



ORANGE WATER AND SEWER AUTHORITY AGENDA #5a

*Quality Service Since 1977*

February 5, 2008

Barry Jacobs, Chair  
Orange County Board of  
Commissioners  
P.O. Box 8181  
Hillsborough, NC 27278

Mark Chilton, Mayor  
Town of Carrboro  
301 West Main Street  
Carrboro, NC 27510

Kevin Foy, Mayor  
Town of Chapel Hill  
405 Martin Luther King Jr.  
Boulevard  
Chapel Hill, NC 27514

Dear Chair Jacobs, Mayor Chilton and Mayor Foy:

We are pleased to submit the enclosed quarterly report of OWASA activities in the quarter from October 2007 through December 2007.

We are continuing to closely monitor water supply, demand, weather forecasts and the financial effects of the current drought, and we continue to prepare for emergency water supply options if they become necessary.

Maintaining an adequate, high quality drinking water supply despite the ongoing drought conditions continues to be our highest priority. Running out of water is not an option.

This Quarterly Report also summarizes key capital projects, including the recently-initiated construction of a reclaimed water system that will initially serve chiller facilities on the University's main campus starting in the spring of 2009. The reclaimed water system, along with our conservation rate structures and other initiatives, is a very important part of our long-term water resource management strategy.

We welcome the opportunity to respond to any questions you may have, and we invite your feedback on our plans and services to the community we all serve.

Best regards,

Randy Kabrick, P.E.  
Chair of the OWASA Board

Enclosure

- c: Ms. Laura Blackmon, Orange County Manager (w/encs.)
- Mr. Roger L. Stancil, Chapel Hill Town Manager (w/encs.)
- Mr. Steven Stewart, Carrboro Town Manager (w/encs.)
- OWASA Board of Directors (w/encs.)
- Ed Kerwin, OWASA Executive Director (w/encs.)



## ORANGE WATER AND SEWER AUTHORITY

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### **Quarterly Report to Local Governments February 5, 2008**

*OWASA's September 4, 2007 Annual Report to Local Governments summarized major accomplishments and activities for Fiscal Year 2007 (July 2006 – June 2007). An October 30, 2007 report provided an update through September, 2007, and this current report provides new or updated information for October – December, 2007. Additional materials are available on request. OWASA Board members and staff will be glad to provide presentations if desired.*

**Water Supply** – The OWASA Board of Directors declared a Stage One Water Shortage on September 27, 2007, which was elevated to Stage Two on October 18. As of this writing (February 5, 2008), OWASA's Cane Creek and University Lake reservoirs contain 1.40 billion gallons of water, or about 39 percent of their capacity. An additional 175 million gallons is available in our Stone Quarry Reservoir. Assuming no further rainfall and the current 30-day average demand of 7.44 million gallons per day (mgd), this represents about six months of water remaining in storage. Although the reservoirs normally refill during this time of the year, weather forecasts for the next few months predict less than normal rain, with a possible return to normal rainfall patterns later in the spring and summer.

The OWASA Board received a "State of Our Local Water Supply" report at their meeting on January 24, 2008. A copy of the presentation can be viewed online at <http://www.owasa.org/pdfs/2008-01-24%20Public%20Forum.pdf>.

More stringent Stage Three restrictions may be necessary if we don't receive significant rainfall in February and March. It remains very important for all users to continue their conservation efforts.

**Alternative Supply Options** – *Running out of water is not an option for OWASA or the community we serve.* To be certain that this worst-case situation does not occur, we have examined a range of additional supply alternatives as follows:

**Buying Water from Neighboring Communities** – OWASA's drinking water system is interconnected with water lines from Durham, Hillsborough, and Chatham County. These connections have the capacity to provide our community with up to 8 mgd of treated drinking water, but volumes in this range will not likely be available during the drought due to the limited available supply and treatment capacities in those communities.

**Highly Treated Reclaimed Wastewater (RCW)** – We are currently producing high quality wastewater that meets the regulatory requirements for non-potable (non-drinking) uses, and will have a permanent reclaimed water system in place around March 2009. The system will initially serve the University’s main campus and provide approximately 0.6 mgd to UNC chiller plants when it is placed into service. A temporary reclaimed water line to the UNC campus is feasible, but would be very expensive, and could not supply enough water to offset the worst-case scenario. As an option of last resort, a larger (temporary) line could pump greater volumes of RCW back to University Lake, but this is not preferred.

**Drill Wells and Use Ground Water** – The amount of water available from wells in our region is highly variable and unpredictable. It is unlikely that we could obtain more than 1 mgd from a series of many new wells – not nearly enough to avert the worst case scenario.

**Jordan Lake** – The Jordan Lake water supply appears to be fairly drought-resistant. Although OWASA holds a storage allocation for the eventual use of about 5 mgd of Jordan Lake water, OWASA does not have any facilities, such as an intake, pumps, or pipelines, in place, and no contractual agreements with other utilities to provide access to our Jordan Lake allocation. It is important that OWASA and others in the region work together to ensure that this valuable regional resource is shared equitably and efficiently in the future.

**Haw River** – It appears to be feasible to install a temporary pipeline to pump Haw River water from a location in southwestern Orange County directly to the Cane Creek Reservoir. Although it would be very expensive, this option appears to be the most feasible way to avert the worst-case scenario of running out of water.

**Financial Incentives for Increased Conservation** – Incentive programs, such as cash rebates for replacing older less water-efficient plumbing fixtures, represent potential water savings of less than 1 mgd and could not be implemented quickly enough to achieve the significant levels of water reduction necessary to prevent the worst case of running out of water. However, conservation remain a vital component of all future water supply plans.

### **Financial Effects of the Drought**

We estimate that reduced customer consumption will result in \$1 million to \$2.5 million less revenue than anticipated in OWASA’s current budget. We expect to offset \$1.3 million of that potential deficit through reduced spending measures that have already been identified. Depending on the duration and severity of the drought, further spending reductions and higher and than anticipated rate increases may be needed to support next year’s budget.

### **Moving Forward**

We will continue monitoring supply and demand conditions very closely and will likely consider declaring a Stage Three Water Shortage in February or March, depending on conditions at the time. OWASA will provide the Towns and County with bi-weekly or monthly drought and water supply updates. *Because running out of water is not an option*, we will proceed with contingency planning and will be prepared to act quickly – if reservoir storage declines to a critical level.

We will review the adequacy of OWASA's long-term water supply options for the next 20+ years, including risk levels considered acceptable to our community. The additional use of reclaimed water and further conservation and demand management practices will be increasingly critical elements of OWASA's long-term supply plans. Staff and Board will actively engage in local and inter-governmental discussions about desirable solutions to our regional water supply future.

**Additional Conservation and Demand Management Activities** – Seventeen speakers, most of whom represented the local landscaping or “green” industry, addressed the OWASA Board of Directors at their January 24, 2008 meeting about proposed changes to OWASA's water conservation standards. The OWASA Board took no action on the proposals. A more comprehensive and systematic public input process to formulate possible changes to our standards will take place after the drought ends. Such a process was very successful after the 2002 drought.

A joint work group of staff from OWASA, Carrboro, Chapel Hill, and Orange County has prepared a brief set of draft short- and longer-term recommendations for consideration by the policy boards of their respective jurisdictions regarding additional initiatives to incorporate conservation and demand management practices in both new and existing development. An update report will be provided to each of the local governments in the near future.

**New Water and Sewer Rates in Effect** – All customers received brochures describing OWASA's new increasing block water rates that went into effect on October 1, 2007 for individually-metered residential customers. Additional Stage Two drought surcharges also went into effect on November 1<sup>st</sup> for the higher consumption rate blocks. Non-residential customers, including businesses, the University, and master-metered apartment complexes continue to be billed through the seasonal rate structure (higher water prices from May through September, and lower prices from October through April), but may be subject to drought surcharges if it becomes necessary to declare a Stage 3 shortage.

**Mason Farm Wastewater Treatment Plant** – The \$50+ million upgrade and expansion of the wastewater plant was completed, and OWASA hosted a dedication ceremony on November 8, 2007. Work on three additional odor elimination improvements were completed in December. OWASA's annual report on odor elimination at the wastewater

plant has been provided to the Chapel Hill Town Council under separate cover, but more recent data on odor incidents, customer notification, etc. are attached to this Quarterly Report.

**Joint Meeting Of Local Officials** – Representatives of Orange and Chatham Counties, Pittsboro, Chapel Hill, Carrboro, OWASA, and UNC met on October 30, 2007 in the second of a series of meetings intended to share information and discuss issues of mutual interest. The meeting included a discussion of water, as well as four other regional topics. The elected officials present expressed their desire that the State of North Carolina take a more direct role than in the past to ensure the efficient and equitable use of the Jordan Lake water supply during the next round of allocations. The next meeting in this series is in the process of being scheduled.

**Capital Improvement Projects** – OWASA's capital improvements program includes a number of projects that will involve local permits and/or may affect local neighborhoods. Highlights of ongoing or recently completed projects are described below.

Construction is substantially complete at a new treated water pump station near **Interstate 40**. Along with the new 16-inch water line on **Old Durham Road**, the pump station increases OWASA's ability to send or receive treated drinking water from the City of Durham during emergencies or for system maintenance purposes. Older pump stations on Ephesus Church Road and on Old Durham Road were abandoned as part of the same project. During January 2008, OWASA transferred approximately 46 million gallons of treated drinking water to Durham.

We continue to replace aging water mains in order to maintain the high level of water service reliability expected by OWASA customers. Replacement projects were completed during the past year in part of the **Colony Woods** neighborhood. Additional water line replacement projects are underway in **Colony Woods** and are being designed for **Sunrise Lane, Pearl Lane, and near Hillsborough Street at Brookside Condominiums**.

The project to remove the **Lloyd Street** and **Starlite Drive** sewage pump stations by installing a new gravity sewer was completed in November 2007. The new gravity sewer also serves several additional properties in that downtown neighborhood.

Construction for a project that will increase the capacity of the **Morgan Creek sewer** in the Town of Chapel Hill's **Morgan Creek Preserve** property will begin in February 2008 and be completed in summer 2008. The design for this project was closely **coordinated with the Town's greenway plans**.

Construction of the **Meeting of the Waters Interceptor Sewer** and the **Reclaimed Water Pipeline** projects as well as the **Reclaimed Water Pumping and Storage Facilities** project began in January 2008. Construction is expected to be substantially complete on both of these projects in spring 2009.

**Carolina North** – OWASA staff recently met with UNC staff and the University’s utility consultant that will be examining specific opportunities to incorporate the use of reclaimed water (RCW) into the infrastructure plans for Carolina North. We expect to provide updated estimates of the projected effects of Carolina North on OWASA’s water and sewer system as more detailed plans are developed.

**Annual Update of OWASA’s *Comprehensive Water and Sewer Master Plan*** – OWASA staff updated strategic *Master Plan* data and trends in October 2007 and provided presentations to the Chapel Hill Town Council on November 7, 2007 and the Carrboro Board of Aldermen on January 15, 2008. Printed copies and supporting graphics of the update report are available on request or can be viewed online at <http://www.owasa.org/pdfs/Master%20Plan%20Update%20October%202007.pdf>.

**New Service Connections** – For the first half of the fiscal year, OWASA has set only 67 water meters for new development, which is the lowest level of customer growth in the past 12 years. As a result, water and sewer availability (impact) fee revenues were more than \$900,000 below budget projections for the first half of the fiscal year. Along with water and sewer commodity revenues, availability fees are important for ensuring adequate debt coverage. Continued slowdown in customer growth will put further pressure on overall rates.

**SUMMARY OF ODOR REPORTS TO OWASA  
FROM WWTP NEIGHBORS AND EVENTS AS DEFINED BY THE  
DEFINITION FOR ODOR ELIMINATION**

	2002 Reports	2003 Reports	2004 Reports	2005 Reports	2006 Reports	2007 Reports	2007 Events	2008 Reports	2008 Events
January	11	3	9	0	8	3	3	11	8
February	7	5	2	0	8	0	0		
March	9	0	7	1	10	6	4		
April	9	2	4	0	9	3	3		
May	6	0	2	5	8	4	3		
June	4	1	1	1	5	1	1		
July	1	0	2	0	0	4	2		
August	1	0	4	3	11	2	2		
September	2	5	2	2	9	3	3		
October	2	6	1	1	8	9	8		
November	0	0	1	7	2	11	6		
December	3	3	2	5	8	16	10		
<b>TOTALS</b>	<b>55</b>	<b>25</b>	<b>37</b>	<b>25</b>	<b>86</b>	<b>62</b>	<b>45</b>	<b>11</b>	<b>8</b>

An “odor event” is defined as: One or more odor reports received during a 24 hour period from WWTP neighbor(s). Each odor event shall be considered to be “verified” unless OWASA determines conclusively that an alternative source other than the WWTP created the odor.

**LOG OF CALLS AND E-MAILS TO OWASA  
FROM NEIGHBORS REPORTING ODOR IN THE MASON FARM  
WASTEWATER TREATMENT PLANT (WWTP) AREA**

November, 2007 – January, 2008

<b>date</b>	<b>time</b>	<b>location</b>
01/23/2008	9:00 PM	Highland Woods Road
01/18/2008	8:53 PM	Highland Woods Road
01/16/2008	6:56 PM	Highland Woods Road
01/14/2008	8:37 PM	Highland Woods Road
01/11/2008	9:06 PM	Highland Woods Road
01/09/2008	6:30 PM	Highland Woods Road
01/08/2008	7:00 PM	Highland Woods Road
01/07/2008	11:59 PM	Highland Woods Road
01/05/2008	11:20 PM	Finley Golf Course Road
01/05/2008	9:27 PM	Highland Woods Road
01/02/2008	10:15 PM	Highland Woods Road
12/31/2007	5:45:00 PM	Highland Woods Road
12/31/2007	7:00:00 PM	Highland Woods Road
12/31/2007	5:00:00 PM	Highland Wood Road
12/31/2007	7:00:00 PM	Highland Woods Road
12/24/2007	7:35:00 AM	Highland Woods Road
12/19/2007	6:52:00 PM	Highland Woods Road
12/18/2007	6:23:00 PM	Highland Woods Road
12/18/2007	6:19:00 PM	Highland Woods Road
12/14/2007	7:24:00 PM	Highland Woods Road
12/12/2007	9:40:00 PM	West Barbee Chapel Road
12/12/2007	8:50:00 AM	Highland Woods Road
12/10/2007	8:05:00 AM	Highland Woods Road
12/9/2007	5:19:00 PM	Highland Woods Road
12/8/2007	12:11:00 AM	Highland Woods Road
12/5/2007	6:45:00 PM	Highland Woods Road
12/5/2007	6:45:00 PM	Highland Woods Road
11/28/2007	5:45:00 PM	Highland Woods Road
11/18/2007	12:10:00 AM	Highland Wood Road
11/16/2007	7:00:00 PM	Highland Woods Road



<b>date</b>	<b>time</b>	<b>location</b>
11/15/2007	11:01:00 PM	Highland Woods Road
11/13/2007	8:55:00 AM	Highland Woods Road
11/13/2007	7:49:00 AM	Highland Woods Road
11/9/2007	8:35:00 AM	Highland Woods Road
11/9/2007	8:45:00 AM	Highland Woods Road
11/9/2007	8:35:00 AM	Highland Woods Road
11/5/2007	7:15:00 PM	Highland Woods Road
11/5/2007	9:33:00 PM	Highland Woods Road

E-mails from OWASA to neighbors  
of the Mason Farm Wastewater Treatment Plant (WWTP)  
regarding expected odor releases and related items

November, 2007 – January, 2008

<b>Date</b>	<b>Topic/Comments:</b>
December 6, 2007	News release regarding hiring of Mr. Damon Forney as Wastewater Treatment and Biosolids Recycling Manager
December 13, 2007	Increased recent odor events and OWASA staff's follow up
December 20, 2007	Follow-up to December 13 e-mail regarding actions to address odor sources (floating solids at aeration basin and treatment of foul air from Intermediate Pump Station and splitter boxes for Primary Clarifier).
January 28, 2008	Copy of Annual Odor Elimination Report to the Town of Chapel Hill
January 31, 2008	Notice of possible odor release due to maintenance of odor scrubber on February 1, 2008

**DISTRIBUTION LIST FOR OWASA E-MAILS ABOUT ODOR RELEASES FROM  
THE MASON FARM WWTP AND RELATED ITEMS (January 31, 2008)**

<b>NEIGHBORHOOD/ORGANIZATION</b>	<b>NAME</b>
Highland Woods	Alice W. Neebe
	Paul Neebe
	Malcolm Forbes
	Gary Richman
	Robert and Melissa Porter
	Peg Parker
	Jeffrey Tate and Anna Schwab
	Seth Kingsbury
	Amanda Kingsbury
	Abraham Nussbaum
	Elin Nussbaum
	Reed Johnson
	Rex Bartles
	Dan Pollitt
	Mary Ellen Bierck
	Barnes Bierck
	Nortin Hadler
	Carol Hadler
	Frank P. Rexford
	Christina and Rex Page
	Ed Ludwig
	Joy Javits, President, Highland Woods Association
	Gunilla Luboff
	Fred Hall
	John and Anna K Schwab
	Mary Helen and Donald Hayman
Finley Forest	Adam Kimplead
	Cindy Underwood
	Dan Puckett
	Donna Kaye
	Kathryn Conard
	Dan Choi
	Julie Maness
	Maria Fernandez
Laurel Hill Road area	Phyllis Barrett
	Bob Wendell, Pres. Laurel Hill Association
	Carol David
	Pat Evans
	Ewan Rodewald and Sharon Hodge
	Joe Ferrell

<b>NEIGHBORHOOD/ORGANIZATION</b>	<b>NAME</b>
	Dr. Sian Kwa
	Marcella and Paul Grendler
	Carolyn Goldfinch
	Carol Hazard and Winston Liao
	Dick and Marie Clark
	Kay Goldstein
	Ann Wilson
St. Thomas More Church and School	St. Thomas More staff
	Carlos Lima
Morgan Creek area	Ellen Johnson
	Betsy Malpass
	Hanson Malpass
	Laura King Moore
	Jeanne Langley
	John Pendergrass
	Gary Glish
	Jeannie Cox
Ronald McDonald House	Shelley Day
Family House	Matt Hapgood
Reserve	Steve McPhail, President, Hunt's Reserve Homeowners
	Steven and Susan Frye
	Doug Longman
	Barbara and Edward Paradise
	Jeanne & David Jarrett
	Nadine O'Malley
	Mark Witcher
	Ralph Abrahams
	Kathy Abrahams
	Mike Ramsey
Bayberry Drive area	William Ware
UNC	Jim Ward--office
	Jim Ward--home
	Peter White, Director
	Johnny Randall, Assistant Director
	Carolyn Elfland, Assoc. Vice Chancellor
	Ray DuBose, Energy Services Director
	Margaret Holton, Water, Sewer & Stormwater Coord.
	Raymond W. Hackney, Interim Director, Environment, Health and Safety
	Brent Webber, Environment, Health and Safety
	Ross Fowler
	Willie Scroggs
	Michael Wilkinson, golf pro
	John Inman, Men's Golf Coach

<b>NEIGHBORHOOD/ORGANIZATION</b>	<b>NAME</b>
	Sally Austin, Women's Golf Coach
	Jeff McCracken, Public Safety
	Aaron Bednar, Public Safety
	UNC parking
	Mike McFarland, Corporate Relations
	Scott Ragland, Corporate Relations
	Lisa Katz, Corporate Relations
	Linda Convissor, Corporate Relations
	Jon Howes, Corporate Relations
	Cameron Smith, Construction Management
UNC Hospitals	Lynn Wooten, Corporate Relations
	Mel Hurston
	Karen McCall
Town of Chapel Hill	Roger Stancil, Town Manager
	Florentine A. Miller, Deputy Town Manager
	Bruce Heflin, Asst. Town Manager
	Ralph Karpinos, Town Attorney
	Richard Terrell, Public Works Operations Supt.
	Greg Ling, Street Supv..
	Robert Sykes, Public Works
	Dan Jones, Fire Chief
	Caprice Mellon, Deputy Fire Chief
	Robert Bosworth, Deputy Fire Chief
	Bob Overton, Police Captain
	Brian Curran, Interim Police Chief
	Richard Terrell, PW Operations Supt.
	George Small, Town Engineer
	Larry Tucker, Engineering
	Steve Spade, Transportation Director
	Butch Kisiah, Parks and Recreation Director
	Bill Webster, Parks and Recreation
	Ted Hobgood
	Catherine Lazorko, Public Information Officer
	Lance Norris, Inspections Director
	Jennie Bob Culpepper, Planning Director
	Phil Mason, Planner
	Kumar Neppalli, Traffic Engineer
	Sabrina Oliver, Town Clerk
	Sandy Kline, Deputy Town Clerk
City Schools	Neil Pedersen, Superintendent
	Steve Scroggs
	Bill Mullin
Orange County	Orange 911 Center Supervisor on duty
Other Utilities	Ken Kernodle, Duke Energy
	Steve Small, Duke Energy
	Billy Miller, PSNC

NEIGHBORHOOD/ORGANIZATION	NAME
	Time Warner Cable
	Scott Beasley, BellSouth/ATT
	Rob Masterson, BellSouth/ATT
Other	Aldersgate Methodist Church c/o Deil Wright
	Chamber of Commerce

**SUMMARY OF ON-SITE AND OFF-SITE ODOR INSPECTIONS  
AND NUMBER OF TIMES ODOR WAS DETECTED AT THE VARIOUS MONITORING SITES**

**ON-SITE:**

Month and year	Total Inspections	Entrance Gate (1)	Generator Bldg. (2)	Old Outfall (3)	UV Complex (4)	Solids Tanks (5)	Odor Scrubber (6)	Head-works (7)	Digesters (8)	UNC Bldg. (9)
Nov 07	86	8	11	0	9	16	19	33	38	16
Dec 07	89	17	26	2	23	23	34	45	42	14
Jan 08	87	16	15	1	16	18	21	26	28	3
<b>Totals</b>	<b>262</b>	<b>41</b>	<b>52</b>	<b>3</b>	<b>48</b>	<b>57</b>	<b>74</b>	<b>104</b>	<b>108</b>	<b>33</b>
%	----	8%	10%	1%	9%	11%	14%	20%	21%	6%

**OFF-SITE:**

Month and year	Total Inspections	Mc Donald House (1)	Highland Woods-A (2)	Highland Woods-B (3)	Athletic Assoc. (4)	Finley GC (5)	Silers Fen Ct. (6)	Morgan Cliff Ct. (7)	Kings Mill Rd. (8)	Laurel Hill Rd. (9)	Botanical Garden (10)
Nov 07	8	2	1	1	2	2	0	0	1	1	1
Dec 07	11	4	2	3	1	5	1	0	0	0	1
Jan 08	11	3	2	2	2	3	0	0	0	0	0
<b>Totals</b>	<b>30</b>	<b>9</b>	<b>5</b>	<b>6</b>	<b>5</b>	<b>10</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>
%	----	23%	13%	15%	13%	25%	3%	0%	3%	3%	5%

**Notes:**

- 1) All on-site odor events were characterized by the WWTP Operators as "Mild" with odors that would not be expected to create an off-site problem.
- 2) All off-site odor events were characterized by the Collections Staff as "Mild" except for the following dates:

November 13, 2007 – odor was characterized as "Strong" at the McDonald House (1)  
 December 10, 2007 – odor was characterized as "Strong" at the Highland Woods-A (2)  
 December 12, 2007- odor was characterized as "Very Strong" at McDonald House (1), Athletic Assoc. (4) and Finley Golf Course (5)  
 December 14, 2007 - odor was characterized as "Strong" at the Finley Golf Course (5)  
 December 18, 2007 - odor was characterized as "Strong" at the Highland Woods-B (3) and Finley Golf Course (5)  
 December 19, 2007 - odor was characterized as "Strong" at the Finley Golf Course (5)  
 January 23, 2008 - odor was characterized as "Strong" at the Athletic Assoc. (4) and Finley Golf Course (5)