comments, the Board can decide to take action on the contract, or decide that additional information or revisions are needed.

This memorandum provides information about the reuse project, the proposed contract, and the steps taken to request public comments on March 23rd. A draft resolution approving the contract is also provided for your consideration.

### Background

As the drought of record ended in late Fall of 2002, OWASA and the University agreed to jointly study the technical, economic, and environmental feasibility of using highly treated wastewater, or "reclaimed water," from the Mason Farm Wastewater Treatment Plant to meet certain water needs on the University's main campus. It was agreed that such a system could reduce the community's vulnerability to droughts and extend the capability of our local high quality drinking water supplies to meet local needs.

The detailed study, which included pilot-scale testing and an evaluation of public health considerations, showed such a system was feasible. In February, 2004 OWASA and the University entered into a Letter of Understanding committing both parties to move ahead with efforts to develop a water reuse system, and to develop a detailed contract establishing the specific terms and conditions relating to the design, financing, construction, operation and maintenance of the system.

## **The Draft Contract**

The attached draft contract is unchanged from the February 3, 2006 draft that the Board approved in principle on February 9, 2006 (except for date shown on the footer and the page numbering and page breaks).

## **Request for Public Comments on Proposed Water Reuse System Contract**

Notices of the March 23rd public meeting were published on Sunday, March 12th and Sunday, March 19th in The Chapel Hill News (the March 12th ad is included as Attachment #2). A news release was also distributed via e-mail to news media, local governments, and several interested citizens and organizations. A meeting announcement and summary of the contract were also posted on our website.

On March 9th, Board Chair Mac Clarke sent letters to the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners announcing the March 23rd meeting and inviting comments regarding the proposal. A copy of the contract was included with each letter.

Announcements of the March 23rd public meeting were also made at OWASA's recent presentations to the Carrboro Board of Alderman, Chapel Hill Town Council and Orange County Board of Commissioners.

## **Summary of Public Comments Received to Date**

As of the date of this memorandum, staff has received e-mail comments from a limited number of citizens. Their comments are included in Attachment #3. We appreciate our customers' and the public's feedback, which has been generally very favorable, with most expressing very strong support for the planned water reuse system.

## **UNC's Financial Evaluation of Reuse System**

On March 9, 2006 the University provided the final report titled *Reclaimed Water Financial Feasibility Study – 2005* prepared by Burton & Associates, the University's financial consultant for the reuse project. Key findings from the report are:

- ✓ the projected initial capital cost to the University is equivalent to \$3.69 per 1,000 gallons of reclaimed water use, assuming a first phase project cost of about \$10 million;
- ✓ the University projects that it will cost about \$1.00 per 1,000 gallons more to treat reclaimed water used in the cooling tower operations;
- ✓ the estimated reclaimed water rate that OWASA would initially charge the University is \$1.78 per 1,000 gallons; and
- ✓ the total reuse costs to the University would be higher than for use of drinking water for several years; however, it is projected that the University would begin to realize annual savings in Fiscal Year 2011, and reach a "break-even" point in FY 2014.

## **Recommendation**

As documented in prior reports, we believe the planned water reuse system will provide many long-term benefits to our community. If no substantive concerns or questions are raised on March 23rd, staff would recommend approval of the proposed contract as presented. A draft resolution is included as Attachment #4 for your consideration.

## **Next Steps**

If and when the Board approves the contract, we will present it for final approval by the University. Based on our discussions to date, we believe the University would approve the contract in the near future.

Final engineering and design is underway, and the proposed start-up date is November, 2008 as reflected in the contract. The University has already installed or now has under construction or contract about 6,000 feet of water reuse pipe on the main campus. We will continue to provide periodic reports on the status of design, bidding, and construction.

## **Conclusion**

We very much appreciate the Board of Directors' careful consideration and guidance throughout the study and contract negotiation process. We believe the proposed contract is a strong foundation for a successful, sustainable water reuse system that will help meet the community's water resource needs for many years by reducing drinking water demand. Approval of the Water Reuse System Contract would be a major milestone for OWASA, the University, and the community because reuse is a cornerstone of our comprehensive strategy for managing our water resources in coming decades.

We are grateful to the University for its vision, leadership and support for this project. We are also deeply appreciative of the North Carolina Clean Water Management Trust Fund, the U.S. Environmental Protection Agency, and Congressman David Price for their financial support of the reuse project. We also appreciate the comments and support expressed to date by customers, the local governing boards, and the public.

We look forward to receiving further public comments on March 23rd, and to your subsequent discussion and direction.

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Ed Kerwin  
Executive Director

### Attachments

- #1: Proposed Water Reuse System Contract Between OWASA and UNC
- #2: Example of Advertisement of March 23, 2006 Public Meeting
- #3: Compilation of Comments Received From Public in Response to Notice of Meeting
- #4: Draft Resolution Approving Reuse System Contract

c: Robert Epting, Esquire  
Carolyn Elfland, Associate Vice Chancellor for Campus Services, UNC

**FINAL DRAFT CONTRACT**  
**BETWEEN**  
**ORANGE WATER AND SEWER AUTHORITY**  
**AND**  
**THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL**  
**REGARDING**  
**CONSTRUCTION, OPERATION AND USE OF WATER REUSE SYSTEM**

THIS CONTRACT, made and entered into this \_\_\_ day of \_\_\_\_\_, 200\_ between the ORANGE WATER AND SEWER AUTHORITY, a political subdivision of the State of North Carolina, organized and existing under North Carolina General Statute 162A, hereinafter referred to as “OWASA”, and THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL, hereinafter referred to as “the UNIVERSITY”,

**WITNESSETH:**

THAT WHEREAS, OWASA owns and operates the water and sewer utility systems serving the Chapel Hill – Carrboro community, which includes the UNIVERSITY; and

WHEREAS, in February, 2004, recognizing the many important benefits of water reuse, OWASA and the UNIVERSITY approved a Letter of Understanding setting forth the guiding principles and general framework for a water reuse system contract relating to the joint development of a water reclamation and reuse system that would initially serve the UNIVERSITY’s main campus area, but would be expandable to serve others in the community consistent with the terms of this Contract;

NOW, THEREFORE, in consideration of the foregoing and the premises and the mutual covenants and agreements herein contained, and in consideration of other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, OWASA agrees to produce and deliver and the UNIVERSITY agrees to accept and use reclaimed water in accordance with the following terms and conditions.

**SECTION 1. DEFINITIONS**

For the purposes of this Contract, the following terms shall have the following meanings:

- (a) “Conditional Final Acceptance” means OWASA’s agreement to accept and place into service specified Reclaimed Water System improvements completed by the UNIVERSITY, subject to the required conditions of this Contract.
- (b) “Final Acceptance” means OWASA’s agreement to accept full responsibility for the operation, maintenance, repair, and replacement of applicable Reclaimed Water System improvements.
- (c) “North Carolina Division of Water Quality” means the agency in North Carolina State Government that is responsible for administering and enforcing the State’s regulations, policies, and programs relating to the design, permitting, construction, operation,

management, and monitoring of systems for the production, delivery, and use of Reclaimed Water.

- (d) “Onsite Use System” means all lines, appurtenances and facilities on the UNIVERSITY’s side of the Reclaimed Water meter that are required to accept, deliver, treat, and use Reclaimed Water supplied by OWASA.
- (e) “Reclaimed Water” means water that is produced following treatment at OWASA’s Mason Farm Wastewater Treatment Plant and meeting the applicable State Standards for Reclaimed Water, and the “University Standards” as defined in this Contract.
- (f) “Reclaimed Water Customer” means any customer or facility that is connected to and receives or may receive Reclaimed Water from OWASA’s Reclaimed Water System other than users located on the UNIVERSITY’s property, all of whom will be served by the UNIVERSITY.
- (g) “Reclaimed Water System,” “Water Reuse System” or “System” means the facilities and appurtenances, up to and including the reclaimed water meter, that are required to produce and deliver Reclaimed Water from OWASA’s Mason Farm Wastewater Treatment Plant to the UNIVERSITY and all distribution lines and appurtenances required to distribute Reclaimed Water throughout the UNIVERSITY’s main campus to the various points of delivery for use by the UNIVERSITY. The System may be extended in the future to serve other Reclaimed Water Customers, consistent with the terms of this Contract.
- (h) “Reclaimed Water System – Phase I Improvements” means the Reclaimed Water System improvements that are to be initially constructed, operated, and maintained pursuant to this Contract.
- (i) “Service” means making Reclaimed Water available at the UNIVERSITY’s service meter, boundary, or other connection point, regardless of the quantity of Reclaimed Water the UNIVERSITY causes to pass through its connection for use.
- (j) “State Standards” means the State of North Carolina’s rules and regulations pertaining to the treatment, delivery, and use of reclaimed water, as such may be amended or superseded from time to time.
- (k) “University Standards” means those water quality specifications described in Section 3.C.2 of this Contract (as amended from time to time) with which OWASA must comply, in addition to any State Standards, as a condition to the UNIVERSITY’s purchase of any Reclaimed Water.

## **SECTION 2. RECLAIMED WATER SYSTEM DEVELOPMENT**

### **A. Reclaimed Water System**

OWASA and the UNIVERSITY shall jointly plan, design, and construct, and OWASA shall operate and maintain, a Reclaimed Water System that provides Reclaimed Water for use by the UNIVERSITY in accordance with applicable laws and regulations governing said System and uses.

The Reclaimed Water System shall initially consist of the Reclaimed Water System – Phase I Improvements that are completed in accordance with this Contract and with applicable laws and regulations governing said System and uses. The Reclaimed Water System shall be designed and extended to accommodate the orderly development of the System.

**B. The Reclaimed Water System – Phase I Improvements**

1. The Reclaimed Water System – Phase I Improvements and their respective capacities to be allocated to the benefit of the UNIVERSITY include:
  - (i) a Reclaimed Water Pumping Station, being located at OWASA’s Mason Farm Wastewater Treatment Plant and having a peak pumping capacity of approximately 2,163 gallons a minute;
  - (ii) a Reclaimed Water Storage Tank, being located at OWASA’s Mason Farm Wastewater Treatment Plant and having a nominal storage capacity of 0.6 million gallons, which is intended to be sufficient to provide a 4.8-hour storage capacity at a maximum-day demand of 3.0 million gallons a day (mgd);
  - (iii) a Reclaimed Water chemical treatment system being located at OWASA’s Mason Farm Wastewater Treatment Plant and consisting of supplemental chlorine disinfection and pH control designed for a peak flow rate of 3.0 million gallons a day;
  - (iv) a Reclaimed Water transmission main, which shall be 24 inches in diameter and begin at OWASA’s Mason Farm Wastewater Treatment Plant and connect to the UNIVERSITY Improvements, as defined in Section 2.B.4.a, at the intersection of Skipper Bowles Drive and the UNIVERSITY’s steam tunnel currently under construction. The Reclaimed Water transmission main shall have a capacity to convey approximately 10.0 million gallons a day at a maximum operating pressure of 186 psi at the Mason Farm Wastewater Treatment Plant Reclaimed Water Pumping Station; and
  - (v) all of the distribution piping and meters installed by the UNIVERSITY, all of which are generally shown in Exhibit A.

Subject to the provisions of Section 2.C, the Reclaimed Water System – Phase I Improvements will be designed and constructed to accommodate to the extent practical, orderly and cost-effective capacity expansions and extensions that may be needed to meet additional future Reclaimed Water demands..

The capacities described above may be changed by written agreement of OWASA’s Executive Director and the UNIVERSITY’s Associate Vice Chancellor for Campus Services.

## **2. Schedule for Completion of the Reclaimed Water System – Phase I Improvements**

OWASA and the UNIVERSITY hereby agree to use their best efforts to complete and place into full operation the Reclaimed Water System – Phase I Improvements on or before November 1, 2008.

## **3. OWASA’s Responsibilities for Planning, Designing, Contracting for, Constructing and Managing the Reclaimed Water System – Phase I Improvements**

In the development of the Reclaimed Water System OWASA shall serve as the lead agency, and in so doing will:

- (i) Cause to be prepared the final plans, designs, and specifications for the Reclaimed Water System – Phase I Improvements to be located on OWASA’s Mason Farm Wastewater Treatment Plant property and the Reclaimed Water transmission line up to the intersection of Skipper Bowles Drive with the UNIVERSITY’s Manning Drive Steam Tunnel. Plans and specifications for all improvements to be paid for by the UNIVERSITY shall meet the UNIVERSITY’s requirements and shall be approved in writing by the UNIVERSITY prior to either party undertaking any construction.
- (ii) Apply for all permits required to construct, operate, maintain, extend, enlarge, or otherwise improve the Reclaimed Water System. Where applicable, OWASA will require the UNIVERSITY to submit applicable plans and specifications and other information and permit processing fees to OWASA.
- (iii) Cause to be constructed the Reclaimed Water System – Phase I Improvements located on OWASA’s Mason Farm Wastewater Treatment Plant property and the Reclaimed Water transmission line up to the intersection of Skipper Bowles Drive with the UNIVERSITY’s Manning Drive Steam Tunnel.
- (iv) Cause to be prepared any required standards and specifications, public education and training programs, operations and maintenance plans, financing plans, and other policies, programs, and materials related to the operation and maintenance of the Reclaimed Water System.

## **4. UNIVERSITY’s Responsibilities for Designing, Contracting for, and Constructing the Reclaimed Water System UNIVERSITY Improvements**

- a. The UNIVERSITY shall cause to be constructed, and shall convey to OWASA free and clear of all encumbrances and at no cost to OWASA, all distribution lines and appurtenances required to distribute Reclaimed Water throughout the UNIVERSITY’s main campus to the various points of delivery for use by the UNIVERSITY and its users (“UNIVERSITY Improvements”). The UNIVERSITY shall submit to OWASA plans and specifications for the UNIVERSITY Improvements prepared by the UNIVERSITY’s professional engineers who must be registered in the State of North Carolina. Plans and specifications shall meet OWASA’s requirements and shall be approved in writing by OWASA prior to the UNIVERSITY’s undertaking of any construction.

- b. Upon completion of construction, the UNIVERSITY shall dedicate to OWASA all UNIVERSITY Improvements including all mains, service connections and appurtenances, up to and including the Reclaimed Water meters, paid for and installed by the UNIVERSITY. OWASA shall accept title to and responsibility for ownership and maintenance of the UNIVERSITY Improvements caused to be constructed by the UNIVERSITY, provided said UNIVERSITY Improvements have passed certain tests, including, without limitation, purity tests, pressure tests, and valve tests, arranged, witnessed, and approved by OWASA or its representatives, to determine whether said UNIVERSITY Improvements are constructed in accordance with the approved engineering plans and specifications.
- c. The UNIVERSITY will furnish OWASA with digital and mylar copies of the as-built drawings of the UNIVERSITY Improvements in a form acceptable to OWASA and certified by the UNIVERSITY's engineer of record, showing specific locations of all facilities, including all lines, mains, valves, and fittings within the UNIVERSITY Improvements.
- d. The UNIVERSITY represents and warrants that the UNIVERSITY Improvements will be constructed and installed in accordance with the plans and specifications approved in writing by OWASA. As security for the UNIVERSITY's performance of this warranty, the UNIVERSITY shall cause its contractors to deliver to OWASA a standard State of North Carolina required construction warranty to remain in full force and effect for a period of not less than one (1) year from the date of Conditional Final Acceptance.
- e. The UNIVERSITY shall, in accordance with the terms of this Contract and at its sole expense design, construct, own, operate, and maintain the Reclaimed Water service lines, Reclaimed Water treatment facilities, and Reclaimed Water pressure control devices that may be required by the UNIVERSITY and that are located on the UNIVERSITY's side of the Reclaimed Water meters (the "Onsite Use System").
- f. OWASA acknowledges that prior to entering into this Contract, the UNIVERSITY, in reliance on the Letter of Understanding between the parties dated February 19, 2004, has contracted for and partially installed piping to support the Reclaimed Water System and OWASA agrees to accept such installations upon completion of construction<sup>4</sup> in accordance with Technical Memorandum MC-4 included as Exhibit E to this Agreement.

### **C. Future Extensions and Connections**

- 1. OWASA may approve extensions, enlargements, improvements and connections to the Reclaimed Water System not inconsistent with the terms of this Contract and applicable laws and regulations. OWASA shall have sole local authority to approve extensions, enlargements, improvements and connections to the Reclaimed Water System subject to the UNIVERSITY's right to approve any extensions, enlargements, improvements and connections located on or serving the UNIVERSITY's property.

2. OWASA will ensure that no new Reclaimed Water Customers will be added to the Reclaimed Water System except consistent with Section 3.F and Section 5.D of this Contract.

### **SECTION 3. OWASA’S OBLIGATION TO PROVIDE RECLAIMED WATER**

#### **A. Ownership, Operation, and Maintenance of and Access to the Reclaimed Water System**

After acceptance, OWASA will own, operate, and maintain all Reclaimed Water System mains, service connections and appurtenances, up to and including the Reclaimed Water meters; provided; however, that OWASA and the UNIVERSITY may agree to alternative service connection and metering arrangements for buildings in existence prior to the date of this Contract, as specified in the “Supplemental Understanding of Operating Protocols for the Reclaimed Water System” which is included as Exhibit B and which may be modified from time to time as specified in Section 6.A of this Contract. Title to the Reclaimed Water shall pass from OWASA to the UNIVERSITY once it has passed through the Reclaimed Water meter(s) located on the UNIVERSITY’s premises.

#### **B. Quantity, Flow Rates, Pressure**

Following completion of the Reclaimed Water System – Phase I Improvements, OWASA will make a good faith effort to maintain a continuous and uninterrupted delivery of Reclaimed Water in such quantity as may be required by the UNIVERSITY, up to the capacities specified under Section 2.B and as may be increased in the future in accord with this Contract. OWASA will make a good faith effort to operate and maintain the Reclaimed Water System at the same level of service and reliability standards that are applied to OWASA’s potable water system and to maintain pressures needed to operate at a hydraulic grade line elevation range of between 551 feet and 591 feet mean sea level at the existing and proposed UNC Chiller Facilities.

#### **C. Quality of Reclaimed Water**

OWASA will make a good faith effort to assure that at all times Reclaimed Water delivered by OWASA to the UNIVERSITY meets all rules, regulations and permit conditions of all applicable governmental agencies exercising jurisdiction over OWASA’s production and delivery of Reclaimed Water.

OWASA will make a good faith effort to provide the UNIVERSITY with high quality Reclaimed Water that meets the non-potable needs of the UNIVERSITY. OWASA agrees that the quality of the Reclaimed Water will meet or exceed the following standards:

##### **1. State Standards**

OWASA agrees to provide Reclaimed Water of at least the minimum quality required by the State Standards.

## **2. UNIVERSITY Standards for Reclaimed Water Quality**

In addition to meeting the above-specified State Standards, OWASA will convey and transfer to the UNIVERSITY Reclaimed Water that meets the additional “UNIVERSITY Standards” specified in the “Supplemental Understanding of Operating Protocols for the Reclaimed Water System” which is included as Exhibit B and which may be modified from time to time as specified in Section 6.A of this Contract.

In the event Reclaimed Water quality falls outside the Desired Quality Specifications for more than eight (8) hours, OWASA agrees to notify the UNIVERSITY and the UNIVERSITY may at that time refuse to accept Reclaimed Water until such time as OWASA has addressed the problem to the satisfaction of the UNIVERSITY. In the event one or more of the monitored contaminants exceeds the “Reject Quality Specifications” as specified by the UNIVERSITY Standards, OWASA must immediately notify the UNIVERSITY. The UNIVERSITY may refuse to accept or use the Reclaimed Water at any of the UNIVERSITY’s facilities whenever Reclaimed Water quality falls outside the “Reject Quality Specifications” as defined in Exhibit B, as measured by the UNIVERSITY or OWASA. In such events, OWASA shall supply the University with an adequate quantity of potable water according to the provisions of the Water Utility Agreement of Sale and Purchase. In the event that Reclaimed Water exceeding the “Reject Quality Specifications” enters the distribution piping or is detected at any point of use, OWASA agrees to arrange to flush all non-complying water from the system prior to initiating Reclaimed Water service to the UNIVERSITY’s Reclaimed Water using facilities. OWASA agrees to discontinue the delivery of Reclaimed Water to the on-site Reclaimed Water Storage tank upon notice that one or more water quality parameters fall outside the respective “Reject Quality Specification” values specified in Exhibit B.

## **3. Wastewater Generated by UNIVERSITY Facilities Using Reclaimed Water**

OWASA agrees to accept wastewater discharges generated by each of the UNIVERSITY’s facilities using Reclaimed Water provided that said discharges from each facility shall: (a) meet the requirements of OWASA’s Sewer Use Ordinance which may be amended from time to time to assure the safe and reliable operation of OWASA’s wastewater collection, treatment and disposal system, and (b) be subject to any applicable high-strength surcharges specified in OWASA’s sewer rates, fees and charges. However, this provision shall not apply to constituents already present in the Reclaimed Water produced by OWASA, and delivered to UNC, excepting those introduced by the UNIVERSITY to the Reclaimed Water stream, that may cause the concentrated discharge from any UNC Reclaimed Water using facility to exceed the Local Limit concentrations identified in the OWASA Sewer Use Ordinance after eight (8) cycles of concentration.

## **D. Monitoring Provisions**

To assure compliance with the UNIVERSITY Standards, OWASA agrees to perform the monitoring services as specified in the “Supplemental Understanding of Operating Protocols for the Reclaimed Water System” which is included as Exhibit B and which may be modified from time to time as specified in Section 6.A of this Contract. All costs of said monitoring services will be recovered by the rates OWASA establishes for Reclaimed Water Service.

## **E. Provisions for Backup Supply During Interruption of Reclaimed Water Service**

The parties acknowledge that emergency failures of pressure or supply due to main supply breaks, power failure, flood, fire, acts of God, civil commotion, strikes, earthquake or other catastrophe may occur which could prevent OWASA from delivering Reclaimed Water to the UNIVERSITY pursuant to this Contract. Upon the occurrence of such events, it is the intention of the parties that OWASA shall be relieved of the responsibility for providing Reclaimed Water for such a period when it is not reasonably within its ability or control to do so.

In any event OWASA cannot deliver Reclaimed Water as agreed to under this Contract, OWASA shall notify the UNIVERSITY of such circumstance and shall supply, through the potable water connection, the UNIVERSITY with an adequate quantity of potable water according to the provisions of the Water Utility Agreement of Sale and Purchase.

OWASA will take immediate action to resolve any interruption of Reclaimed Water service to the UNIVERSITY as soon as practical. OWASA will allow the UNIVERSITY to maintain alternate supply connections as a back-up water supply in the event that Reclaimed Water service is temporarily unavailable.

## **F. Limitations on Supply and Use of Reclaimed Water**

1. The Parties agree that the UNIVERSITY shall have a priority right of first use on all the Reclaimed Water produced by the Reclaimed Water System – Phase I Improvements described in Section 2.B.1, up to the capacities specified in said Section or to such increased capacities as may be developed in the future in accord with this Contract.
2. OWASA may provide Reclaimed Water Service to other non-UNIVERSITY Reclaimed Water Customers provided that: (a) OWASA determines that the provision of Reclaimed Water Service to other Reclaimed Water Customers will not impede OWASA's ability to meet its obligations to the UNIVERSITY as specified in this Contract and (b) that if Reclaimed Water demands of other Reclaimed Water Customers are being met from the capacity of the Reclaimed Water System – Phase I Improvements described in Section 2.B then Reclaimed Water Service to the UNIVERSITY will not be reduced until after Reclaimed Water Service to all other Reclaimed Water Customers has been discontinued.
3. It is the intention of OWASA to assure that the Reclaimed Water System is of adequate capacity so that it will not be necessary to exercise the right of limitation as specified above and OWASA will use its best efforts to that effect.

## **SECTION 4. UNIVERSITY'S SYSTEM OWNERSHIP AND OBLIGATIONS REGARDING RECLAIMED WATER**

### **A. Ownership, Operation, and Maintenance**

The UNIVERSITY will own and maintain all Onsite Use System improvements required for the UNIVERSITY to use Reclaimed Water.

To assure OWASA's ability to meet its obligations under this Contract, the UNIVERSITY, at no cost to OWASA, will grant to OWASA licenses required for the installation, operation, maintenance, repair, and replacement of the Reclaimed Water System improvements located on the UNIVERSITY's property. Said licenses shall be requested and granted in a manner consistent with the licensing provisions specified in the Water Utility and Sewer Utility Agreements of Sale and Purchase between the UNIVERSITY and OWASA.

## **B. Reclaimed Water Uses and Demands**

1. Reclaimed Water shall be used only in accordance with applicable State laws and regulations.
2. The UNIVERSITY shall make a written request to OWASA for any approval to connect to the Reclaimed Water System or to modify the UNIVERSITY's existing uses of Reclaimed Water at a specific facility. For any facilities which are projected to cause the Reclaimed Water demands to exceed the capacities specified in Section 2.B.1, OWASA shall have the right to determine whether, when, and if so upon what conditions such request shall be approved in accordance with Section 5.D. OWASA will conduct an on-site inspection of the Reclaimed Water System connection and the facilities where Reclaimed Water is proposed to be used.
3. OWASA shall have the right to conduct additional on-site inspections of each facility at which Reclaimed Water is being used, provided that at least three (3) days advance notice is given to the UNIVERSITY.
4. Exhibit C lists the UNIVERSITY's facilities that are currently anticipated to use Reclaimed Water from OWASA. Additional uses by the UNIVERSITY may be developed and provided Reclaimed Water Service by OWASA in accordance with this Contract.
5. Upon completion and start-up of the Reclaimed Water System – Phase I Improvements, it is estimated that the UNIVERSITY will use, and OWASA will supply a presently anticipated annual average of 0.53 million gallons of reclaimed water per day beginning by November, 2008. It is understood that this initial reclaimed water demand may increase to an annual average of 0.66 million gallons per day if UNC Hospitals agrees to use a presently-anticipated annual average per day of 0.130 million gallons of reclaimed water for cooling tower make-up at its two existing chiller facilities. The UNIVERSITY shall make a good faith effort to use OWASA's Reclaimed Water rather than potable water in said amount, or in higher amounts as the UNIVERSITY may need and as OWASA may supply in accord with this Contract. In the event that the UNIVERSITY must temporarily discontinue using Reclaimed Water at any facility as a result of planned or unplanned maintenance, the UNIVERSITY will restore the use of Reclaimed Water at that facility as soon as practical.
6. Any supply of Reclaimed Water to UNC Hospitals shall be provided through the UNIVERSITY.
7. Each service connection to the Reclaimed Water System shall be separately metered. The UNIVERSITY and OWASA agree that any Reclaimed Water Meters or other

devices installed to measure and control the amount of Reclaimed Water delivered to the UNIVERSITY's facilities shall be:

- (i) purchased from OWASA and installed at the UNIVERSITY's sole expense;
  - (ii) flow meters and other devices of standard make and type approved by OWASA for which replacement parts and service are reasonably available;
  - (iii) installed in accordance with OWASA's standards and specifications, and so as to be readily accessible for reading, testing, maintenance, and replacement. Access shall be provided to OWASA and its personnel;
  - (iv) adequately maintained by OWASA; and
  - (v) tested by OWASA for accuracy when requested by the UNIVERSITY, with the understanding that OWASA will provide the test results to the UNIVERSITY.
8. The UNIVERSITY shall have sole responsibility for the sequencing, tie-in, and operation of back-up potable water supply or other backup water supply sources for the UNIVERSITY's facilities that are connected to the Reclaimed Water System.
9. The UNIVERSITY shall be solely responsible for the physical separation of lines and connections to the UNIVERSITY's Onsite Use System. The Onsite Use System shall be constructed to prevent backflow of Reclaimed Water and any other non-potable water source into the public potable water system. The UNIVERSITY shall install, operate, test, and maintain approved backflow prevention assemblies as required herein or as may be required by OWASA's Cross Connection Control Ordinance and applicable State regulations.

#### **C. Prohibitions and Restrictions on Use of Reclaimed Water**

1. Reclaimed Water from OWASA shall not be used by the UNIVERSITY for any purposes not otherwise approved by OWASA and allowed by the applicable regulatory agencies.
2. The UNIVERSITY may distribute Reclaimed Water to any users that the UNIVERSITY is permitted by the Water Utility Agreement of Sale and Purchase to serve. The University may recover its costs in the same manner and to the same extent as the UNIVERSITY operates its current potable water distribution system pursuant to the Water Utility Agreement of Sale and Purchase.
3. The University shall be solely responsible for assuring that no Reclaimed Water received from OWASA is distributed, used or consumed other than in compliance with all applicable local, State and Federal rules, standards, and statutes, or other law.

#### **D. Exclusive Use of Reclaimed Water From OWASA**

The UNIVERSITY agrees that it will obtain all of its Reclaimed Water requirements from OWASA. Nothing in this Contract shall limit the UNIVERSITY's right to build and operate systems for the treatment and reuse of wastewater, process water, rainwater, groundwater, or other water generated by the UNIVERSITY's property and facilities. The UNIVERSITY may not introduce any other source of water into the Reclaimed Water System.

## **E. Backup Supply During Interruption of Reclaimed Water Demands**

The parties acknowledge that emergency failures of pressure or supply due to main supply breaks, power or equipment failure, flood, fire, acts of God, civil commotion, strikes, earthquake or other catastrophe may occur which would prevent the UNIVERSITY from using Reclaimed Water pursuant to this Contract. The parties agree that the UNIVERSITY shall not be required to use Reclaimed Water for such a period when it is not reasonably within its ability or control to do so.

## **SECTION 5. FINANCING OF THE RECLAIMED WATER SYSTEM**

### **A. Financial Sustainability of Reclaimed Water System**

1. The Reclaimed Water rates, fees, and charges established by OWASA will recover all of OWASA's direct and indirect expenses for developing, operating, and maintaining the Reclaimed Water System.
2. No costs of the Reclaimed Water System shall be paid with revenues generated by OWASA's potable water system or generated by OWASA's sewer system rates, fees, or charges.
3. Revenues generated by the Reclaimed Water rates, fees, and charges shall be used solely for the Reclaimed Water System. Revenues from the Reclaimed Water System shall not be used to offset or recover the potable water revenue reduction that is or may be associated with the sustainable water management practice of using Reclaimed Water instead of potable water to meet non-potable water needs.

### **B. Financing the Initial Development of the Reclaimed Water System**

1. The UNIVERSITY shall be solely responsible for paying all costs for the design, construction, construction management and inspection of the Reclaimed Water System – Phase I Improvements, except to the extent that OWASA may receive and apply Federal or State grant funds to offset the UNIVERSITY's cost for initial development of said improvements. The amount of any construction contract for the Reclaimed Water System – Phase I Improvements, plus an approved contingency (collectively, the "Total Construction Amount") to cover change order items which may be approved by OWASA's Executive Director, must have the UNIVERSITY's prior written approval in order to qualify for reimbursement by the UNIVERSITY. Any increases to the Total Construction Amount must have prior written UNIVERSITY approval in order to qualify for reimbursement by the UNIVERSITY.
2. The UNIVERSITY shall reimburse OWASA for the costs OWASA incurs for planning, designing and constructing the Reclaimed Water System – Phase I Improvements described in Section 2.B.3, except to the extent that OWASA may receive and apply Federal or State grant funds to offset the University's cost for initial development of said improvements. The parties agree to develop a procedure for UNIVERSITY reimbursement of the approved costs of OWASA's design, construction, construction management, and inspection of the part of the Reclaimed Water System that the parties

agree that OWASA will construct. The reimbursement procedure must have the approval of the University's bond counsel.

### **C. Establishment of Reclaimed Water Rates, Fees and Charges**

OWASA shall establish and periodically amend the rates, fees, and charges for providing Reclaimed Water service. The rates, fees, and charges shall be set at levels that are sufficient to recover the costs that OWASA incurs to provide Reclaimed Water service, and to provide adequate reserves for maintenance and replacement of the system. OWASA shall follow "cost-of-service" rate-making principles for setting the rates, fees, and charges sufficient to pay the costs of Reclaimed Water services and facilities provided by OWASA.

Exhibit D is a list of the cost-of-service components that will be included in the determination of the initial rates, fees, and charges for Reclaimed Water service. To assure recovery of OWASA's anticipated fixed costs for the Reclaimed Water System, the UNIVERSITY will pay a minimum monthly service charge as determined by OWASA, without regard to the amount of Reclaimed Water used by the UNIVERSITY. The UNIVERSITY also agrees to pay a separate commodity charge per 1,000 gallons of Reclaimed Water used. No seasonal, inclining block, or other conservation rate structure will be imposed for Reclaimed Water service to the UNIVERSITY unless mutually agreed upon in writing by both parties.

As determined necessary, OWASA may from time to time modify the cost-of-service components and cost-of-service calculations to assure full and fair recovery of OWASA's costs for providing Reclaimed Water Service. The methodology for calculating the General and Administrative and Other components of the rates, fees, and charges for Reclaimed Water Service listed in Exhibit D shall be used as the basis for determining said costs for the first five (5) full OWASA fiscal years of operation of the Reclaimed Water System.

OWASA shall provide the UNIVERSITY the opportunity to review and comment on proposed Reclaimed Water rates, fees, and charges. The notification and comment process will be comparable to that provided for in the Water Utility Agreement of Sale and Purchase between OWASA and the UNIVERSITY.

The UNIVERSITY will not be required to pay Reclaimed Water System Availability Fees or similar capital buy-in charges for any connections to the Reclaimed Water System – Phase I Improvements. In the event the UNIVERSITY's total Reclaimed Water demands exceed the capacities specified in Section 2.B.1, or are otherwise increased in accordance with this Contract, the parties shall finance future extensions and connections in accordance with Section 5.D.

### **D. Financing Future Extensions and Connections to the Reclaimed Water System**

Subject to the provisions of Section 3.F. of this Contract, OWASA may extend the Reclaimed Water System providing Reclaimed Water Service in or to other areas to serve other Reclaimed Water Customers.

Consistent with the provisions of the Water Utility and Sewer Utility Agreements of Sale and Purchase, OWASA shall adopt and maintain a basic policy with respect to the extension of the Reclaimed Water System which provides, to the extent possible, that the ultimate cost of any such extensions shall be borne by those parties primarily benefiting from such extensions.

Reclaimed Water Customers connecting to the Reclaimed Water System shall be required to pay all applicable Reclaimed Water service availability charges, connection fees, and other charges established by OWASA. The UNIVERSITY shall not be entitled to any revenues or reimbursements OWASA receives from future Reclaimed Water Customers, as any Reclaimed Water System availability fees OWASA receives will be applied to the capacity expansion and improvements to the Reclaimed Water System.

If in the future, the UNIVERSITY determines and advises OWASA that the UNIVERSITY requires Reclaimed Water in excess of the capacities described in Section 2.B, OWASA, in consultation with the UNIVERSITY, shall determine how best to meet the UNIVERSITY's needs, and, before undertaking such improvements or expansions, shall obtain the approval of the UNIVERSITY as to how to finance the same, and as to the terms and conditions under which the additional capacity will be developed and provided to the UNIVERSITY.

## **SECTION 6. OTHER PROVISIONS**

### **A. Operating Protocols**

OWASA and the UNIVERSITY agree to develop and implement monitoring and reporting procedures, billing and payment procedures, communications and emergency response plans, public information and training programs, notification procedures, and other operating protocols relating to the Reclaimed Water System, as generally described in Exhibit B, "Supplemental Understanding of Operating Protocols for Reclaimed Water System." OWASA's Executive Director and the UNIVERSITY'S Associate Vice Chancellor for Campus Services may, upon mutual agreement, amend said Supplemental Understanding without the necessity of formally amending this Contract.

### **B. Plans for Reclaimed Water System Improvements or Connections**

The parties agree to notify each other in writing as to any plans for extending, enlarging, improving, or connecting to the Reclaimed Water System in accordance with this Contract. Each party shall make its best effort to provide said notification within thirty (30) days following the development of any concept plan for extending, enlarging, improving, or connecting to the Reclaimed Water System.

### **C. Parties to Be Notified**

All notices required to be given, or which may be given by either party to the other, shall be deemed to have been fully given and fully received when made either by personal delivery to, and acknowledgment of receipt by the following offices, or in writing and deposited in the United States mail, registered and postage prepaid and addressed to the respective offices as follows:

OWASA: Executive Director  
Orange Water and Sewer Authority  
400 Jones Ferry Road  
P.O. Box 366  
Carrboro, NC 27510-0366

UNIVERSITY: Associate Vice Chancellor for Campus Services  
The University of North Carolina at Chapel Hill  
305 South Building  
Campus Box #1000  
Chapel Hill, NC 27599-1000

#### **D. Assignment of Contract**

In the event of a transfer by any means of the assets and liabilities of OWASA, OWASA shall have the right to transfer all or any part of the Reclaimed Water System to another public utility and to assign all or any part of its rights and obligations under this Contract to another public utility who shall be bound by and accept, and be exclusively responsible for all applicable terms and conditions of this Contract.

#### **E. Contract Amendments**

This Contract may be amended at any time by mutual written consent of both parties.

#### **F. Severability**

Should any part, term, or provision of this Contract be decided by a final judgment of a court to be illegal or in conflict with any law of the State of North Carolina, or otherwise be rendered invalid, unenforceable, or ineffectual, the remaining provisions of this Contract shall not be affected and shall be valid and enforceable to the fullest extent permitted by law.

#### **G. Resolution of Disputes**

OWASA and the UNIVERSITY shall negotiate in good faith and attempt to resolve any dispute which may develop hereunder. If they are unable to resolve a dispute hereunder, either party may serve upon the other a request for voluntary mediation by a neutral mediator who shall be chosen by the parties to conduct the mediation within thirty (30) days of his or her selection, or whenever later the parties may agree.

#### **H. Planning for Water Reuse at Carolina North**

OWASA and the UNIVERSITY agree to jointly evaluate the feasibility of developing a reclaimed water system to serve the UNIVERSITY's proposed Carolina North project.

**SECTION 7. REGULATORY APPROVALS; ENTIRE AGREEMENT**

**A. Agreement Subject to Regulatory Approval of Reclaimed Water System**

OWASA’s obligations under this Contract are contingent upon its obtaining all necessary approvals and permits from all governmental agencies exercising jurisdiction over the production, treatment, and delivery of Reclaimed Water.

**B. Contract Constitutes the Entire Agreement**

This Contract constitutes the entire agreement and understanding between the parties, and supersedes all offers, negotiations and other agreements concerning the production, delivery, and use of Reclaimed Water.

All exhibits annexed hereto form material parts of this Contract.

**SECTION 8. TERM OF AGREEMENT**

In light of the obligations undertaken by the parties herein, this Contract shall be perpetual.

IN WITNESS WHEREOF, the parties hereto have executed this Contract the day and year first above written.

ORANGE WATER AND SEWER AUTHORITY

By \_\_\_\_\_

ATTEST:

By \_\_\_\_\_

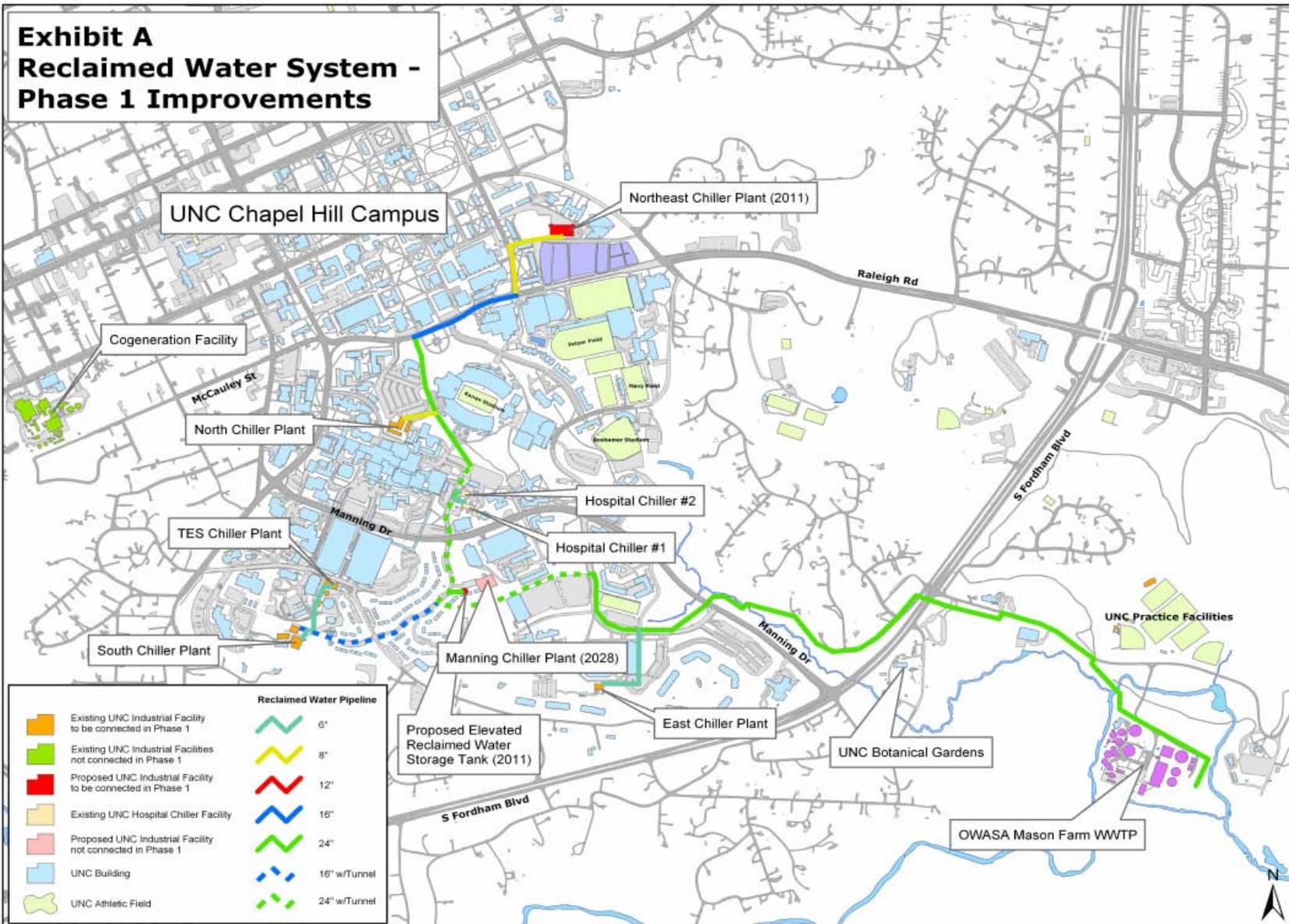
THE UNIVERSITY OF NORTH CAROLINA  
AT CHAPEL HILL

By \_\_\_\_\_

ATTEST:

By \_\_\_\_\_

**EXHIBIT A  
GENERAL LOCATION OF  
RECLAIMED WATER SYSTEM – PHASE I IMPROVEMENTS**



## EXHIBIT B

### SUPPLEMENTAL UNDERSTANDING OF OPERATING PROTOCOLS FOR THE RECLAIMED WATER SYSTEM

OWASA and the UNIVERSITY agree that the following protocols will apply to the operation of the Reclaimed Water System. This Exhibit may be amended on behalf of the parties upon mutual written agreement by OWASA's Executive Director and the UNIVERSITY'S Associate Vice Chancellor for Campus Services without the necessity of the formal amendment of the Water Reuse System Contract between OWASA and the UNIVERSITY.

#### A. Supplemental UNIVERSITY Standards for Reclaimed Water Quality

In addition to all the requirements of OWASA's Mason Farm Wastewater Treatment Plant NPDES permit and State Standards, OWASA shall produce Reclaimed Water for the UNIVERSITY's points of use that has undergone tertiary filtration, UV-irradiation and free-chlorine disinfection (as evaluated in the Final Report titled, "Evaluation of the Proposed OWASA Water Reclamation System for Production of Non-Potable Reuse Water for UNC Chapel Hill" dated December 2004, by Mark Sobsey, Ph.D. et al) and complies with all of the following water quality specifications (the "UNIVERSITY Standards"):

| <u>Control Parameters</u>             | <u>Desired Quality Specifications</u> | <u>Reject Quality Specifications</u> |
|---------------------------------------|---------------------------------------|--------------------------------------|
| Turbidity                             | <3 NTU                                | >5 NTU                               |
| pH                                    | 7.00 – 7.40                           | < 7.0 and > 7.4                      |
| Free Chlorine Residual                | >0.5 mg/l to 2.0 mg/l                 | < 0.5 and > 2.0 mg/l                 |
| Ammonia-Nitrogen                      | <0.5 mg/l as NH <sub>3</sub>          | >2.0 mg/l as NH <sub>3</sub>         |
| Total Phosphorus                      | <1.0 mg/l as PO <sub>4</sub>          | >3.0 mg/l as PO <sub>4</sub>         |
| Carbonaceous Biological Oxygen Demand | Permit Limit                          | Permit Limit                         |
| Fecal Coliform                        | Permit Limit                          | Permit Limit                         |

Fecal coliform will have minimum limits in accordance with North Carolina reclaimed water standards (currently 14 FCU/100 mL monthly average and 25 FCU/100 mL daily maximum).

## B. Monitoring and Reporting

1. OWASA shall develop and implement a Reclaimed Water System water quality monitoring program that meets all applicable regulatory requirements and that also provides timely and accurate information needed for system operation, maintenance, and quality assurance and control. OWASA will monitor the quality of Reclaimed Water produced at the Mason Farm Wastewater Treatment Plant, and in representative locations in the Reclaimed Water System.

OWASA shall:

- (i) install and maintain continuous monitoring and recording devices as specified below;
- (ii) maintain all monitoring records required by the applicable regulatory agencies;
- (iii) prepare and submit any reports and notices required by said agencies, and provide the UNIVERSITY with copies of said reports or notices; and
- (iv) advise the UNIVERSITY of any unusual results or water quality conditions as soon as practical following the discovery of such results or conditions.

### 2. Monitoring Parameters and Frequencies

To ensure compliance with UNIVERSITY Standards, OWASA agrees to perform all of the following routine monitoring. In addition, OWASA agrees to install the identified online process monitoring analytical instruments to insure water quality remains within the designated acceptable ranges at all times. Provision shall be made to telemeter (via telephone, radio, or web based) all monitoring data and information (real-time) to the UNIVERSITY and integrate into its existing Chilled Water SCADAs system via new Reclaimed Water input/monitoring screens. All of the following parameters shall be monitored in accordance with the designated methodology and/or frequency:

| <u>Control Parameters</u> | <u>Monitoring Frequency</u>  |
|---------------------------|--|
| pH                        | Continuous recording analyzers<br>(2) locations on OWASA site <sup>(1)</sup>                 |
| Free Chlorine Residual    | Continuous recording analyzer at<br>the OWASA plant site                                     |
| Ammonia-Nitrogen          | Continuous recording analyzer will<br>be installed by OWASA for overall<br>WWTP operations   |
| Fecal Coliform            | Weekly grab sample taken inside the<br>Reclaimed Water storage tank prior<br>to pump suction |

## Anions and Cations

Composite sampling will be performed on a monthly basis by OWASA staff; however, analysis will be done by University's contractor; two (2) ½-liter bottles

(1) Two independent pH probes installed downstream of the acid injection point and in-pipe mixer. Probe #1 is used for automatic adjustment of the acid feed rate.. The second probe will serve to deactivate acid feed pumps and send a Low pH alarm in the event the pH drops to 0.5 SU below the minimum setpoint or send a High pH alarm in the event pH increases to 0.5 SU above maximum setpoint.

### **C. Billing for Reclaimed Water Services**

OWASA shall provide the UNIVERSITY with periodic itemized statements of the applicable charges for Reclaimed Water service provided during the proceeding reading period. Statements will be issued on a monthly basis, or on a less frequent basis as determined appropriate by OWASA. Within twenty-one (21) days of the receipt of said statement, the UNIVERSITY shall pay to OWASA their respective applicable charges for the provision of Reclaimed Water service. The amount of Reclaimed Water delivered shall be determined by OWASA based on the actual measurements recorded by the Reclaimed Water meter. In the event an actual measurement is unavailable, OWASA shall estimate the amount of Reclaimed Water used; provided that said estimate is developed in a manner consistent with the practice OWASA uses to make estimates of potable water use.

### **D. Communications and Emergency Response Plan**

OWASA and the UNIVERSITY shall prepare and implement a Reclaimed Water System communications and emergency response plan that includes contact information and clearly defines each party's respective roles and responsibilities in communications and emergency response.

### **E. Public Information, Education, and Training**

OWASA and the UNIVERSITY shall develop, implement, and maintain a comprehensive Reclaimed Water System public education and training program. The program shall be designed to inform, educate and train the various agencies, businesses, contractors, and individuals that may use, come into contact with, or install systems associated with the distribution and use of Reclaimed Water. Training sessions shall include education on lawful uses of Reclaimed Water, policies and regulations governing the operation and maintenance of the Reclaimed Water System and the UNIVERSITY's Onsite Use Systems, and emergency notification procedures in the event of breaks, leaks, spills, and cross-connections.

Target audiences shall include, but shall not be limited to, the following:

- (i) OWASA staff;
- (ii) UNIVERSITY staff;
- (iii) Residential, commercial, and institutional Reclaimed Water Customers;

- (iv) Plumbing contractors;
- (v) Landscaping and lawn care companies;
- (vi) Irrigation system installers, operators, and support service providers;
- (vii) Tank truck drivers; and
- (viii) Construction companies and contractors.

All Reclaimed Water System valves, storage facilities, and outlets shall be specially color coded, tagged or labeled to inform the public or employees that the water is not intended for drinking. Where appropriate, such warning shall inform the public or employee to avoid contact with the Reclaimed Water. Permanent notification shall be posted at all facilities that use Reclaimed Water, advising the public and employees that the Reclaimed Water is not intended for drinking.

#### **F. Notices of Reclaimed Water Spills, Leaks, or Discharges**

The UNIVERSITY shall, as soon as possible, notify OWASA by telephone and in writing of any Reclaimed Water use not authorized by this Contract, including, but not limited to, spills, leaks, discharges, or releases of a material volume. Telephone and written notices must be provided in the manner and within the timeframe specified by the applicable regulatory agencies. At a minimum, telephone notice shall be given as soon as possible after any unauthorized use, and written notice shall be given within 5 working days of any unauthorized use. Written notice shall be provided using the form provided as Attachment #1, as may be amended from time to time by OWASA.

The UNIVERSITY shall, as soon as possible, notify both OWASA and the North Carolina Division of Water Quality by telephone and in writing of any spills, leaks, discharges, or releases of Reclaimed Water into or adjacent to the waters of the State. Telephone notice shall be given as soon as possible after any spills, leaks, discharges, or releases, intended or unintended. Written notice shall be given within 5 working days of any spills, leaks, discharges, or releases, intended or unintended, and on the form provided as Attachment #1, as may be amended from time to time by OWASA.

#### **G. Reclaimed Water Service Connections for New and Existing Buildings**

For new Reclaimed Water connections, Reclaimed Water meters will be located outside the building unless otherwise approved by the Executive Director of OWASA. For buildings that existed prior to the date of this Contract, the Executive Director may allow the UNIVERSITY to locate the Reclaimed Water meter inside the building subject to certain conditions, including but not limited to:

- (i) the meters and other devices must be of standard make and type approved by OWASA for which replacement parts and service are reasonably available;
- (ii) the meter must be installed in accordance with OWASA's standards and specifications;
- (iii) OWASA and its personnel must be assured access to the meter for monitoring, testing, repair, and replacement;
- (iv) the UNIVERSITY must provide written assurance that OWASA will not be in any way responsible or liable for any damage associated with the malfunctioning of the Reclaimed Water service line or Reclaimed Water meter inside the building.

APPROVED BY:

\_\_\_\_\_  
Executive Director  
Orange Water and Sewer Authority

\_\_\_\_\_  
Date

\_\_\_\_\_  
Associate Vice-Chancellor for Campus Services  
University of North Carolina at Chapel Hill

\_\_\_\_\_  
Date

**ATTACHMENT #1**

**RECYCLED WATER USER NOTIFICATION OF UNAUTHORIZED USE**

**Facility Information**

User/Facility Name: \_\_\_\_\_

Facility Contact Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Approved Use(s): \_\_\_\_\_

**Summary of Unauthorized Use**

Description of Unauthorized Use or Noncompliance (include a sketch showing location and discharge point and flow route): \_\_\_\_\_  
\_\_\_\_\_

Estimated Volume of Reclaimed Water Involved: \_\_\_\_\_ gallons

Discharge of Reclaimed Water  did  did not occur into or adjacent to waters of the State.  
If applicable, provide name of water body: \_\_\_\_\_

Cause of Noncompliance: \_\_\_\_\_

Duration: Start Date: \_\_\_\_\_ Time: \_\_\_\_\_

End Date: \_\_\_\_\_ Time: \_\_\_\_\_

Potential Hazards to Human Health or the Environment: \_\_\_\_\_  
\_\_\_\_\_

**Actions Taken**

Any Monitoring Data Collected?  Yes  No (if Yes, please attach any monitoring data collected for this occurrence)

Actions Taken to Mitigate Adverse Effects: \_\_\_\_\_  
\_\_\_\_\_

Actions Taken to Correct and Prevent Recurrence of the Problem: \_\_\_\_\_  
\_\_\_\_\_

**Verification Information**

Report Submitted By: \_\_\_\_\_ / \_\_\_\_\_  
(Name) (Title)

Date Reported: \_\_\_\_\_ Signature: \_\_\_\_\_

**Mail to: OWASA, Reclaimed Water Services, P.O. Box 366, Carrboro, NC 27510-0366**

**EXHIBIT C**  
**PHASE 1**  
**TABLE OF PROJECTED WATER DEMANDS BY FACILITY**

| Facility Name                                      | Initial Year Projected Demand     |                       |                        | 2018 Projected Demand             |                       |                        |
|--|-----------------------------------|-----------------------|------------------------|-----------------------------------|-----------------------|------------------------|
|  | Annual Average Daily Demand (MGD) | Peak Day Demand (MGD) | Peak Hour Demand (GPM) | Annual Average Daily Demand (MGD) | Peak Day Demand (MGD) | Peak Hour Demand (GPM) |
| <b>UNC Campus</b>                                  |                                   |                       |                        |                                   |                       |                        |
| East Chiller                                       | 0.034                             | 0.118                 | 82                     | 0.090                             | 0.275                 | 190                    |
| South Chiller                                      | 0.250                             | 0.874                 | 606                    | 0.368                             | 0.874                 | 606                    |
| Thermal Energy Storage Chiller                     | 0.079                             | 0.276                 | 191                    | 0.116                             | 0.276                 | 191                    |
| North Chiller                                      | 0.167                             | 0.584                 | 405                    | 0.252                             | 0.627                 | 435                    |
| Northeast Chiller (2011)                           | 0.000                             | 0.000                 | 0                      | 0.194                             | 0.459                 | 319                    |
| Combined Annual Average UNC Demand (MGD)           | 0.530                             |                       |                        | 1.020                             |                       |                        |
| Diversified Peak Day UNC Demand (MGD)              |                                   | 1.588                 |                        |                                   | 2.500                 |                        |
| Diversified Peak UNC Demand (GPM)                  |                                   |                       | 1,102                  |                                   |                       | 1,736                  |
| <b>UNC-HOSPITAL</b>                                |                                   |                       |                        |                                   |                       |                        |
| UNC-Hospital Chiller Facility #1                   | 0.062                             | 0.147                 | 280                    | 0.113                             | 0.280                 | 280                    |
| UNC-Hospital Chiller Facility #2                   | 0.068                             | 0.188                 | 147                    | 0.075                             | 0.199                 | 147                    |
| Combined Annual Average Hospital Demand (MGD)      | 0.130                             |                       |                        | 0.188                             |                       |                        |
| Diversified Peak Day Hospital Demand (MGD)         |                                   | 0.335                 |                        |                                   | 0.479                 |                        |
| Diversified Peak Hospital Demand (GPM)             |                                   |                       | 427                    |                                   |                       | 427                    |
| <b>Total Phase 1 Projected Diversified Demands</b> |                                   |                       |                        |                                   |                       |                        |
|  | <b>0.660</b>                      | <b>1.923</b>          | <b>1,529</b>           | <b>1.208</b>                      | <b>2.979</b>          | <b>2,163</b>           |

**EXHIBIT D**  
**COST OF SERVICE COMPONENTS FOR RATE DETERMINATION**

| Major Cost Category               | OWASA Cost Components  | General Methodology/Approach  | Fixed or Variable Cost  |
|-----------------------------------|--|---|---|
| <b>Capital</b>                    | Debt and Up-Front Cash-Financing for Initial System Development – Net of Grant Funding Received  | Not Applicable if UNC pays for upfront capital or if OWASA capital costs are paid with or are to be reimbursed with grant funding. Otherwise, based on (a) debt service payment required to cover any system development costs debt-financed by OWASA at 1.0 coverage and (b) amortization of OWASA cash-financing for system development costs such as engineering and design over a twenty-five year period at 1.0 coverage at the same interest rate applicable to debt service payment in (a) or the prevailing market rate if all system development costs incurred by OWASA are cash-financed.  | Fixed   |
| <b>Operations And Maintenance</b> | Variable Operating Costs:<br>Energy<br><br>Hypochlorite<br><br>Acid<br>Allocated Operating Costs:<br>Laboratory<br>Pump Station Maintenance<br>On-line Monitors<br>Pipeline Maintenance<br><br>WWTP Operators            | UNC reclaimed water avg day demand in gal.*TDH of system*0.746*OWASA total cost of power per kWh for pumping*24*365/(1440*3960*0.8*0.93)<br>mg/l dose*8.34*UNC reclaimed water avg day demand in million gal* (1/1.002)*365*unit cost of chemicals in million gal.<br>Unit cost of chemicals per million gallons*UNC reclaimed water avg day demand in million gallons * 365<br><br>In-house laboratory staff time as well as sampling and analytical cost services<br>In-house staff time and contract labor<br>Annual replacement cost, maintenance, and in-house staff time<br>Water Distribution department cost*(Length of reclaimed water pipe/Length of potable water, and reclaimed water pipe)<br>In-house staff time  | Variable<br><br>Variable<br><br>Variable<br><br>Fixed<br>Fixed<br>Fixed<br>Fixed<br><br>Fixed |
| <b>General and Administrative</b> | General System Management<br>Office of the Executive Director<br><br>Customer Service<br><br>Engineering and Planning<br><br>Human Resources<br><br>Finance and Accounting<br><br>Purchasing<br><br>Business Information | Total Department Cost*(Weighted average percentage of General and Administrative cost components other than Office of the Executive Director water, and sewer costs excluding capital)<br>Total Department Cost*(Total number of reclaimed water meters/Total number of OWASA water and reclaimed water meters)<br>Total Department Cost*(Department in-house staff time for reclaimed water/Total department in-house staff time)<br><br>Total Department Cost*(Full time equivalents allocated to reclaimed water/Total OWASA utility staff-time equivalents)<br>Total Department Costs*(Reclaimed water revenues/Total OWASA water, sewer, and reclaimed water revenues)<br><br>Total Department Costs*(Total reclaimed water operations and maintenance costs/Total OWASA water, sewer, and reclaimed water operations and maintenance costs)<br>Total Department Costs*(Full-time equivalents allocated to reclaimed water/Total OWASA utility staff time equivalents) | Fixed<br><br>Fixed<br><br>Fixed<br>Fixed<br>Fixed<br>Fixed<br><br>Fixed                       |
| <b>Other</b>                      | Debt Service Coverage<br><br>Rehabilitation & Replacement Fund<br>Contingency Fund   | Debt service coverage required in bond covenant/loan agreement, applicable only if OWASA incurs debt for reclaimed water capital costs that are not reimbursed or will not be reimbursed in the future with grant funding<br>0.50% of total cumulative capital investment in reclaimed water system by UNC and OWASA<br>5.0% of annual reclaimed water operations and maintenance costs   | Fixed<br>Fixed<br>Fixed   |
|                                   |  | <b>TOTAL OF ALL OWASA COST COMPONENTS FOR RECLAIMED WATER:</b>  | Reclaimed Water Rate  |

Exhibit E

**TECHNICAL MEMORANDUM MC-4**

**Revision 2**

TO: UNC at Chapel Hill Reclaimed Water Project Team

FROM: Kevin Eberle, PE, McKim & Creed

DATE: October 4, 2005 (Original Issue)  
December 13, 2005 (Revision 1)  
December 16, 2005 (Revision 2)

SUBJECT: Reclaimed Water Transmission and Distribution System  
Interim Acceptance Testing Requirements  
For Reclaimed Water Infrastructure Under Construction Prior to March  
2008

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Background

UNC and OWASA are working cooperatively to construct a reclaimed water system consisting of treatment, storage, pumping, transmission and distribution piping to serve a variety of industrial cooling demands on the UNC Chapel Hill campus. After signing a letter of intent with OWASA, UNC began looking for opportunities to couple reclaimed water transmission line construction to on-going utility construction projects throughout the campus. This had the benefit of reducing capital cost, minimizing the impact to the traveling public, and expediting construction. With these benefits in mind, UNC coupled construction of approximately 4,400 lf of 16" and 24" reclaimed water transmission main with the on-going Manning Drive Steam Plant and Utility Distribution Tunnel. This work has now been completed and certain sections have been flushed (using 2" blow-offs), filled, and pressure-tested. The remaining sections are currently being prepared for flushing, testing and acceptance from the Contractor.

Although these reclaimed water line segments are completed, final completion of the rest of the system is not projected until March 2008. Therefore, final flushing (to obtain scouring velocities), pressure and acceptance testing of the entire system cannot be completed until that time. In the meantime, UNC initiated discussions with OWASA with the intention of coming to a consensus as to an interim protocol for integrity testing, flushing standards, and interim acceptance by UNC for isolated pipe segments that are completed in advance of the main reclaimed water system.

Current AWWA, State NCDENR and OWASA water line standards and specifications were reviewed during a joint meeting between UNC and OWASA staff on September 26, 2005. A summary of pertinent information is tabulated in Table 1.

Both parties understand the importance of verifying and maintaining the initial integrity and cleanliness of the new Reclaimed Water Line segments (RWL). However, it was agreed that proper flushing of large diameter, isolated pipe segments was not practical for the following reasons:

1. A source of flush water is not currently available at the rate and volume required to achieve AWWA recommended flushing velocities.
2. The size and number of pipeline blow-offs on the recently completed pipeline segments are insufficient to obtain AWWA recommended flushing velocities.
3. Even if items #1&#2 above can be overcome, then disposal of flush water would present a significant impediment regarding shear volume, flowrate and water quality.

As a result of initial discussions, UNC and OWASA established the following interim guidelines for integrity testing, pipeline cleanliness, and acceptance testing for isolated RWL segments completed in advance of the main reclaimed water transmission system.

#### Interim Pipeline Cleanliness Verification

1. UNC shall stress the importance of keeping new reclaimed water lines clean and free of debris with their contractors during construction activities. Such precautions as using temporary caps on linework during construction activities to prevent contamination of debris and soil shall be standard protocol.
2. Completed reclaimed water pipeline sections shall be visually inspected for cleanliness using in-situ pipe cameras, lamp or mirror testing, or by monitoring the discharge from 2" blow-offs during filling for evidence of silt/mud, debris, or other contaminants. The contractor shall be required to collect samples from the pipeline during filling and shall perform turbidity testing to confirm pipeline cleanliness.

\*\*\*OWASA ENGINEERING STAFF COMMENT: WE DO NOT KNOW HOW THIS WOULD BE ACCOMPLISHED. UNLIKE A SEWER MAIN, ACCESS WOULD BE DIFFICULT. ALSO, DEFLECTIONS COULD BE A PROBLEM. LAMP AND MIRROR MAY NOT BE POSSIBLE. \*\*\*

3. All RWL segments shall be chlorinated to achieve a minimum total residual chlorine concentration of not less than 5 ppm. The contractor shall be required to maintain the total residual chlorine concentration at or above 2 ppm for 30 minutes. At the end of the chlorination period, the contractor shall collect two samples for bacteriological testing. Fecal counts shall be no greater than the concentrations required under the current OWASA potable water standards.

#### Interim Pipeline Integrity Testing

1. After filling and flushing to remove entrained air, pipeline segments shall be pressure tested at a pressure of 150% of design working pressure, but no less than 200 psi for two hours. Maximum allowable leakage shall be per AWWA standards.

#### Temporary System Integrity Monitoring Prior to Final Ownership Transfer

1. Due to the extensive amount of construction that is on-going on the UNC campus, UNC will require construction contractors to leave the new pipeline segments full of water and under pressure (100 psi minimum pressure). Each contractor shall install temporary piping and pressure gages as necessary to allow UNC staff to periodically monitor system pressure and to periodically boost system pressure. This interim integrity monitoring system will allow UNC to accurately and timely locate pipe failures which may occur from adjacent construction activities.

Pipeline Acceptance, Integrity, and Cleanliness Testing to be Completed at Time of Ownership Transfer

1. OWASA's construction contractor responsible for construction of the reclaimed water transmission mains onto the UNC Campus shall be responsible for performing all required integrity, cleanliness and water quality testing on the transmission mains installed under their contract. In addition, prior to making connections to line segments installed by others under previous contracts with UNC or OWASA, the contractor shall verify the integrity of the previously constructed pipeline segments (confirmed via pressure testing) prior to connection to the new system.
2. The entire reclaimed water system (including the new transmission main and all previously constructed distribution pipe segments) shall then be filled with chlorinated reclaimed water.
3. The entire reclaimed water transmission and distribution system shall then be back-flushed from the UNC campus to the OWASA Mason Farm Wastewater Treatment Facility. The flush water shall either be collected in the new reclaimed water storage tank (for return to the head of the plant for biological treatment prior to discharge) or discharged directly to Morgan Creek (if water quality satisfies minimum NPDES permit requirements).
4. This flushing protocol shall be repeated as necessary until OWASA is satisfied contaminants have been adequately flushed from the new pipeline.
5. Following flushing, the reclaimed water system shall be filled with chlorinated reclaimed water for pressure testing. To facilitate removal of trapped air, it is likely that flushing will be required throughout the distribution system using blow-offs with drainage directed to the sanitary sewer.
6. The entire system shall be pressurized per AWWA standard specifications (150% of the design operating pressure or 200 psi minimum for two hours).
7. Following acceptable acceptance testing, the system shall be deemed fully operational and put into operation after completion of required startup testing.

#### Reclaimed Water Meter Locations

OWASA agreed that retrofitted, existing chillers (i.e. North, South, and East Chillers) may have the new reclaimed water meters located inside the physical plant with the following conditions:

1. An isolation valve shall be installed on the service connection line outside the building and in a location fully accessible by OWASA personnel. This valve shall be the boundary between OWASA and UNC for the purpose of designating ownership, maintenance and repair responsibilities. The valve shall be located at, or as close as possible, to the tap connection to the Reclaimed Water main.
2. UNC shall provide OWASA with legal access to the meter inspection and maintenance purposes, and shall provide a remote read-out device mounted on the face of the building in a location and of a model suitable to OWASA for reading of the meter.
3. Even though the meters are to be located within the UNC chiller buildings, OWASA shall maintain ownership of the meter and shall periodically calibrate the meters to insure accuracy and fairness in reporting.

External reclaimed water meters in vaults shall be incorporated into the design of any new or future chiller facilities on the UNC campus as well as part of all other reclaimed water using facility designs.

Table 1  
Comparison of Potable Water Transmission and Distribution Piping Testing Requirements

| Parameter        | NCDENR Public Water Supply | OWASA  | AWWA   |
|------------------|----------------------------|--|--|
| Filling          | No Standard                | Fill at rate 1 fps while necessary measures are taken to remove air for the lines.   | Fill at rate to expel air in the pipeline. Provide adequate air removal devices.   |
| Pressure Testing | Per AWWA Standards         | To be witnessed by OWASA Authorized Representative. Test at a pressure of 150% of design working pressure, but no less than 200 psi for two hours. Maximum allowable leakage per OWASA Table 6A.   | Test at a pressure of 150% of design working pressure, but no less than 200 psi for two hours. Maximum allowable leakage same as OWASA Table 6A.   |
| Flushing         | No Standard                | After system has been filled for a minimum of 24 hours, begin flushing at a velocity of not less than 2.5 fps to remove sediment. All flushing shall be completed though adequately sized blow offs per OWASA Standards (minimum 6" for line size 16" or larger). A minimum of two complete pipeline volumes is required. Dechlorination and disposal per NCDENR requirements. | After system has been filled for a minimum of 24 hours, begin flushing at a velocity of not less than 2.5 fps to remove sediment. All flushing shall be completed though adequately sized blow offs. A minimum of two complete pipeline volumes is required. Dechlorination and disposal as required by State or Local requirements. |

\*\*\* OWASA ENGINEERING STAFF COMMENT: Flushing velocity to remove sediment and debris would be 2.5 fps normally if the intent was to "flush" the pipe to make sure it was clean before sampling. The interim measures being followed are an attempt to keep from having to flush the lines at 2.5 fps at the time purity samples are taken. Scouring velocity may not be needed if "clean" installation techniques have been followed. \*\*\*

## **PUBLIC COMMENTS INVITED REGARDING PLANS FOR REUSE OF HIGHLY TREATED WASTEWATER**

### **OWASA Board meeting on Thursday, March 23, 2006 at 7:00 PM**

All citizens are cordially invited to comment to the OWASA Board of Directors on Thursday night, March 23rd regarding plans for a water reuse system that would initially serve facilities on the University campus.

The OWASA Board of Directors' meeting on March 23rd will begin at 7:00 p.m. and it will be in the Council Chambers at the Chapel Hill Town Hall, 405 Martin Luther King Jr. Boulevard. The meeting will be televised live on the local cable systems (cable channel 18 in Chapel Hill and Carrboro).

Citizens are also invited to send comments and questions to OWASA before the meeting by e-mail to [webmaster@owasa.org](mailto:webmaster@owasa.org), by letter to the OWASA offices at 400 Jones Ferry Road, Carrboro or by fax to 968-4464.

After receiving public comments, the OWASA Board may consider taking final action on a proposed contract with the University of North Carolina at Chapel Hill regarding the financing, construction, operation and maintenance of the water reuse system.

#### **What is water reuse?**

"Reuse" refers to the use of highly treated wastewater (reclaimed water) for purposes such as operation of cooling systems, irrigation and toilet flushing. The University plans to initially use reclaimed water instead of OWASA drinking water in cooling towers at its chiller plants.

#### **Why is water reuse important?**

Like water conservation, water reuse will reduce the demand for drinking water and thus reduce the community's risks of running out of water during severe droughts.

Water reuse will also extend the sufficiency of OWASA's high quality, locally protected water sources (the Cane Creek Reservoir and University Lake).

By reducing the demand for drinking water, water reuse can help our community defer or eliminate the need to develop or expand costly drinking water supply and treatment facilities, thereby providing long-term cost savings for the community.

#### **When and how have OWASA and the University planned the reuse system?**

OWASA and the University began evaluating the practicality of developing a water reuse system in 2003, and entered into a Letter of Understanding in 2004 with basic principles for planning and financing the reuse system.

In February, 2006 the University and OWASA completed development of a proposed water reuse system contract, which the OWASA Board of Directors endorsed in principle on February 9th.

### Proposed water reuse system contract

A key element of the draft contract is that the University and other future users of the reuse system will pay all capital and operating costs of the reuse system.

The estimated cost of the reuse system is about \$15 million for design and construction, and the University has agreed to pay all of that cost not covered by state or federal funding.

The draft contract commits the University to using reclaimed water instead of drinking water in certain cooling tower operations. OWASA will have the sole authority to set the rates and fees for reclaimed water service and will base the rates on the actual cost to operate, maintain and manage the water reuse system. (The rates for water reuse will be set at a later time following a rate study by OWASA.)

A summary of the proposed contract is available in the water reuse section of the OWASA Website, [www.owasa.org](http://www.owasa.org). Copies of the draft contract, which is 28 pages long, are available in the OWASA offices in Carrboro.

### Additional information about water reuse

1. The reuse system will initially carry highly treated water from OWASA's Mason Farm Wastewater Treatment Plant in the southeast part of Chapel Hill to the southern campus area near Manning Drive. The reuse system may be extended to other areas and customers in the future where feasible.
2. The University estimates that its initial demand for water reuse will reduce its drinking water demand by about 530,000 gallons per day, which equals nearly 6% of overall water use by OWASA customers.
3. Water reuse at additional University facilities on the main campus could lower the community's long-term demand for drinking water by about 13%.
4. The overall amount of water use by OWASA customers will drop once the reuse system comes on line. That will affect OWASA's drinking water revenues and rates somewhat, but the long-term effect will be savings to customers through reduced or deferred needs for water system capacity expansions.
5. The reuse system can be extended to serve additional facilities and customers where technically and economically feasible and desired by customers who are willing to pay for extensions.
6. The technology of reuse has been used and proven to be safe in many areas of the U.S. including communities in the Triangle such as the Towns of Cary and Zebulon and Johnston County.
7. OWASA and UNC did a special study in 2004 to confirm that the quality and disinfection of treated wastewater will meet State standards for allowable reuse purposes and will provide a high level of protection of public health.
8. The State of North Carolina and the Federal government support the planned project, and are providing almost \$2.5 million in grant funds for design and construction of the reuse system.

**For more information**, please contact Patrick Davis, Sustainability Administrator at 537-4210 or by e-mail to [pdavis@owasa.org](mailto:pdavis@owasa.org)

## ORANGE WATER AND SEWER AUTHORITY

OWASA is the public, nonprofit water and sewer agency serving the Carrboro-Chapel Hill community.



400 Jones Ferry Rd., Carrboro, NC 27510 Telephone: (919) 968-4421  
Fax: 968-4464 E-mail: [webmaster@owasa.org](mailto:webmaster@owasa.org) Website: [www.owasa.org](http://www.owasa.org)

**ATTACHMENT #3**

**COMPILATION OF WRITTEN COMMENTS RECEIVED FROM CUSTOMERS,  
CITIZENS AND THE PUBLIC IN RESPONSE TO NOTICE OF MARCH 23, 2006  
PUBLIC MEETING ON THE PROPOSED WATER REUSE SYSTEM**

\*\*\*\*\*

From: Sydney Miller [<mailto:smiller@tjcog.org>]  
Sent: Friday, March 10, 2006 12:26 PM  
To: Greg Feller  
Subject: Re: OWASA Board seeks public comments on Thursday night, March 23rd regarding plans for water reuse

Good news, after a long haul.

\*\*\*\*\*

**From:** Sarah Bruce [<mailto:sbruce@tjcog.org>]  
**Sent:** Friday, March 10, 2006 12:28 PM  
**To:** Greg Feller  
**Subject:** Re: OWASA Board seeks public comments on Thursday night, March 23rd regarding plans for water reuse

what do you anticipate by way of public comment/interest on this topic? I realize that the hearings are required... are you still hearing objections & concerns, or, is everybody like me (sees this is a no-brainer)?

Just curious; I can't make the hearing.

\*\*\*\*\*

**From:** Amanda Lail [<mailto:alail@selcnc.org>]  
**Sent:** Friday, March 10, 2006 12:32 PM  
**To:** Webmaster  
**Subject:** comment on water reuse

I think water reuse is great and should be utilized to the fullest extent. Thanks for being proactive!  
Amanda Lail  
Carrboro, NC homeowner

\*\*\*\*\*

From: John Hartwell [<mailto:jwhartwell@triangleresearch.com>]  
Sent: Friday, March 10, 2006 12:38 PM  
To: Pat Davis; [carolyn\\_elfland@unc.edu](mailto:carolyn_elfland@unc.edu); [patandmac@earthlink.com](mailto:patandmac@earthlink.com)  
Subject: water re-use

Very glad to see today's press release about the water re-use program. It's a fine idea whose time is surely now.  
Congratulations for having brought it this far. Hope the public hearing results in nothing but deserved praise, and that the project stays on track for implementation in 2008.

John Hartwell

Compilation of Written Comments on Reuse Project

March 17, 2006

Page 2 of 4

\*\*\*\*\*

**From:** Jackie Helvey [mailto:jackie@carrboro.com]  
**Sent:** Friday, March 10, 2006 3:33 PM  
**To:** Webmaster  
**Subject:** water reuse...

The water reuse plan sounds like a winner all the way around.

Jackie Helvey  
<http://uniqueorn.com>  
Designing sites for sore eyes  
<http://carrboro.com>  
Your hometown website  
919.933.9312

\*\*\*\*\*

**From:** Catherine DeVine [mailto:catdevine@mindspring.com]  
**Sent:** Friday, March 10, 2006 3:46 PM  
**To:** Greg Feller  
**Subject:** FW: Incredible Juggler!

Greg, congrats and best wishes on the water reuse launch. Catherine

\*\*\*\*\*

**From:** Condax@aol.com [mailto:Condax@aol.com]  
**Sent:** Friday, March 10, 2006 5:13 PM  
**To:** Webmaster  
**Subject:** Great idea

Go for it. Highly treated wastewater for nondrinking use sounds like a terrific conservation idea to me. In fact, if you want to distill it and do whatever else it takes to make it suitable for drinking, I'll be happy to drink it. <G> We can't make it rain more, but we sure can make better use of the water we have.

Vanna

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Vanna Condax  
Scottish Deerhound (breed), Border Collie (performance)  
Chapel Hill, NC  
[Condax@aol.com](mailto:Condax@aol.com)

Compilation of Written Comments on Reuse Project

March 17, 2006

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**From:** JLN55ND@aol.com [mailto:JLN55ND@aol.com]

**Sent:** Sunday, March 12, 2006 4:15 PM

**To:** Pat Davis

**Subject:** Re: OWASA Board seeks public comments on Thursday night, March 23rd regarding...

Patrick,

Good too see you back at Owasa.

Just one question about this arrangement. Will the rates go up for other customers since the Uni. will be using 500,000 + gallons less???

Hope to see you sometime and catch up on old times.

Joe Nassif

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**From:** Blair Pollock [mailto:BPollock@co.orange.nc.us]

**Sent:** Monday, March 13, 2006 10:20 AM

**To:** Greg Feller

**Subject:** Re: OWASA Board seeks comments on Thursday night, March 23rd regarding plans for water reuse

I hope you can keep rate hikes on the rest of us to a minimum as a result of selling less potable water. I realize the contradiction here. While I realize we 'benefit in the long run', in the short run, rates are getting really high! Those who benefit directly from this project should pay the most. I reconginze that UNC is paying for the hardware and the water itself, but let's mimimize our systemic impact too.

There should be a significant amount of technical and fiscal support from OWASA for those who want to change out their old commodes and switch to highly efficient irrigation systems from spray type irrigation as a way to combat the anticipated higher bills.

Another way to relieve some of the upward pressure on bills is to find ways to reduce operational costs. The other day I observed the sewer line inspector (ununiformed, so presumable a contractor, maybe not) walkng the line with an OWASA employee, as they inspected a line crossing a creek where a small amount of debris had collected behind the line, they did not clear the debris. It was a small enough amount they could have hand cleared it right then, thus possibly eliminating a future trip to do so. Maybe the crews can do this type work when routinely flushing lines as happens in my neighborhood monthly (I think)

As a corollary cost reduction issue, I have over time become less supportive of OWASA buying, essentially on its own, taxable County land for watershed protection and using downzoning as the only other tool to protect the waterways. At this point I'd like to see more use of some of the many technical tools now available that it doesn't appear are being adequately investigated to maximize water quality protection. Further coordination between County staffa nd OWASA might result in some of the same public funds serving both recreational open space acquisition and water shed protection.

Compilation of Written Comments on Reuse Project

March 17, 2006

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Thank you for taking these concerns into account while developing policies. In general, I appreciate the high quality of water and the level of service provided by our utility.

Blair Pollock

**RESOLUTION APPROVING A WATER REUSE SYSTEM CONTRACT  
WITH THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL**

WHEREAS, OWASA and the University of North Carolina at Chapel Hill (“the University”) have a shared commitment to manage water resources in a sustainable manner; and

WHEREAS, OWASA and the University have jointly undertaken a comprehensive study of the technical and economic feasibility of using reclaimed water to meet certain non-potable water needs on the University’s main campus; and

WHEREAS, OWASA and the University concur that the development of a water reclamation and reuse system would provide many important benefits to OWASA, the community, the environment, and the University including lowering the risk of water shortages during future droughts; optimizing the use of locally-controlled water resources; deferring or eliminating certain long-term capital improvements, including more costly water supply sources; and further improving the quality of surface waters; and

WHEREAS, OWASA and the University have negotiated, and now desire to enter into a detailed contract relating to the design, construction, financing, and operation and maintenance of a water reuse system; and

WHEREAS, OWASA held a public meeting on March 23, 2006 for the purpose of receiving questions, comments and feedback from the public on the proposed project and contractual arrangement; and

WHEREAS, the OWASA Board of Directors, following careful consideration of the comments received, and the benefits and costs of the planned water reuse system, now desires to formally enter into a contract with the University for said purpose;

**NOW, THEREFORE, BE IT RESOLVED:**

1. That the Board of Directors of Orange Water and Sewer Authority hereby approves the “Contract Between Orange Water and Sewer Authority and the University of North Carolina at Chapel Hill Regarding Construction, Operation and Use of Water Reuse System,” (the Water Reuse System Contract) dated March 23, 2006, a copy of which is attached hereto as Exhibit 1.

2. That the Board of Directors hereby authorizes and directs the Executive Director to execute the Water Reuse System Contract, or an amended version thereof provided such amended version is consistent with the primary principles, terms, and conditions included in the attached Contract.

March 17, 2006

Page 2

3. That the Board of Directors directs the Executive Director to move forward with all engineering design work and related tasks to successfully develop the water reuse system consistent with the terms and conditions of the Water Reuse System Contract.

Adopted this \_\_\_\_ day of \_\_\_\_\_, 2006.

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Michael A. (Mac) Clarke, Chair

ATTEST:

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Randolph M. Kabrick, P.E.  
Secretary

**AGENDA ITEM**

- **RESOLUTION RECLASSIFYING THE VACANT ADMINISTRATIVE ASSISTANT POSITION TO THE NEW POSITION OF UTILITY MANAGER GENERALIST**

**PURPOSE**

- To reclassify the vacant Administrative Assistant position to a new position of Utility Manager Generalist.

**BACKGROUND**

- The continued health challenges of the Customer Service Manager are expected to continue for the next 12 months or so. The 24-hour per week contract assistance OWASA receives from the consulting firm McKim & Creed will be reduced soon.
- The short-term responsibility of this new position will be to provide day-to-day leadership of the Customer Service Department and staff.
- Once the Customer Service Manager is able to return to work full-time, he would resume leadership responsibilities for the Customer Service Department. The Utility Manager Generalist would then be reassigned new high-level duties and responsibilities throughout the organization as listed in the attached memorandum.
- The Board's Human Resources Committee reviewed this proposal on March 16, 2006 and supports the recommendation.

**STAFF RECOMMENDATION**

- Approve the attached resolution to reclassify the vacant Administrative Assistant position to the new position of Utility Manager Generalist.

March 23, 2006

## MEMORANDUM

TO: Board of Directors

FROM: Ed Kerwin

DATE: March 17, 2006

**SUBJECT: Proposal to Create a New Position of Utility Manager Generalist**

### The Proposal:

Reclassify the existing vacant Administrative Assistant position in the Office of the Executive Director to the new position of Utility Manager Generalist to meet specific short-term and long-term senior staffing needs of the organization.

### Short-Term Need:

The continued health challenges of our Customer Service Manager are expected to continue for the next 12 months or so. Additionally, the 24-hour per week contract assistance we have received from Linda Vaughn, from the consulting firm McKim & Creed, will be reduced soon and ultimately unavailable because of other commitments Ms. Vaughn has for her employer. Given the importance of focused full-time leadership of the Customer Service Department and our desire to give the Customer Service Manager a reasonable opportunity to get well, I recommend we reclassify the currently vacant Administrative Assistant position to the new position of Utility Manager Generalist. The short-term responsibility of this new position would be to provide day-to-day leadership of the Customer Service Department and staff. This person would also be responsible for improving our service to customers by maximizing existing and implementing new technologies and further developing staff.

### Long-Term Need:

Once the Customer Service Manager is able to return to work full-time and perform at the expected level, he would resume leadership responsibilities for the Customer Service Department. At that time, the Utility Manager Generalist would be reassigned new high-level duties and responsibilities throughout the organization which may include:

- ✓ Coordinating the development and regular updating of a strategic business master plan.
- ✓ Coordinating succession planning, knowledge retention, and workforce planning programs.
- ✓ Leading and/or assisting in the development of optimization and efficiency studies.
- ✓ Assisting with employee training and development programs.
- ✓ Providing leadership and/or support for biosolids management and reclaimed water programs.
- ✓ Assisting in the development and implementation of water conservation initiatives or other special projects.

- ✓ Learning various operations and business functions throughout the organization to be a high-level resource to all Department Directors on an as needed basis.
- ✓ Filling in for other Managers when there is a planned or unplanned need.

I believe this Utility Manager Generalist will provide a much needed “deeper bench” for our team and is consistent with our desire to establish a more flexible and adaptable workforce, especially at the Senior Manager level. In the short-term while leading the Customer Service Department, I expect this person would report to Kevin Ray. After that, I expect that this person would report to me and other Department Directors depending on the assigned responsibilities (Organizational Chart attached).

*Brief Job Description - Utility Manager Generalist:*

This position is responsible for providing high-level leadership and management oversight for a variety of service functions within OWASA. These may include customer service, operations, strategic planning, human resources, and other functions instrumental for operating a successful and sustainable water utility. The candidate must have “best-in-class” interpersonal and communication skills; the aptitude to quickly learn a variety of technical aspects for operating a successful water utility; be flexible and adaptable to work effectively with diverse people on a wide variety of projects and responsibilities throughout the organization; and be able to effectively implement change when needed.

This position requires eight plus years of progressively responsible experience in leading and managing people and programs, requires a four-year degree from an accredited college or university and a proven track record of success.

It is recommended that this position be classified at Grade 31 (\$56,542–\$81,986), which is consistent with other Manager positions at this level of responsibility in the organization.

*Conclusion*

I believe this new position will add much needed support for our Senior Management Team and allow us to spend more time on further improving our organization. It will also allow us to continue to develop and take full advantage of our “in-house” talent rather than relying on consultants for various projects. Finally, I believe the short-term assignment of leading our Customer Service Department is critically important.

The Human Resources Committee reviewed this proposal at their March 16, 2006 meeting and supports the recommendation.

---

Ed Kerwin  
Executive Director

Attachment

**RESOLUTION RECLASSIFYING THE VACANT ADMINISTRATIVE ASSISTANT  
POSITION TO THE NEW POSITION OF UTILITY MANAGER GENERALIST**

**WHEREAS**, the Executive Director has determined that the currently vacant Administrative Assistant position is no longer needed; and

**WHEREAS**, the Executive Director has determined there is short- and long-term need for additional senior management level assistance throughout the organization to ensure staffing needs are met; and

**WHEREAS**, the Executive Director recommends that the vacant Administrative Assistant position be reclassified to the new position of Utility Manager Generalist;

**NOW, THEREFORE, BE IT RESOLVED:**

1. That the Board of Directors of the Orange Water and Sewer Authority approves the reclassification of the vacant Administrative Assistant position to the new position of Utility Manager Generalist Grade 31 (\$56,542–\$81,986).
2. That this reclassification shall become effective upon adoption of this resolution.
3. That the Schedule of Employee Classification and Authorized Compensation adopted on June 9, 2005 be amended to reflect this new job classification.
4. That the Executive Director is authorized to establish a detailed job description for this new position.

Adopted this 23<sup>rd</sup> day of March, 2006.

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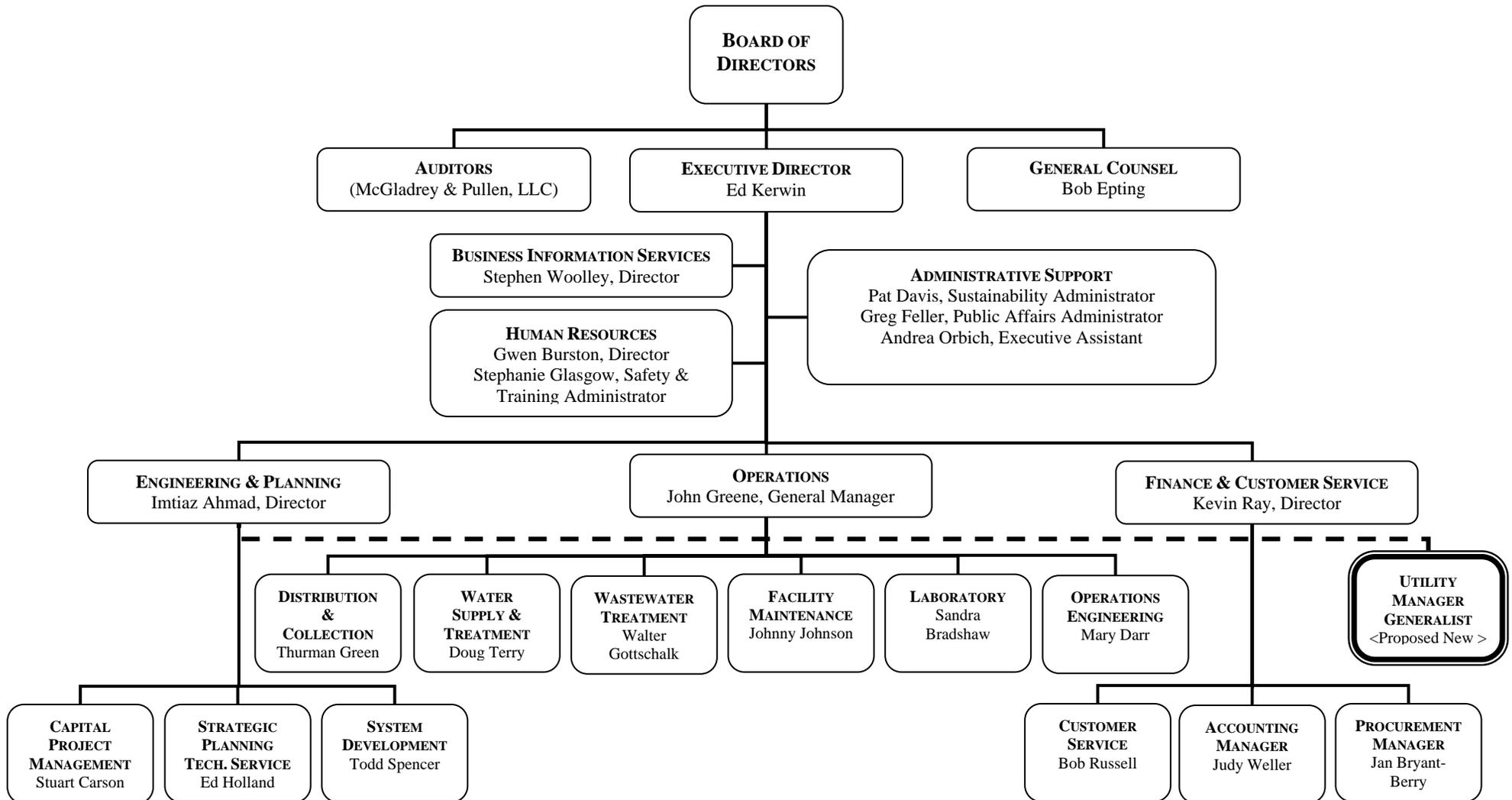
Michael A. Clarke, Chair

ATTESTED:

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Randolph M. Kabrick, P.E.  
Secretary

# Orange Water and Sewer Authority



March 17, 2006

**AGENDA ITEM**

- **RESOLUTION TO AMEND THE PERSONNEL POLICY TO INCLUDE EARLY HIRES FOR TRAINING AND KNOWLEDGE TRANSFER**

**PURPOSE**

- To amend Section 10 of the Personnel Policy to add Early Hires for Training and Knowledge Transfer.

**BACKGROUND**

- OWASA has a number of key positions where it would be advantageous for the organization to hire a replacement employee for training purposes before the incumbent employee leaves the position.
- The Human Resources Committee reviewed and endorsed this proposal at their March 16, 2006 meeting.

**STAFF RECOMMENDATION**

- Approve the attached resolution to amend the OWASA Personnel Policy to include the Early Hires for Training and Knowledge Transfer.

March 23, 2006

## MEMORANDUM

TO: Board of Directors

FROM: Ed Kerwin

DATE: March 17, 2006

**SUBJECT: Early Hires for Training and Knowledge Transfer**

OWASA has a number of key positions where it would be advantageous for the organization to hire a replacement employee for training purposes before the incumbent employee leaves the position. This opportunity occurs when a long-term employee announces his/her intention to retire or resign.

Early hiring would allow more effective on-the-job training of and transfer of knowledge to the new employee. The duration of this training period would vary by position, but would normally be in the one- to six-month range. During this training period, the incumbent would train the new hire with special emphasis on transferring the incumbent's knowledge and insights. The incumbent employee could also use this training time to document knowledge, train other employees and work on special projects that add value to our services.

It is recommended that the Personnel Policy be amended by adding new language as follows:

### **PERSONNEL POLICY**

#### **SECTION 10. POSITION CLASSIFICATION PLAN**

##### **G. Early Hires for Training and Knowledge Transfer**

When an incumbent employee in a key position has given written notice of plans to retire or resign, the Authority's service objectives may be best met if a new employee is hired for training and knowledge transfer purposes before the incumbent leaves.

The Executive Director is authorized to immediately recruit, select, and hire a new employee under these circumstances. The Executive Director is authorized to determine when and for what period of time (not to exceed 12 months) the

Early Hire for Training and Knowledge Transfer

March 17, 2006

Page 2

Early Hire may occur. The Executive Director will give the Board of Directors advance notice when he/she elects to make an Early Hire under this policy.

We anticipate that the use of early hiring can be accommodated in normal circumstances within the existing budget for a given year. However, if early hires would necessitate budget transfers or other amendments, we would advise the Board accordingly.

The Human Resources Committee reviewed and endorsed this proposal at their March 16, 2006 meeting.

---

Ed Kerwin  
Executive Director

Attachment

**RESOLUTION TO AMEND THE OWASA PERSONNEL POLICY TO INCLUDE  
EARLY HIRES FOR TRAINING AND KNOWLEDGE TRANSFER**

WHEREAS, the Orange Water and Sewer Authority (OWASA) desires to have very high service quality; and

WHEREAS, early hiring in anticipation of an expected retirement or resignation will capitalize on the knowledge and skills of employees in key positions;

NOW, THEREFORE, BE IT RESOLVED:

1. That the OWASA Board of Directors amends the OWASA Personnel Policy to include a section on Early Hires for Training and Knowledge Transfer as shown in Attachment A.
2. That the said policy is effective upon adoption of this resolution.

Adopted this 23<sup>rd</sup> day of March, 2006.

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Michael A. (Mac) Clarke  
Chair

ATTEST:

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Randolph M. Kabrick, P.E.  
Secretary

**SECTION 10. POSITION CLASSIFICATION PLAN**

G. Early Hires for Training and Knowledge Transfer

When an incumbent employee in a key position has given written notice of plans to retire or resign, the Authority's service objectives may be best met if a new employee is hired for training and knowledge transfer purposes before the incumbent leaves.

The Executive Director is authorized to immediately recruit, select, and hire a new employee under these circumstances. The Executive Director is authorized to determine when and for what period of time (not to exceed 12 months) the Early Hire may occur. The Executive Director will give the Board of Directors advance notice when he/she elects to make an Early Hire under this policy.

**AGENDA ITEM**

- STATUS REPORT ON WATER SUPPLY AND DEMAND CONDITIONS

**PURPOSE**

- To provide information on OWASA's current water supply and demand conditions.

**BACKGROUND**

- Our water supply and demand outlook appears favorable for most of 2006, but we continue to look further into the future.
- If the reservoirs do not refill during the next month or so, staff will recommend that the Board consider declaring a Water Supply Advisory per our conservation guidelines and local ordinances.
- Additional water use restrictions may become necessary to reduce the risk of shortages in 2007.

**ACTION NEEDED**

- No action is needed at this time. Discussion as desired by the Board.

**STAFF RECOMMENDATION**

- Staff will continue advising OWASA customers of the water supply and demand outlook and remind them of the year-round conservation requirements already in place.

March 23, 2006

## MEMORANDUM

**TO:** Board of Directors  
**THROUGH:** Ed Kerwin  
**FROM:** Ed Holland  
**DATE:** March 16, 2006  
**SUBJECT:** Status Report on Water Supply and Demand

### Water Supply – Then and Now

Our Cane Creek and University Lake reservoirs are currently 91 percent full with 3.1 billion gallons in storage. This is equivalent to about 11 months of use at an average demand of 9 million gallons per day (mgd). At this time in March 2006, during the drought of record, our reservoirs were 71 percent full with 2.4 billion gallons in storage, or about 8 months of supply at 10 mgd. This information is summarized in Table 1, which also includes comparative data from 1985, before the Cane Creek Reservoir was completed and our only local sources were University Lake and the Quarry Reservoir. At that time our system could only store a maximum of 3½ to 4 months of supply, which is the same relative amount that remained in OWASA’s reservoirs in October of 2002 just before the historic drought ended.

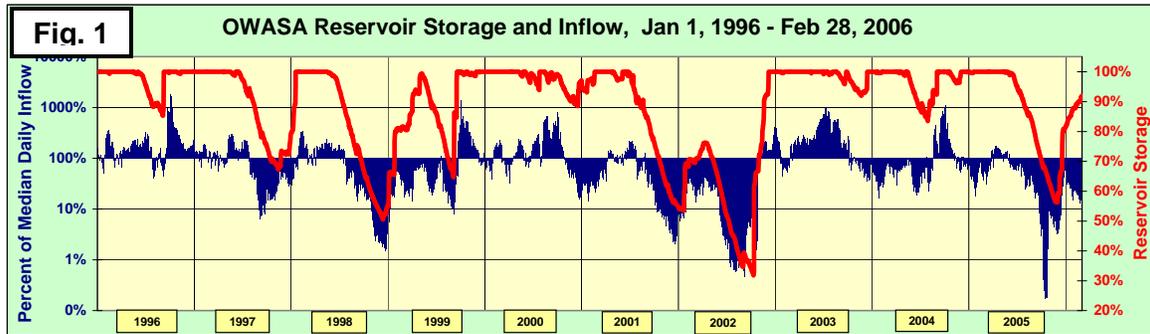
| <b>Table 1. OWASA Reservoir Storage<br/>Then and Now</b> |                         |                             |                 |
|--|-------------------------|-----------------------------|-----------------|
| <b>Available Storage</b>                                 | <b>1985<sup>A</sup></b> | <b>Oct 2002<sup>B</sup></b> | <b>Mar 2006</b> |
| <b>% Full</b>  | <b>100%</b>             | <b>32%</b>                  | <b>91%</b>      |
| <b>Water Volume (MG)</b>                                 | <b>550</b>              | <b>1,100</b>                | <b>3,100</b>    |
| <b>Demand (MGD)</b>                                      | <b>5</b>                | <b>10</b>                   | <b>9</b>        |
| <b>Days Remaining</b>                                    | <b>110</b>              | <b>110</b>                  | <b>340</b>      |

**A: Pre-Cane Creek; University Lake + Stone Quarry storage only**

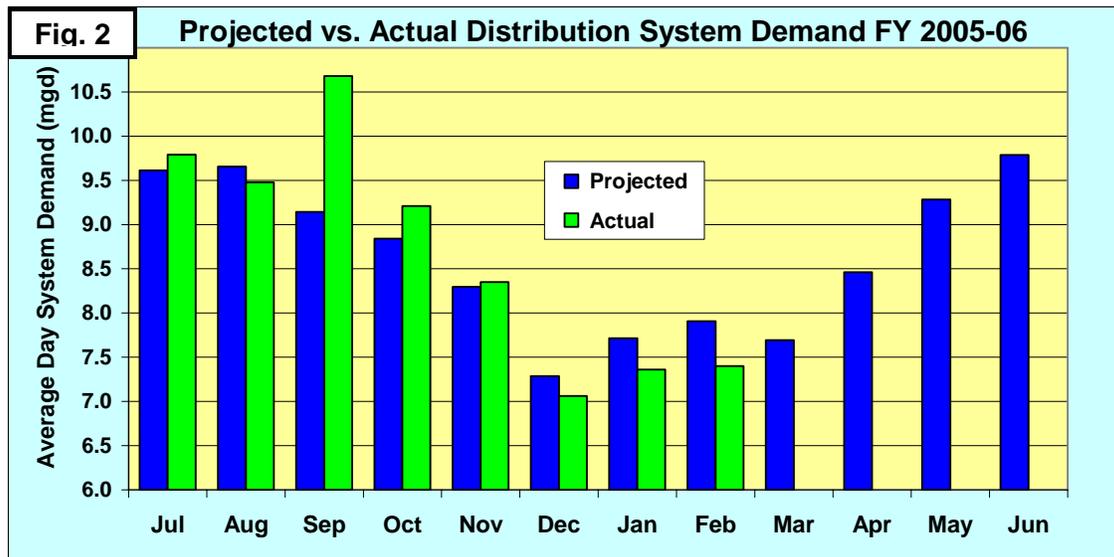
**B: Record drought conditions of 2002**

Figure 1 on the next page illustrates daily reservoir storage and inflow for the past 10 years. Thirty-day median inflows (dark blue) are shown as percentages above or below normal (the 100% line) for each day of the year and provide a visual overview of long-term streamflow

conditions. As can be seen, reservoir storage is presently below normal for this time of the year, when the reservoirs are usually full, due to deficient rainfall and streamflow during the past several months.



**Demand Patterns Are Near Normal**



**Projected distribution system demand** = [Projected monthly sales volume] plus [8 percent unbilled water].  
 (Based on projected annualized sales of 8.00 mgd, per adopted FY 2006 O&M Budget, adjusted by monthly demand factors.)

**Actual distribution system demand:** As reported in monthly DWR spreadsheets.

**Table 2. Actual vs. Projected FY 2006 Distribution System Demand**

|             | <b>Projected</b> | <b>Actual</b> | <b>Pct of Projected</b> |
|-------------|------------------|---------------|-------------------------|
| <b>Jul</b>  | <b>9.61</b>      | <b>9.79</b>   | <b>101.8%</b>           |
| <b>Aug</b>  | <b>9.66</b>      | <b>9.48</b>   | <b>98.2%</b>            |
| <b>Sep</b>  | <b>9.14</b>      | <b>10.68</b>  | <b>116.8%</b>           |
| <b>Oct</b>  | <b>8.84</b>      | <b>9.21</b>   | <b>104.2%</b>           |
| <b>Nov</b>  | <b>8.30</b>      | <b>8.35</b>   | <b>100.7%</b>           |
| <b>Dec</b>  | <b>7.28</b>      | <b>7.06</b>   | <b>96.9%</b>            |
| <b>Jan</b>  | <b>7.71</b>      | <b>7.36</b>   | <b>95.4%</b>            |
| <b>Feb</b>  | <b>7.91</b>      | <b>7.4</b>    | <b>93.6%</b>            |
| <b>Mar</b>  | <b>7.69</b>      |               |                         |
| <b>Apr</b>  | <b>8.46</b>      |               |                         |
| <b>May</b>  | <b>9.28</b>      |               |                         |
| <b>Jun</b>  | <b>9.79</b>      |               |                         |
| <b>Avg:</b> | <b>8.64</b>      | <b>8.67</b>   | <b>100.9%</b>           |

Figure 2 and Table 2 indicate that actual customer demands are within one percent of projected use through the first eight months of Fiscal Year 2006. September water use was 17 percent above projected demands, likely reflecting above normal temperatures and below normal rainfall. Winter time consumption (December through February) has been about 5 percent below projections.

**Vulnerability to Prolonged Drought**

Figure 3 on the next page is a graphic guide indicating the likelihood of reservoir depletion during the next 18 months. This figure is based on an annual average raw water withdrawal rate of 9.15 mgd. Because this is slightly higher than the actual and projected rate of reservoir withdrawals, the table presents a somewhat conservative forecast of risk.

Figure 3 indicates that if our reservoir system had been 91 percent full on March 1 in each of the previous 77 years of record and we had been withdrawing water at an average rate of 9.15 mgd, reservoir storage would have remained above 20 percent at all times (during the next 18 months).

As we have noted before, OWASA’s system is less vulnerable to shorter term droughts (months) than it is to droughts that persist for more than a year. This is due to our system’s relatively large storage capacity in relation to its drainage area and to our rate of withdrawals.

**Reservoir Drawdown Frequency and Guidelines for Conservation Triggers, Average Demand = 9.15 mgd**

Number of times (or percent of years) during the 77-year streamflow record in which reservoir storage would have declined to 20% or less during the following 18 months.

|   |              | Jan<br>8.0<br>mgd | Feb<br>8.2<br>mgd | Mar<br>8.0<br>mgd | Apr<br>8.3<br>mgd | May<br>9.2<br>mgd | Jun<br>9.8<br>mgd | Jul<br>10.5<br>mgd | Aug<br>10.6<br>mgd | Sep<br>10.3<br>mgd | Oct<br>9.8<br>mgd | Nov<br>9.0<br>mgd | Dec<br>8.1<br>mgd |
|---|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------------|--------------------|--------------------|-------------------|-------------------|-------------------|
| Water Remaining in University Lake and Cane Creek Reservoirs (% Full and Million Gallons) | 100%<br>3358 | 0<br>0%            | 0<br>0%            | 0<br>0%            | 0<br>0%           | 0<br>0%           | 0<br>0%           |
|   | 95%<br>3190  | 0<br>0%            | 0<br>0%            | 0<br>0%            | 0<br>0%           | 0<br>0%           | 0<br>0%           |
|   | 90%<br>3022  | 0<br>0%            | 1<br>1%            | 0<br>0%            | 0<br>0%           | 0<br>0%           | 0<br>0%           |
|   | 85%<br>2854  | 0<br>0%           | 0<br>0%           | 0<br>0%           | 0<br>0%           | 2<br>3%           | 0<br>0%           | 0<br>0%            | 1<br>1%            | 0<br>0%            | 0<br>0%           | 0<br>0%           | 0<br>0%           |
|   | 80%<br>2686  | 0<br>0%           | 0<br>0%           | 0<br>0%           | 0<br>0%           | 2<br>3%           | 3<br>4%           | 2<br>3%            | 1<br>1%            | 1<br>1%            | 0<br>0%           | 0<br>0%           | 0<br>0%           |
|   | 75%<br>2519  | 0<br>0%           | 0<br>0%           | 0<br>0%           | 0<br>0%           | 2<br>3%           | 3<br>4%           | 2<br>3%            | 1<br>1%            | 1<br>1%            | 0<br>0%           | 0<br>0%           | 0<br>0%           |
|   | 70%<br>2351  | 0<br>0%           | 0<br>0%           | 0<br>0%           | 0<br>0%           | 2<br>3%           | 3<br>4%           | 3<br>4%            | 3<br>4%            | 1<br>1%            | 1<br>1%           | 0<br>0%           | 0<br>0%           |
|   | 65%<br>2183  | 0<br>0%           | 0<br>0%           | 0<br>0%           | 2<br>3%           | 4<br>5%           | 4<br>5%           | 4<br>5%            | 3<br>4%            | 1<br>1%            | 1<br>1%           | 0<br>0%           | 0<br>0%           |
|   | 60%<br>2015  | 0<br>0%           | 0<br>0%           | 1<br>1%           | 4<br>5%           | 6<br>8%           | 10<br>13%         | 6<br>8%            | 5<br>6%            | 3<br>4%            | 1<br>1%           | 1<br>1%           | 0<br>0%           |
|   | 55%<br>1847  | 0<br>0%           | 1<br>1%           | 2<br>3%           | 4<br>5%           | 13<br>17%         | 12<br>16%         | 12<br>16%          | 7<br>9%            | 3<br>4%            | 2<br>3%           | 1<br>1%           | 0<br>0%           |
|   | 50%<br>1679  | 0<br>0%           | 1<br>1%           | 2<br>3%           | 6<br>8%           | 15<br>19%         | 18<br>23%         | 16<br>21%          | 9<br>12%           | 6<br>8%            | 3<br>4%           | 1<br>1%           | 1<br>1%           |
|   | 45%<br>1511  | 1<br>1%           | 1<br>1%           | 3<br>4%           | 7<br>9%           | 17<br>22%         | 21<br>27%         | 22<br>29%          | 17<br>22%          | 8<br>10%           | 3<br>4%           | 2<br>3%           | 1<br>1%           |
|   | 40%<br>1343  | 1<br>1%           | 1<br>1%           | 3<br>4%           | 8<br>10%          | 24<br>31%         | 29<br>38%         | 26<br>34%          | 25<br>32%          | 18<br>23%          | 5<br>6%           | 3<br>4%           | 1<br>1%           |
|   | 35%<br>1175  | 1<br>1%           | 3<br>4%           | 5<br>6%           | 12<br>16%         | 25<br>32%         | 34<br>44%         | 34<br>44%          | 31<br>40%          | 27<br>35%          | 15<br>19%         | 3<br>4%           | 2<br>3%           |
|   | 30%<br>1007  | 1<br>1%           | 4<br>5%           | 6<br>8%           | 14<br>18%         | 27<br>35%         | 38<br>49%         | 39<br>51%          | 39<br>51%          | 40<br>52%          | 25<br>32%         | 7<br>9%           | 3<br>4%           |
| 25%<br>839  | 3<br>4%      | 4<br>5%           | 6<br>8%           | 17<br>22%         | 33<br>43%         | 45<br>58%         | 48<br>62%         | 46<br>60%          | 50<br>65%          | 40<br>52%          | 19<br>25%         | 5<br>6%           |                   |

| Conservation Stages and Risk Levels | NORM | ADV  | #1   | #2    | #3     | EMRG |
|-------------------------------------|------|------|------|-------|--------|------|
| =                                   | 0-1% | 1-3% | 3-8% | 8-21% | 21-47% | 48+% |

**2002 Reservoir Levels**

**2005 Reservoir Levels**

**2006 Reservoir Levels**

Each cell of the table contains an integer and a percentage, which represent the probability that reservoir levels will decline to 20 percent or less of full capacity during the following 18 months. These were calculated from spreadsheet model runs of 77+ years of daily streamflow data, updated through January 2003, and driven by monthly water demand and reservoir storage at the beginning of each month. Calculations were based on an average annual raw water demand of 9.15 mgd, adjusted by observed monthly ratios, which are reflected in monthly demands shown at the top of the table.

Each column in the table corresponds to a month, and each row corresponds to reservoir storage at the beginning of that month. Storage is subdivided into increments of 5% and also expressed as million gallons (MG).

Colors indicate the corresponding conservation and risk levels proposed for each condition. Cells highlighted in **black** or **blue** represent actual reservoir storage conditions at the beginning of that month during the **severe drought year of 2002 (black)**, **last year 2005 (blue)**, or the **current year (orange)**.

**Staff Recommendation**

Although our water supply and demand outlook appears favorable for most of 2006, we continue to look further in the future. We don't know if rainfall and streamflow will return to normal levels during the coming months. Additional water use restrictions could become necessary to reduce the risk of shortages in 2007.

We will continue to monitor supply and demand conditions very closely. If the reservoirs do not refill during the next month or so, staff will recommend that the Board consider declaring a Water Supply Advisory per our conservation guidelines and as reflected in the local ordinances:

*A Water Supply Advisory shall represent an alert to the public of a potential shortage and notification that water use restrictions may be imposed if the water supply and/or demand conditions do not improve in the near future. In the event of a declared Water Supply Advisory:*

- 1. No mandatory water use restrictions other than year-round requirements already in place will be implemented.*
- 2. OWASA shall make extensive use of media releases, advertising, and other reasonable means of publicizing the water supply advisory and the need for immediate voluntary conservation.*
- 3. OWASA shall inform the Mayors of Carrboro and Chapel Hill and the Chair of the Orange County Board of Commissioners of its declaration of a Water Supply Advisory.*

In the meantime, we will continue advising OWASA customers of the supply and demand outlook and remind them of the year-round conservation requirements already in place. Additional communication measures are suggested in the attachment.

We will be glad to provide more information as needed.



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Edward A. Holland, AICP  
Planning Director

attachment

Summary of Public Communications Plan  
Spring 2006

1. Primary objectives:
  - a. Do regular public communications and use multiple methods to maximize public awareness and understanding of key water supply and demand facts, what OWASA is doing and what customers should do.
  - b. Emphasize direct mail including bill inserts and media advertising as optimum communications channels.
  - c. Reach all customers including those who do not receive OWASA bills.
  - d. Keep community leaders and the overall community informed.
  
2. Information content would include:
  - a. Informing customers about the status of water supply, demand, seasonal weather forecasts and conservation needs and requirements as they change.
  - b. Explaining that we are in a drought that was formally declared in the fall; water supplies should be conserved for this year and to help ensure we will have an adequate supply in 2007.
  - c. Informing customers about the year-round conservation requirements.
  - d. Emphasizing that conservation saves dollars, especially when peak seasonal rates are in effect.
  
3. Communication Methods:
  - a. Blue Thumb newsletter to billed customers
  - b. Bill messages
  - c. Weekday update of water supply and demand, weather data, etc.
  - d. Paid advertising
  - e. Letters to the editor/guest columns/radio commentaries
  - f. News release about peak seasonal water conservation rate in effect May-September
  - g. Other news releases depending on conditions and OWASA actions
  - h. Presentations to local government boards at televised meetings (if/as accepted by localities)

## **ITEM 8**

### **AGENDA ITEM**

- REPORT FROM THE AD HOC COMMUNITY OUTREACH COMMITTEE

### **PURPOSE**

- To discuss plans for the Community Outreach Meeting on April 27, 2006 including the draft meeting format and a basic outline as a starting point for developing the OWASA presentation.

### **BACKGROUND**

- On February 9<sup>th</sup>, the Board agreed with the Committee's recommendation to hold a Community Outreach Meeting in the Chapel Hill Town Hall on Thursday night, April 27<sup>th</sup>.

### **ACTION REQUESTED**

- For discussion only.

March 23, 2006

M E M O R A N D U M

TO: Board of Directors  
THROUGH: Ed Kerwin  
FROM: Greg Feller  
DATE: March 16, 2006  
SUBJECT: Draft format and presentation outline for the Community Outreach Meeting

Attached as background information for discussion of the Community Outreach Meeting is a draft meeting format and outline for the OWASA presentation.

This draft is intended to reflect discussions and comments by the Ad Hoc Community Outreach Meeting Committee to date.

Respectfully submitted,

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Greg Feller, Public Affairs

Attachment: Draft meeting format and presentation outline

**DRAFT**

Proposed meeting format and presentation outline  
 2006 Community Outreach Meeting  
 April 27, 2006 at 7:00 pm in the Council Chambers, Chapel Hill Town Hall

| est. time (min.) | ITEM   | WHO                                | NOTES  |
|------------------|--|------------------------------------|--|
| 5                | Welcome and introductions.<br><br>Purposes of the outreach meeting | Mac Clarke                         | Include welcome to citizens watching on cable TV systems |
| 20               | Presentation by OWASA.   | Mac Clarke;<br>Ed Kerwin/<br>staff |  |
| 90               | Comments and questions from citizens.                              |                                    |  |
| 5                | Concluding remarks and thanks                                      | Mac Clarke                         |  |

**Presentation—a basic outline**

- What is OWASA? How was OWASA created and how is it structured, funded and governed?
  - A non-profit, public agency
  - 9-member appointed Board of Directors
  - 1977: municipal and University systems transferred to OWASA
  - Basic legal framework: NC law, 1977 sale agreements, Bond Order
  - Funded from service fees and charges; no taxes received exc. grants
- Some basic information about OWASA: services, facilities and policies
  - lakes, plants, collection/distribution systems, storage, etc.
  - water safe yield in a 30-year drought
  - capacities of lakes, treatment plants; miles of mains
  - average and peak demand levels
  - cost of service rates
  - growth pays for growth/developer extensions and fees
  - seasonal water conservation water rate structure
- Projected future water supply and demand levels (one graph)
- How can and should the potential supply/demand gap be managed between 2015 and the availability of the Expanded Stone Quarry Reservoir in the 2030s?
  - Future supply options (one part of the overall picture)

- Water conservation and demand management
    - Expanded Stone Quarry Reservoir (mid-2030s)
    - Connections with other water systems
    - Jordan Lake-- future 5% allocation but expensive
    - Not practical to plan for a new, local reservoir
  - Continued process water recycling (about 5% savings; began in 2002)
  - Water reuse
    - What is it?
    - Proposed to start by 2008
    - 6-13% drinking water supply savings
  - Conservation and “demand management”
    - Adopted goal and objectives
    - Average and peak water demand targets—to be periodically adjusted
    - Rate study pending; options include block or tiered rates
    - Other conservation options: policies/incentives/education
- Short- and long-term financial implications of conservation and reuse
- With water reuse and conservation as key strategies, we can meet the community’s future water needs from our existing and planned high quality, locally protected water sources
- A final item: the importance of adequate wastewater treatment capacity and how the current treatment plant upgrade will affect water quality downstream of our community

**Possible Posters to be displayed at the meeting**

1. Reuse
2. Biosolids
3. Partnership for Safe Drinking Water
4. Conservation
5. Taste of Hope
6. Renewal/replacement of infrastructure
7. WWTP improvements
8. The jobs we do [as before]
9. Protecting watersheds