RHODE ISLAND PUBLIC UTILITIES COMMISSION

DOCKET NO. 4550
PAWTUCKET WATER SUPPLY BOARD

PREFILED REBUTTAL TESTIMONY OF CHRISTOPHER P.N. WOODCOCK ON BEHALF OF PAWTUCKET WATER SUPPLY BOARD

JULY 23, 2015

Woodcock & Associates, Inc.
18 Increase Ward Drive
Northborough MA 01532

PREFILED REBUTTAL TESTIMONY OF
CHRISTOPHER P.N. WOODCOCK

Q: Are you the same Christopher Woodcock that submitted pre-filed direct testimony in this docket on behalf of the Pawtucket Water Supply Board?

A: Yes.

Q: Have you reviewed the direct testimony filed by the witnesses from the Division and the Town of Cumberland?

A: Yes. I would like to address aspects of each of those, starting with Mr. Mierzwa on behalf of the Division, and I am attaching revised schedules from the rate model that documents the PWSB's revised position in this Docket.

Direct Testimony of Jerome Mierzwa

Q: Please summarize your response to Mr. Mierzwa's direct testimony.

A: Mr. Mierzwa had two general recommendations for PWSB's next rate filing: (1) update the maximum day and maximum hour demand ("peaking" or "extra capacity") factors for the various customer classes using the guidance in the AWWA's M1 Manual appendices, and (2) update the symbol "O" allocation factor (used for T&D O&M expenses).

Q: Can you address the first recommendation –updating the maximum day and maximum hour factors for each rate class?

A: Mr. Mierzwa noted that data for the maximum day demands from Cumberland (the only wholesale customer), and the availability of monthly billing records for the retail customers since 2011, would facilitate the development of new extra capacity factors. Mr. Mierzwa suggests that the PWSB use the procedure in the AWWA's M1 Manual "to evaluate the reasonableness of its extra capacity factors for future proceedings." (*See* Mierzwa Direct, p.6, ll. 17-18) I do not agree that we need to wait until "future proceedings" to

evaluate the reasonableness of these factors. The PWSB can evaluate, and update, the peaking factors for both the retail and wholesale classes in this Docket.

In fact, the actual wholesale maximum day demands that can be derived directly from the PWSB's response to Division Data Request 1-6, clearly demonstrate that the actual maximum day demands from Cumberland far exceed the wholesale estimates developed almost fifteen years ago in Docket 3378. This data response shows maximum day to average day demand ratios in the order of 4.5 to 4.9. These actual values are nearly twice the wholesale ratios of 2.5 that have been used since 2001.

Q: Are you surprised at these higher ratios?

A: Yes, when I first saw them I was surprised. I expected them to be in line with the small meter ratios in Pawtucket. However, upon reviewing information on the Town of Cumberland's web site regarding its effort to develop new sources of water supply, including groundwater wells, I discovered that Cumberland has trouble meeting its peak summer demands from its own sources. Based on a review of the monthly water demands from Cumberland, it is clear that Cumberland's summer demands are met by peaking off the PWSB system. (*See* PWSB Response to Div. 1-9) The demands in July and August are much higher than average. Because Cumberland is peaking off the PWSB system, it would not be fair to base their rates on uses when they did not peak off the system (as may have been the case in 2001).

Q: What is the relevance of when or how Cumberland is meeting its peak water demands?

A: In order to meet the peak water demands (either maximum day or peak hour), it is necessary to oversize various components of the water system to meet these highest demands for water. If customers used water at a constant rate 24 hours a day and 365 days per year, Pawtucket's pipes and pumps would not need to be as large and there would be no need for storage facilities. However, customers do not use water at a constant rate, so

Pawtucket must "oversize" its facilities so it has the capacity to meet the highest daily or hourly demands. During periods of low demand, the extra sizing sits idle or is not fully utilized. As a result, the water provided during peak demand periods is the most expensive water PWSB provides.

Q: What are you proposing?

A: I am proposing that the analysis Mr. Mierzwa recommended be done now and implemented in this Docket to properly assign the high peaking costs to Cumberland. I made the analysis using the AWWA M1 Manual that Mr. Mierzwa suggested. My new Schedule 2.3 contains this analysis for Cumberland and the other retail classes.

Q: Why are you proposing to make the adjustments now, rather than waiting until a future proceeding as suggested by Mr. Mierzwa?

A: First, the PWSB proposes a three step increase in this Docket. Thus, the PWSB does not plan to submit a new cost of service study for at least three years (maybe longer). The maximum day and peak hour demand factors I have been using for Cumberland are well below the actual demand factors. This results in Cumberland being charged much less for the peaking costs than it has been putting on the system the past few years. The wholesale rate being charged to Cumberland is below the cost of providing service to them and should be corrected right away. Now that we can calculate new factors based on monthly billing, it also appears the factors I had been using for the medium and large retail meters are also too low. Apparently, these customers have also been getting charged less than the cost to serve them, and this has been corrected as well.

I included a new Sch. 2.3 with my rebuttal testimony that provides the derivation of the new maximum day and peak hour factors using the methodology suggested by the Division. For Cumberland, I simply used their actual maximum day demands over the past few years.

Q: Please comment on Mr. Mierzwa's recommendation that allocation symbol "O" be reviewed or updated in PWSB's next rate filing.

A: While we have data to re-calculate this factor and it was provided in the PWSB's response to Div. 1-5, I agree that unlike the immediate revision to the peaking factors, this change should wait. As Mr. Mierzwa correctly notes, the impact of this change on the combined service and fire protection charge would be rather small; however, the increase to the public fire charges outside of Pawtucket would be significant. Because we already propose a significant increase to the hydrant charges, I believe it is appropriate to re-examine the T&D expenses and update the symbol "O" allocator in the next rate filing and phase in this revision.

Direct Testimony of Lafayette Morgan

Q: Please summarize your response to Mr. Morgan's direct testimony?

A: Mr. Morgan proposed several revisions to PWSB's proposed revenue requirements. As Mr. Morgan noted, PWSB initiated several of these revisions in data responses and supplemental testimony. The revisions Mr. Morgan proposed and the witnesses who will address them are:

1. Other operating revenue (Mr. Benson).
2. Regulatory expenses (Mr. Benson).
3. Rate case expenses (Mr. Woodcock and Mr. Benson).
4. Property taxes (Mr. Benson).
5. Inflation adjustments (Mr. Woodcock).
6. Electric Power (Mr. Woodcock and Mr. DeCelles).
7. WTP Operating contract (Mr. Benson).
8. Maintenance of miscellaneous plant (Mr. DeCelles).
9. Step increases:
    a. Debt (Mr. Woodcock).
    b. Property taxes (Mr. Benson).

c. Inflation adjustments, including Worker's Compensation (Mr. Woodcock and Mr. DeCelles).

10. Operating Reserves/Revenue Stabilization (Mr. Woodcock).

Rate Case Expenses

Q: Please comment on Mr. Morgan's proposed adjustment to rate case expenses.

A: Mr. Morgan proposed adjusting the rate case expenses by normalizing them over a three year period rather than the two year period I proposed. I should also note that Mr. Russell suggested the same adjustment in his direct testimony.

As noted in Mr. Benson's rebuttal testimony, PWSB's rate case expenses through June 30, 2015 were $105,615. Through June 19, 2015, the Division's cost were $28,700 (*See* Division Response to PWSB 1-3). As noted in the Division's response, it is difficult to estimate the final costs. PWSB proposes that the Division and PWSB provide updated costs near the conclusion of hearings along with estimated final costs. We further propose that these costs plus an allowance for PWSB's estimated cost of compliance filings for the two step increases be summed and normalized over the three year period proposed by Mr. Morgan and Mr. Russell. As a place holder I have shown $76,667 on my updated Sch. 1.1.

Inflation Adjustments

Q: The next proposed adjustment from Mr. Morgan has to do with inflation rates. Please comment on this.

A: PWSB proposed an annual inflation rate of 3.08% that equals a two year compounded rate of inflation of 6.24%. Mr. Morgan proposed a two year compounded rate of inflation of 2.60%. Mr. Russell also proposed an adjustment, but proposed a compounded two year inflation rate of 4.1%.

I looked at the Division's responses to PWSB data request 1-1 on the Blue Chip Economic Indicators that Mr. Morgan referenced, and I also examined the Bureau of Labor Statistics overall CPI-U index and the detailed index for water and sewer maintenance. Based on these reviews, I have drawn several conclusions:

- The 6.34% compounded, two year rate that I proposed in the filing is not unreasonable considering the cost of water vs. other expenses.
- As Mr. Morgan pointed out in his direct testimony, the GDP I initially proposed is a measure of all goods and services. However, the GDP-PI that Mr. Morgan proposed is a similarly broad measure.
- In a paper I authored with Mr. Russell, we noted that the cost of water exceeds the general or overall rate of inflation. I believe that recent national water rate surveys (e.g., AWWA/Raftelis Financial Consultants, Inc.) indicate that the price of water has exceeded general inflation rates. I reviewed the end of year (December) annual change in the overall CPI-U (all items) and the reported index for water and sewerage maintenance for the period 2007 through 2014. In every year, the index for water and sewerage maintenance was between 1.5 and nearly 2 times that of the general inflationary index. Even more striking, the percentage annual change from December to December showed the increase for water and sewerage maintenance to range from a low of 37% more than the overall rate to a high of 6900% higher than the increase for all items. Even discounting the high year (6900%), the average increase for water and sewerage maintenance was more than twice that of all items. I believe it is clear that the cost of water maintenance has been exceeding the overall rate of inflation and that there is no indication that this trend will not continue.
- Based on the GDP Chained Price indices provided by Mr. Morgan in response to PWSB 1-1, we can look at the actual two year change.

Q: Based on your analysis, what rate of inflation does PWSB propose for this Docket?

A: Using the most recent projections Mr. Morgan provided, the two year change in GDP Chained Price from the actual fourth quarter of 2014 (May 10, 2015 report) and the projected 4th quarter in 2016 (from the same report), the two year overall inflation rate is projected to be 3.3%. As Mr. Morgan notes, the index measures the inflation of the overall economy, not just for water. Based on my review of the past overall CPI-U index (all items) and the index for water and sewerage maintenance, water and sewerage costs are significantly higher (2 X) than the overall economy. If I multiply the two year change in the index that Mr. Morgan has proposed we use by a factor of only two, I get a two year change of 6.6%. This is not far from the 6.34% rate that we had initially proposed.

Based on the above, we believe the 6.34% rate is reasonable. However, we are proposing to use a two year rate that is rounded down to 6.0%.

Electric Power Expense

Q: Can you address Mr. Morgan's adjustment to electric power expense?

A: Mr. Morgan proposed an adjustment to PWSB's power costs based on his lower cost of inflation. This matter is discussed above. I adjusted the power delivery portion of costs based on the revised inflation rate we now propose.

Step Increases

Q: Please address the last item you mentioned in your summary, the step increases.

A: Mr. Morgan identified three separate issues with the step increases: debt service, property taxes, and inflation (including worker's compensation expenses). We agree with the updated debt service costs Mr. Morgan proposed as these match what Mr. Benson had provided in his supplemental direct testimony. Mr. Benson will also address the property tax adjustment in his rebuttal testimony. The inflation issue was addressed by me above – we

believe the higher rate of 6% over two years (3% per year) should be used. Finally, Mr. DeCelles will address Mr. Morgan's specific testimony on worker's compensation expense.

Q: Mr. Morgan also mentioned the inclusion of retiree benefit costs that Mr. Benson addressed in his supplemental direct testimony. Did you include those in your rebuttal schedules?

A: Yes I did.

Direct Testimony of David Russell

Q: Please summarize your response to Mr. Russell's pre-filed direct testimony.

A: Mr. Russell proposed adjustments to sales and expenses plus some cost allocation and rate design proposals, but he did not provide a rate model or schedules that show the results of his adjustments and proposals. There were several matters that Mr. Russell and Mr. Morgan both addressed that I responded to in my discussion of Mr. Morgan's testimony (e.g. inflation and rate case expense). The issues Mr. Russell raised, and the witnesses who will address them are as follows:

- Billable water sales (i.e. consumption) (Mr. Woodcock).
- Non-operating revenues (Mr. Benson).
- Water Treatment Plant operating contract (Mr. Benson).
- Inflation rate adjustments (Mr. Woodcock - addressed under comments regarding Mr. Morgan's testimony).
- Rate case expenses (Mr. Woodcock - addressed under comments regarding Mr. Morgan's testimony).
- Electricity savings (Mr. DeCelles).
- Various issues regarding the PWSB's capital programs (Mr. DeCelles).
- Adjustments to the operating reserves (Mr. Woodcock).
- Cost allocations/lost water calculations (Mr. Woodcock).
- Rate design issues (Mr. Woodcock):

- Assign debt costs to fixed charges.
- Adopt new conservation rates.
- Combine medium and large user classes.

- Mitigation measures (Mr. Woodcock).

Billable Water Sales

Q: Mr. Russell devoted quite a bit of his testimony to billable water sales. Can you summarize the issues here?

A: Mr. Russell raised several points regarding the rate year billable water sales.

- While he seems to agree with the downward trend in some sales, he sees them leveling off and not decreasing as much as we projected.
- He offered considerable testimony regarding a link between the overall economy in Rhode Island and water sales, suggesting that the downward trend in economic activity post 2008 caused much of the decline in that period while the recovery in recent years led to a leveling off of water sales.

We now have the full fiscal year 2015 sales data and can use this for our projections. We revised our projections for the rate year (FY 2016) and recommend using the actual FY 2015 amounts for the retail customers. For the Town of Cumberland, we propose to use the estimated purchases for FY 2016 provided by Mr. Russell and Christopher Champi, Superintendent of the Cumberland Water Department. (*See* Cumberland Response to PWSB Data Requests 1-13 and 1-38) While we do not agree with the links to the economy Mr. Russell seems to have relied on, our current projections are much more closely aligned with those of Mr. Russell.

Q: You indicated that you do not agree with Mr. Russell's testimony that links water sales with economic activity. Please elaborate.

A: It is the PWSB's position that Mr. Russell's responses to data requests concerning the linkage between water sales and the economic indicators do not establish a direct correlation. (*See* Cumberland Response to PWSB Data Requests 1-6 through 1-11). These responses demonstrated little, if any, correlation between water sales and economic activity. Further, in response to Cumberland's Data Request 4-13, the PWSB provided additional data that refutes Mr. Russell's claims.

Q: How do your current sales projections compare to those proposed by Mr. Russell?

A: As discussed later in my testimony, we agree with Mr. Russell's suggestion to combine the medium and large retail rate classes, so I will compare our overall retail and wholesale projections with Mr. Russell's.

	Initial PWSB	Mr. Russell	Rebut. PWSB
Retail Small	2,509,723	2,608,868	2,624,381
Retail Other	815,448	838,863	821,930
Wholesale	253,719	274,064	274,064
Total	3,578,890	3,721,795	3,720,375

As shown on this comparison, our rate year sales estimates for the retail customers are quite similar to Mr. Russell's, and we adopted Mr. Russell's estimates for Cumberland's FY16 wholesale purchases.

Capital Funding

Q: Please summarize Mr. Russell's position on PWSB's capital improvement program and the related funding issues he has raised.

A: Mr. Russell characterized PWSB's program as "aggressive", both in the past and for the next five years. He offered recommendations to lessen the impact of the program, and recommended that the IFR program be reduced from $2.5 million per year to $2.25 million per year (with various options). He suggested that the CL-6 Project can be delayed as it

"does not appear to be of a critical nature" and that a delay would not "result in major customer disruptions or dangerous water quality issues."

Q: Mr. Russell testified that the CL-6 project "has not been reviewed or approved by the RIDOH." Is that correct?

A: No, it is not correct. CL-6 is not on the RIDOH Project Priority List (PPL) for funding under the RICWFA. However, CL-6 is part of PWSB's Infrastructure Replacement Program plan, which was submitted to the RIDOH for approval and was part of the PWSB's most recent IFR plan. Accordingly, it has been approved by the RIDOH for infrastructure replacement; it is just not on the past year's PPL. PWSB fully expects it to be on the next PPL.

Q: Does Mr. Russell's recommendation regarding the delay of CL-6 impact the rates proposed for the rate year?

A: No it does not have any impact. PWSB proposed to fund CL-6 with a new bond issue, and because PWSB is not requesting any rate year changes in debt service to cover the costs of this bond issue (see the note on my Sch. 1.1), there is no impact on the proposed rate year rates. The impacts would begin with the step increase for FY 2017 (see my Sch. 12.0). Before this step increase goes into effect, PWSB will need to submit documentation to the Commission for review in its compliance filings, including proof that CL-6 is on the PPL.

Q: On page 27 of his testimony, Mr. Russell seems to suggest that PWSB should only undertake projects to avert major customer disruptions or dangerous water quality. Do you agree?

A: No I do not. PWSB began a program to address significant water quality issues in its transmission and distribution system over a dozen years ago. This program was developed by PWSB, and approved by the Commission, to assure that water from the new treatment facility would be delivered through a piping system that would not degrade the treated water quality. Drinking water infrastructure is perhaps our most critical and significant in-

frastructure. It is essential for public health and safety. It should not be operated nor maintained "on the edge" so major disruptions or dangerous water qualities are narrowly missed.

Funding of the Operating Reserve

Q: What is Mr. Russell's position on funding PWSB's Operating Reserve?

A: There appears to be some confusion or misunderstanding regarding the Operating Reserve. The PWSB is requesting an operating reserve of 1.5% of operating revenues for the first two steps of the increase (FY16 and FY17). In the third step (FY18), the PWSB requests a 3% operating reserve (1.5% restricted and 1.5% unrestricted). Mr. Russell acknowledges that PWSB is "entitled" to such a reserve. However, he recommends that PWSB only be allowed operating revenues equal to 0.75% of its annual revenues. (*See*, Russell Direct, pg. 30)

Q: Do you agree with his recommendation?

A: No. Mr. Russell has projected an increase in retail sales. We now agree to use a similar (although slightly lower) estimate for retail sales based on the most recent fiscal year. However, over the past 8-10 years, there has been a downward trend in sales in Pawtucket specifically, and throughout Rhode Island generally. I do not believe it is all related to the economy. The weather certainly plays a key role in water sales and we cannot predict the weather over the coming years. If we have cooler and/or rainier summers than normal, water sales could be less than projected. We have already shown the impact that reduced sales have had on PWSB's revenues. PWSB needs some protection from reduced sales. To help keep the rate request reasonable, the PWSB Board did not ask to fund a full 3% Operating Reserve – that would help protect it from downward sales – until FY18. It is unreasonable to suggest a further cut to about 25% of what most water utilities in Rhode Island have been receiving from the Commission. This would leave PWSB with little protection from reduced sales or increased costs. Furthermore, the hearing in this Docket is sched-

uled for October 1, 2015. Thus, the PWSB will be 1/3 of the way through the rate year when a decision is rendered without any increase in rates that have already been shown to be inadequate.

Cost Allocation – Unbilled Water

Q: Can you address Mr. Russell's issue regarding unaccounted for water?

A: While Mr. Russell agreed with the methodology we used to allocate unaccounted for water, he disagreed with the PWSB's actual calculation. In our initial filing we used water production and sales data for the period from FY 2010 to FY 2014. Mr. Russell noted that the production meter was not operating properly from FY 2010 through FY 2012. Thus, we updated the calculations in our rebuttal filing to only include fiscal years 2013 through 2015.

Rate Design

Q: Mr. Russell provided several recommendations on rate design. Can you summarize these?

A: Mr. Russell made three suggestions:

- He suggested recovering some debt service costs only through the retail service charges.
- He suggested that PWSB consider an increasing block rate structure to encourage more efficient water use.
- He suggested combining the medium and large meter retail classes.

Q: Do you agree with his suggestion to recover some of PWSB's debt through increased service charges?

A: No. There is no precedent or basis for this. Mr. Russell has not even provided any specific recommendation on how this would be accomplished. While he suggests adding the CL-6 debt service to the "meter and service costs", he did not, and will not, be providing a rate

model, or schedules, that demonstrate the results of his suggestion. (*See* Russell Direct, p. 32, ll. 16-31, and Cumberland Response to PWSB Data Request 1-2) He also does not indicate which component(s) this would be added to, and later suggests that they could be in some "separate fixed charge". (*See* Cumberland response to PWSB Data Request 1-1)

His proposal is further compounded by the fact that there is no debt associated with CL-6 in the rate year that can be added to or made a separate charge. Any subsequent step increase that would recover this debt would be an across the board increase to existing charges. Since there is no "new debt service fixed charge" in the rate year, there would be nothing to which it can be added.

Mr. Russell suggests that some or all of this debt is specific to just retail customers. When asked, he could provide no example where he sought, or any other commission or authority allowed, a specific bond issue to be treated differently than other debt that is allocated based on the allocation of overall assets. (*See* Cumberland Response to PWSB Data Request 1-33)

Lastly, Mr. Russell appears to make this recommendation in the interest of revenue stability. I find his concern about revenue stability to be contrary to his recommendation to cut the operating reserve in half.

Q: Do you concur with his recommendation that PWSB adopt an increasing block rate structure?

A: No. There is no evidence of wasteful water use at this time. Perhaps more importantly, PWSB needs to be concerned with revenue stability as Mr. Russell has suggested. I believe that the change in rate structure that combines the medium and large meter sizes along with the proposed increase to those classes of customers will help encourage their efficient use of water.

Q: Do you agree with Mr. Russell's proposal to combine the medium and large meter classes?

A: Yes. I believe Mr. Russell raised a valid issue. With the loss of large water using accounts and the downsizing of meters, there are only 30 accounts in the "Large Meter" class. As a result I revised my schedules to combine these two rates into a single rate for all meters greater than 1".

Mitigation Measures

Q: Please comment on Mr. Russell's proposed mitigation measures."

A: Mr. Russell has suggested several "mitigation measures" in his pre-filed testimony.

- The first measure has to do with the overall annual increases in allowed revenues. Apparently referring to the filing for the rate year and the subsequent step increases, Mr. Russell has suggested that rather than looking at each year's revenue requirements individually, the Commission look at these in the aggregate and somehow make adjustments to the capital plan or reserve funding so that each of the percentage increases are within 2% or 3% of each other.
- His second recommended measure caps the increase for any customer class at 10% for any year. If any class of customer (other than fire protection) has an increase in excess of 10%, he recommends that the costs to serve that class be moved to another class of customer so no one has an increase in excess of 9.9%.
- His final measure has to do with the public fire protection charges. In this case, he suggests that no annual increase be greater than 50%, and if this were to happen, that the amounts over 50% be re-allocated to other classes or customers.

Part of the problem with Mr. Russell's recommended mitigation measures seems to stem from a misunderstanding as to how the step increases are implemented. As the Commission knows, while preliminary step increases may be "approved" they are subject to review by all the parties before they can be implemented. I believe that few (if any) of the step

increases for water utilities approved by the Commission to date have actually been implemented as planned. In some cases, plans or programs have changed so that the "approved" step increases were not needed or not needed in the amounts initially requested. Each step increase needs to be thoroughly understood and reviewed prior to its adoption. The notion of smoothed out or gradual increases does not work with this uncertainty. I don't believe his first suggested measure – equalizing the annual increases – would be workable given the uncertainty with the steps. This also causes problems with the second and third mitigation measures he has suggested, as once again, the future steps are not fixed and the contemplated adjustments or subsidies may not be possible.

It is my understanding that step increases provided by the Commission will always be across-the-board or equal percentage changes to every rate and charge. There is no reallocation or "correction" to various rates and charges provided under the current procedures (as I understand them).

Mr. Russell has somehow determined that any increase to a class or customer in excess of 9.9% is unacceptable and must be limited to this level of increase each year. This not only has the problem of different increases for different classes for the step increases that was just discussed, it essentially provides a cap of 9.9% on any overall rate increase. Aside from the question of where does his 9.9% maximum come from, there are times when this is just not possible. The Commission's docket is full of revenue increases for water utilities that have exceeded 9.9%. To put an artificial cap for an increase at 9.9% would put a stop to any major projects for RI water utilities. It is just plain unworkable.

Conclusion

Q: Does this conclude your rebuttal testimony?

A: Aside from new information that may be brought to my attention and without reviewing surrebuttal testimony from the Division or Cumberland, yes it does.

TEST YEAR & RATE YEAR EXPENSES

Expense Item	Test Year FY 2014	Summary of Adjustments	Rate Year * FY 2016	<---------- Adjustments Detail ----------> Labor & Related Items	Other Adjustments	Supporting Schedule
ADMINISTRATION						
Salaries & Wages - (601)	$656,397	$9,152	$665,549	$9,152	$0	R. Benson
Salaries & Wages - Payroll Taxes	$46,352	$69	$46,421	$69	$0	R. Benson
Employee Pensions & Benefits (604)	$428,079	-$10,513	$417,566	-$189,609	$179,096	Sch. 1.1 (i)
Workers Comp	$13,792	$16,875	$30,667	$16,875	$0	R. Benson
Materials and Supplies (Account 620)	$53,171	$3,190	$56,361	$0	$3,190	Sch. 1.1 (i)
Contractual Services - Legal (Account 633)	$188,115	$11,287	$199,402	$0	$11,287	Sch. 1.1 (i)
Contractual Services - Mgt. Fees (634) City Chg	$275,788	$0	$275,788	$0	$0	
Contractual Services - Other (Account 635)	$11,188	$671	$11,859	$0	$671	Sch. 1.1 (i)
Rental of Equipment (Account 642)	$3,455	$207	$3,662	$0	$207	Sch. 1.1 (i)
Transportation Expenses (Account 650)	$7,043	$423	$7,465	$0	$423	Sch. 1.1 (i)
Insurance - General Liability (Account 657)	$151,690	$0	$151,690	$0	$0	
Insurance - Other (Account 659)	$0	$0	$0	$0	$0	
Regulatory Com Expense - Other (667)	$94,971	-$8,182	$86,789	$0	-$8,182	LKM-4
Reg Com Exp - Amort of Rate Case Exp (666)	$0	$76,667	$76,667	$0	$76,667	Sch. 1.1
Miscellaneous Expense (Account 675)	$28,117	$1,687	$29,804	$0	$1,687	Sch. 1.1 (i)
Credit Card Fees	$22,812	$1,369	$24,181	$0	$1,369	Sch. 1.1 (i)
Education Training	$4,250	$255	$4,506	$0	$255	Sch. 1.1 (i)
Maint of Misc Plant	$48,584	$2,915	$51,499	$0	$2,915	Sch. 1.1 (i)
Purchased Power	$40,489	$7,585	$48,074	$0	$7,585	Sch. 1.1
Other Utilities	$98,864	$5,932	$104,795	$0	$5,932	Sch. 1.1 (i)
Printing	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Postage	$78	$5	$83	$0	$5	Sch. 1.1 (i)
Subtotal - Admin	$2,173,233	$119,593	$2,292,826	-$163,514	$283,107	
CUSTOMER ACCOUNTS						
Salary & Wages - Cust Ser	$192,753	$6,255	$199,008	$6,255	$0	R. Benson
Salary & Wages - Meter	$252,127	$76,413	$328,541	$76,413	$0	R. Benson
Salary & Wages Payroll Tx(CS)	$14,856	$123	$14,979	$123	$0	R. Benson
Salary & Wages Payroll Tx (Meters)	$23,110	$1,289	$24,399	$1,289	$0	R. Benson
Empl Pensions & Benefits (Cust Ser)	$68,892	$7,929	$76,821	$7,929	$0	R. Benson
Empl Pensions & Benefits (Meters)	$156,109	$15,327	$171,436	$15,327	$0	R. Benson
Matls & Supp (Cust Serv)	$980	$59	$1,038	$0	$59	Sch. 1.1 (i)
Matls & Supp (Meters)	$3,360	$202	$3,561	$0	$202	Sch. 1.1 (i)
Contractual Services - Other - [Cust. Srvc.] (Account 63	$34,898	$2,094	$36,992	$0	$2,094	Sch. 1.1 (i)
Rental of Equipment (Account 642)	$1,931	$116	$2,047	$0	$116	Sch. 1.1 (i)
Workers Comp - Cust Serv	$12,517	-$9,954	$2,563	-$9,954	$0	R. Benson
Workers Comp - Meters	$0	$13,191	$13,191	$13,191	$0	R. Benson
Transportation Expenses - [Cust srvc.] (Account 650)	$763	$46	$808	$0	$46	Sch. 1.1 (i)
Transportation Expenses - [Meter] (Account 650)	$11,117	$667	$11,784	$0	$667	Sch. 1.1 (i)
Bad Debt Expense (Account 670)	$1,710	$103	$1,813	$0	$103	Sch. 1.1 (i)
Miscellaneous Expense - [Cust. Srvc.] (Account 675)	$238	$14	$252	$0	$14	Sch. 1.1 (i)
Miscellaneous Expense - [Meter] (Account 675)	$686	$41	$727	$0	$41	Sch. 1.1 (i)
Education Training - [Cust. Srvc.]	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Education Training - [Meter]	$732	$44	$776	$0	$44	Sch. 1.1 (i)
Repairs & Maintenance - general	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Repairs & Maintenance - meters	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Other Utilities - [Cust. Srvc.]	$2,586	$155	$2,741	$0	$155	Sch. 1.1 (i)
Other Utilities - [Meter]	$3,028	$182	$3,210	$0	$182	Sch. 1.1 (i)
Printing - [Cust. Srvc.]	$39,768	$2,386	$42,154	$0	$2,386	Sch. 1.1 (i)
Printing - [Meter]	$902	$54	$956	$0	$54	Sch. 1.1 (i)
Postage--[Cust. Srvc.]	$110,011	$6,601	$116,611	$0	$6,601	Sch. 1.1 (i)
Subtotal - Customer Accts	$933,072	$123,336	$1,056,408	$110,574	$12,763	

TEST YEAR & RATE YEAR EXPENSES

Expense Item	Test Year FY 2014	Summary of Adjustments	Rate Year FY 2016	<---------- Adjustments Detail ----------> Labor Increase	Other Adjustments	Supporting Schedule
SOURCE OF SUPPLY						
Salaries & Wages - (601)	$126,626	-$1,117	$125,509	-$1,117	$0	R. Benson
Salaries & Wages - Payroll Taxes	$9,327	$91	$9,418	$91	$0	R. Benson
Employee Pensions & Benefits (604)	$45,138	$4,772	$49,910	$4,772	$0	R. Benson
Workers Comp	$3,959	$1,338	$5,297	$1,338	$0	R. Benson
Purchased Power (Account 615)	$92,006	$23,015	$115,021	$0	$23,015	Sch. 1.1
Materials and Supplies (Account 620) & Rental	$1,988	$119	$2,107	$0	$119	Sch. 1.1 (i)
Transportation Expenses (Account 650)	$3,661	$220	$3,881	$0	$220	Sch. 1.1 (i)
Miscellaneous Expense (Account 675)	$49	$3	$52	$0	$3	Sch. 1.1 (i)
Security Service	$74,733	$4,484	$79,217	$0	$4,484	Sch. 1.1 (i)
Education Training	$628	$38	$666	$0	$38	Sch. 1.1 (i)
Maint of Misc Plant	$76,766	-$19,480	$57,286	$0	-$19,480	LKM-10
Other Utilities	$3,990	$239	$4,230	$0	$239	Sch. 1.1 (i)
Subtotal - Supply	$438,872	$13,722	$452,594	$5,084	$8,638	
PURIFICATION						
DBO O&M Contract	$1,851,761	$37,331	$1,889,092	$0	$37,331	Sch. 1.1
Purchased Power (Account 615)	$776,713	$187,607	$964,320	$0	$187,607	Sch. 1.1
Other Utilities	$0	$0	$0	$0	$0	
Subtotal - Purification	$2,628,473	$224,938	$2,853,412	$0	$224,938	

TEST YEAR & RATE YEAR EXPENSES

Expense Item	Test Year FY 2014	Summary of Adjustments	Rate Year FY 2016	<---------- Adjustments Detail ----------: Labor Increase	Other Adjustments	Supporting Schedule
TRANSMISSION & DISTRIBUTION						
Salaries & Wages - (601)	$927,786	$80,121	$1,007,907	$80,121	$0	R. Benson
Salaries & Wages -[Engineering] (601)	$373,160	$4,937	$378,097	$4,937	$0	R. Benson
Salaries & Wages - Payroll Taxes -	$71,111	$4,035	$75,146	$4,035	$0	R. Benson
Salaries & Wages - Payroll Taxes - [Engineering]	$27,444	$929	$28,374	$929	$0	R. Benson
Salaries & Wages - Police Details	$86,272	$0	$86,272	$0	$0	
Employee Pensions & Benefits - (604)	$399,728	$70,721	$470,449	$70,721	$0	R. Benson
Employee Pensions & Benefits - [Engineering] (604)	$122,039	$27,683	$149,723	$27,683	$0	R. Benson
Materials and Supplies - (Account 620)	$55,068	$3,304	$58,372	$0	$3,304	Sch. 1.1 (i)
Materials and Supplies - [Engineering] (Account 620)	$11,225	$674	$11,899	$0	$674	Sch. 1.1 (i)
Rental of Equipment (Account 642)	$11,734	$704	$12,438	$0	$704	Sch. 1.1 (i)
Rental of Equipment - [Engineering] (Account 642)	$2,959	$178	$3,137	$0	$178	Sch. 1.1 (i)
Transportation Expenses - (Account 650)	$79,571	$4,774	$84,345	$0	$4,774	Sch. 1.1 (i)
Transportation Expenses - [Engineering](Account 650)	$8,826	$530	$9,356	$0	$530	Sch. 1.1 (i)
Workers Comp T&D	$74,692	-$29,928	$44,764	-$29,928	$0	R. Benson
Workers Comp - Engineering	$16,100	$1,513	$17,613	$1,513	$0	R. Benson
Miscellaneous Expense - (Account 675)	$3,377	$203	$3,580	$0	$203	Sch. 1.1 (i)
Miscellaneous Expense - [Engineering] (Account 675)	$495	$30	$525	$0	$30	Sch. 1.1 (i)
Education Training	$4,444	$267	$4,711	$0	$267	Sch. 1.1 (i)
Education Training - [Engineering]	$667	$40	$707	$0	$40	Sch. 1.1 (i)
Repairs & Maintenance - general	$1,432	$86	$1,518	$0	$86	Sch. 1.1 (i)
Repairs & Maintenance - T&D	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Repairs & Maintenance - fire services	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Repairs & Maintenance - services	$4,268	$256	$4,524	$0	$256	Sch. 1.1 (i)
Repairs & Maintenance - Hydrants	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Road surface restoration	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Repairs & Maintenance - general	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Purchased Power	$14,744	$2,488	$17,232	$0	$2,488	Sch. 1.1
Other Utilities	$22,105	$1,326	$23,432	$0	$1,326	Sch. 1.1 (i)
Other Utilities - [Engineering]	$3,525	$211	$3,736	$0	$211	Sch. 1.1 (i)
Printing	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Postage--[Engineering]	$0	$0	$0	$0	$0	Sch. 1.1 (i)
Subtotal - T&D	$2,322,774	$175,082	$2,497,856	$160,012	$15,070	

TEST YEAR & RATE YEAR EXPENSES

Expense Item	Test Year FY 2014	Summary of Adjustments	Rate Year FY 2016	<---------- Adjustments Detail ----------> Labor Increase	Other Adjustments	Supporting Schedule
CAPITAL EXPENSE						
Property Taxes						
Source of Supply	$750,533	-$133,300	$617,233	$0	-$133,300	Sch. 1.1
Treatment-Pumping	$0	$0	$0	$0	$0	Sch. 1.1
Treatment-Purification	$0	$0	$0	$0	$0	Sch. 1.1
Trans & Distrib	$162,078	-$28,977	$133,101	$0	-$28,977	Sch. 1.1
Rental Property	$9,217	$68	$9,285	$0	$67.57	Sch. 1.1
Restrict. Bond Principal, Interest & RICWFA Fees *	$7,764,193	$0	$7,764,193	$0	$0	Sch. 1.1
Leases	$0	$0	$0	$0	$0	
IFR	$2,500,000	$0	$2,500,000	$0	$0	Sch. 1.1
Trustee Fees	$26,879	$4,121	$31,000	$0	$4,121	Sch. 1.1
O&M Reserve Deposit	$0	$0	$0	$0	$0	Sch. 1.1
Subtotal - Capital	$11,212,900	-$158,089	$11,054,811	$0	-$158,089	
TOTAL EXPENSES	$19,709,324	$498,583	$20,207,907	$112,156	$386,427	
PLUS: Rev. Stabiliz./Oper. Rev. Allowance	$0	$292,836	$292,836			Sch. 1.1
LESS: Service Instal Revenue	-$78,239	$14,068	-$64,171		$14,068	LKM-3
LESS: State Surcharge Revenue	-$48,282	-$612	-$48,894		-$612	Sch. 1.1
LESS: Penalties	-$284,343	-$39,897	-$324,240		-$39,897	LKM-3
LESS: Non-Operating Rental	-$27,850	$0	-$27,850			see DGB-1
LESS: Interest Income	-$813	$0	-$813			see DGB-1
LESS: Misc Non-Operating	-$219,519		-$219,519		-$23,036	LKM-3
REQUIRED FROM RATES	$19,050,279	$764,977	$19,815,256	$112,156	$336,949	

* TY Debt & RICWFA Fees = Restricted amount from Docket #4171 less Trustee Fees Below

DETAILS OF ADJUSTMENTS TO TEST YEAR EXPENSES

Capital Requirements

Property Taxes

Property taxes for future years based on following projections:

	2015	2016	2017	2018
Source of Supply	$627,484	$617,233	$569,464	$571,807
Trans & Distrib	$135,573	$133,101	$132,487	$131,972
Rental Property	$9,222	$9,285	$9,299	$9,315
Totals	$772,279	$759,618	$711,251	$713,094

After FY 2015, non-Cumberland amounts increased 1.3%/year based on updated response to Div. 1-12

Debt Service

Projected Debt is as follows:

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
Existing Revenue Bonds					
Principal (& sinking fund)	$4,067,074	$4,182,000	$4,650,000	$4,782,000	$4,924,000
Interest	$3,397,676	$3,452,974	$3,386,756	$3,275,044	$3,154,900
Total	$7,464,750	$7,634,974	$8,036,756	$8,057,044	$8,078,900
Projected Revenue Bonds (2015 & 2016)					
Principal	$0	$0	$1,000	$252,000	$447,000
Interest	$0	$0	$49,549	$191,530	$248,081
Total	$0	$0	$50,549	$443,530	$695,081
Existing General Obligation Bonds					
Principal	$84,527	$59,600	$58,266	$59,562	$60,374
Interest	$16,212	$18,850	$10,708	$8,456	$6,164
Total	$100,739	$78,449	$68,974	$68,018	$66,538
Total All Bonds	$7,565,489	$7,713,423	$8,156,278	$8,568,592	$8,840,519
RICWFA Fees	$352,914	$366,140	$363,683	$370,018	$355,989
Total RICWFA	$7,918,403	$8,079,564	$8,519,961	$8,938,610	$9,196,508

* Although costs are shown to increase, no change over the restricted amounts from Docket 4171 is requested for the rate year. Full recovery in a second step increase is requested for FY 2017 amounts.

Trustee Fees

		Test Yr	Estim RY
Bank of New York	Trustees Fees	$18,500	$22,250
US Bank	Admin Fess	$3,250	$3,250
Partridge, Hahn & Snow	Legal Fees - Annual Disclosure filing	$2,729	$3,100
Amtec	Annual Arbitrage Services	$2,400	$2,400
Total Fees		$26,879	$31,000

	Rate Year		
IFR - PAYGO	$2,500,000		

O&M Reserve Requirement

Rate Year O&M =	$9,912,714	(Operating Costs plus Property Taxes)	
Required Level (25%)	$2,478,179		
Balance 6/30/14	$2,708,181		$230,002
Estimated Additions	$0		
Estimated Balance 6/30/15	$2,708,181		
Rate Year Addition =	$0		

Operating Costs

DBO Contract

	New WTP
Annual Contract Test Year	$1,851,761
Rate Year Estimate	$1,889,092
Increase over Test Year	$37,331

DETAILS OF ADJUSTMENTS TO TEST YEAR EXPENSES

Inflation Adjustments

Based on the rebuttal testimony, we use a two year, compounded rate of inflation of 6.0% (annual rate of) 3.00%

Power Costs

		Test Year	Adjustment *	Rate Year
Administration				
	Delivery	$ 24,976	$ 1,521	$ 26,497
	Supply	$ 15,513	$ 6,064	$ 21,577
	Total	$ 40,489	$ 7,585	$ 48,074
Source of Supply				
	Delivery	$ 39,245	$ 2,390	$ 41,635
	Supply	$ 52,761	$ 20,625	$ 73,386
	Total	$ 92,006	$ 23,015	$ 115,021
Purification				
	Delivery	$ 351,556	$ 21,410	$ 372,966
	Supply	$ 425,157	$ 166,198	$ 591,354
	Total	$ 776,713	$ 187,607	$ 964,320
T&D				
	Delivery	$ 9,926	$ 604	$ 10,530
	Supply	$ 4,818	$ 1,883	$ 6,701
	Total	$ 14,744	$ 2,488	$ 17,232

* Delivery costs increased annually (2 yrs) by 3.00% per year for two years. Supply costs were increased based on an increase in the contract effective January 1, 2015 from 6.49 cents to 9.027 cents or 39.09%

Regulatory Expenses

1. Rate Case Estimated Rate Year

Rate Case Costs (estim)	$230,000
Step Increases (estim)	$50,000
Total	$280,000
Spread over 3 yrs	$76,667
Test Year	$0
Adjustment	$76,667

2. PUC Fee - Admin

FY 2014 Fee	$94,971
Increase (2 yr inflation)	$0
Total Rate Year	$94,971
Test Year	$94,971
Adjustment	$0

State Surcharge Revenues

	Hcf/yr	Rate/hcf	Revenue
Resid. Sales (92.7%)	2,432,801	$0.015	$36,492
Non-Resid. Sales	826,793	$0.015	$12,402
Totals			$48,894

Revenue Stabilization / Operating Revenue Allowance

See testimony of C. Woodcock. An operating reserve allowance of 1.5% on total revenues is requested in this case.

Retiree Health Care.

This item includes the cost of the health care plans for retirees. See Rebuttal Testimony of R. Benson

UNITS OF SERVICE

METERS

Meter Size	Test Year Monthly	Avg. Annual Chng 2009-14	Rate Year Monthly	Equiv Factor	# of Equivs
5/8	21,551	100.02%	21,561	1.00	21,561
3/4	266	100.53%	269	1.39	373
1	510	100.48%	515	2.00	1,030
1 1/2	219	99.29%	216	4.07	879
2	310	95.08%	280	5.29	1,481
3	18	94.41%	16	6.00	96
4	9	94.41%	8	14.00	112
6	3	87.06%	2	21.00	48
8	0		0	30.00	0
Totals	22,886		22,867		25,579

PUBLIC FIRE HYDRANTS

	Test Year	Adjustments	Rate Year
Pawtucket	1,515	0	1,515
Central Falls	202	0	202
Cumberland	198	0	198
Attleborough	2	0	2
Totals	1,917	0	1,917

PRIVATE FIRE SERVICE

Size	Test Year	Adjustments	Rate Year	Equiv Factor **	# of Equivs
2	33	5	38	4.07	155
4	67	11	78	6.00	468
6	405	0	405	14.00	5,670
8	91	2	93	21.00	1,953
10	3	0	3	21.00	63
12	0	0	0	21.00	0
Total	599	18	617		8,309

* Adjusted based on annual average change from 2009-2014
* one size down to equate to meter equivalent

UNITS OF SERVICE

METERED WATER USE (ccf/year)

Class	FY 2014	Adjustments	Rate Year *
Small (5/8 - 1")	2,565,972	58,409	2,624,381
Large (>1")	816,657	10,136	821,930
Total	3,382,629	68,545	3,446,311
Wholesale			
Cumberland	235,483	38,581	274,064
Seekonk	0	0	0
Total	235,483	38,581	274,064

* See Page 2

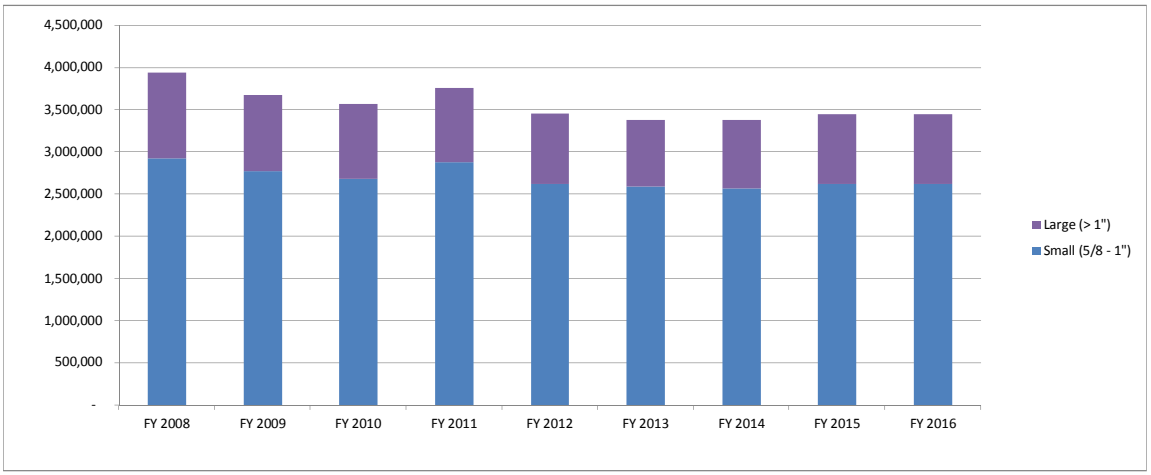
Miles of Mains

Size	Miles		Inch-Miles	
Service Pipes	203.549			
1	0.040		0.0	
2	0.672		1.3	
4	1.120		4.5	
6	92.335		554.0	
8	112.146		897.2	
10	1.638		16.4	
12	49.531	95.6%	594.4	82.3%
14	0.008		0.1	
16	4.316		69.0	
20	8.576		171.5	
24	7.446		178.7	
30	0.009		0.3	
36	0.654		23.5	
48	0.015	4.4%	0.7	17.7%
Totals	482.05		2,512	

Historic and Projected Water Sales (hcf/year)

	Actual								Projected*	Avg Change
RETAIL	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	12-15
Small (5/8 - 1")	2,927,770	2,773,813	2,681,579	2,883,337	2,622,322	2,589,759	2,565,972	2,624,381	2,624,381	100.0%
Large (> 1")	1,018,442	906,763	887,657	880,645	833,152	791,480	816,657	821,930	821,930	99.5%
Subtotal Retail	3,946,212	3,680,576	3,569,236	3,763,982	3,455,474	3,381,239	3,382,629	3,446,311	3,446,311	
RESALE										12-15
Cumberland	822,591	578,899	547,806	445,099	218,558	204,308	235,483	302,739	274,064	111.5%

* Note: Projections for FY 2016 based on FY 2015 actuals for retail customrs and value for Cumberland based on Cumberland testimony and data responses



UNITS OF SERVICE - DEMAND FACTORS

	BASE		MAXIMUM DAY			PEAK HOUR			Equivalent	
	Annual Use	Average Day	Demand	Maximum Day	Extra Capacity	Demand	Maximum Hour	Extra Capacity	Meters &	
Inside - Retail	ccf/year	ccf/day	Factor	ccf/day	ccf/day	Factor	ccf/day	ccf/day	Services	Bills
Small (5/8 - 1")	2,624,381	7,190	2.62	18,859	11,669	3.53	25,409	6,550	22,963	268,132
Large (>1")	821,930	2,252	2.28	5,144	2,892	3.08	6,931	1,787	2,616	6,269
Fire Protection	6,000 gal/min for 6 hours per Docket 3193			2,888	2,888		11,551	8,663		7,404
Wholesale										
Cumberland	274,064	751	4.81	3,613	2,862	6.48	4,867	1,255		
Seekonk	0	0	4.81	0	0	6.48	0	0		
Totals	3,720,375	10,193		30,504	20,311		48,758	18,254	25,579	281,805

Unbilled Water (ccf/yr)

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	3 Yr Avg 2013-15
Plant Production	5,296,280	5,213,904	4,726,665	4,413,094	4,497,146	3,860,951	3,989,537	4,136,470	4,438,485	4,188,164
Less: Retail Sales	3,884,773	3,949,963	3,611,646	3,593,567	3,779,526	3,426,499	3,373,788	3,410,888	3,455,075	3,413,250
Wholesale Sales	729,063	612,607	535,345	559,455	429,555	196,038	196,479	264,579	295,333	252,130
Semi-Annual Flush	70,194	113,493	100,936	123,462	78,587	109,780	91,937	40,080	49,728	60,582
Estimated Fire	26,481	26,070	23,633	22,065	19,056	20,210	19,050	18,100	5,500	14,217
Unbilled Water	585,769	511,771	455,105	114,545	190,422	108,424	308,283	402,823	632,849	447,985
% Unaccounted	11.1%	9.8%	9.6%	2.6%	4.2%	2.8%	7.7%	9.7%	14.3%	10.7%

Note: These differ from the values in Sch. 2.1 as these are ***sales*** in the fiscal year, where Sch. 2.1 is ***billings*** in the fiscal year.

8.48 9.10

DERIVATION OF CLASS PEAKING FACTORS

Average Day Use in Maximum Month to Average Day Annual Use Ratio (Based on Data from July 2012 - June 2015)

	Avg Day in Max Month	Average Day Annual	Ratio	System Max Day - Avg in Max Mo *	Adj. Factor **	Calc. Max Day Ratio ***	Max Hr:Day Ratio ****	Calc. Max Hour Ratio
Small (5/8 - 1")	9,367	7,108	1.32	1.49	1.34	2.62	1.35	3.53
Combined Large/Medium (> 1")	2,936	2,233	1.31	1.49	1.17	2.28	1.35	3.08
Wholesale			2.76	1.49	1.17	4.81	1.35	6.48

* System Max Day = 19,679 System Avg Day in Max Mo = 13,249 Ratio = 1.49
** Based on example in AWWA Manual.
*** Wholesale from Div 1-6 = 4.9 in FY12, 4.8 in FY13, and 4.5 in FY14.
**** See Sch 3.4

Gallons/Day	Avg day	Max Day	Max Hour
Calculated	10,019	27,008	36,388
System	10,019	13,249	24,947
Factor		2.04	1.46

ALLOCATION OF RATE YEAR EXPENSES TO COST COMPONENTS

EXPENSE ITEM	PRO FORMA EXPENSE	ALLOC. SYMBOL (1)	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
ADMINISTRATION								
Salaries & Wages - (601)	$665,549	L-M	$600,156	$21,245	$12,481	$0	$0	$31,667
Salaries & Wages - Payroll Taxes	$46,421	L-M	$41,860	$1,482	$870	$0	$0	$2,209
Employee Pensions & Benefits (604)	$417,566	L-M	$376,538	$13,329	$7,830	$0	$0	$19,868
Workers Comp	$30,667	L-M	$27,654	$979	$575	$0	$0	$1,459
Materials and Supplies (Account 620)	$56,361	E-M	$46,284	$8,079	$565	$0	$0	$1,434
Contractual Services - Legal (Account (	$199,402	E-M	$163,748	$28,582	$1,999	$0	$0	$5,073
Contractual Services - Mgt. Fees (634	$275,788	E-M	$226,476	$39,531	$2,765	$0	$0	$7,016
Contractual Services - Other (Account (	$11,859	E-M	$9,738	$1,700	$119	$0	$0	$302
Rental of Equipment (Account 642)	$3,662	E-M	$3,007	$525	$37	$0	$0	$93
Transportation Expenses (Account 650	$7,465	E-M	$6,131	$1,070	$75	$0	$0	$190
Insurance - General Liability (Account (	$151,690	E-M	$124,567	$21,743	$1,521	$0	$0	$3,859
Insurance - Other (Account 659)	$0	E-M	$0	$0	$0	$0	$0	$0
Regulatory Com Expense - Other (667)	$86,789	E-M	$71,271	$12,440	$870	$0	$0	$2,208
Reg Com Exp - Amort of Rate Case Ex	$76,667	E-M	$62,958	$10,989	$769	$0	$0	$1,950
Miscellaneous Expense (Account 675)	$29,804	E-M	$24,475	$4,272	$299	$0	$0	$758
Credit Card Fees	$24,181	B	$0	$0	$0	$0	$24,181	$0
Education Training	$4,506	E-M	$3,700	$646	$45	$0	$0	$115
Maint of Misc Plant	$51,499	E-M	$42,291	$7,382	$516	$0	$0	$1,310
Purchased Power	$48,074	E-M	$39,478	$6,891	$482	$0	$0	$1,223
Other Utilities	$104,795	E-M	$86,057	$15,021	$1,051	$0	$0	$2,666
Printing	$0	E-M	$0	$0	$0	$0	$0	$0
Postage	$83	E-M	$68	$12	$1	$0	$0	$2
Subtotal - Admin	$2,292,826		$1,956,457	$195,915	$32,870	$0	$24,181	$83,403
CUSTOMER ACCOUNTS								
Salary & Wages - Cust Ser	$199,008	B	$0	$0	$0	$0	$199,008	$0
Salary & Wages - Meter	$328,541	M	$0	$0	$0	$262,832	$65,708	$0
Salary & Wages Payroll Tx(CS)	$14,979	B	$0	$0	$0	$0	$14,979	$0
Salary & Wages Payroll Tx (Meters)	$24,399	M	$0	$0	$0	$19,519	$4,880	$0
Empl Pensions & Benefits (Cust Ser)	$76,821	B	$0	$0	$0	$0	$76,821	$0
Empl Pensions & Benefits (Meters)	$171,436	M	$0	$0	$0	$137,149	$34,287	$0
Matls & Supp (Cust Serv)	$1,038	B	$0	$0	$0	$0	$1,038	$0
Matls & Supp (Meters)	$3,561	M	$0	$0	$0	$2,849	$712	$0
Contractual Services - Other - [Cust. Si	$36,992	B	$0	$0	$0	$0	$36,992	$0
Rental of Equipment (Account 642)	$2,047	B	$0	$0	$0	$0	$2,047	$0
Workers Comp - Cust Serv	$2,563	B	$0	$0	$0	$0	$2,563	$0
Workers Comp - Meters	$13,191	B	$0	$0	$0	$0	$13,191	$0
Transportation Expenses - [Cust srvc.]	$808	B	$0	$0	$0	$0	$808	$0
Transportation Expenses - [Meter] (Acc	$11,784	M	$0	$0	$0	$9,427	$2,357	$0
Bad Debt Expense (Account 670)	$1,813	B	$0	$0	$0	$0	$1,813	$0
Miscellaneous Expense - [Cust. Srvc.] (	$252	B	$0	$0	$0	$0	$252	$0
Miscellaneous Expense - [Meter] (Accc	$727	M	$0	$0	$0	$582	$145	$0
Education Training - [Cust. Srvc.]	$0	B	$0	$0	$0	$0	$0	$0
Education Training - [Meter]	$776	M	$0	$0	$0	$621	$155	$0
Repairs & Maintenance - general	$0	B	$0	$0	$0	$0	$0	$0
Repairs & Maintenance - meters	$0	M	$0	$0	$0	$0	$0	$0
Other Utilities - [Cust. Srvc.]	$2,741	B	$0	$0	$0	$0	$2,741	$0
Other Utilities - [Meter]	$3,210	M	$0	$0	$0	$2,568	$642	$0
Printing - [Cust. Srvc.]	$42,154	B	$0	$0	$0	$0	$42,154	$0
Printing - [Meter]	$956	M	$0	$0	$0	$765	$191	$0
Postage--[Cust. Srvc.]	$116,611	B	$0	$0	$0	$0	$116,611	$0
Subtotal - Customer Accts	$1,056,408		$0	$0	$0	$436,312	$620,097	$0

ALLOCATION OF RATE YEAR EXPENSES TO COST COMPONENTS

EXPENSE ITEM	PRO FORMA EXPENSE	ALLOC. SYMBOL (1)	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
SOURCE OF SUPPLY								
Salaries & Wages - (601)	$125,509	A	$125,509	$0	$0	$0	$0	$0
Salaries & Wages - Payroll Taxes	$9,418	A	$9,418	$0	$0	$0	$0	$0
Employee Pensions & Benefits (604)	$49,910	A	$49,910	$0	$0	$0	$0	$0
Workers Comp	$5,297	A	$5,297	$0	$0	$0	$0	$0
Purchased Power (Account 615)	$115,021	A	$115,021	$0	$0	$0	$0	$0
Materials and Supplies (Account 620) &	$2,107	A	$2,107	$0	$0	$0	$0	$0
Transportation Expenses (Account 650	$3,881	A	$3,881	$0	$0	$0	$0	$0
Miscellaneous Expense (Account 675)	$52	A	$52	$0	$0	$0	$0	$0
Security Service	$79,217	A	$79,217	$0	$0	$0	$0	$0
Education Training	$666	A	$666	$0	$0	$0	$0	$0
Maint of Misc Plant	$57,286	A	$57,286	$0	$0	$0	$0	$0
Other Utilities	$4,230	A	$4,230	$0	$0	$0	$0	$0
Subtotal - Supply	$452,594		$452,594	$0	$0	$0	$0	$0
PURIFICATION								
DBO O&M Contract	$1,889,092	D	$1,022,852	$866,239	$0	$0	$0	$0
Purchased Power (Account 615)	$964,320	A	$964,320	$0	$0	$0	$0	$0
Other Utilities	$0	A	$0	$0	$0	$0	$0	$0
Subtotal - Purification	$2,853,412		$1,987,172	$866,239	$0	$0	$0	$0

ALLOCATION OF RATE YEAR EXPENSES TO COST COMPONENTS

EXPENSE ITEM	PRO FORMA EXPENSE	ALLOC. SYMBOL (1)	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
TRANSMISSION & DISTRIBUTION								
Salaries & Wages - (601)	$1,007,907	O	$55,890	$47,332	$27,806	$806,326	$0	$70,553
Salaries & Wages -[Engineering] (601)	$378,097	O	$20,966	$17,756	$10,431	$302,477	$0	$26,467
Salaries & Wages - Payroll Taxes -	$75,146	O	$4,167	$3,529	$2,073	$60,117	$0	$5,260
Salaries & Wages - Payroll Taxes - [En	$28,374	O	$1,573	$1,332	$783	$22,699	$0	$1,986
Salaries & Wages - Police Details	$86,272	O-A	$73,801	$4,051	$2,380	$0	$0	$6,039
Employee Pensions & Benefits - (604)	$470,449	O	$26,087	$22,093	$12,979	$376,359	$0	$32,931
Employee Pensions & Benefits - [Engir	$149,723	O	$8,302	$7,031	$4,131	$119,778	$0	$10,481
Materials and Supplies - (Account 620)	$58,372	O	$3,237	$2,741	$1,610	$46,698	$0	$4,086
Materials and Supplies - [Engineering]	$11,899	O	$660	$559	$328	$9,519	$0	$833
Rental of Equipment (Account 642)	$12,438	O	$690	$584	$343	$9,951	$0	$871
Rental of Equipment - [Engineering] (A	$3,137	O	$174	$147	$87	$2,510	$0	$220
Transportation Expenses - (Account 65	$84,345	O	$4,677	$3,961	$2,327	$67,476	$0	$5,904
Transportation Expenses - [Engineerin	$9,356	O	$519	$439	$258	$7,485	$0	$655
Workers Comp T&D	$44,764	O	$2,482	$2,102	$1,235	$35,811	$0	$3,133
Workers Comp - Engineering	$17,613	O	$977	$827	$486	$14,090	$0	$1,233
Miscellaneous Expense - (Account 675	$3,580	O	$199	$168	$99	$2,864	$0	$251
Miscellaneous Expense - [Engineering]	$525	O	$29	$25	$14	$420	$0	$37
Education Training	$4,711	O	$261	$221	$130	$3,769	$0	$330
Education Training - [Engineering]	$707	O	$39	$33	$19	$565	$0	$49
Repairs & Maintenance - general	$1,518	O	$84	$71	$42	$1,215	$0	$106
Repairs & Maintenance - T&D	$0	T	$0	$0	$0	$0	$0	$0
Repairs & Maintenance - fire services	$0	F	$0	$0	$0	$0	$0	$0
Repairs & Maintenance - services	$4,524	S	$0	$0	$0	$4,524	$0	$0
Repairs & Maintenance - Hydrants	$0	F	$0	$0	$0	$0	$0	$0
Road surface restoration	$0	O	$0	$0	$0	$0	$0	$0
Repairs & Maintenance - general	$0	O	$0	$0	$0	$0	$0	$0
Purchased Power	$17,232	O	$956	$809	$475	$13,786	$0	$1,206
Other Utilities	$23,432	O	$1,299	$1,100	$646	$18,745	$0	$1,640
Other Utilities - [Engineering]	$3,736	O	$207	$175	$103	$2,989	$0	$262
Printing	$0	O	$0	$0	$0	$0	$0	$0
Postage--[Engineering]	$0	O	$0	$0	$0	$0	$0	$0
Subtotal - T&D	$2,497,856		$207,276	$117,089	$68,786	$1,930,172	$0	$174,533
TOTAL O&M	$9,153,096	I	$4,603,499	$1,179,243	$101,656	$2,366,484	$644,277	$257,937

ALLOCATION OF RATE YEAR EXPENSES TO COST COMPONENTS

EXPENSE ITEM	PRO FORMA EXPENSE	ALLOC. SYMBOL (1)	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
CAPITAL EXPENSE								
Property Taxes								
Source of Supply	$617,233	A	$617,233	$0	$0	$0	$0	$0
Treatment-Pumping	$0	D	$0	$0	$0	$0	$0	$0
Treatment-Purification	$0	D	$0	$0	$0	$0	$0	$0
Trans & Distrib	$133,101	T-C	$46,588	$39,455	$23,233	$20,147	$0	$3,678
Rental Property	$9,285	A	$9,285	$0	$0	$0	$0	$0
Restrict. Bond Principal, Interest & RIC	$7,764,193	P-M	$4,146,234	$2,391,407	$736,171	$357,913	$10,542	$121,926
Leases	$0	P-M	$0	$0	$0	$0	$0	$0
IFR	$2,500,000	P	$1,216,411	$770,012	$237,041	$230,489	$6,789	$39,259
Trustee Fees	$31,000	P-M	$16,555	$9,548	$2,939	$1,429	$42	$487
O&M Reserve Deposit	$0	E	$0	$0	$0	$0	$0	$0
Subtotal - Capital	$11,054,811		$6,052,304	$3,210,422	$999,385	$609,978	$17,373	$165,350
TOTAL EXPENSES	$20,207,907		$10,655,803	$4,389,665	$1,101,041	$2,976,462	$661,650	$423,287
PLUS: Rev. Stabiliz./Oper. Rev. Allowa	$292,836	I	$147,280	$37,728	$3,252	$75,711	$20,612	$8,252
LESS: Service Instal Revenue	-$64,171	S	$0	$0	$0	-$64,171	$0	$0
LESS: State Surcharge Revenue	-$48,894	I	-$24,591	-$6,299	-$543	-$12,641	-$3,442	-$1,378
LESS: Penalties	-$324,240	I	-$163,075	-$41,774	-$3,601	-$83,831	-$22,823	-$9,137
LESS: Non-Operating Rental	-$27,850	A	-$27,850	$0	$0	$0	$0	$0
LESS: Interest Income	-$813	I	-$409	-$105	-$9	-$210	-$57	-$23
LESS: Misc Non-Operating	-$219,519	I	-$110,406	-$28,282	-$2,438	-$56,756	-$15,452	-$6,186
REQUIRED FROM RATES	$19,815,256		$10,476,752	$4,350,933	$1,097,702	$2,834,565	$640,489	$414,815

ALLOCATION OF PLANT IN SERVICE TO COST COMPONENTS

EXPENSE ITEM	PLANT VALUE	ALLOC. SYMBOL (1)	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
SOURCE OF SUPPLY								
Land & Land Rights	$5,738,631	A	$5,738,631	$0	$0	$0	$0	$0
Structures & Improvements	$14,532,046	A	$14,532,046	$0	$0	$0	$0	$0
Wells & Springs	$449,365	A	$449,365	$0	$0	$0	$0	$0
PUMPING								
Land & Land Rights	$30,133	D	$16,315	$13,817	$0	$0	$0	$0
Structures & Improvements	$937,301	D	$507,504	$429,798	$0	$0	$0	$0
Pumping Equipment	$1,566,482	D	$848,174	$718,307	$0	$0	$0	$0
PURIFICATION								
Land & Land Rights	$26,046	D	$14,103	$11,943	$0	$0	$0	$0
Structures & Improvements	$52,659,920	D	$28,512,813	$24,147,107	$0	$0	$0	$0
Water Treatment Equipment	$635,768	D	$344,238	$291,530	$0	$0	$0	$0
TRANSM & DISTRIBUTION								
Land & Land Rights	$1,590	H	$639	$541	$410	$0	$0	$0
Distribution Reservoirs	$693,080	H	$278,536	$235,888	$178,656	$0	$0	$0
Transmission Mains	$13,902,718	D	$7,527,653	$6,375,065	$0	$0	$0	$0
Distribution mains	$64,762,267	H	$26,026,730	$22,041,677	$16,693,860	$0	$0	$0
Services	$9,654,037	S	$0	$0	$0	$9,654,037	$0	$0
Meters	$4,977,190	S	$0	$0	$0	$4,977,190	$0	$0
Hydrants	$2,671,081	F	$0	$0	$0	$0	$0	$2,671,081
Other Misc Equip	$100,595	H	$40,427	$34,237	$25,930	$0	$0	$0
GENERAL								
Structures & Improvements	$2,337,900	E	$902,081	$335,107	$23,441	$806,470	$211,322	$59,479
Office furniture & equipment	$846,750	E	$326,719	$121,370	$8,490	$292,091	$76,537	$21,542
Transportation equipment	$1,778,868	E	$686,378	$254,977	$17,836	$613,629	$160,791	$45,256
Stores equipment	$7,525	E	$2,904	$1,079	$75	$2,596	$680	$191
Tools, shop & garage equipment	$41,651	E	$16,071	$5,970	$418	$14,368	$3,765	$1,060
Laboratory equipment	$85,723	A	$85,723	$0	$0	$0	$0	$0
Power equipment	$55,968	E	$21,595	$8,022	$561	$19,306	$5,059	$1,424
Communication equipment	$103,470	E	$39,924	$14,831	$1,037	$35,693	$9,353	$2,632
Miscellaneous equipment	$199,453	E	$76,959	$28,589	$2,000	$68,802	$18,028	$5,074
TOTAL PLANT	$178,795,557		$86,995,528	$55,069,857	$16,952,716	$16,484,181	$485,535	$2,807,740
PERCENT		P	48.66%	30.80%	9.48%	9.22%	0.27%	1.57%

ALLOCATION OF NON-ADMINISTRATIVE LABOR COSTS TO COST COMPONENTS

EXPENSE ITEM	PRO FORMA AMOUNT	ALLOC. SYMBOL (1)	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
CUSTOMER ACCOUNTS								
Salary & Wages - Cust Ser	$199,008	B	$0	$0	$0	$0	$199,008	$0
Salary & Wages - Meter	$328,541	M	$0	$0	$0	$262,832	$65,708	$0
SOURCE OF SUPPLY								
Salaries & Wages - (601)	$125,509	A	$125,509	$0	$0	$0	$0	$0
TRANSMISSION & DISTRIBUTION								
Salaries & Wages - (601)	$1,007,907	O	$55,890	$47,332	$27,806	$806,326	$0	$70,553
Salaries & Wages -[Engineering] (601)	$378,097	O	$20,966	$17,756	$10,431	$302,477	$0	$26,467
TOTALS	$2,039,061		$202,365	$65,088	$38,237	$1,371,635	$264,716	$97,020
PERCENT		L	9.9%	3.2%	1.9%	67.3%	13.0%	4.8%

ALLOCATION TO FIRE, WHOLESALE & RETAIL SERVICE

UNITS OF SERVICE	TOTAL	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
Number		3,720,375	20,311	18,254	25,579	281,805	1,917
Units		ccf/yr	ccf/day	ccf/day	equiv meters	bills	hydrants
Revenue Requirements	$19,815,256	$10,476,752	$4,350,933	$1,097,702	$2,834,565	$640,489	$414,815
Allocation to Fire Protection	$1,585,774	$31,430	$618,578	$520,950	included in calculation		$414,815
Allocation to Wholesale *	$1,023,943	$690,096	$332,240	$1,607			
Net To Retail Metered Rates	$17,205,540	$9,755,226	$3,400,115	$575,145	$2,834,565	$640,489	$0
		6.6%	7.6%	0.1%			

* Allocation to wholesale based on:

BASE

Metered Sales (ccf/yr)	3,720,375	
Retail Sales (ccf/yr)	3,446,311	
Retail Unacctd For (ccf/yr)	460,762	Based on miles of pipe: 100% of distribution/service costs plus 92.6% of transmission plus estim fire
Total Retail (ccf/yr)	3,907,073	
Wholesale Sales (ccf/yr)	274,064	
Wholesale Unacctd For (ccf/yr)	1,439	
Total Wholesale (ccf/yr)	275,503	
Grand Total (ccf/yr)	4,182,577	
Wholesale Percent of Grand Total	6.6%	
Total Base Allocation	$10,476,752	
Wholesale Allocation	**$690,096**	

MAX DAY

Total Max Day Allocation	$4,350,933		
Less: Distribution Costs			
82.3% of T&D O&M	-$96,396		
Admin O&M Share	-$16,015	16.6%	
Distribution Capital Items	-$1,880,567	58.58%	(Less Distribution Mains & Gen'l Items allocated to Max Day)
Total Net of Distribution	$2,357,956		
Wholesale Max Day %	14.09%	See Sch. 2.2	
Wholesale Allocation	**$332,240**		

PEAK HOUR

Total Peak Hour Allocation	$1,097,702		
Less: Distribution Costs			
82.3% of T&D O&M	-$56,629		
Admin O&M Share	-$18,311	32.3%	
Capital Items	-$999,385	100.00%	(All Capital Peak Hour costs = distribution)
Total Net of Distribution	$23,377		
Wholesale Peak Hr %	6.87%	See Sch. 2.2	
Wholesale Allocation	**$1,607**		

ALLOCATION SYMBOLS

	ALLOCATION SYMBOL	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE	
100.00%	A	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	Supply, IFR, Power & Chemicals
100.00%	B	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	Billing
100.00%	D	54.15%	45.85%	0.00%	0.00%	0.00%	0.00%	Max Day Demand
100.00%	E	38.59%	14.33%	1.00%	34.50%	9.04%	2.54%	O&M less A&G
100.00%	E-M	82.12%	14.33%	1.00%	0.00%	0.00%	2.54%	O&M less A&G - No Meter Alloc
100.00%	F	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	Fire Service
100.00%	H	40.19%	34.03%	25.78%	0.00%	0.00%	0.00%	Max Hour Demand
100.00%	I	50.29%	12.88%	1.11%	25.85%	7.04%	2.82%	Total O&M
100.00%	L	9.92%	3.19%	1.88%	67.27%	12.98%	4.76%	Labor
100.00%	L-M	90.17%	3.19%	1.88%	0.00%	0.00%	4.76%	Labor-No Meter Allocation
100.00%	M	0.00%	0.00%	0.00%	80.0%	20.0%	0.00%	Cust Serv - "Meter"
100.00%	O	5.55%	4.70%	2.76%	80.00%	0.00%	7.00%	O&M Mains, Hydrants & Service
100.00%	O-A	85.55%	4.70%	2.76%	0.00%	0.00%	7.00%	T&D Police Details
100.00%	P	48.66%	30.80%	9.48%	9.22%	0.27%	1.57%	Plant
100.00%	P-M	53.40%	30.80%	9.48%	4.61%	0.14%	1.57%	Meter & Service Capital
100.00%	S	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	Services and Meters
100.00%	T	42.65%	36.12%	21.22%	0.00%	0.00%	0.00%	T&D Mains
100.00%	T-C	35.00%	29.64%	17.46%	15.14%	0.00%	2.76%	T&D Capital

Symbol D

	MGD	%
Avg Day	8.403	54.15%
Max Day Inc	7.117	45.85%
Total Max Day	15.520	100.00%

Symbol E

	TOTAL	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
Amount	$6,860,270	$2,647,042	$983,328	$68,786	$2,366,484	$620,097	$174,533
Percent	E	38.6%	14.3%	1.0%	34.5%	9.0%	2.5%

Symbol H

	MGD	%
Avg Day	8.403	40.19%
Max Day Inc	7.117	34.03%
Peak Hour Inc	5.390	25.78%
Total Peak Hour	20.910	100.00%

	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	Avg or Max *
Avg Day mgd)	8.53	8.38	7.11	7.56	8.55	9.10	8.40
Max Day (mgd)	13.72	14.90	13.48	12.34	14.72	15.52	15.52
Max Hour (mgd)	19.95	19.84	18.64	18.66	18.55	20.91	20.91

* FY 13 - 15

Symbol M

These accounts include activities associated with meter reading, meter testing, backflow testing, etc. Costs have been split based on the following personnel associated with these activities:

	# Employees	Meter Read	Meters
Meter Reader	1.0	1.0	
Technician	3.0		3.0
Backflow	1.0		1.0
Subtotal	5.0	1.0	4.0
Percent		20%	80%
Agent	1.0	0.20	0.80
Supervisor	1.0	0.20	0.80
Total	7.0	1.4	5.6
Percent		20%	80%

ALLOCATION SYMBOLS

Symbol O

	% of Time	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
Mains	13.00%	5.55%	4.70%	2.76%	0.00%	0.00%	0.00%
Hydrants	7.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.00%
Services	80.00%	0.00%	0.00%	0.00%	80.00%	0.00%	0.00%
Total	100.0%	5.5%	4.7%	2.8%	80.0%	0.0%	7.0%

Note: Based on prior docket analysis of time

Symbol T

	Plant Amt.	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
Transmission	$13,902,718	$7,527,653	$6,375,065	$0	$0	$0	$0
Distribution	$64,762,267	$26,026,730	$22,041,677	$16,693,860	$0	$0	$0
Total	$78,664,985	$33,554,383	$28,416,742	$16,693,860	$0	$0	$0
		42.65%	36.12%	21.22%	0.00%	0.00%	0.00%

Symbol T-C

	Plant Amt.	BASE	MAX. DAY	PEAK HOUR	METERING	BILLING	DIRECT FIRE
Distribution Reservoirs	$693,080	$278,536	$235,888	$178,656	$0	$0	$0
Transmission Mains	$13,902,718	$7,527,653	$6,375,065	$0	$0	$0	$0
Distribution mains	$64,762,267	$26,026,730	$22,041,677	$16,693,860	$0	$0	$0
Services	$9,654,037	$0	$0	$0	$9,654,037	$0	$0
Meters	$4,977,190	$0	$0	$0	$4,977,190	$0	$0
Hydrants	$2,671,081	$0	$0	$0	$0	$0	$2,671,081
Total	$96,660,373	$33,832,919	$28,652,630	$16,872,517	#########	$0	$2,671,081
		35.00%	29.64%	17.46%	15.14%	0.00%	2.76%

FIRE SERVICE CHARGES

PUBLIC FIRE SERVICE

Annual Charge/Hydrant =	$640.45
Charge per meter/month (Pawtucket) =	$4.64

PRIVATE FIRE SERVICE

SERVICE SIZE (inches)	ANNUAL CHARGE
2	$16.88
4	$35.95
6	$89.98
8	$163.09
10	$241.95
12	$351.26

ALLOCATION OF FIRE SERVICE EXPENSES
TO PUBLIC AND PRIVATE FIRE SERVICE

	NUMBER	DEMAND FACTOR (1)	NO. OF EQUIVS.	PERCENT OF DEMAND	NON-HYDR. REQUIRED	DIRECT HYDRANT	TOTAL
PUBLIC FIRE SERVICE							
Hydrants	1,917	111.31	213,383.0	74.86%	$1,066,350	$161,388	$1,227,738
PRIVATE FIRE SERVICE							
SIZE (IN)							
2	38	6.19	235.2				
4	78	38.32	2,988.9				
6	405	111.31	45,080.9				
8	93	237.21	22,060.2				
10	3	426.58	1,279.7				
12	0	689.04	0.0				
TOTAL-PRIV.	617		71,645.0	25.14%	$358,035	$0	$358,035
GRAND TOTALS	2,534		285,028.0	100.00%	$1,424,385	$161,388	$1,585,774

Total Fire Allocation	$1,585,774
Less O&M for T&D Fire	$4,086
Hydrant Capital	$157,302
Net Non-Hydrant	$1,424,385

(1) Based on size to the 2.63 power.

DETERMINATION OF FIRE SERVICE CHARGES

PUBLIC FIRE PROTECTION			CALCULATED CHARGE	
PUBLIC FIRE ALLOCATION	$1,227,738			
NUMBER OF PUBLIC HYDRANTS	1,917	=	$640.45 per year =	$53.37 per month

PRIVATE FIRE PROTECTION			
PRIVATE FIRE ALLOCATION (1)	$358,035		
NO. OF EQUIV. UNITS	71,645.01	=	$5.00 /EQUIV.

		ANNUAL AMOUNTS					
SIZE (IN)	DEMAND FACTOR	DEMAND CHARGE	SERVICE EQUIVS (2)	SERVICE LINE CHRG	MONTHLY TOTAL	+ BILLING CHARGE	CALCULATED MON. CHRG
2	6.19	$30.93	4.07	$144.32	$14.60	$2.27	$16.88
4	38.32	$191.50	6.00	$212.68	$33.68	$2.27	$35.95
6	111.31	$556.26	14.00	$496.26	$87.71	$2.27	$89.98
8	237.21	$1,185.40	21.00	$744.40	$160.82	$2.27	$163.09
10	426.58	$2,131.77	21.00	$744.40	$239.68	$2.27	$241.95
12	689.04	$3,443.39	21.00	$744.40	$348.98	$2.27	$351.26

(1) Private Fire includes allocated service maintenance costs as detailed below:
(2) See Schedule 2.0

Service Line Maintenance Cost =	$965,086	(Half of total "Metering" O&M)
Service Line Debt Costs =	$236,159	
Addtnl Allocation to Fire Service =	$294,522	(24.52%)
Cost per Equiv/year =	$ 35.45	

CITY OF PAWTUCKET FIRE CHARGES

Because the City of Pawtucket has passed an Ordinance to stop paying hydrant rental fees under R.I.GL. § 45-39-4 it is necessary to reallocate the allocated costs directly to the customers in Pawtucket. This was approved by the RI PUC in Docket 4300.

Fire Hydrants in Pawtucket =	1,515
Proposed Hydrant Charge (per month)	$53.37
Annual Hydrant Charge to Pawtucket =	$970,267
Number of Meters *	208,932
Fire Charge per meter =	$4.64

* Pawtucket Water Proposed to recover these costs through an additional charge per meter in Docket 4300. This was approved by the RI PUC.

DETERMINATION OF SERVICE CHARGES

BILLING CHARGE

CUST. BILLING ALLOC.		$640,489	
----------	=	---------- =	$2.27 PER BILLING
NUMBER OF BILLINGS (Include Priv Fir		281,805	

METER CHARGE

CUST. METER ALLOC. (1)		$2,540,042	
----------	=	---------- =	$99.30 / EQ. METER/YR
NO. EQUIV. METERS		25,579	

TOTAL SERVICE CHARGES

	MONTHLY ACCOUNTS		
METER SIZE (IN)	METER CHARGE	BILLING CHARGE	TOTAL CHARGE
5/8	$8.28	$2.27	$10.55
3/4	$11.47	$2.27	$13.74
1	$16.55	$2.27	$18.82
1 1/2	$33.69	$2.27	$35.96
2	$43.74	$2.27	$46.01
3	$49.65	$2.27	$51.92
4	$115.85	$2.27	$118.12
6	$173.78	$2.27	$176.05
8	$248.25	$2.27	$250.52

(1) Less allocation of Service Maintenance Costs to Private Fire Service - see Sch. 4.2,

ALLOCATION OF GENERAL WATER EXPENSES
TO CUSTOMER CLASSES

Class Demands

CUSTOMER	AVERAGE DEMANDS		MAX DAY EXTRA CAPACITY			
CLASS	(CCF/DAY)	PERCENT	FACTOR	(CCF/DAY)	XTRA CCF/DAY	PERCENT
Retail						
Small (5/8 - 1")	7,190	70.54%	2.62	18,859	11,669	66.97%
Large (>1")	2,252	22.09%	2.28	5,144	2,892	16.60%
Wholesale						
Cumberland	751	7.37%	4.81	3,613	2,862	16.43%
Seekonk	0	0.00%	4.81	0	0	0.00%
Total	10,193	100.00%		27,617	17,424	100.00%

CUSTOMER	AVERAGE DEMANDS		PEAK HOUR EXTRA CAPACITY			
CLASS	(CCF/DAY)	PERCENT	FACTOR	(CCF/DAY)	XTRA CCF/DAY	PERCENT
Retail						
Small (5/8 - 1")	7,190	70.54%	3.53	25,409	6,550	68.29%
Large (>1")	2,252	22.09%	3.08	6,931	1,787	18.63%
Wholesale						
Cumberland	751	7.37%	6.48	4,867	1,255	13.08%
Seekonk	0	0.00%	6.48	0	0	0.00%
Total	10,193	100.00%		37,208	9,591	100.00%

Allocation of Retail Metered Sales Costs to Classes (see Sch 3.3)

CUSTOMER	BASE COSTS		MAX. DAY XTRA CAPACITY		PEAK HR. XTRA CAPACITY		TOTAL
CLASS	PERCENT	AMOUNT	PERCENT	AMOUNT	PERCENT	AMOUNT	AMOUNT
Retail							
Small (5/8 - 1")	76.15%	$7,428,647	80.14%	$2,724,733	78.57%	$451,883	$10,605,263
Large (>1")	23.85%	$2,326,578	19.86%	$675,382	21.43%	$123,262	$3,125,223
Total	100.00%	$9,755,226	100.00%	$3,400,115	100.00%	$575,145	$13,730,486
		71.0%		24.8%		4.2%	

METERED WATER RATES

Small (5/8 - 1")

Total Expense (2)	$10,605,263				
---------- =	----------	=	$	4.041	per ccf
Metered Sales (HCF) (1)	2,624,381				

Large (>1")

Total Expense (2)	$3,125,223				
---------- =	----------	=	$	3.802	per ccf
Metered Sales (HCF) (1)	821,930				

Wholesale

Total Expense (3)	$1,023,943				
---------- =	----------	=		$3.736	per ccf
Metered Sales (HCF) (1)	274,064				

(1) See Sch 2.0
(2) See Sch 6.0
(3) See Sch. 3.3

COMPARISON OF CURRENT & PROPOSED RATES

		Current	Proposed	% Change
Metered Rates ($/ccf)				
Small (5/8 - 1")		$3.900	$4.041	3.6%
Medium (1.5 - 2" & By pass)		$3.489	$3.802	9.0%
Large (3" and up)		$3.286	$3.802	15.7%
Large (>1")			$3.802	
Wholesale		$2.726	$3.736	37.1%
Service Charges (Monthly)				
	5/8	$10.00	$10.55	5.5%
	3/4	$12.96	$13.74	6.0%
	1	$17.68	$18.82	6.4%
	1 1/2	$33.60	$35.96	7.0%
	2	$42.93	$46.01	7.2%
	3	$48.42	$51.92	7.2%
	4	$109.89	$118.12	7.5%
	6	$163.68	$176.05	7.6%
	8	$232.83	$250.52	7.6%
Fire Service (Monthly)				
Public	/hydrant/month	$29.51	$53.37	80.9%
Pawtucket	$/billing	$2.57	$4.64	80.5%
Private				
	2	$16.76	$16.88	0.7%
	4	$35.67	$35.95	0.8%
	6	$89.21	$89.98	0.9%
	8	$161.72	$163.09	0.8%
	10	$240.07	$241.95	0.8%
	12	$348.65	$351.26	0.7%

IMPACT OF PROPOSED RATES

METER SIZE	MONTHLY USE - CU FT	CURRENT RATES	<--------- PROPOSED ---------> NEW BILL	$ INCREASE	% INCREASE
Metered Service (Monthly Bills/Includes Pawtucket Fire)					
Small					
5/8	600	$33.40	$34.80	$1.40	4.2%
5/8	**800**	**$41.20**	**$42.88**	**$1.68**	**4.1%**
5/8	1,200	$56.80	$59.04	$2.24	3.9%
5/8	1,700	$76.30	$79.25	$2.95	3.9%
5/8	2,500	$107.50	$111.58	$4.08	3.8%
5/8	3,000	$127.00	$131.78	$4.78	3.8%
5/8	5,000	$205.00	$212.60	$7.60	3.7%
5/8	7,500	$302.50	$313.63	$11.13	3.7%
5/8	9,000	$361.00	$374.24	$13.24	3.7%
1	1,000	$56.68	$59.23	$2.55	4.5%
1	12,000	$485.68	$503.74	$18.06	3.7%
1	25,000	$992.68	$1,029.07	$36.39	3.7%
Large					
1 1/2	25,000	$905.85	$986.46	$80.61	8.9%
1 1/2	50,000	$1,778.10	$1,936.96	$158.86	8.9%
2	75,000	$2,659.68	$2,897.51	$237.83	8.9%
2	100,000	$3,531.93	$3,848.01	$316.08	8.9%
3	75,000	$2,512.92	$2,903.42	$390.50	15.5%
3	100,000	$3,334.42	$3,853.92	$519.50	15.6%
4	250,000	$8,324.89	$9,623.12	$1,298.23	15.6%
6	300,000	$10,021.68	$11,582.05	$1,560.37	15.6%
Wholesale					
6	1,000,000	$27,423.68	$37,536.05	$10,112.37	36.9%
Fire Service (Monthly Bill)					
Municipal Fire Service	200 hydrants	$491.82	$889.50	$397.68	80.9%
Pawtucket Public Fire Protection	per bill	$2.57	$4.64	$2.07	80.5%
Private Fire Service	4 Inch Service	$2.97	$3.00	$0.02	0.8%
	6 Inch Service	$7.43	$7.50	$0.06	0.9%
	8 Inch Service	$13.48	$13.59	$0.11	0.8%

REVENUE RECONCILIATION

Service Charge: (Monthly)		<------- Current ------->		<------- Proposed -------->	
5/8	21,561	$10.00	$2,587,273	$10.55	$2,729,573
3/4	269	$12.96	$41,812	$13.74	$44,328
1	515	$17.68	$109,237	$18.82	$116,281
1 1/2	216	$33.60	$87,043	$35.96	$93,156
2	280	$42.93	$144,364	$46.01	$154,722
3	16	$48.42	$9,322	$51.92	$9,996
4	8	$109.89	$10,578	$118.12	$11,370
6	2	$163.68	$4,466	$176.05	$4,803
8	0	$232.83	$0	$250.52	$0
Consumption Charge:					
Small (5/8 - 1")	2,624,381	$3.900	$10,235,086	$4.041	$10,605,124
Medium (1.5 - 2" & By pass)	676,243	$3.489	$2,359,412		
Large (3" and up)	150,550	$3.286	$494,709		
Large (>1")	821,930			$3.802	$3,124,978
Wholesale	274,064	$2.726	$747,098	$3.736	$1,023,903
Fire Protection:					
Public Hydrants (non Pawtucket)	402	$29.51	$142,352	$53.37	$257,457
Pawtucket Billings	208,932	$2.57	$536,955	$4.64	$969,444
Private Fire Protection					
2	38	$16.76	$7,640	$16.88	$7,696
4	78	$35.67	$33,391	$35.95	$33,653
6	405	$89.21	$433,569	$89.98	$437,318
8	93	$161.72	$180,479	$163.09	$182,008
10	3	$240.07	$8,642	$241.95	$8,710
12	0	$348.65	$0	$351.26	$0
Total			$18,173,428		$19,814,520
Plus: Misc Revenues			$659,046		$685,488
Pro Forma Revenue			$18,832,473		$20,500,008
Required Revenue			$20,500,744		$20,500,744
Difference			-$1,668,270		($736)
Increase in Revenues					$1,667,535
Percent Increase in Total Revenues					8.9%
Percent Increase in Rate Revenues (non-misc)					9.0%

SUMMARY OF COST OF SERVICE

	Test Year	Adjustments	Rate Year
Revenues			
Service Charges	$2,994,094	$170,135	$3,164,229
Metered Rates	$13,836,305	$917,700	$14,754,005
Fire Protection	$1,343,028	$553,258	$1,896,287
Miscellaneous	$659,046	$26,442	$685,488
Total Revenue	$18,832,473	$1,667,535	$20,500,008
Expenses			
O&M			
Admin	$2,173,233	$119,593	$2,292,826
Customer Serv	$933,072	$123,336	$1,056,408
Supply	$438,872	$13,722	$452,594
Purification	$2,628,473	$224,938	$2,853,412
Trans & Distrib	$2,322,774	$175,082	$2,497,856
Total O&M	$8,496,424	$656,672	$9,153,096
Capital			
Property Taxes	$921,828	-$162,210	$759,618
incipal, Interest & RICWFA Fees *	$7,764,193	$0	$7,764,193
Leases	$0	$0	$0
IFR	$2,500,000	$0	$2,500,000
Trustee Fees	$26,879	$4,121	$31,000
O&M Reserve Deposit	$0	$0	$0
Total Capital	$11,212,900	-$158,089	$11,054,811
Operating Revenue Allowance	$0	$292,836	$292,836
Total Expenses	$19,709,324	$791,419	$20,500,744
	$19,709,324		$20,500,744

PROPOSED STEP INCREASES

YEAR 2 - FY 2017

Rate Year (FY 2016) Revenue Requirements =			$20,500,744
Step Increases for 2017			
New Debt	$	1,174,417	
Property Tax Reduct.	$	(48,368)	
Inflation: Labor @2%	$	54,092	
Inflation: Non-labor @ 3%	$	193,455	
Rev. Stabiliz @ 1.5%	$	20,604	
	$	1,394,200	
FY 2017 Revenue Requirements =			$ 21,894,943
Proposed Step Increase for FY 2017			6.8%

Metered Rates		Current	Proposed (FY2016)	Step Increase (FY 2017)
Small (5/8 - 1")		$3.900	$4.041	$4.316
Medium (1.5 - 2" & By pass)		$3.489	$3.802	$4.061
Large (3" and up)		$3.286	$3.802	$4.061
Wholesale		$2.726	$3.736	$3.990
Service Charges				
Monthly	5/8	$10.00	$10.55	$11.27
	3/4	$12.96	$13.74	$14.67
	1	$17.68	$18.82	$20.10
	1 1/2	$33.60	$35.96	$38.41
	2	$42.93	$46.01	$49.14
	3	$48.42	$51.92	$55.45
	4	$109.89	$118.12	$126.15
	6	$163.68	$176.05	$188.02
	8	$232.83	$250.52	$267.56
Fire Service				
Public	/hydrant/qurt	$29.51	$53.37	$57.00
Pawtucket	$/bill	$2.57	$4.64	$4.96
Private				
	2	$16.76	$16.88	$18.03
	4	$35.67	$35.95	$38.40
	6	$89.21	$89.98	$96.10
	8	$161.72	$163.09	$174.18
	10	$240.07	$241.95	$258.41
	12	$348.65	$351.26	$375.14

PROPOSED STEP INCREASES

YEAR 3 - FY 2018

Rate Year (FY 2017) Revenue Requirements =		$21,894,943
Step Increases for 2018		
New Debt	$ 257,898	
Property Tax Increase	$ 1,843	
Inflation: Labor @2%	$ 55,174	
Inflation: Non-labor @ 3%	$ 199,258	
Rev. Stabiliz @ 3%	$ 358,833	
	$ 873,007	
FY 2018 Revenue Requirements =		$ 22,767,950
Proposed Step Increase for FY 2018		4.0%

		Current	Proposed (FY2016)	Step Increase (FY2017)	Step Increase (FY 2018)
Metered Rates					
Small (5/8 - 1")		$3.900	$4.041	$4.316	$4.488
Medium (1.5 - 2" & By pass)		$3.489	$3.802	$4.061	$4.222
Large (3" and up)		$3.286	$3.802	$4.061	$4.222
Wholesale		$2.726	$3.736	$3.990	$4.149
Service Charges					
Monthly	5/8	$10.000	$10.55	$11.27	$11.72
	3/4	$12.960	$13.74	$14.67	$15.26
	1	$17.680	$18.82	$20.10	$20.90
	1 1/2	$33.600	$35.96	$38.41	$39.94
	2	$42.930	$46.01	$49.14	$51.10
	3	$48.420	$51.92	$55.45	$57.66
	4	$109.890	$118.12	$126.15	$131.18
	6	$163.680	$176.05	$188.02	$195.52
	8	$232.830	$250.52	$267.56	$278.23
Fire Service					
Public	/hydrant/qurt	$29.509	$53.37	$57.00	$59.27
Fire Service (Monthly Bill)	$/bill	$2.570	$4.64	$4.96	$5.15
Private					
	2	$16.755	$16.88	$18.03	$18.74
	4	$35.674	$35.95	$38.40	$39.93
	6	$89.212	$89.98	$96.10	$99.93
	8	$161.719	$163.09	$174.18	$181.13
	10	$240.067	$241.95	$258.41	$268.71
	12	$348.654	$351.26	$375.14	$390.10

CERTIFICATION

I hereby certify that on July 23, 2015, I sent a copy of the within to all parties set forth on the attached Service List by electronic mail and copies to Luly Massaro, Commission Clerk, by electronic mail and regular mail.

Parties/Address	E-mail Distribution	Phone
Joseph A. Keough, Jr., Esq. Keough & Sweeney 41 Mendon Ave. Pawtucket, RI 02861	jkeoughjr@keoughsweeney.com	401-724-3600
James L. DeCelles, P.E. Chief Engineer Pawtucket Water Supply Board 85 Branch St. Pawtucket, RI 02860	decelles@pwsb.org rbenson@pwsb.org	401-729-5001
Karen Lyons, Esq. Dept. of Attorney General 150 South Main St. Providence, RI 02903	Klyons@riag.ri.gov steve.scialabba@dpuc.ri.gov john.bell@dpuc.ri.gov Al.mancini@dpuc.ri.gov Pat.smith@dpuc.ri.gov Jmunoz@riag.ri.gov dmacrae@riag.ri.gov	401-222-2424
Christopher Woodcock Woodcock & Associates, Inc. 18 Increase Ward Drive Northborough, MA 01532	Woodcock@w-a.com	508-393-3337
David Bebyn B&E Consulting 21 Dryden Lane Providence, RI 02904	dbebyn@beconsulting.biz	401-785-0800
Thomas S. Catlin Exeter Associates, Inc. 10480 Little Patuxent Parkway Suite 300 Columbia, MD 21044	tcatlin@exeterassociates.com jmierzwa@exeterassociates.com lmorgan@exeterassociates.com	410-992-7500
Michael McElroy, Esquire Schacht & McElroy PO Box 6721 Providence, RI 02940-6721	Michael@McElroyLawOffice.com	401-351-4100
Thomas Hefner, Esquire Town of Cumberland	thefner@cumberlandri.org	
David Russell	Davidrussell015@comcast.net	

File original and nine (9) copies w/: Luly E. Massaro, Commission Clerk Public Utilities Commission 89 Jefferson Boulevard Warwick, RI 02888	Luly.massaro@puc.ri.gov Amy.dalessandro@puc.ri.gov Sharon.colbycamara@puc.ri.gov	401-780-2104 401-941-1691

Joseph A. Keough, Jr., Esquire # 4925
KEOUGH & SWEENEY, LTD.
41 Mendon Avenue
Pawtucket, RI 02861
(401) 724-3600 (phone)
(401) 724-9909 (fax)
jkeoughjr@keoughsweeney.com