




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: September 7, 2012

SUBJECT: Finance Committee Meeting – September 13, 2012

The Finance Committee will meet on Thursday, September 13, 2012, at 5:30 PM in the OWASA Board Room. The agenda will be:

- **Review and discuss OWASA's Rate Study. (Consultant's Technical Memo 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 – Summary of Consultant's Rate Study Technical Memorandum
Attachment 2 – Burton & Associates Technical Memorandum

Background

We engaged the firm of Burton & Associates to conduct a rate study. The engagement included two components:

- Revenue sufficiency – the purpose of this component was to help us update our financial planning model in order to evaluate the sufficiency of revenues provided by our current rates. This is an annual process that helps us determine whether a rate adjustment is needed. This phase of the engagement was completed in the spring of this year and informed our budget and rate adjustment decisions.
- Rate design – the purpose of this component was to help us analyze and identify potential changes to our rate structure to ensure it still supports our strategic priorities of cost of service, conservation, and affordability. Burton & Associates has developed tools that they are using to help us analyze how changing various rate structure components affects our various customer classes.

Staff has worked with our consultants to arrive at the recommendations outlined below.

Our discussion at the September 13, 2012 Finance Committee meeting will focus on potential changes to certain components of our rate structure. The goal of the discussion will be to determine which, if any, of the potential rate structure changes the Committee and staff are interested in considering further. Once these are identified, there will likely be further analysis and testing needed before a final decision is made. If the Board decides to modify the rate structure, we will develop an implementation plan which will include a process for obtaining input from the public.

Potential rate changes must be evaluated against rate-setting objectives such as:

- ✓ Ensure we generate sufficient revenues to remain sustainable
- ✓ Set rates to recover all costs we incur to provide the service from the party that benefits from the service
- ✓ Establish rates that are equitable across customer classes
- ✓ Make our rates affordable to the extent we can legally do so
- ✓ Maintain a system of rates and fees that is reasonably understandable by our customers
- ✓ Implement a rates and fees structure that is reasonably administered

These objectives can be competing and conflicting. For example, if monthly fixed service charges are set at a level that fully recovers our fixed costs and maximizes revenue stability, the minimum bill to our customers would be substantially higher which would adversely affect the affordability objective. Under such an approach, commodity volume charges would be much lower which would offset the conservation objective.

The attached Technical Memorandum (TM) from Burton & Associates summarizes results from the Rate Study work completed to date. Below is a summary of the issues covered in the TM.

1. Monthly Service Charges / portion of fixed costs recovered – Currently, 25% of water revenue is derived from the fixed water service charge and 75% is derived from the commodity volume charge. For sewer revenue, 19% is derived from the sewer service charge and 81% is derived from the commodity volume charge.

Recommendation: Change the amount of revenue derived from the fixed service charges so that the amounts recovered from water and sewer are both 20%.

Effect of change: This will result in a relatively small increase in the amount of “at-risk” revenue since more revenue will come from the commodity volume charge versus fixed service

charge. It will improve affordability as it will result in slightly lower bills for residential customers using lower volumes of water.

2. Monthly Service Charges / allocation of costs by meter size – The amount of our fixed monthly service charges increases based on meter size; large meters have a higher service charge than smaller ones. The American Water Works Association (AWWA) has established standards for determining the differential in service charges based on meter size. The amounts by which our service charges increase between meter sizes is different than the AWWA standard.

Recommendation: Recalibrate service charges to match the AWWA standard.

Effect of change: This will slightly reduce the service charge for most residential customers and increase the service charge for customers with large meters. Therefore, it will result in slightly lower bills for residential customers using lower volumes of water.

3. Monthly Service Charges / recovery of customer service and billing costs – Our monthly service charge recovers costs associated with customer service, meter reading and billing. It also includes other costs that increase as the size of a meter increases. Customer service costs do not change based on meter size; it does not cost more to read and bill for a 2” meter than it does for a 5/8” meter.

Recommendation: Separately determine the customer service portion of our service charge from the other service charge components that appropriately increase as meter size increases. The customer service portion would not be shown separately on bills.

Effect of change: This will better conform to the cost of service principle and will have negligible effect on customer classes.

4. Sewer Cap – Sewer charges for residential customers are based on the volume of water used. If a customer uses 5,000 gallons of water they are charged for treating 5,000 gallons of wastewater. For residential customers, monthly sewer charges are capped at 15,000 gallons of use. If a customer uses 22,000 gallons of water, they are charged for treating only 15,000 gallons of wastewater. The justification for using a cap is that water use over a certain number of gallons per month is most likely for outdoor use which means it does not enter the sewer system.

Recommendation: Lower the sewer cap. Customer water use data indicates that the cap should be no higher than 10,000 gallons.

Effect of change: Lowering the sewer cap will more accurately account for water that is most likely not entering OWASA's sewer system. It will have the effect of lowering the bills for residential customers with high-use and increasing the bills for non-residential customers and lower volume-use residential customers.

5. Block Rate Structure – We also considered changing certain aspects of our residential block rates such as the number of gallons in the blocks, the differential in rates between blocks, the number of blocks, etc.

Recommendation: Make no changes to the block rate structure. Our block rates are in-line with industry practices. However, once agreement is reached on the changes mentioned above, we can use “changing the block rate structure” as another tool to address conservation, affordability, etc.

Effect of change: Not applicable.

6. Drought Surcharges – Based on Burton & Associates' analysis, our current approach to drought surcharges should be generally revenue neutral during periods of water use restrictions. However, factors such as the time of year the drought occurs can greatly affect revenue recovery. Additionally, our analysis is based on our experience during prior droughts and we cannot be certain that customers will react similarly when the next water restriction incident occurs.

Recommendation: Do not modify the drought surcharge structure. The current structure appears to be revenue neutral; the analysis did not produce compelling reasons to make changes.

Effect of change: Not applicable.

The following are additional rate-setting policy issues that we recommend be included as part of the rate-setting process for FY 2014. However, we recommend that the above rate-setting issues be resolved before making any additional changes.

- Evaluate the current method for calculating irrigation service availability and monthly service charges
- Update water and sewer availability fee calculations
- Evaluate alternative rate structure approaches for master-metered residential developments

Committee Action Requested

Staff requests the Finance Committee's feedback on the consultant's report and recommendations before staff makes final recommendations for the Committee's consideration and ultimately, a vote by the Board of Directors.

We look forward to your questions, comments and guidance at the Committee's September 13th meeting.



Stephen Winters, CPA
Director of Finance and Customer Service

Attachment: Rate Design and Drought Surcharge Summary Technical Memorandum



TECHNICAL MEMORANDUM

Burton & Associates

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DATE: August 7, 2012

TO: Stephen Winters, Director of Finance & Customer Service, OWASA

FROM: Andrew Burnham, Senior Vice President, Burton & Associates

RE: RATE DESIGN AND DROUGHT SURCHARGE SUMMARY

The Orange Water and Sewer Authority (OWASA) retained Burton & Associates to perform a Water and Sewer Rate Study (Study) during Fiscal Year (FY) 2012 with the stated objectives of:

1. Assist in the update of the FAMS-XL© financial management planning model under license from Burton & Associates in order to evaluate the sufficiency of the revenues provided by OWASA's current rates to meet its current and projected cost requirements as part of the FY 2013 Budget development process.
2. Review OWASA's existing monthly water and sewer rate structure and identify potential modifications for consideration in regards to i) conservation incentives, ii) equality between seasonal and inclining block customers, iii) affordability, iv) the maximum (sewer cap) level of residential metered water use billed sewer volume charges, and v) conformance with accepted industry practice and cost-of-service principles.
3. Evaluate the effectiveness of the OWASA's Water Commodity or Drought Surcharges applicable during periods of mandatory water use restrictions.

FINANCIAL MANAGEMENT PLANNING MODEL UPDATE

Since FY 2008, Burton & Associates has assisted OWASA staff in annual updates to the FAMS-XL© model in order to measure the sufficiency of the revenues provided by current rates versus annual projected cost requirements and determined plans of annual rate revenue adjustments that would be necessary to meet its current and future cost requirements and financial planning targets. Specifically, Burton & Associates facilitates the update process by inputting or linking updated monthly customer statistics and billed consumption data for each service and class of customer, current year revenue and expenses, proposed operating and capital improvement budgets, historical fund balances, etc. The updated model is then reviewed with OWASA staff in on-site interactive worksessions to review and confirm the data, assumptions, and model results. The annual update is concluded by delivering a copy of our FAMS-XL© model to OWASA for use in finalizing its budget and rate recommendations for the upcoming year. This process was again completed as part of this Study for FY 2013.

RATE DESIGN MODIFICATIONS FOR CONSIDERATION

The second element of the Study was the examination of the current monthly water and sewer rates and identification of potential rate structure modifications in regards to i) conservation incentives, ii) equality between seasonal and inclining block customers, iii) affordability, iv) the maximum (sewer cap) level of residential metered water use billed sewer volume charges, and v) conformance with accepted industry practice and cost-of-service principles. The potential modifications identified for consideration by OWASA are separated between monthly service charges and commodity charges:

Monthly Service Charges

Level of Charges – Based on FY 2011 billing data and FY 2011 rates, it is estimated that OWASA recovers approximately 25% of its annual water revenue through monthly service charges, and 19% of its annual sewer revenue through monthly service charges. The remaining portion of the annual revenues for each system is recovered from commodity charges based on metered water use.

One modification developed for consideration was equalizing the level of revenue recovered in the monthly service charges for the water and sewer systems to be 20% of annual revenues. This would have the effect of reducing the water monthly service charge and slightly increasing the sewer monthly service charge, with the net effect being a reduction to the combined water and sewer monthly service charges. This type of modification would reduce the bills for low volume and average customers, with a slight increase to larger volume users. The reason larger volume users will see an increase to monthly bills is that lowering the amount of revenue recovered in monthly service charges increases the amount of revenue that must be recovered in commodity charges and subsequently requires higher usage-based rates.

This type of modification would enhance both affordability and water conservation, but would reduce the level of revenue recovery in fixed monthly charges, increasing the risk and financial impact to OWASA associated with variability in water demands.

Scaling of Charges for Larger Meters & Higher Volume Users – OWASA's current monthly service charges for water and sewer service are scaled based upon meter size (i.e. the charge increases for customers with larger meter sizes in recognition of the increased potential demands associated with larger meters). The level of monthly service charges for customers with meters larger than a 5/8" X 3/4" (5/8") meter is determined under generally accepted ratemaking practice by either observed usage or the maximum capacity flow rates as published by an industry organization such as the American Water Works Association (AWWA).

OWASA's current monthly service charges increase by meter size at a comparable level to the AWWA maximum capacity flow ratios. However, as rate increases have been applied across

the board over the years, the ratio of charges for the larger meter sizes appear to have gradually deviated from the AWWA maximum capacity flow ratios. One potential modification for consideration is to realign the meter size ratios applied to the monthly service charges to the AWWA flow rates as shown in the table below. As the current monthly service charges for larger meters are not scaled to the same level as the AWWA flow rates, making such an adjustment would allow for a small reduction to the level of the monthly service charges for customers with a 5/8" meter.

An alternative option that is also accepted within the industry would be to scale the monthly service charges based upon the observed level of demand by meter size within the OWASA service area. For example, if OWASA customers with 2" meters use on average 15 times more than the average monthly use of OWASA customers with a 5/8" meter, then the monthly service charge for a 2" meter would be set 15 times greater than the charge for a 5/8" meter. This particular modification would enhance affordability for customers with a 5/8" meter (over 90% of all bills issued, representing predominantly the residential customer class), and reduce affordability for customers with meter size 1" and larger (less than 10% of all bills issued, representing predominantly the non-residential customer class).

However, the ratios calculated using observed levels of demand are substantially higher than the existing ratios, as well as the AWWA maximum capacity flow ratios. If the Authority wished to use the ratios based on observed levels of demand, customers with larger meter sizes would see significant bill increases. Therefore, we recommend the Authority consider adopting the AWWA meter ratios as a first step; with future adjustments dependent upon the policy preference of the Board to move to a usage based method. The AWWA meter equivalency ratios and meter equivalency ratios calculated by meter size based upon observed average usage per the FY 2011 billing data by meter size are presented in the table below.

OWASA - Base Facility Charge Meter Ratios						
Meter Size	Current Water Base Facility Charges	Current Irrigation Base Facility Charges	Current Sewer Base Facility Charges	Current Water Meter Ratios	Current Irrigation Meter Ratios ⁽¹⁾	Current Sewer Meter Ratios
5/8"	\$ 14.70	\$ 23.54	\$ 12.00	1.00	1.60	1.00
1"	\$ 29.53	\$ 47.05	\$ 20.61	2.01	3.20	1.72
1.5"	\$ 63.86	\$ 87.10	\$ 35.53	4.34	5.93	2.96
2"	\$ 96.38	\$ 133.96	\$ 53.72	6.56	9.11	4.48
3"	\$ 198.22	\$ 265.15	\$ 101.58	13.48	18.04	8.47
4"	\$ 323.58	\$ 407.02	\$ 155.28	22.01	27.69	12.94
6"	\$ 704.66	\$ 800.67	\$ 284.70	47.94	54.47	23.73
8"	\$ 1,002.06	\$ 1,273.30	\$ 485.62	68.17	86.62	40.47

(1) Irrigation Meter Ratios are calculated using 5/8" Water Meter as the base

Alternative Meter Size Ratios				
Meter Size	Water Use ⁽²⁾ Meter Ratios	Irrigation Use ⁽²⁾ Meter Ratios	Sewer Use ⁽²⁾ Meter Ratios	AWWA Meter Ratios
5/8"	1.00	2.46	1.00	1.00
1"	3.98	5.15	3.98	2.50
1.5"	8.99	12.10	8.99	5.00
2"	15.41	22.01	15.41	8.00
3"	45.46	62.14	45.46	16.00
4"	113.71	170.56	113.71	25.00
6"	143.17	214.75	143.17	50.00
8"	552.13	828.20	552.13	80.00

(2) Use ratios based upon billed consumption by meter size in FY 2011

Customer Service Charge – An additional modification for consideration is the development of a separate Customer Service Charge that would be assessed to each metered service in order to recover the cost associated with customer service, meter reading, and billing. The revenue recovered by this new charge would reduce the revenue currently recovered in either monthly service charges and/or commodity charges. The advantage of this modification would be that it isolates and recovers cost components that are equal regardless of the size of the meter and amount of monthly water consumption. This would add one more component to the billing system; however, this could be overcome by combining the Monthly Readiness-to-Serve Charge with the Customer Service Charge. This could be accomplished by multiplying the Readiness-to-Serve Charge by the appropriate meter equivalency factor, then adding the Customer Service Charge for a combined Monthly Service Charge.

Commodity Charges

Commodity charges recover the portion of the operations and maintenance, debt service, and capital costs not recovered by monthly service charges. OWASA currently has a five-tier inclining block water commodity charge structure that is uniformly applied to residential customers regardless of meter size. Non-residential customers are assessed using a seasonal water commodity charge structure that includes a single commodity charge per 1,000 gallons during non-peak periods (October through April) that increases during peak water use periods (May through September). OWASA maintains a separate higher uniform water commodity charge for separate irrigation only meters. Relative to sewer service, OWASA employs a uniform sewer commodity charge that is capped for residential customers at 15,000 gallons of metered water consumption.

Residential Water Commodity Charges – While the existing residential commodity rate structure is fair and equitable, certain modifications could be considered to enhance affordability and/or increase the price incentive for water conservation. The first tier of usage is currently capped at 2,000 gallons and reflects a low rate on a portion of essential domestic use that is intended to provide affordability for low volume users. In order to enhance affordability, a potential change to the commodity charges would be to expand the first tier to 3,000 gallons. In addition, the second tier, currently from 2,001 – 5,000 gallons could be adjusted and expanded to be for water use between 3,001 – 6,000 gallons.

These modifications would have the effect of slightly lowering bills for low and average users. As a consequence, the charges for the remaining tiers of the inclining block rate structure would need to increase to offset the revenue impacts of such a change, providing an increase in the price incentive for conservation.

In addition to adjusting the amount of water use in each tier of the inclining block rate structure, the differential of commodity charges between each block could be adjusted or “steepened” which would send a larger price signal to higher volume users and aid in enhancing affordability to low volume users. It should be noted that the effect of elasticity has been factored into the calculation of the rates, and the effect of ongoing elasticity on future rate increases has been factored into the long term financial projections.

While there are many options on how to restructure the ranges of usage blocks as well as the rate differential from one block to the next, such rate structure adjustments will have consequences to users at various levels of usage which may influence policy decisions on usage block and rate modifications as the need to increase affordability to lower volume users is evaluated.

Non-Residential Water Commodity Charges – It is a goal of the Authority to have the level of commodity charge revenue per 1,000 gallons of the non-residential seasonal rates equal to the commodity charge revenue per 1,000 gallons of the inclining block residential rates. Although currently approximately equal, any rate structure modification would require an evaluation of revenue recovery. As such, we developed an additional modification in the rate design model that would precisely match these revenues.

This matching could be achieved by adjusting or increasing the differential between peak and non-peak seasonal rates to generate slightly more revenue so that the water commodity revenue per 1,000 gallons is equal to the residential inclining block rate structure. Increasing the rate differential would not only equalize the water commodity revenue generated per 1,000 gallons for residential and non-residential users but would also provide an additional price incentive for water conservation during periods of peak water use to non-residential customers.

Residential Sewer Cap – Currently, the amount of metered residential water consumption assessed sewer commodity charges is capped at 15,000 gallons per month. The intent of such a cap is to avoid charging sewer commodity charges to water use that is presumed to be primarily for irrigation and does not return to the sewer system. It has been our experience that residential sewer caps can range from 6,000 to 20,000 gallons (in communities that employ a cap).

The impact of lowering the current sewer cap would be to increase the sewer commodity charge, and thereby the monthly bill for all residential users at or below the new lower cap amount. Meanwhile, users above the new cap would see a lower bill as the higher commodity charge is more than offset by the fact it is applied to less water use. Moreover, within a uniform commodity charge structure, lowering the residential cap serves to increase the commodity charge that is applied to all customer classes, including non-residential users.

As an example, if the Authority wished to decrease the sewer cap to 10,000 gallons per month, all other rate design features being equal, the sewer commodity charge per 1,000 gallons for all customers would raise from \$6.48 to \$6.60. A single family residential customer with a 5/8" meter would see a slight increase to bills issued under 10,000 gallons due to the rise in the commodity charge, but would experience a decrease to the bill at any usage above 10,000 gallons due to the new cap. However, lowering the sewer cap would cause the bills for non-residential customers to increase as sewer cap does not apply to these customers and the higher sewer rate will cause an increase in all bills at all levels of usage for non-residential customers. The table below compares the combined monthly water and sewer bill under the

existing rates vs. those calculated with the 10,000 gallon cap for a residential single family customer with a 5/8" meter.

In addition, a bill comparison for a 2" Commercial customer is also included below. Due to the rise in the commodity charge as a result of the residential sewer cap being lowered, commercial customers will experience a slight increase to their monthly sewer bills.

Monthly Bill Comparison – 10,000 Gallon per Month Sewer Cap

Single Family 3/4" Meter Monthly Water & Sewer Bill Calculations						
(Gallons)	% of Bills	Agg. %	Current	Alternative	\$ Chg	% Chg
-	6.4%	6.4%	\$ 26.70	\$ 26.70	\$ -	0.0%
1,000	11.6%	18.0%	\$ 35.81	\$ 35.93	\$ 0.12	0.3%
2,000	17.3%	35.3%	\$ 44.92	\$ 45.16	\$ 0.24	0.5%
3,000	17.8%	53.1%	\$ 57.79	\$ 58.16	\$ 0.37	0.6%
4,000	14.7%	67.8%	\$ 70.66	\$ 71.16	\$ 0.50	0.7%
5,000	10.4%	78.2%	\$ 83.53	\$ 84.16	\$ 0.63	0.8%
6,000	6.7%	84.9%	\$ 97.84	\$ 98.60	\$ 0.76	0.8%
7,000	4.3%	89.2%	\$ 112.15	\$ 113.04	\$ 0.89	0.8%
8,000	2.8%	92.0%	\$ 126.46	\$ 127.48	\$ 1.02	0.8%
9,000	1.8%	93.8%	\$ 140.77	\$ 141.92	\$ 1.15	0.8%
10,000	1.2%	95.0%	\$ 155.08	\$ 156.36	\$ 1.28	0.8%
11,000	0.9%	96.0%	\$ 172.50	\$ 167.31	\$ (5.19)	-3.0%
12,000	0.7%	96.6%	\$ 189.92	\$ 178.26	\$ (11.66)	-6.1%
13,000	0.6%	97.2%	\$ 207.34	\$ 189.21	\$ (18.13)	-8.7%
14,000	0.4%	97.6%	\$ 224.76	\$ 200.16	\$ (24.60)	-10.9%
15,000	0.3%	97.9%	\$ 242.18	\$ 211.11	\$ (31.07)	-12.8%
16,000	0.3%	98.2%	\$ 261.97	\$ 230.92	\$ (31.05)	-11.9%
17,000	0.2%	98.4%	\$ 281.76	\$ 250.73	\$ (31.03)	-11.0%
18,000	0.2%	98.6%	\$ 301.55	\$ 270.54	\$ (31.01)	-10.3%
19,000	0.2%	98.8%	\$ 321.34	\$ 290.35	\$ (30.99)	-9.6%
20,000	0.1%	98.9%	\$ 341.13	\$ 310.16	\$ (30.97)	-9.1%

Commercial 2" Meter Monthly Water & Sewer Bill Calculations Off-Peak Season Rates						
(Gallons)	% of Bills	Agg. %	Current	Alternative	\$ Chg	% Chg
-	3.9%	3.9%	\$ 150.10	\$ 150.10	\$ -	0.0%
5,000	1.1%	10.4%	\$ 203.30	\$ 203.90	\$ 0.60	0.3%
10,000	1.7%	18.4%	\$ 256.50	\$ 257.70	\$ 1.20	0.5%
20,000	0.9%	30.6%	\$ 362.90	\$ 365.30	\$ 2.40	0.7%
30,000	1.3%	41.5%	\$ 469.30	\$ 472.90	\$ 3.60	0.8%
40,000	1.1%	52.4%	\$ 575.70	\$ 580.50	\$ 4.80	0.8%
50,000	0.8%	60.7%	\$ 682.10	\$ 688.10	\$ 6.00	0.9%
60,000	0.4%	67.1%	\$ 788.50	\$ 795.70	\$ 7.20	0.9%
70,000	0.7%	72.7%	\$ 894.90	\$ 903.30	\$ 8.40	0.9%
80,000	0.6%	76.6%	\$1,001.30	\$1,010.90	\$ 9.60	1.0%
90,000	0.3%	80.0%	\$1,107.70	\$1,118.50	\$ 10.80	1.0%
100,000	0.3%	82.4%	\$1,214.10	\$1,226.10	\$ 12.00	1.0%
150,000	0.2%	88.9%	\$1,746.10	\$1,764.10	\$ 18.00	1.0%
200,000	0.1%	93.1%	\$2,278.10	\$2,302.10	\$ 24.00	1.1%
300,000	0.0%	97.5%	\$3,342.10	\$3,378.10	\$ 36.00	1.1%
400,000	0.0%	98.4%	\$4,406.10	\$4,454.10	\$ 48.00	1.1%
500,000	0.0%	99.3%	\$5,470.10	\$5,530.10	\$ 60.00	1.1%

WATER COMMODITY SURCHARGE ANALYSIS

As part of the Study, Burton & Associates was tasked to review the adequacy of OWASA’s Water Commodity Surcharge structure. OWASA’s current structure involves applying surcharges to water commodity rates that increase as the severity of drought conditions increase. The current surcharges are presented in the table below:

CURRENT SURCHARGES:	Stage 1	Stage 2	Stage 3
SF - Block 1 (0-2 kgal)	0%	0%	0%
SF - Block 2 (2-5 kgal)	0%	25%	50%
SF - Block 3 (5-10 kgal)	25%	50%	100%
SF - Block 4 (10-15 kgal)	50%	100%	200%
SF - Block 5 (15+ kgal)	100%	200%	300%
Non-Res Off-Peak	15%	25%	50%
Non-Res Peak	15%	25%	50%
Irrigation	15%	25%	50%
Temp Hydrant	15%	25%	50%

The first part of the analysis was to quantify the level of water usage reduction during Phase 2 and Phase 3 conditions as observed when these Phases were implemented during drought conditions from November 2007 through May 2008. Next, using the actual FY 2011 billed water use data provided by OWASA staff, we calculated the revenue per month by applying the normal-condition rates to all flows to obtain the base-line revenue. We then reduced the FY 2011 water use across all customer classes by the level of observed usage reductions from Nov. 2007 – May 2008, and applied the Stage 2 and Stage 3 surcharges to the current rates to observe if the surcharges would generate the same level of revenue from the reduced flows.

In summary, the analysis concluded that the existing surcharges would adequately recover revenues during Phase 2 and 3 drought conditions (assuming similar levels of demand reduction as experienced previously) as observed over a full calendar year when considering all customer classes. However, the total revenue recovery was reflective of:

- the surcharges on non-residential users and the second tier of the residential inclining block rate structure over-recovering
- the top tiers of the residential inclining block rate structure and the irrigation commodity charges under-recovering.

That being said, this dynamic is expected as the most significant demand reductions during water use restrictions should come from the highest tiers of the inclining block rate structure and separate irrigation only meters.

Nevertheless, the analysis calculated surcharges during a Phase 2 and Phase 3 drought scenario that would recover revenues precisely as they are recovered using normal rates from each customer class. The tables below present what the surcharges would be to recover all revenues in a calendar year drought scenario, a non-peak season drought scenario, and a peak season drought scenario on a revenue neutral basis by class of customer.

CALCULATED FULL YEAR	Stage 1	Stage 2	Stage 3
SF - Block 1 (0-2 kgal)	0%	2%	2%
SF - Block 2 (2-5 kgal)	0%	19%	27%
SF - Block 3 (5-10 kgal)	25%	85%	152%
SF - Block 4 (10-15 kgal)	50%	150%	355%
SF - Block 5 (15+ kgal)	100%	229%	343%
Non-Res Off-Peak	15%	5%	10%
Non-Res Peak	15%	5%	10%
Irrigation	15%	638%	1086%
Temp Hydrant	15%	0%	15%

CALCULATED NON-PEAK	Stage 1	Stage 2	Stage 3
SF - Block 1 (0-2 kgal)	0%	2%	2%
SF - Block 2 (2-5 kgal)	0%	19%	27%
SF - Block 3 (5-10 kgal)	25%	45%	96%
SF - Block 4 (10-15 kgal)	50%	56%	190%
SF - Block 5 (15+ kgal)	100%	78%	127%
Non-Res Off-Peak	15%	5%	10%
Non-Res Peak	15%	5%	10%
Irrigation	15%	638%	1086%
Temp Hydrant	15%	0%	15%

CALCULATED PEAK	Stage 1	Stage 2	Stage 3
SF - Block 1 (0-2 kgal)	0%	2%	2%
SF - Block 2 (2-5 kgal)	0%	19%	27%
SF - Block 3 (5-10 kgal)	25%	140%	233%
SF - Block 4 (10-15 kgal)	50%	245%	511%
SF - Block 5 (15+ kgal)	100%	362%	557%
Non-Res Off-Peak	15%	5%	10%
Non-Res Peak	15%	5%	10%
Irrigation	15%	638%	1086%
Temp Hydrant	15%	0%	15%

As can be seen, the calculated surcharges for non-peak months for residential customers are lower than the existing surcharges, while the calculated peak month surcharges are higher (due to the greater demand reductions expected in these periods associated with larger amounts of irrigation demands). Moreover, the irrigation surcharge calculates at a very high rate because water usage for irrigation only accounts dropped to nearly zero in prior drought conditions.

CONCLUSIONS & RECOMMENDATIONS

Based upon the analysis presented herein, we have reached the following conclusions and recommendations regarding OWASA’s water and sewer rate structure and Water Commodity Surcharges:

Conclusions:

1. While OWASA’s current rate structure is generally fair, equitable, and conforms to industry standards, certain adjustments could be made to achieve the goals of providing additional price incentives for water conservation and enhancing affordability for low volume and average users.

2. OWASA's existing Water Commodity Surcharge structure should be generally revenue neutral during periods of water use restrictions based upon similar water use reductions as experienced during previous drought conditions.

Recommendations:

1. Review and discuss any rate structure modifications in concept within the OWASA organization and potentially with key stakeholders during summer and fall of 2012
2. Quantify selected rate structure modifications as part of OWASA's annual financial management and rate study update process for consideration in FY 2014.

If you have any question or would like to discuss this Draft Technical Memorandum, please do not hesitate to call me at (904) 247-0787.

Sincerely,



Andrew J. Burnham
Senior Vice President