



ORANGE WATER AND SEWER AUTHORITY

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

September 2, 2009

Chair Valerie Foushee
Orange County
Post Office Box 8181
Hillsborough, NC 27278

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

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

Dear Chair Foushee, Mayor Chilton, and Mayor Foy:

Enclosed is our annual report for 2008-2009.

Please feel free to contact me or our staff if you would like an in-person presentation or further details about any of the items in the enclosed report.

Best regards,

Randy Kabrick, Chair
OWASA Board of Directors

Enclosure

- c: Mr. Frank Clifton, Interim 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.)



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Annual Report to Local Governments August 28, 2009

This report summarizes major OWASA activities and accomplishments from July 2008 through June 2009. We have selected items that we believe are most likely to be of interest to the elected officials of Carrboro, Chapel Hill, and Orange County. Additional information is available on request, and OWASA Board members or staff will be glad to provide presentations if desired.

Water Supply and Demand – As of August 28, 2009, OWASA’s University Lake/Cane Creek/Stone Quarry reservoir system was 82 percent full, with 2.95 billion gallons, or about 11 months of supply in storage. On this date one year ago (2008), the reservoirs were 79 percent full. The all-time low for this date occurred during the record drought of 2002 when total storage was 35 percent on August 28. OWASA’s annual drinking water demand has declined by 18 percent since that time. The statistical risk of critical reservoir drawdown based on historical data remains minimal for the next 12 months.

Long Range Water Supply Plan Update – We have completed a comprehensive review of OWASA’s long-range water supply strategy. The recent draft report thoroughly reviewed underlying assumptions, including demand projections, supply/demand-side options, and other alternatives that have been identified since the last comprehensive water supply report in 2000. Largely due to potable water demand reductions achieved by our customers, OWASA’s existing University Lake/Cane Creek Reservoir system and planned expansion of the Quarry Reservoir is expected meet our drinking water needs substantially further into the future than previously thought. Except for the expanded Quarry Reservoir, temporary water purchases from neighboring utilities offer the most cost-effective supply supplement, especially for the infrequent times and limited amounts that may be needed during the next 25 years or more. OWASA’s continued participation in the recently established Jordan Lake Partnership will provide important opportunities to develop such arrangements and to gain cost-effective access to our Jordan Lake water supply storage allocation. The draft report, available online at <http://www.owasa.org>, presents a very positive future for OWASA’s water supply.

Jordan Lake Partnership – OWASA is participating in the Jordan Lake Partnership through a Memorandum of Understanding with the Towns of Apex, Cary, Hillsborough, Holly Springs, Morrisville, Pittsboro, the Cities of Durham and Raleigh, and the Counties of Chatham, Orange, and Wake. The Partnership’s goal is to “collaboratively define Jordan Lake’s role in a long-term sustainable and secure regional water supply for the Research Triangle Region.” Initial efforts are focused on gathering, reviewing, and refining relevant water supply and demand information from Partnership members, including conservation practices, supply sources, and future needs. Subsequent efforts will likely include a preliminary planning project for a western Jordan Lake water intake.

Revisions to OWASA’s Conservation Standards – After an extensive process of public comment and review, the OWASA Board adopted revised Water Conservation Standards in March 2009 and transmitted them to the Carrboro Board of Aldermen, Chapel Hill Town Council, and Orange County Board of Commissioners. All three bodies incorporated the new Standards into their respective ordinances.

Cost Reductions and Rate Increases for Fiscal Year (FY) 2010 – During the past year, OWASA staff identified nearly \$1.7 million in operating and maintenance cost cutting measures that will remain in place during FY 2010. These include a combination of frozen and permanently eliminated full-time staff positions representing 12 percent of the workforce and the deferral of numerous initiatives, such as employee pay increases, sewer maintenance programs, annual water meter testing and replacement, and fewer days of recreational access at University Lake and the Cane Creek Reservoir. Several capital improvement projects were deferred, which reduced previous FY 2010 capital spending projections by \$2.6 million.

In spite of these reductions, increased operating costs and a further decrease in expected customer revenues required the Board to approve a combined water and sewer rates increase of 9.75 percent, effective on October 1, 2009. The average bill for a typical individually-metered residential customer using 5,000 gallons per month will increase by \$6.68, from \$68.24 to \$74.92, but individual bills will vary according to the actual amount of water used, size of meter, and so forth.

Odor Elimination at the Mason Farm Wastewater Treatment Plant (WWTP) – Work still remains in OWASA’s efforts to eliminate objectionable off-site odors at the WWTP, but significant investments were made to plant facilities and operating procedures during the past year. These included:

- Construction of “Phase 2” improvements to cover and treat foul air from the plant’s three primary settling tanks began in February and is on schedule for completion in September 2009.
- Design was completed for the “Phase 3” improvements to cover and treat foul air from eight of sixteen aeration basins. The OWASA Board’s approved Capital Improvements Program for FY 2010-2024 includes funding for Phase 3 construction in FY 2011 and FY 2012.

Mason Farm WWTP Hydraulic and Treatment Capacity Study – An engineering study is underway to determine the actual hydraulic (flow) and treatment capacity of the WWTP now that significant plant improvements have been completed. The study will evaluate the effects of changes observed in influent sewage characteristics and will consider recently updated wastewater flow projections. It will also assess the need, timing, and cost of any capital or operating improvements that may be required to meet nitrogen and phosphorus removal standards in the recently enacted Jordan Lake Nutrient Rules. The study will be completed by April 2010.

Biosolids – OWASA produces about four dry tons per day of wastewater biosolids. A portion of this is applied as liquid to agricultural land, and the remainder is “dewatered” to the texture and consistency of potting soil and transported to a private composting facility. Our near-term focus is on improving and optimizing the existing land application and composting program. OWASA recognizes that some uncertainty still exists about the effects of certain biosolids constituents, and we support further studies to determine these impacts. However, we also firmly believe that recycling biosolids through a properly managed program in strict compliance with State and federal permit requirements is a safe, cost effective, and environmentally responsible way of managing this inevitable by-product of our community.

Reclaimed Water System (RCW) – RCW pumping, storage, and pipeline facilities are now complete, and the University began using RCW in April 2009. RCW is expected to supply an average of 0.66 million gallons per day (mgd), or about nine percent of the community's total water needs during FY 2010, and as much as 2 mgd when the main campus is fully developed in the late 2020s. By decreasing the amount of drinking water for non-potable uses, the RCW system will reduce the community's drought risk and will help defer future expansions of water supply and treatment facilities.

The RCW system will be financially self-supporting. UNC paid the construction costs, and OWASA will recover all operating, maintenance, management, and overhead expenses through separate RCW rates and fees as specified in our contractual agreement with UNC. We received about \$2.25 million in Federal and State grant funding for the project.

Rogers Road Community – OWASA provided Orange County's Housing and Community Development Department with updated cost estimates for extending sewer service to a portion of the Rogers Road community as the County explored opportunities for State of NC Community Development Block Grant (CDBG) funding. Orange County subsequently elected not to apply, due grant conditions that require "severe sewer needs," such as a lack of on-site wastewater systems, the presence of pit privies, evidence of direct wastewater discharges, failed septic systems, etc., to qualify for funding. None of those conditions are present in the Rogers Road area. County staff will continue to seek funding from other sources for Rogers Road sewer improvements.

Carolina North – OWASA staff participated in meetings with UNC and Town of Chapel Hill staff as the Town and University drafted the Carolina North Development Agreement, which the Town and University approved this past spring.

Capital Improvement Projects – OWASA's Capital Improvements Program (CIP) includes a number of projects that involve local permits and/or affect local neighborhoods. Highlights of FY 2009 projects are described below.

- The remaining section of the **Meeting of the Waters Interceptor** along **Fern Lane** and through a utility easement in the **Coker Pinetum** was completed in June 2009. The sewer line was co-constructed with the Reclaimed Water Transmission Main.
- Landscaping improvements required by the Town of Chapel Hill's Special Use Permit for the booster pump station near **Old Chapel Hill Road and I-40** were completed in December 2008. This work had been postponed due to drought conditions when construction work was completed in May 2008.
- We continue to replace aging water mains in order to maintain a high level of water service reliability. Replacement projects were completed during FY 2009 at the **Brookside Condominiums** along **Hillsborough Street**; at the intersection of **Martin Luther King, Jr. Boulevard/North Columbia Street/North Street**, and **along Lexington Drive/Lexington Circle** in Heritage Hills.
- A project to replace the **Cleland Drive** sewage pump station with a new gravity sewer was recently completed in conjunction with the replacement of an aging water main.

- A major project to replace portions of the large sewer main along **Bolin Creek** between **Estes Drive Extension** and **Martin Luther King, Jr. Boulevard** will begin in FY 2010 with completion scheduled during FY 2011. OWASA's application for a Town of Chapel Hill Zoning Compliance Permit is currently under review.

KEY OWASA FACTS, FY 2009 (JULY 1, 2008 – JUNE 30, 2009)

<i>Water Supply and Treatment</i>		FY 08	FY 09
Average Daily Drinking Water Production (Million Gallons Per Day = MGD)		8.0	8.0
Peak Day Drinking Water Production (MGD)		13.4	10.9
Total Rainfall (Inches): <i>At Jones Ferry Road Water Treatment Plant</i> 30 Year Average (through Dec 2008) = 47.8 inches		36.8	56.3
Exceedances of Primary Drinking Water Standards		0	0
<i>Wastewater Collection and Treatment</i>		FY 08	FY 09
Average Daily Wastewater Treated (MGD)		7.4	7.9
Reportable Sewer Overflows		1	7
Exceedances of Treated Wastewater Quality Standards		2	1
<i>Financial</i>		FY 08	FY 09
Total Revenues (\$ Million):	<i>Budget</i>	\$32.4	\$32.5
	<i>Actual</i>	\$30.7	\$32.0
Operations & Maintenance Expenditures (\$ Million):	<i>Budget</i>	\$18.2	\$18.4
	<i>Actual</i>	\$16.5	\$17.5
Capital Improvements Expenditures (\$Million):	<i>Budget</i>	\$18.8	\$13.9
	<i>Actual</i>	\$16.3	\$10.5
Debt Service Coverage Ratio (Minimum of 1.2 required)		1.5	1.6
Total Water Meter Connections at End of Fiscal Year		20,279	20,452
Average combined monthly water and sewer bill for a residential customer using 5,000 gallons per month:		(FY 2009) \$68.24	(FY 2010) \$74.92

MONTHLY SUMMARY OF CALLS AND E-MAILS TO OWASA
FROM NEIGHBORS REPORTING ODOR
IN THE MASON FARM WASTEWATER TREATMENT PLANT AREA

January-2002 to July-2009

	2002	2003	2004	2005	2006	2007 Reports	2007 Events	2008 Reports	2008 Events	2009 Reports	2009 Events
January	11	3	9	0	8	3	3	11	8	1	1
February	7	5	2	0	8	0	0	6	4	1	1
March	9	0	7	1	10	6	4	1	1	1	1
April	9	2	4	0	9	3	3	1	1	1	1
May	6	0	2	5	8	4	3	2	2	8	5
June	4	1	1	1	5	1	1	13	8	9	8
July	1	0	2	0	0	4	2	6	6	4	3
August	1	0	4	3	11	2	2	12	9		
September	2	5	2	2	9	3	3	1	1		
October	2	6	1	1	8	9	8	2	2		
November	0	0	1	7	2	11	6	7	7		
December	3	3	2	5	8	16	10	2	2		
TOTALS	55	25	37	25	86	62	45	64	51	25	20

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**

May 2009 - July 2009

Date call received	Time call received	Location
5/10/2009	7:32 AM	Highland Woods
5/10/2009	7:55 AM	Highland Woods
5/21/2009	10:43 PM	Highland Woods
5/21/2009	11:46 PM	Highland Woods
5/22/2009	11:11 PM	Highland Woods
5/22/2009	7:58 PM	Highland Woods
5/24/2009	8:21 PM	Highland Woods
5/31/2009	8:15 PM	Highland Woods
6/02/2009	9:25 PM	Highland Woods
6/02/2009	10:40 PM	Highland Woods
6/03/2009	6:45 AM	Highland Woods
6/08/2009	8:30 AM	Highland Woods
6/12/2009	11:30 AM	Highland Woods
6/21/2009	12:06 AM	Highland Woods
6/23/2009	9:30 AM	Highland Woods
6/25/2009	11:25 AM	Highland Woods
6/27/2009	11:00 AM	Highland Woods
7/01/2009	9:06 PM	Highland Woods
7/06/2009	10:10 PM	Highland Woods
7/11/2009	12:06 AM	Highland Woods
7/11/2009	12:49 AM	Highland Woods

E-mails from OWASA to neighbors
of the Mason Farm Wastewater Treatment Plant (WWTP)
regarding odor elimination matters

April 24- August 31, 2009

Date	Topic/Comments:
April 30	Quarterly report to the Town of Chapel Hill
May 27	OWASA Board's public hearing on the proposed budget and capital program
May 29	OWASA Board plan to discuss proposed capital program on June 11th
June 12	OWASA Board's decision on capital program including next phase of odor elimination work
June 25	Repair of hose to be completed; possible odor releases in interim
July 16	Status of Phase 2 odor elimination work on primary settling tanks, consideration of deferring Phase 3 improvements (covering 8 of 16 aeration basins)

**DISTRIBUTION LIST FOR OWASA E-MAILS ABOUT ODOR RELEASES FROM
THE MASON FARM WWTP AND RELATED ITEMS (August 31, 2009)**

Area	Name
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
	Reed Johnson
	Rex Bartles
	Dan Pollitt
	Mary Ellen Bierck
	Barnes Bierck
	Nortin Hadler
	Carol Hadler
	Frank P. Rexford, President, Highland Woods Association
	Christina and Rex Page
	Ed Ludwig
	Joy Javits
	Gunilla Luboff
	Fred Hall
	John and Anna K Schwab
	Mary Helen and Donald Hayman
Finley Forest	Adam Kimplead
	Cindy Underwood
	Dan Puckett
	Donna Kaye
	David J. Polewka
	Kathryn Conard
	Michael Sharpe
	Rima Wehbe
	Dan Choi
	Julie Maness
Laurel Hill	Mike Ramsey
	Phyllis Barrett
	Bob Wendell, Pres. Laurel Hill Association
	Carol David
	Pat Evans

Area	Name
	Ewan Rodewald and Sharon Hodge
	Joe Ferrell
	Dr. Sian Kwa
	Marcella Grendler
	Paul Grendler
	Carolyn Goldfinch
	Carol Hazard and Winston Liao
	Dick and Marie Clark
	Kay Goldstein
	Ann Wilson
	Anne Fogleman
	Louis Fogleman
St. Thomas More Church and School	St. Thomas More Church staff
	Carlos Lima
Morgan Creek area	Ellen Johnson
	Betsy Malpass
	Hanson Malpass
	Jeannie Cox
	Laura King Moore
	Jeanne Langley
	John Pendergrass
	AW Carr
	Gary Glish
	Marilyn and Don Hartman
Ronald McDonald House	Shelly Day
Family House	Greg Kirkpatrick, Executive Director
	Janice Ross, Operations Manager
	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
Bayberry Drive area	William Ware
University of North Carolina	Jim Ward, Curator, NC Botanical Garden
	Jim Ward--home
	Peter White, Director, NC Botanical Garden
	Johnny Randall, Assistant Director, NC Botanical garden
	Carolyn Elfland, Assoc. Vice Chancellor
	Ray DuBose, Energy Services Director

Area	Name
	Margaret Holton, Water, Sewer & Stormwater Coord.
	Mary Beth Koza, Director, Environment, Health and Safety
	Ross Fowler, Finley Golf Course
	Willie Scroggs, Athletic Department
	Michael Wilkinson, golf pro
	John Inman, Men's Golf Coach
	Sally Austin, Women's Golf Coach
	UNC Tennis Center
	UNC parking
	Mike McFarland, Corporate Relations
	Scott Ragland, Corporate Relations
	Lisa Katz, Corporate Relations
	Linda Convisor, Corporate Relations
	Jon Howes, Corporate Relations
	Married Student Housing Manager
	UNC Farm (Faculty Staff Recreation Association)
	Steve Reznick, UNC Farm Assoc President
	Jim McAdams, Energy Services
	Frank Maynard, Athletics/ Finley Golf Course
	Robert Costa, Athletics/ Finley Golf Course
	Jeremy Whitehurst, Athletics/ Finley Golf Course
	Mark Steffer, Athletics/ Finley Golf Course
	Jeff McCracken, Public Safety
UNC Hospitals	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
	Lance Norris, Public Works Director
	Richard Terrell, Public Works Operations Supt.
	Dan Jones, Fire Chief
	Caprice Mellon, Deputy Fire Chief
	Robert Bosworth, Deputy Fire Chief
	Catherine Lazorko, Public Information Officer
	Jennie Bob Culpepper, Planning Director
	David Bonk, Planner
	Phil Mason, Planner
	Sabrina Oliver, Town Clerk
	Sandy Kline, Deputy Town Clerk
	Larry Tucker, Engineering
	Bobby Pettiford, Inspections
	Brian Curran, Police Chief
	Kevin Gunter, Captain/ Police Information Officer

Area	Name
City Schools	Neil Pedersen, Superintendent
	Bill Mullin
	Todd LoFrese, Asst Supt. For Support Services
Other Utilities	Ken Kernodle, Duke Energy
	Steve Small, Duke Energy
	Rob Masterson, BellSouth/ATT
	Billy Miller, PSNC
	Time Warner Cable
Orange County	Clint Osburn, Emergency Management
	Orange 911 Center Supervisor on duty
	Mike Tapp, Fire Marshall
	Frank Montes de Oca, Emergency Services Director
	Tom Konsler, Environmental Health
Other	Meadowmont Apts.
	Bill Ferrell, Meadowmont Community Association
	Chamber of Commerce

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

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)
May 2009	38	12	11	4	0	15	18	20	21	16
June 2009	38	7	6	0	0	9	14	26	23	14
July 2009	40	1	0	0	0	5	10	15	14	2
Totals	116	20	17	4	0	29	42	61	58	32
%		8	6	2	0	11	16	23	22	12

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.

**SUMMARY OF ON-SITE HYDROGEN SULFIDE (H₂S)
ODOR MONITORING**

Month and year	Headworks Monitor			UNC Monitor			Digester Monitor			Switchgear Monitor		
	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)	Average H ₂ S Reading (ppm)	Minimum H ₂ S Reading (ppm)	Maximum H ₂ S Reading (ppm)
May 2009	0.0000	0.0000	0.0005 ¹	0.0006	0.0000	0.0519 ²	0.0023	0.0000	0.4952 ³	0.0001	0.0000	0.0471 ⁴
June 2009	0.0000	0.0000	0.0000	0.0016	0.0000	0.4020 ⁵	0.0003	0.0000	0.5800 ⁶	0.0001	0.0000	0.5050 ⁷
July 2009	0.0000	0.0000	0.0000	0.0019	0.0000	0.1805 ⁸	0.0002	0.0000	0.0322 ⁹	0.0001	0.0000	0.0214 ¹⁰

Notes:

- ¹ Maximum reading occurred on May 18, 2009 at 3:30 PM
² Maximum reading occurred on May 8, 2009 at 10:00 PM.
³ Maximum reading occurred on May 3, 2009 at 5:37 PM.
⁴ Maximum reading occurred on May 11, 2009 at 1:33 AM.
⁵ Maximum reading occurred on June 2, 2009 at 9:13 AM.
⁶ Maximum reading occurred on June 9, 2009 at 8:12 AM.
⁷ Maximum reading occurred on June 2, 2009 at 9:22 AM.
⁸ Maximum reading occurred on July 10, 2009 at 9:32 PM.
⁹ Maximum reading occurred on July 9, 2009 at 7:53 PM.
¹⁰ Maximum reading occurred on July 12, 2009 at 6:23 AM.

Monitor Locations:

Headworks Monitor (#1) – Monitor located between Headworks Facility and Septage Receiving Station on south side of plant property.
 Digester Monitor (#2) – Monitor located between Digester #1 and Digester #4 on west side of plant property.
 UNC Monitor (#3) – Monitor located between UNC Research Building and Trickling Filter on north side of plant property.
 Switchgear Monitor (#4) – Monitor located across from Switchgear building on north side of plant property.