ORANGE WATER AND SEWER AUTHORITY

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

MEMORANDUM

TO: **Finance Committee**
John Young (Chair)
Terri Buckner
Gordon Merklein
Will Raymond
Amy Witsil
Alan Rimer (*ex-officio*)

THROUGH: Ed Kerwin

FROM: Stephen Winters, CPA

DATE: October 11, 2012

SUBJECT: Finance Committee Meeting – October 17, 2012

The Finance Committee will meet on Wednesday, October 17, 2012, at 8:00 AM in the OWASA Board Room. The agenda will be:

- **Review and discuss OWASA's Rate Study. (Background information attached.)**

  Committee Action Requested: Receive and discuss the study's results and recommendations.

Stephen Winters, CPA
Director of Finance and Customer Service

cc: Board of Directors, Ed Kerwin, Bob Epting

Attachment 1 – Background information for rate study discussion
Attachment 2 – Schedule of current water and sewer rates
Chart A – Rate structure survey information
Chart B – Rate structure scenarios

Rate Study Discussion Information

At the Finance Committee meeting on September 13, 2012, we discussed potential changes to components of our rate structure. Committee members also posed questions and requested additional information. The following information addresses questions from the September 13th meeting and also summarizes the impact of some of the alternative rate structure scenarios that were discussed.

1. What is the monthly "customer service cost" per account? (This includes meter reading; meter maintenance, repair and replacement; preparation and delivery of bills; receipt and processing of payments; records maintenance; collection of delinquent accounts; receipt, investigation and resolution of inquiries and complaints.)

    - Approximately $5 per account, per account.

2. For other water utilities, what portion of a residential customer's bill is made up of a fixed service charge versus a volumetric commodity charge?

    - The attached *Chart A* shows the amount of the fixed service charge and the volumetric commodity charge for 35 North Carolina water utilities. This analysis is based on bills for 5,000 gallons of water use. We are attempting to gather information about the amount of revenue other utilities derive from fixed charges versus volumetric charges.

3. What is the rationale for the block volumes of our current rate structure for residential customers?

    - The increasing block rate structure first went into effect on October 1, 2007 when the monthly average water use for our residential customers was about 5,000 gallons.
    - The first block, 0 to 2,000 gallons, is intended to reflect the minimum amount of water required to meet essential domestic requirements.
    - Block two, the next 3,000 gallons, brings the range of the first two blocks to the increment that is closest to the average single family residential monthly water usage: 5,000 gallons.
    - The first block rate was initially set at 60% of the second.
    - The block three rate was initially set at 1.35 times the Block two rate.
    - The block four rate was initially set at 1.35 times the Block three rate.
    - The block five rate was initially set at 1.75 times the Block four rate.

    As rate increases have been applied since 2007, the differentials between the blocks have changed. This has been done out of concern for affordability and a desire to recover more costs from high-volume users, especially those in Blocks four and five.

4. How will different customer classes be affected by the rate structure changes we are considering?

    - The attached *Chart B* shows the effects of the three rate structure scenarios listed below. In each scenario, the 15,000 gallon sewer cap and the current block rate structure is assumed to remain in-place. We will be able to discuss additional scenarios during the meeting.

        - Scenario 1
            - Adjusts the monthly service charge so that the amount of revenue recovered from the fixed charge is 20% for both water and sewer.
            - Separately calculates the customer service portion of the monthly service charge.

        - Changes the allocation of the monthly service charge based on meter size to match the allocation (ratios) recommended by the American Water Works Association (AWWA).
    - Scenario 2
        - Same as Scenario 1 but adjusts the monthly service charge so that the amount of revenue recovered from the fixed charge is 10% for water and sewer.
    - Scenario 3
        - Eliminates the monthly service charge. All revenue comes from volumetric commodity charges.

Scenarios 2 and 3 would reduce monthly charges for low-volume residential customers and low-volume non-residential customers with small meters. However, those scenarios would result in increases in the monthly charges for many non-residential customers, especially those who use relatively high volumes of water compared to the size meter that serves their property.

5. Consider alternatives to the "seasonal rate" structure for billing master-metered, multi-family residential properties.

    - Most multi-family residential properties are served by a single OWASA meter ("master meter"). Some master-metered, multi-family properties have installed private meters for each unit of the property ("submeters"). The submeters are owned and maintained by the property owner. OWASA is responsible for billing the property based on the water passing through the master meter. The property owner or manager may bill the property's individual units at rates approved by the North Carolina Utilities Commission (NCUC).
    - Currently, we bill master-metered, multi-family residential properties using the seasonal rate structure. Under this approach, such properties are billed at a flat commodity rate that is lower in off-peak-use months and higher during peak-use months.
    - Changing the billing structure for master-metered, multi-family residential properties is a complex issue and staff recommends that it be addressed in a process that is separate from the current rate study. Analyzing alternative billing methods for these types of properties was not in the scope of the current study. Additionally, master-metered, multi-family residential properties represent about 20% of our total sales so any change to the way we bill this customer class could have significant revenue implications and/or affect the rates we charge to our other customer classes.

6. The following questions / issues raised during the September 13th meeting have not yet been addressed:

    - How much of our fixed costs are related to supporting baseline use vs. peak seasonal and peak-day demands? Depending on that analysis, we may need to consider revising our approach of recovering the cost of peak demand capacity from peak demand users.
    - Analyze customer data by geographic area.
    - Consider adjusting the "rate blocks."
    - Should we consider funding installation of automated meter reading technology throughout the service area, thereby enabling us to bill in smaller increments and realize other benefits?
    - How do our reserve fund levels and targets compare to those of other utilities?

Monthly Water Rates

Monthly water service charges:

Meter Size	Monthly Service Charge
5/8”	$14.70
3/4" Combination Fire and Domestic Service Meter	$15.20
1”	$29.53
1-1/2”	$63.86
2”	$96.38
3”	$198.22
4”	$323.58
6”	$704.66
8”	$1,002.06

Monthly water commodity charges for individually metered residential accounts:

	Volume of Use (Gallons)	Commodity Rate per 1,000 Gallons
Block 1	1,000 to 2,000	$2.63
Block 2	3,000 to 5,000	$6.39
Block 3	6,000 to 10,000	$7.83
Block 4	11,000 to 15,000	$10.94
Block 5	All use 16,000 and up	$19.79

Monthly water commodity charges for non-residential accounts:

Off-peak seasonal rate per 1,000 gallons (October through April)	$4.16
Peak seasonal rate per 1,000 gallons (May through September)	$7.91

Monthly Sewer Rates

Monthly sewer service charges:

Meter Size	Monthly Service Charge
5/8” or 3/4" Combination Fire and Domestic Service	$12.00
1”	$20.61
1-1/2”	$35.53
2”	$53.72
3”	$101.58
4”	$155.28
6”	$284.70
8”	$485.82

Monthly sewer commodity charges:

$6.48 per thousand gallons

Individually-metered residential customers will not be charged for monthly sewer use in excess of 15,000 gallons.

Comparative Water & Sewer Rate Survey For:		
OWASA		Date
5,000	Gallons/Month	10/9/2012

Chart A

Water & Sewer System	Water Bill				Sewer Bill				Total Bill			
	Fixed	Volume	Total	% Fixed	Fixed	Volume	Total	% Fixed	Fixed	Volume	Total	% Fixed
Aberdeen	$ 5.00	$ 12.83	$ 17.83	28%	$ 5.00	$ 15.18	$ 20.18	25%	$ 10.00	$ 28.00	$ 38.00	26%
Apex	5.24	20.30	25.54	21%	7.95	28.35	36.30	22%	13.19	48.65	61.84	21%
Benson	2.15	21.15	23.30	9%	4.00	26.05	30.05	13%	6.15	47.20	53.35	12%
Broadway	8.00	20.00	28.00	29%	8.00	22.50	30.50	26%	16.00	42.50	58.50	27%
Carthage	14.00	15.00	29.00	48%	14.00	31.50	45.50	31%	28.00	46.50	74.50	38%
Cary	3.07	18.00	21.07	15%	3.07	38.65	41.72	7%	6.14	56.65	62.79	10%
Chatham County	15.00	35.00	50.00	30%	15.00	40.00	55.00	27%	30.00	75.00	105.00	29%
Clayton	10.10	17.55	27.65	37%	5.20	24.30	29.50	18%	15.30	41.85	57.15	27%
Durham	5.56	16.07	21.63	26%	6.49	23.80	30.29	21%	12.05	39.87	51.92	23%
Fuquay-Varina	9.55	15.61	25.16	38%	11.50	22.00	33.50	34%	21.05	37.61	58.66	36%
Garner	5.24	19.33	24.57	21%	5.05	19.45	24.50	21%	10.29	38.78	49.07	21%
Hillsborough	23.04	15.36	38.40	60%	25.98	17.32	43.30	60%	49.02	32.68	81.70	60%
Holly Springs	11.00	21.40	32.40	34%	11.00	21.40	32.40	34%	22.00	42.80	64.80	34%
Johnston County	15.00	15.50	30.50	49%	15.00	23.25	38.25	39%	30.00	38.75	68.75	44%
Kenly	5.00	26.20	31.20	16%	8.50	44.65	53.15	16%	13.50	70.85	84.35	16%
Knightdale	6.27	30.10	36.37	17%	6.27	26.20	32.47	19%	12.54	56.30	68.84	18%
Micro	18.35	9.00	27.35	67%	9.35	38.05	47.40	20%	27.70	47.05	74.75	37%
Moore County	6.10	18.70	24.80	25%	6.10	21.20	27.30	22%	12.20	39.90	52.10	23%
Morrisville	5.00	21.80	26.80	19%	5.00	50.50	55.50	9%	10.00	72.30	82.30	12%
OWASA	14.70	24.43	39.13	38%	12.00	32.40	44.40	27%	26.70	56.83	83.53	32%
Pine Level	12.00	12.50	24.50	49%	17.50	20.00	37.50	47%	29.50	32.50	62.00	48%
Pittsboro	9.00	23.32	32.32	28%	10.00	35.66	45.66	22%	19.00	58.98	77.98	24%
Princeton	16.78	21.25	38.03	44%	25.17	43.00	68.17	37%	41.95	64.25	106.20	40%
Raleigh	5.24	19.33	24.57	21%	5.05	19.45	24.50	21%	10.29	38.78	49.07	21%
Robbins	17.00	19.71	36.71	46%	18.00	26.58	44.58	40%	35.00	46.29	81.29	43%
Rolesville	11.66	11.64	23.30	50%	17.23	18.60	35.83	48%	28.89	30.24	59.13	49%
Sanford	13.77	15.32	29.09	47%	27.54	30.65	58.19	47%	41.31	45.97	87.28	47%
Selma	5.00	18.00	23.00	22%	9.00	31.51	40.51	22%	14.00	49.51	63.51	22%
Siler City	23.00	3.51	26.51	87%	7.00	17.55	24.55	29%	30.00	21.06	51.06	59%
Smithfield	6.02	20.82	26.84	22%	6.80	29.35	36.15	19%	12.82	50.17	62.99	20%
Southern Pines	10.31	15.00	25.31	41%	4.06	23.75	27.81	15%	14.37	38.75	53.12	27%
Taylortown	14.60	9.00	23.60	62%	10.40	6.00	16.40	63%	25.00	15.00	40.00	63%
Wake Forest	5.24	17.00	22.24	24%	9.72	25.50	35.22	28%	14.96	42.50	57.46	26%
Wendell	5.32	31.70	37.02	14%	5.32	29.75	35.07	15%	10.64	61.45	72.09	15%
Zebulon	12.81	33.60	46.41	28%	13.04	30.75	43.79	30%	25.85	64.35	90.20	29%
Average				35%				28%				31%

Scenario 1
> 20% revenue recovery from Service Charge
> Separate customer service Service Charge
> AWWA Meter Ratios

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Chart B

Gallons [4]	% of Bills for Customer Type	Cumulative % of Bills for Customer Type [4]	$ Change in Monthly Bill	% Change in Monthly Bill	% of Bills for Customer Type	Cumulative % of Bills for Customer Type [4]	$ Change in Monthly Bill	% Change in Monthly Bill	% of Bills for Customer Type	Cumulative % of Bills for Customer Type [4]	$ Change in Monthly Bill	% Change in Monthly Bill
	Individually-metered, single-family residences [1]				Non-residential 5/8" Off-Peak [2]				Non-residential 2" Off-Peak [3]			
2,000	17.0%	35%	(0.50)	-1.1%	11.0%	42%	(0.40)	-0.8%				
4,000	15.0%	68%	(0.80)	-1.1%	7.0%	58%	(0.82)	-1.2%				
5,000	10.0%	78%	(0.95)	-1.1%	6.0%	63%	(1.03)	-1.3%	1.0%	10%	26.77	13.2%
7,000	4.0%	89%	(1.17)	-1.0%	4.0%	71%	(1.45)	-1.4%				
10,000	1.0%	95%	(1.50)	-1.0%	2.0%	80%	(2.08)	-1.6%	2.0%	18%	25.72	10.0%
15,000	0.3%	98%	(1.60)	-0.7%	1.0%	87%	(3.13)	-1.7%				
20,000	0.1%	98.9%	1.20	0.4%	1.0%	91%	(4.18)	-1.7%	1.0%	31%	23.62	6.5%
60,000					0.1%	98.9%	(12.58)	-1.9%	0.4%	67%	15.22	1.9%
100,000									0.3%	82%	6.82	0.6%
500,000									0.0%	99.3%	(77.18)	-1.4%
					Non-residential 5/8" Peak				Non-residential 2" Peak			
2,000					12.0%	41%	(0.02)	0.0%				
4,000					7.0%	56%	(0.06)	-0.1%				
5,000					6.0%	62%	(0.08)	-0.1%	1.0%	12%	27.72	12.5%
7,000					4.0%	70%	(0.12)	-0.1%				
10,000					2.0%	79%	(0.18)	-0.1%	1.0%	19%	27.62	9.4%
15,000					1.0%	86%	(0.28)	-0.1%				
20,000					1.0%	90%	(0.38)	-0.1%	1.0%	32%	27.42	6.3%
60,000					0.1%	98.5%	(1.18)	-0.1%	0.3%	67%	26.62	2.6%
100,000									0.3%	80%	25.82	1.6%
500,000									0.0%	99.5%	17.82	0.2%

Notes:
1 - Individually-metered, single-family residences represent 88% of all bills
2 - 5/8" non-residential customers represent 3.6% of all bills
3 - 2" non-residential customers represent 1.4% of all bills
4 - Not all "thousand gallon billing increments" are shown on this chart

Scenario 2
> 10% revenue recovery from Service Charge
> Separate customer service Service Charge
> AWWA Meter Ratios

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Chart B

Gallons [4]	% of Bills for Customer Type	Cumulative % of Bills for Customer Type [4]	$ Change in Monthly Bill	% Change in Monthly Bill	% of Bills for Customer Type	Cumulative % of Bills for Customer Type [4]	$ Change in Monthly Bill	% Change in Monthly Bill	% of Bills for Customer Type	Cumulative % of Bills for Customer Type [4]	$ Change in Monthly Bill	% Change in Monthly Bill
	Individually-metered, single-family residences [1]				Non-residential 5/8" Off-Peak [2]				Non-residential 2" Off-Peak [3]			
2,000	17.0%	35%	(8.70)	-19.4%	11.0%	42%	(8.16)	-17.0%				
4,000	15.0%	68%	(5.30)	-7.5%	7.0%	58%	(5.54)	-8.0%				
5,000	10.0%	78%	(3.60)	-4.3%	6.0%	63%	(4.23)	-5.3%	1.0%	10%	(52.03)	-25.6%
7,000	4.0%	89%	0.30	0.3%	4.0%	71%	(1.61)	-1.6%				
10,000	1.0%	95%	6.15	4.0%	2.0%	80%	2.32	1.7%	2.0%	18%	(45.48)	-17.7%
15,000	0.3%	98%	18.60	7.7%	1.0%	87%	8.87	4.8%				
20,000	0.1%	99%	35.90	10.5%	1.0%	91%	15.42	6.4%	1.0%	31%	(32.38)	-8.9%
60,000					0.1%	99.7%	67.82	10.2%	0.4%	67%	20.02	2.5%
100,000									0.3%	82%	72.42	6.0%
500,000									0.0%	99.3%	596.42	10.9%
					Non-residential 5/8" Peak				Non-residential 2" Peak			
2,000					12.0%	41%	(6.16)	-11.1%				
4,000					7.0%	56%	(1.54)	-1.8%				
5,000					6.0%	62%	0.77	0.8%	1.0%	12%	(47.03)	-21.2%
7,000					4.0%	70%	5.39	4.2%				
10,000					2.0%	79%	12.32	7.2%	1.0%	19%	(35.48)	-12.1%
15,000					1.0%	86%	23.87	9.8%				
20,000					1.0%	90%	35.42	11.3%	1.0%	32%	(12.38)	-2.8%
60,000					0.1%	99%	127.82	14.4%	0.3%	67%	80.02	7.9%
100,000									0.3%	80%	172.42	10.9%
500,000									0.0%	99.5%	1,096.48	14.9%

Notes:
1 - Individually-metered, single-family residences represent 88% of all bills
2 - 5/8" non-residential customers represent 3.6% of all bills
3 - 2" non-residential customers represent 1.4% of all bills
4 - Not all "thousand gallon billing increments" are shown on this chart

Scenario 3
> No Service Charge

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Chart B

Gallons [4]	% of Bills for Customer Type	Cumulative % of Bills for Customer Type [4]	$ Change in Monthly Bill	% Change in Monthly Bill	% of Bills for Customer Type	Cumulative % of Bills for Customer Type [4]	$ Change in Monthly Bill	% Change in Monthly Bill	% of Bills for Customer Type	Cumulative % of Bills for Customer Type [4]	$ Change in Monthly Bill	% Change in Monthly Bill
	Individually-metered, single-family residences [1]				Non-residential 5/8" Off-Peak [2]				Non-residential 2" Off-Peak [3]			
2,000	17.0%	35%	(20.98)	-46.7%	11.0%	42%	(19.84)	-41.4%				
4,000	15.0%	68%	(12.44)	-17.6%	7.0%	58%	(12.98)	-18.7%				
5,000	10.0%	78%	(8.17)	-9.8%	6.0%	63%	(9.55)	-12.0%	1.0%	10%	(132.95)	-65.4%
7,000	4.0%	89%	1.45	1.3%	4.0%	71%	(2.69)	-2.7%				
10,000	1.0%	95%	15.88	10.2%	2.0%	80%	7.60	5.7%	2.0%	18%	(115.80)	-45.1%
15,000	0.3%	98%	45.73	18.9%	1.0%	87%	24.75	13.3%				
20,000	0.1%	99%	82.83	24.3%	1.0%	91%	41.90	17.5%	1.0%	31%	(81.50)	-22.5%
60,000					0.1%	99.7%	179.10	26.9%	0.4%	67%	55.70	7.1%
100,000									0.3%	82%	192.90	15.9%
500,000									0.0%	99.3%	1,564.90	28.6%
					Non-residential 5/8" Peak				Non-residential 2" Peak			
2,000					12.0%	41%	(15.24)	-27.5%				
4,000					7.0%	56%	(3.78)	-4.5%				
5,000					6.0%	62%	1.95	2.0%	1.0%	12%	(121.45)	-54.7%
7,000					4.0%	70%	13.41	10.5%				
10,000					2.0%	79%	30.60	17.9%	1.0%	19%	(92.80)	-31.6%
15,000					1.0%	86%	59.25	24.4%				
20,000					1.0%	90%	87.90	27.9%	1.0%	32%	(35.50)	-8.1%
60,000					0.1%	99%	317.10	35.6%	0.3%	67%	193.70	19.1%
100,000									0.3%	80%	422.90	26.6%
500,000									0.0%	99.5%	2,714.90	37.0%

Notes:
1 - Individually-metered, single-family residences represent 88% of all bills
2 - 5/8" non-residential customers represent 3.6% of all bills
3 - 2" non-residential customers represent 1.4% of all bills
4 - Not all "thousand gallon billing increments" are shown on this chart