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February 12, 2016

Ms. Luly Massaro, Clerk
Rhode Island Public Utilities Commission
89 Jefferson Boulevard
Warwick, RI 02888

**Re: *City of Newport, Utilities Department, Water Division
Docket 4595***

Dear Ms. Massaro:

Enclosed please find an original and nine (9) copies of the following document:

1. City of Newport, Utilities Division, Water Department's Response to the Portsmouth Water and Fire District's Data Request (Set 1).

Please note that an electronic copy of this document has been provided to the service list.

Thank you for your attention to this matter.

Sincerely,



Joseph A. Keough, Jr.

JAK/kf
Enclosure
cc: Docket 4595 Service List (*via electronic mail*)

PWFD 1-1: Referring to the cost of service (“COS”) model provided by City of Newport, Department of Utilities, Water Division (“NWD”), Sheet “Demand Detail”: why do the monthly residential demands in cells CV21:DF21 not match those shown on HJS-D7 cells C9:M9? Which values are correct?

Response: Both sets of numbers are correct, but they are different because the residential demands shown on the “Demand Detail” also include the volume of water billed as Sundry Billing for each month. The values used on D-7 are the volume of water billed to the Residential class each month and do not include the Sundry Billing volumes.

The values are different because they are used for two different purposes. The values in the Demand Detail feed the table at the top of HJS Schedule B-6 which shows historical annual consumption by class. These values are the basis of the annual demand projections for each class. The values on D-7 are used to determine the max day and max hour peaking factors for the Residential and Non-Residential class. As noted in the footnote on HJS Schedule D-7, the billed consumption value for July is actually billed consumption for July 2015 while the other values are billed consumption for August 2014 through June 2015. The consumption from July of 2015 was substituted for the July 2014 consumption because the July 2014 billing was a quarterly billing and therefore included three months of consumption.

Prepared by: Harold Smith

PWFD 1-2: Referring to HJS Schedule D-7: The footnote states that the July residential use is from July 2015. However, based on the total residential use in the rate year (FY 2015) of 740,242 (See HJS B-6), the residential use in July 2014 would be 133,602 (total use of 740,242 less use from Aug – Jun in HJS D-7). On the COS model provided by NWD, Sheet “Demand Detail”, it shows 131,545. Please explain whether this discrepancy and how the difference between the lower number on HJS D-7 and the higher numbers suggested by HJS B-6 and the COS model impacts the rate year sales projections.

Response: The value for July on HJS Schedule D-7 has no impact on the rate year sales projections. As stated in the response to PWFD 1-1, the sales projections are based on values in the “Demand Detail” tab which include consumption from Sundry Billing in the Residential consumption for each month. The values in D-7 are only used for the development of demand factors for the Residential and Non-Residential classes. As explained in the response to PWFD 1-1 the Residential value for July on HJS Schedule D-7 is the billed consumption for July of 2015.

Prepared by: Harold Smith

PWFD 1-3: Referring to HJS Schedule D-7: In determining the system demand data (lines 25-30, cell E38, etc.) of the model), please explain why NWD used the system average day, maximum day and average day of the maximum month from FY 2013 rather than the rate year (FY 2015) when NWD used the rate year water sales for residential and non-residential customers to derive the calculated demand factors.

Response: The demand factors for the Residential and Non-Residential class were developed using the methodology in Appendix A of AWWA Manual M-1. On page 313, the M-1 Manual provides a description of the data required to develop demand factors using monthly data. The description of system data required is as follows:

“The system-wide demand data that are necessary to undertake the analysis include: (1) the **highest ratio** of system maximum day (MD) demand to system average day (AD) demand **over a representative number of years** (2) the system maximum month (Max month or MM) for **that highest year**; and (3) the system maximum hour demand for **that year.**” (Emphasis added)

Since FY 2013 had the highest ratio of system maximum day demand to system average day demand for the past three fiscal years, it was determined that system data for FY 2013 should be used in order to comply with the M-1 methodology.

Prepared by: Harold Smith

PWFD 1-4: Referring to HJS Schedule D-7: How did NWD derive the weekly adjustment use factors for residential (1.20) and non-residential (1.17) customers? If NWD was to apply weekly adjustment factors for the Navy and for the Portsmouth Water & Fire District ("Portsmouth"), what would those factors be and why?

Response: The daily data gathered for the Daily Demand Study that Newport performed during several summers was analyzed to determine the daily variation in demand for the Residential and Non-Residential classes. Analysis of this data actually indicated that there was very little day to day variability in demand for the Residential class and only slight variation for the Non-Residential class. This lack of variability would argue for making no adjustment (Weekly Adjustment Factor = 1.0) to account for daily variability. However, recognizing that the data for the daily demand study was collected during the peak tourist season in Newport, a period when rental houses are occupied seven days a week and businesses are likely open more days of the week that they would be during the off season, it was determined that an adjustment factor of 1.0 would likely understate the portion of the daily peaks attributable to daily variation. Therefore, we used an approach used in the M-1 Manual and determined the Non-Residential adjustment factor based on the assumption that the Non-Residential customer would only use water six days a week and the adjustment factor was determined by dividing 7 by 6 to arrive at 1.17. The Residential adjustment factor was set slightly higher than the Non-Residential adjustment based on the assumption that daily variability for the Residential class would be greater than the Non-Residential class, especially during the "off season" when fewer tourists are visiting Newport.

It would not be appropriate to apply weekly adjustment factors to the Navy and PWFD because their peaks were determined based on daily data such that the actual relationship between the Max Day and Average Day is known.

Prepared by: Harold Smith

PWFD 1-5: The rate year demand (HJS B6) is based on the average of 2014 and 2015 (two year average). The production peaks on HJS B7 (see cell M37, M39, M40, M44) are based on the average of 2014 and 2015. The maximum day factor (cell M42) and cell M43 are based on the year 2013. The maximum hour factor (cell M45) is based on an average of the 2014 and 2015 maximum hour demands. The Navy and Portsmouth maximum day values are based only on year 2015 data. The lost water allocation (HJS B9) is based actual 2015 sales but lost water is based on a 3 year average. Please explain why NWD did not use the same time period for each of these calculations.

Response: For the most part, the use of data from different time periods is consistent with the cost of service model agreed to in Dockets 4128 and 4355. With regard to the rate year demand (HJS B-6), the production peaks (cells M37,M39, M40, M44) and the maximum hour factor (cell M45) in the previously approved model used a two year average based on the most recent two prior years and that is what was done in the current model. The same is true for the determination of the lost water volume. In the previously approved model the percentage of water produced, but was then "lost", was based on a three year average and we have done the same in this model.

With regard to the allocation of lost water, the allocation is actually based on projected rate year demand by class and not on actual 2015 sales as is stated in the data request. The previously approved model also used each class' proportionate share of projected rate year demand as the basis for the lost water adjustment; however, PWFD was not allocated any lost water and the Navy was only allocated a share of lost water based on 25% of its actual projected demand.

The only deviation from the previously approved model is the use of system data from FY 2013 in the development of peaking factors for the Residential and Non-Residential classes. In the previously approved model peaking factors for these two classes were developed using data from the Daily Demand Study while in this filing the peaking factors were developed using the methodology detailed in Appendix A of AWWA Manual M-1. As discussed in the response to PWFD 1-3, system data for

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FY 2013 was used because the highest ratio of system maximum day demand to system average day demand occurred in FY 2013.

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PWFD 1-6: Referring to request number 5 above, please state whether NWD agrees that it is necessary to use the same time period when deriving the max day and max hour diversity factors (HJS D7)? If NWD does not agree, please explain the basis for this position.

Response: Both the max day and max hour diversity factors were developed using system data from FY 2013 and consumption data by class from FY 2015. As discussed in the response to PWFD 1-5 this approach is consistent with the methodology described in Appendix A of AWWA Manual M-1.

Prepared by: Harold Smith

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PWFD 1-7: If NWD agrees that all or some of the values discussed in requests 5 and 6 above should be changed to be calculated based on consistent time intervals, please provide the updated numbers and an updated excel file with the numbers incorporated.

Response: NWD does not agree that the values discussed in requests 5 and 6 should be changed.

Prepared by: Harold Smith

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PWFD 1-8: In deriving the diversity factors on HJS D7, does NWD agree that the non-coincident values can NOT be less than the coincident values? If not, please explain.

Response: NWD agrees that non-coincident values should be greater than coincident values as is the case on HJS Schedule D-7 as filed.

Prepared by: Harold Smith

PWFD 1-9: Referring to HJS-D6:

a. Please reconcile the FY 2014 debt payment with the annual debt schedules.

b. Please confirm the opening balance in the Debt Service Account of \$3,782,354 on July 1, 2015.

Response: a. The amounts shown on HJS Schedule D-6 as deductions from the Debt Service Restricted account to pay existing debt service do not reconcile with the debt service schedules because Newport used surplus bond proceeds to pay a portion of debt service in FY 2014. The bond proceed funds did not flow through the restricted account and therefore do not show on HJS Schedule D-6. Newport made all of its required debt service payments in FY 2014.

b. The balance in the Debt Service Account as of July 1, 2015 was \$3,782,354.

Prepared by: Harold Smith

PWFD 1-10: Referring to HJS B4: The base of this schedule purports to show the average and maximum day capacities for each customer class for the new treatment plants.

- a. Please provide any documentation to support the average and maximum volumes for each customer class, including fire protection.
- b. Please explain why the maximum day:average day ratios for each class are different from those presented on HJS B8.
- c. Please explain why the treatment capital costs are not allocated 50% to average day and 50% to maximum day?

Response: a. The projected average day and maximum day capacity requirements for Portsmouth and the Navy were based on information contained in the August 2009 CDM Technical Memorandum titled "City Advisor for Project Delivery of Water Treatment Plant Improvements; Project 08-028; Task 3.1 – Review of Demands and Supply." (See attached)

The capacity needed to meet fire demands is based on the fire protection demand assumptions show on HJS Schedule B-11.

The projected capacity requirements for the Residential and Non-Residential allocate the remaining design capacity after accounting for the capacity reserved to meet the demands of the Navy, PWFD and fire protection between the Residential and Non-Residential classes based on the relationship between the average day and maximum day demands for these two classes developed on HJS Schedule B-9.

b. As explained in the answer to .a above the referenced values on HJS Schedule B-4 are reserved capacity values while the maximum day and average day ratios used on HJS Schedule B-8 are peaking factors based on historical system demand data and historical customer class demand data.

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c. As explained in my testimony, treatment capital costs are allocated directly to each customer class based on each class' share of average day and maximum day design capacity. The allocations to PWFD and the Navy are based on each wholesale customer's projected capacity requirements that were used in determining the design capacity of the treatment facilities. The allocation to fire protection is based on the capacity required to meet potential fire flow demands and the remaining design capacity is allocated between the Residential and Non-Residential classes based on the relationship between the average day and maximum day demands for these two classes developed on HJS Schedule B-9.

Prepared by: Harold Smith

City of Newport, Rhode Island
Department of Utilities

**City Advisor for Project Delivery of Water
Treatment Plant Improvements Project 08-028
Task 3.1 - Review of Demands and Supply**

August 2009

*Technical
Memorandum*



Technical Memorandum

To: Julia Forgue, P.E., Director of Utilities

From: Carol Rego and Jeff Diercks

Date: May 1, 2009 (Finalized August 6, 2009)

Subject: Task 3.1 – Water Supply and Demands

1 – Purpose of Memorandum

The purpose of this memorandum is to develop water demand projections for the Newport Water Division (NWD) service area, as a basis for establishing the design capacities of the two water treatment plants (WTPs). The projections are to be based on a 5-year and 20-year planning horizon. The 5-year horizon corresponds approximately to the Consent Order date of December 31, 2014, for having the two WTPs on-line.

Although other projections have been performed as recently as 2008, it was decided this project should include a more detailed water demand review. This was deemed appropriate in view of the significant financial ramifications of the design capacity decisions.

CDM's original intent was for this memorandum to include specific recommendations for the design capacities of the two WTPs. It has become evident, however, that this should not be done until after detailed consideration of treatment process changes at Station No. 1. These process evaluations will determine the cost-effectiveness of increasing this plant's capacity within its existing footprint. We expect this to be a major factor in capacity selection. Therefore, this memorandum presents demand projections, then concludes with a review of various factors that will be considered when establishing the final design capacities. Once the Station No. 1 process evaluation is completed, the design capacities will be assigned and presented in a separate memorandum.

This final memorandum supersedes the prior draft version dated May 1, 2009. The primary modification following submission of the draft version was the incorporation of water demand projections prepared by Naval Station Newport for their facilities. The Navy's projections superseded placeholder projections prepared by CDM in the draft memorandum.

2 – Available Federal and State Population Information

The U.S. Census Bureau's decennial census provides population data for the three Aquidneck Island communities. The Census Bureau has also prepared annual population estimates for

the communities since 2000. In 2004, the Rhode Island Statewide Planning Program prepared population projections for all communities in the state. These projections extend to the year 2030.

Table 1 (note – all tables are at the end of this section) summarizes the census data, estimates, and projections for each of the three communities and for the island as a whole. For Aquidneck Island as a whole, the State’s projections called for essentially no increase in population over the period 2000-2030. Specifically, the cited increase from the 2000 census population of 60,958 was 206 persons, to a population of 61,164 in 2030. This is an increase of merely 0.3% over the 30-year period. The projected change in population was, however, not distributed equally among the three communities. Portsmouth was projected to grow significantly, with the population increasing by more than 2,600 persons during the 30-year period. Middletown’s situation appeared static, with only a 97-person increase over the period. Newport was shown as losing more than 2,500 persons during the period.

This information is also discussed later herein when we review the municipal planners’ comments.

3 – Supply Source Yield

The most recent evaluation of NWD’s supply source yield is that presented in the “Reservoirs Safe Yield Study”, dated March 2009, prepared by Wright-Pierce of Providence, RI. The study included a description of the supply source system, a review of historical droughts, documentation of the methods of analysis and the input data, and a description of the yields of each reservoir and of the system as a whole.

The key results of the safe yield evaluation, including contributions from all reservoirs, are listed below:

<u>Climatic Event</u>	<u>Reservoir Yield</u> (million gallons per day, mgd)
Drought of Record (1964-66)	9.40
20-Year Drought	10.48
Average Conditions	14.60

Later in this memorandum, reservoir yield will be compared to the projected water demand.

4 - Historical Water Data

NWD maintains its water production and water demand statistics in a number of different databases. Five are described herein, and summary tables are attached for each.

The **total water treatment plant effluent** is tracked in an Excel spreadsheet, which contains data starting with June 1997. Daily data from both WTPs are recorded. Table 2 is a summary of this information, listing the annual totals for 1998-2008, the average day, and the maximum day. We understand that the information from 2006 to date is considered more reliable due to improvements in metering procedures. The "total water treatment plant effluent" statistic includes most of the plant water use.

For calendar years 2007 and 2008, the total WTP effluent was very similar, slightly under 7.2 mgd.

The **water produced available for sale (WPAFS)** statistic is available starting July 2006. The WPAFS spreadsheet tracks monthly values and is organized by fiscal year (July through June). Plant water use is excluded from these values.

Table 3 summarizes the monthly WPAFS records from July 2006 through December 2008, listing totals by both fiscal year and calendar year. For calendar years 2007 and 2008, the WPAFS was virtually identical, at about 6.9 mgd.

Comparing the WPAFS figures to the total WTP effluent, we see that WPAFS represents 96.0% and 95.7% of the total WTP effluent in 2007 and 2008, respectively. Values of 4-5% are reasonable figures for plant water use.

Newport also tracks the **metered consumption of its retail customers** located in Newport and Middletown. The metered consumption is divided into three usage categories: residential, commercial, and governmental. Table 4 lists the information for the three most recent fiscal years. Table 4 also lists the sales to the two wholesale customers discussed below, and compares the total metered sales to the WPAFS statistic for FY2007 and FY2008. The resulting "unmetered water" figure is 20-22% for those two years.

Note that, although this memo will generally refer to retail customers as being in Newport and Middletown, the data also include a very small number of retail customers located in the southwestern corner of Portsmouth.

NWD tracks its daily metered **water sold to Portsmouth Water & Fire District**, and provided CDM with Excel spreadsheets organized by calendar year from 2006 to date. Table 5 summarizes this information on a monthly basis for 2006 through 2008. The annual averages are listed below:

<u>Calendar Year</u>	<u>Annual Average Sale to PWFD (mgd)</u>
2006	1.161
2007	1.294
2008	1.253

NWD provided CDM with an Excel spreadsheet of the **water sold to Naval Station Newport** (NSN) from July 2003 through June 2008. Each meter is separately listed, and totaled by month. The information is organized by fiscal year. In Table 6, CDM has summarized this information, and listed totals by both fiscal year and calendar year. The data demonstrate a clear and significant downward trend, as summarized below:

<u>Fiscal Year</u>	<u>Annual Average Sale to NSN (mgd)</u>	<u>Adjusted Value (mgd)</u>
2004	1.374	1.374
2005	1.148	1.148
2006	1.023	1.023
2007	0.763	0.798
2008	0.677	0.708

Historically, NSN purchased all its water from NWD. However, in September 2006, the Navy began a temporary, emergency purchase from PWFD for the Navy's Melville area. This purchase continues today, but is expected to conclude in December 2009 when the Navy completes upgrades to its water system facilities in the Melville area. The water which NSN purchases from PWFD ultimately originates from NWD. The "Adjusted Value" column above adds this purchase (which averages a little over 0.03 mgd), thereby indicating in FY2007 and FY2008 the total Navy water usage. The data on NSN's purchase from PWFD was taken from PWFD's response to NWD's questions in the ongoing rate case (PUC Docket No. 4025).

The 2008 NSN water use is only 52% of that in 2004. Additional discussion on the downward trend appears elsewhere herein.

5 - Discussions with Wholesale Customers

NWD requested its two wholesale customers to provide their own water demand projections and related information to CDM. NWD convened a meeting with both customers (PWFD and NSN) on February 12, 2009, to discuss these issues. A Meeting Summary describing the discussions is presented in Appendix A.

PWFD's water demand projections were furnished to NWD in late 2008 and were very slightly updated in April 2009. Their projections are as follows:

<u>Planning Year</u>	<u>Average Day (mgd)</u>	<u>Maximum Day (mgd)</u>
5-Year Horizon (2013)	1.45	2.61
20-Year Horizon (2028)	1.64	2.95

Additional information beyond that included in Appendix A was received from both PWFD and NSN following the February 12 meeting. The nature of the additional information is summarized below.

Portsmouth Water & Fire District

PWFD provided their 2004 Water Supply System Management Plan (WSSMP) and 2007 WSSMP update, and their water distribution system map. In addition, PWFD transmitted detailed spreadsheets addressing PWFD's historical demand data, number of customers, daily sales to the Navy since September 2006, unmetered and unaccounted-for water, and the basis of their projections.

It should be noted that NWD's statistics for sales to PWFD are not exactly the same as PWFD's statistics for water demand. PWFD's water demand statistics take into account the change in storage of their tanks. This means that, if some of the water purchased in a given day by PWFD fills a tank to a higher level, then that particular volume of water will not be counted in PWFD's record of that day's customer demand. Also, even though the same meter reading signal is used by both utilities for tracking the metered purchase/sale, there are small differences in the recording instruments which can affect the records as well. Further, the two utilities may use different times-of-day in their recordkeeping, when calculating the flow over a 24-hour period. (PWFD uses 7:45 am as the start of their recordkeeping day.)

PWFD prepared its projections as follows:

1. The year 2000 was selected as a base year, because PWFD's gallons-per-customer usage was the highest in 2000 (77,327 gallons) that it has been since 1994.

2. PWFD performed a regression analysis on its demand data from the period 1994-2008, and assigned a trend line for average day projections. The average day demand from 2000 into the future was calculated on this basis. Because this trend is linear, the projection for years other than the two years provided by PWFD can readily be obtained.
3. PWFD reviewed their maximum day peaking factors (i.e., the ratios of maximum day to average day demands) for the period 1994-2008, and determined that the average peaking factor was 1.80. PWFD utilized this peaking factor for their projected maximum day demands.

Note that the “years” in the foregoing discussion are PWFD’s fiscal years, which end on April 30. Inherent in PWFD’s projection methodology is an assumption that future growth in customers will occur at about the same rate as in the past. PWFD intentionally excluded from its projections any consideration of future development of the Navy’s surplus property and of potential wastewater treatment plant development.

Naval Station Newport

NSN offered the following additional remarks:

- The Navy has several ongoing initiatives to improve its water conservation and demand management. These include continued installation of low-flow water fixtures, returning as much steam condensate as possible to reduce boiler makeup water, and designing all new construction projects to meet LEED requirements.
- The Navy performs comprehensive leak detection surveys on its water system at least every 2-3 years, and repairs identified leaks.

In an email dated July 20, 2009, NSN transmitted water demand projections for its facilities. This email and associated data tables are included in Appendix C. NSN recommended an average day demand projection of 0.90 mgd for both the 5-year and 20-year planning horizons. They also recommended a maximum day demand projection of 1.40 mgd for that same period.

6 - Discussions with Municipal Planners

On March 11, 2009, CDM met with each of the three municipal planners for the three Aquidneck Island communities. The planners offered comments on federal and state population data, reviewing potential changes in zoning, discussed various factors affecting development in both the near-term and far-term, and provided information about various planned developments.

A meeting summary, including all information provided by the planners, is presented in Appendix B.

We offer the following overview of the information provided about upcoming trends from the three communities:

Portsmouth

- The Town Planner does not agree with the Census estimates showing a slight decline since the 2000 Census, but believes instead that the overall population is static.
- He generally concurs with the State projections, which call for a 15% increase in population (more than 2,600 persons) from 2000 to 2030. He notes, however, that those projections assume there will be no wastewater collection and treatment system in Portsmouth. If such a system is constructed, there will be additional development and population increase.
- He believes that, ultimately, a wastewater system will likely be constructed on the West Side, but that similar proposals for a system in the North End will not be successful.
- The surplus Navy property (Tank Farms 1-4) has significant potential for commercial and/or mixed-use development, and there are numerous other potential developments in Portsmouth as documented in Appendix B. The surplus Navy property will not, however, be occupied within the 5-year planning horizon.

Middletown

- The Town Planner does not agree with the Census estimates showing a decline of over 1,000 persons since the 2000 Census. A stable population is more likely.
- The State projections are essentially static, at an increase of merely 92 persons over the 25-year period of 2005 to 2030. The Town Planner believes the actual figures may be slightly greater, but agrees in general with a very-slow-growth scenario. There is minimal subdivision activity and only limited commercial development activity.
- There seems to be no interest by any developers or municipal entities in paying for extending the public water system farther into the eastern portion of the town, where there is more developable land than on the west side. Even in the one recent situation where a subdivision immediately adjacent to the public water system was being constructed, the developer determined it was less expensive to install private wells instead of extending the public water main, and proceeded on that basis.

Newport

- The City's Director of Planning does not concur with the Census estimates for the period since 2000. He believes that when the 2010 Census becomes available, it will show very little change over the decade, or perhaps a slight increase.
- He discounts the State projections which show a significant decline in population to the year 2030. He indicates that Newport has bottomed out in terms of any population decline, and should be essentially stable for some years to come. In the 2020-2030 timeframe, he anticipates an increase in population due to Newport's desirability for retirees. He suggests the 2010-2030 increase in Newport's population may be on the order of 1,000, excluding Navy personnel.
- Newport currently has significant redevelopment activity ongoing, as demonstrated by the fact that FY2008 brought the City its highest permit revenues ever. He anticipates this level of activity will continue for a number of years, as demonstrated on the project list included in Appendix B.

7 - Water Demand Projections - Average Day

The water demand of the NWD service territory can be divided into the following five categories, which will be considered separately:

- Metered sales to PWFD (largest wholesale customer)
- Metered sales to NSN (other wholesale customer)
- Potential future metered sales in Navy surplus property
- Metered sales to retail customers in Newport and Middletown
- Unmetered water

Strictly speaking, the 5-year and 20-year planning horizons should be set at 2014 and 2029. Nevertheless, it is common practice to project parameters of various sorts to target years that are multiples of five, so we have adjusted these years herein to 2015 and 2030. The 5-year horizon thus represents the first full year that both WTPs are expected to be on-line, and the 20-year horizon corresponds with the State's population projection horizon.

For some of the following discussion, CDM assigned values for the future average day water use of various types of developments. No water demand estimates were directly available for any future developments, and in most cases the size and nature of the development has not been established. Our assigned water demand values were based where possible on the following parameters:

<u>Type of Use</u>	<u>Parameter</u>	<u>Data Source</u>
Office	75 gpd/1000 sf	MassDEP septic system regulations*
Retail	50 gpd/1000 sf	MassDEP septic system regulations*
Marina	25 gpd/boat	RI septic system regulations
Residential units	2 persons/unit 65 gpcd	(CDM assumption) (CDM assumption)

*RI values are not available.

When the use of a potential building was indicated by a Planner simply as “commercial” or as mixed commercial and retail use, we utilized the “office” parameter above. Those parameters listed above which are from state septic system regulations are based on peak water use. To convert those to average use, we utilized half of the listed figures.

Metered Sales to PWFD

If we adjust PWFD’s average day demand projections to the years 2015 and 2030, the values are 1.48 mgd and 1.67 mgd, respectively. These values compare to NWD’s FY2008 sale to PWFD of 1.26 mgd, excluding PWFD’s sales to the Navy. Although the 2015 figure represents a significant (17%) increase over 2008, and although development is slowed during the current recession, examination of the information provided by the Town Planner makes it clear that Portsmouth has the potential for substantial additional development in the near future.

The Planner provided a list of major new developments that are now planned to occur over the next decade. If we exclude the Navy surplus property, and retain the Planner’s figure of 50% of the concept development as an estimate of the ultimate development, then the listed developments total the following:

Condos/townhouses:	659 units
Multi-family buildings:	54 buildings
Single-family residences:	132 units
Retail & restaurants:	60,000 sf
Other commercial buildings:	28,540 sf
Marina:	748 boatslips

These developments would represent an average day water demand of about 0.13 mgd, using the assumptions cited earlier.

Many of the residential units actually are high-value properties that may function as second residences and not be occupied on a continuous basis, thereby leading to less water demand than under usual circumstances. On the other hand, it is possible that some developments could ultimately exceed the 50% assumption cited above. Unquestionably, there is substantial additional land beyond the lands for the listed developments on which additional development could occur. The Planner's list included only "major" developments, and it is to be expected that other development not on the list will occur. The Planner's 2008 "What's Left?" study, which estimated the number of buildable lots in Portsmouth under current zoning if all larger parcels were eventually developed, determined that there were over 2,600 buildable lots remaining in town.

It may well be that the PWFD projection is "conservative", especially in the sense that the ongoing recession may slow down the pace of development such that the projection proves to be higher than the actuality. Nevertheless, CDM believes the projection is reasonable in the light of Portsmouth's overall situation, and in the light of the purposes of NWD's project. Therefore, this memorandum includes the PWFD projection in the overall demand projections.

We note that it is unlikely that PWFD will achieve major reductions in its unmetered and unaccounted-for water percentages in the future, because those values are already low. In FY2007 and FY2008, PWFD had unmetered water of 9.9% and 9.6%, respectively. PWFD then calculated its unaccounted-for water by subtracting estimates of water used in flushing, blowoffs, new main construction, fire department use, tank overflow/maintenance, and meter testing. The resulting unaccounted-for water was 8.8% (FY2007) and 8.7% (FY2008). PWFD already calibrates its master source meter annually, performs an annual leak detection and repair program, and has established a consumer meter replacement program with the goal of keeping all meters under 22 years of age. Therefore, PWFD is already addressing the three primary typical sources of unaccounted-for water. We have not adjusted PWFD's demand projection for these types of issues.

We also have considered the possibility of development of a wastewater treatment plant (WWTP) in Portsmouth. The Town Planner's opinion is that Portsmouth will eventually have a WWTP on the West Side, though not one serving the North End. He provided a map (included in Appendix B) showing the likely area for initial and later connections to a West Side WWTP. Examination of the map shows that most of the area to be connected is represented by the Navy surplus property and the major new developments cited above.

WWTP operation will not occur within the 5-year planning horizon, but is a possibility for the 20-year horizon. Qualitatively, one would expect WWTP construction to affect water demands in its service area as follows:

1. There are some properties that currently experience septic system problems, and thus have reduced their water use to minimize their wastewater disposal issues. In such properties, one would expect an increase in water demand once a WWTP and collection system is constructed.
2. Most properties are not currently experiencing wastewater disposal problems. These properties will see a significant increase in their monthly bills from the new sewer utility charges. Water demand at these properties may decline somewhat, as customers adjust their water use habits in response to the higher costs.
3. There will be additional development pressures within the WWTP service area, particularly in areas that previously could not accommodate on-site wastewater disposal. The degree of development that might result from this factor cannot readily be projected.

On the whole, CDM believes it is likely that WWTP construction, if it were to occur in the 20-year planning horizon, would not significantly alter the water demands projected herein, given that so much of the area proposed to be sewerred has already been accounted for elsewhere in these projections. We have elected not to increase PWFD's demand projection in this memorandum for this factor. If it were preferred instead to include such an increase, we believe that the effect should be kept small, 0.1 mgd or less, given the planned service area. This can be kept in mind when the WTP design capacities are set.

Metered Sales to NSN

As noted earlier, the average day demand projection prepared by Naval Station Newport is 0.90 mgd. This value applies to both the 5-year and 20-year planning horizons.

Navy Surplus Property

Based on discussions with the municipal planners, the Navy surplus properties are not likely to be occupied within the 5-year planning horizon. Therefore, no 2015 water demand will be included for these properties. Within the 20-year planning horizon, however, it is expected that all these properties will be occupied.

To derive a 2030 water demand estimate for the Tank Farms, Melville Backyard, and former Navy Hospital, we used the Planners' figures for potential commercial building sizes on these parcels. No data were available for the small (3-acre) Navy Lodge site in Middletown, so CDM assumed a value. Using the "office" water use parameter above, the average day water demand for the Navy surplus properties would be 90,000 gpd, or 0.09 mgd.

As noted by the Portsmouth Planner, it is possible there could be as many as 100-150 residences eventually constructed in the Tank Farms properties, partially supplanting the commercial development figures above. Residential units may utilize water at a higher rate than commercial development, so rounding the above-listed estimate up appears appropriate. A value of 0.1 mgd was carried for the 20-year horizon.

Retail Sales in Newport and Middletown

As shown on Table 4, the FY2008 metered sales to retail customers was 1,287.6 million gallons, which is an average day demand of 3.52 mgd.

CDM has adopted the Planners' recommendations that population has not decreased since 2000 and will not decrease in the future, despite the Census estimates and State projections. The Newport Planner suggested a population increase on the order of 1,000 in the period 2010-2030. Given the limited development potential in Middletown, we utilized the figure of 1,000 persons as representing the population change between now and 2030 for the entire area of retail sales. As compared to the 2000 Census, this would represent a 2.3% increase in the Newport/Middletown population. Assuming the same overall per-capita demand, the water demand would also increase 2.3% over that period. This would represent an additional 0.08 mgd, above the current usage.

Given the Newport Planner's comments about redevelopment of commercial properties in Newport, we believe it is reasonable to use a higher overall increase in water demand than 2.3%. The developments which he listed for the next decade would be expected to have a water usage of about 0.05 mgd. We have assumed the same would be true for the second decade in the planning period.

Thus the total increase in usage would be 0.18 mgd. We assumed one-fourth of that would occur by the 5-year planning horizon, and the remaining three-fourths by the 20-year horizon.

On that basis, the metered retail sales are projected as 3.57 mgd for the 5-year horizon, and 3.70 mgd for the 20-year horizon.

The foregoing assumes that there is no significant expansion of the water system into the currently-unserved area of Middletown. In view of the Town Planner's comments regarding this issue, this seems to be the most-likely future scenario. Nevertheless, the possibility that an additional portion of Middletown could eventually be served can be considered when setting WTP design capacities.

Unmetered Water

As shown on Table 4, NWD's unmetered water percentage was 21.8% in FY2007, and 20.0% in FY2008.

NWD has a goal of reducing unmetered water to 15% or less. For the sake of considering future water use, CDM will present future average day demands using a range of assumptions for unmetered water. We will assume for the lower-bound figure that NWD is successful in reducing its unmetered water to 15%, and assume for the upper-bound figure that unmetered water stays at 20%.

Summary of Average Day Demand Projections

Summarizing the foregoing, the average day water demand projection for NWD is as follows:

<u>Component</u>	<u>5-Year Horizon</u> (2015)	<u>20-Year Horizon</u> (2030)
Sales to PWFD	1.48	1.67
Sales to NSN	0.90	0.90
Allowance for Navy surplus land	0.00	0.10
Retail sales, Newport/Middletown	3.57	3.70
Unmetered water (20%)	<u>1.49</u>	<u>1.59</u>
TOTAL	7.44 mgd	7.96 mgd
TOTAL (if 15% unmetered water)	7.00	7.50

8 - Water Demand Projections, Maximum Day

Water treatment plant design capacities must ultimately be based on the maximum day demand, not the average day demand, to assure satisfactory service. Therefore, CDM has developed maximum day demand projections from the above-listed average day demands. We recommend that the maximum day demand projection be determined by selecting an overall-system peaking factor to be applied to the average day demand projections.

Other methodologies are possible. For example, one could attempt to assign peaking factors for each of the five categories of average day demand described above. However, simply adding such results to obtain an overall system maximum day demand would be overconservative, because it is unlikely that each of the five components will experience its maximum day demand on the same date. For example, examination of the Navy's monthly demands shows that February has often been a very high-demand month, but that is not true for the rest of the customer base.

Table 2 shows the overall-system maximum day peaking factors for recent years. NWD has reported that the information starting in 2006 is the most reliable. In that period, the highest peaking factor was 1.77, in 2008. Even if the prior data back to 1998 were considered, 2008 would still have the highest peaking factor, though two other years were also above 1.70. We note for reference that NWD, in its 2007 WSSMP update, stated that it utilized a peaking

factor of 1.68 for its projections. We also note for reference that PWFD is utilizing a peaking factor of 1.80 for its projections, which represents their average peaking factor rather than a high-end peaking factor.

The purpose of this memorandum is to establish a basis for the WTP design capacities. Since the WTPs need to be able to produce sufficient water even on high-end maximum demand days, we recommend utilizing the 2008 peaking factor of 1.77 for projections. Given that the previously-utilized value of 1.68 has been surpassed, and given that 2008 was not an unusually dry year (dry years tend to have higher peaking factors), it appears that using a higher value than 1.68 is warranted.

The 5-year and 20-year forecast recommended in this memorandum can then be summarized as follows:

<u>Planning Year</u>	<u>Average Day (mgd)</u>	<u>Maximum Day (mgd)</u>
5-Year Horizon (2015)	7.00-7.44	12.4-13.2
20-Year Horizon (2030)	7.50-7.96	13.3-14.1

The ranges shown are based on the assumed range of 15-to-20% in future unmetered water.

As discussed below, the selection of the WTP design capacities can include consideration of the possibility that future demands could vary somewhat from these figures.

9 – Factors That Could Modify These Future Demands

During the planning horizon of this project, there are many factors that could cause the actual water demands to vary from the projections. The year-to-year variations in climate are of course one such factor. This section of the memorandum lists a number of others, some of which are specific to the Aquidneck Island communities.

Factors That Could Cause Lower Demands

CDM believes that the upper-end projections are “conservative”, in the sense that they contain a reasonable bias toward making sure the figures will be sufficiently-large for selecting WTP design capacities. A conservative approach is common in water system planning, due to the desire among water system owners and engineers to be sure that there is not a need for another improvements project only a few years after the completion of a major WTP program. Therefore, there are a number of factors that could cause lower demands to be realized in the future. Several are noted below:

- The current recession could continue longer than anticipated, resulting in less development activity and lower demands for some years to come.

- PWFD could elect to proceed with a bedrock wellfield or other alternate water supply source, thereby reducing its dependence upon NWD for drinking water.
- Water conservation and demand management practices to be employed in water systems, in residences, in businesses, and at Naval Station Newport, could continue to evolve, thereby resulting in even greater savings in water usage than has already occurred in the past 10-20 years.
- The construction of a WWTP in Portsmouth, or the desirability of Newport to increased numbers of retirees in the period 2020-2030, might not materialize.
- Rate increases, such as those needed to pay for the WTP improvements, can cause consumers to reduce their demands for a period of time after each increase.

Factors That Could Cause Higher Demands

There are also some scenarios in which the demand projections could prove to be too low:

- One or more significant water-using industries could relocate to, or be developed on, Aquidneck Island.
- Due to circumstances affecting the United States and our Armed Forces, Naval Station Newport could need to increase its operations beyond the currently-foreseeable amount.
- A widespread issue affecting private well groundwater quality in eastern Middletown could be discovered, providing impetus for water system expansion into this area.
- WWTP construction could occur sooner than anticipated, and result in somewhat greater increases in demand within the 20-year planning horizon than discussed herein.
- Development, especially in Portsmouth, or the desirability of Newport to the retirement community and/or tourist trade, could exceed expectations.

Issues such as the foregoing can be qualitatively taken into account as the WTP design capacities are established.

10 – Comparison to Safe Yield

In accordance with the procedures of the Rhode Island Water Resources Board (RIWRB), the “available water” should be compared to the projected average day demand. Although the “Reservoirs Safe Yield Study” did not use the term “available water”, we have assumed for the purpose of this memorandum that the study’s “safe yield” is identical to the “available water”.

As noted earlier in this memorandum, the safe yield of NWD's reservoirs during a repeat of the drought of record is 9.40 mgd. The high end of CDM's projected range of average day demand is 7.96 mgd. The safe yield of the reservoirs is thus well in excess of the projected average demand.

NWD's supply sources should therefore be considered to be of adequate quantity, for the planning period of this project.

11 - Upcoming Selection of WTP Design Capacities

The selection of WTP design capacity is affected by the water demand projections developed in this memorandum, by the potential variances from those projections discussed above, by assumptions to be made regarding future plant water use, and by the degree of redundancy desired to be available in the WTPs. Redundancy is beneficial in the event of a supply source disruption affecting one plant, or in the event of any far-future operational problems at one plant that cause reductions in its output during high-demand periods. In addition, as discussed at the beginning of this memorandum, the feasibility and cost-effectiveness of process capacity increase within the existing footprint of Station No. 1 needs to be assessed before assigning the final design capacities.

As noted earlier, the WTP design capacities will be based in part on the projected maximum day demand, not the projected average day demand. CDM recommends using the higher 2030 demand projection (i.e., the one based on 20% unmetered water) in setting the WTP design capacities. We also have assumed a future plant water use of 5%. On this basis, the WTPs would need to have a combined capacity equal to at least 14.8 mgd. In view of the various factors that could possibly increase demands, we recommend using a figure no less than 15 mgd.

Following completion of the process review at Station No. 1, the design capacity of each WTP will be selected and presented in a separate memorandum.

cc: Jack Keaney, CDM
Pat Gallagher, CDM
Kathy Mello, CDM
John Willis, CDM

STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION
DOCKET NO. 4595
Response Of The City Of Newport,
Utilities Division, Water Department
To The Portsmouth Water And
Fire District's
Data Requests
Set 1

PWFD 1-11: Referring to HJS B1: Please explain why Employee Benefits and Annual Leave Buyback are not allocated based on non-administrative O&M labor?

Response: Employee Benefits and Annual Leave Buyback expenses are allocated in the manner in which they were allocated in the cost of service models approved in Docket 4128 and 4355 and we saw no reason to change the allocation of these expenses for this filing.

Prepared by: Harold Smith

PWFD 1-12: Referring to the Cap Restricted Cashflow tab on NWD's rate model, please confirm that with no increase to the capital spending account from this rate case, the balance of that account will:

- a. be \$3,165,210 at the end of FY 2016;
- b. never drop below \$2,962,185 in FY 2017; and
- c. never drop below \$2,833,460 in FY 2018.

Response: a. After updating the Capital Cash Flow analysis to show activity through December 2015, which was included in Newport's most recent quarterly report filed with the Commission, and assuming no increase above the current \$2,500,000 annual contribution to the account, the anticipated balance in the Capital Restricted account at the end of FY 2016 would be \$1,930,886.

b. Assuming no increase above the current \$2,500,000 annual contribution to the Capital Restricted account, the lowest month-end anticipated balance during FY 2017 would be \$1,047,359.

c. Assuming no increase above the current \$2,500,000 annual contribution to the Capital Restricted account, the lowest month-end anticipated balance during FY 2018 would be \$238,132.

Prepared by: Harold J. Smith

STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION
DOCKET NO. 4595
Response Of The City Of Newport,
Utilities Division, Water Department
To The Portsmouth Water And
Fire District's
Data Requests
Set 1

PWFD 1-13: In light of your response to request 12, please explain why NWD seeks an increase of \$680,502 to the restricted capital spending account in this case.

Response: Newport seeks an increase because the Capital Account will begin running a deficit in early FY19 if no increase is granted.

Prepared by: Harold Smith

PWFD 1-14: Referring to the L&A & Data Proc. Detail tab in the rate model spreadsheet.

- a. Please provide the City's 2015 budget document that shows the following values.

	FY2015 Adopted Budget
General Fund Less School/Civic Support	67,985,188
Water Fund	17,784,227
WPC Fund	17,070,113
Maritime Fund	1,213,535
Parking Fund	1,730,325
Combined Budgets	105,783,388

- b. If these amounts are not reflected directly in the City's 2015 budget provided in response to subpart a. of this request, please provide the backup calculations that show the derivation of these values.
- c. Please explain why NWD did not use the FY 2016 or FY 2017 budget.
- d. Please demonstrate how NWD excluded the debt service and capital expenses in the allocation of these City Service costs as required by paragraph 16 of the settlement in Docket 4243 ("... in all future dockets the allocation of City Service payments will not include or be based on debt service and capital expenses").

- e. Please provide the backup calculations and supporting data for each of the "Water %" value percentages shown for the calculations (including MIS).

Response:

a. The City's FY2015 Budget document (approximately 450 pages) is on the City's website at www.cityofnewport.com/finance. The City's determination of budget allocation percentages for the water fund is attached as PWFD 14: Budget Allocation. The budget page numbers have been added so that you may cross-reference to the budget document.

b. These amounts are reflected in the City's Budget. The only numbers that do not tie in directly are Civic Support and General Fund Capital. Civic Support is the total of Newport Public Library of \$1,756,025 (p.62) and Total Donations of \$95,200 (p. 63); General Fund Capital is total of Transfer to Capital Improvement Fund (p. 71) plus police transfer to equipment replacement of \$300,000 (p. 66), fire transfer to equipment replacement of \$219,907 (p. 66) and public services transfer to equipment replacement of \$350,000 (p. 67).

c. The City does periodic counts to determine allocations to enterprise funds. The last count was done in November 2014. The latest available budget at that time was the 2015 budget.

d. Please see Exhibit 2 to my testimony, which shows the deduction of debt service and capital.

e. The Water Fund percentages for City Manager, City Solicitor, Finance Administration 50%, and MIS are based on the percentage of the Water Fund's budget compared to the combined total budgets of all the City's Enterprise Funds and the General Fund (See Exhibits 1 and 2 to my testimony). The remainder of the Water Fund Percentages are as follows:

- The percentage for the Audit Fees is based on the Auditor's Estimation that they spent approximately 6.5% of their time on the Water Fund. (The actual percentage used to allocate this expense is slightly less).

- The OPEB percentage calculation is attached.
- The City Council percentage is based on agenda items on the City Council Dockets and the calculation is attached.
- The City Clerk percentage of 1% is the same percentage carried over from past Dockets.
- The Human Resources percentage calculation is attached.
- The Finance – 5% RICWFA percentage is the same percentage carried over from past Dockets (this line item was referred to as Finance Admin. in past Dockets.)
- The Finance Admin 10% Inv/Debt percentage is based on the total number of bank and investment accounts held by the City, and the calculation is attached.
- The Purchasing percentage is based on purchase orders and the calculation is attached.
- The Collections percentage is based on a time estimate of the number of hours spent on Water and Sewer. The estimate is 52 hours per month spent on Water and Sewer, or 11.6% of total hours. This 11.6% is then split between Water and Sewer, which results in the 5.8% for Water.
- The Accounting Wires percentage is based on the number of wires for the Water Department, and the calculation is attached.
- The Accounting percentage is based on combined vendor, ETF, Payroll and Automatic Deposits and the calculation is attached.

Prepared by: Laura Sitrin

City of Newport
 Cost Allocation - Percentage of Budgets
 as of November 4, 2014

	Budget Page No.	FY2015 Budget	Less School*	Less Civic Support	Less Debt Service	Less Capital		Percentage
General Fund Less School/Civic Support	71	88,538,139	18,701,726	1,851,225	5,433,371	3,783,857	58,767,960	71.68%
Water Fund	344	17,784,227	-	-	5,788,074	1,152,400	10,843,753	13.23%
WPC Fund	306	17,070,113			2,999,616	4,065,000	10,005,497	12.20%
Maritime Fund	270	1,213,535				420,000	793,535	0.97%
Parking Fund	287	<u>1,730,325</u>				155,000	<u>1,575,325</u>	1.92%
Total		126,336,339					81,986,070	
* School Appropriation: 20% appropriation left in general fund	62	23,377,157					<u>4,675,431</u>	
							18,701,726	

Appendix B: Breakdown of the Annual OPEB Cost and Accrued Liability by Departments

City of Newport Post Retirement Valuation

As of 7/1/2014	Beach	Equipment Operations	Fire	General Government	Harbor	Library	Planning	Police	Public Safety	Public Works	Recreation	School	Water	All
Number of Employees														
Current Retirees	1	2	96	28	0	7	5	90	12	16	2	246	27	532
Future Retirees	2	1	88	41	2	20	8	80	15	35	2	284	45	623
Total	3	3	184	69	2	27	13	170	27	51	4	530	72	1,155
Actuarial Accrued Liability														
Current Retirees	128,761	247,337	13,030,817	2,512,996	0	441,331	522,128	13,054,108	1,278,638	1,938,650	330,706	49,450,069	3,270,346	86,205,886
Future Retirees	19,368	34,231	6,208,012	1,000,548	47,763	1,456,229	131,730	5,937,225	679,639	997,420	94,418	14,135,166	1,273,680	32,015,429
Total	148,129	281,568	19,238,829	3,513,544	47,763	1,897,560	653,858	18,991,333	1,958,277	2,936,070	425,124	63,585,235	4,544,026	118,221,315
Normal Cost														
Current Retirees	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Future Retirees	2,302	487	389,671	74,392	4,298	59,896	11,873	351,681	42,836	68,369	3,643	777,181	92,778	1,879,407
Total	2,302	487	389,671	74,392	4,298	59,896	11,873	351,681	42,836	68,369	3,643	777,181	92,778	1,879,407
Annual OPEB Cost														
Normal Cost	2,302	487	389,671	74,392	4,298	59,896	11,873	351,681	42,836	68,369	3,643	777,181	92,778	1,879,407
Amortization Cost	6,240	11,860	810,387	147,999	2,012	79,930	27,542	799,962	82,487	123,675	17,907	2,678,367	191,406	4,979,773
Interest on Unfunded ARC	518	985	67,283	12,288	167	6,636	2,287	66,418	6,849	10,268	1,487	222,375	15,892	413,452
Adjustment to the ARC	-412	-784	-53,556	-9,781	-133	-5,282	-1,820	-52,867	-5,451	-8,173	-1,183	-177,005	-12,649	-329,098
Total	8,647	12,548	1,213,786	224,898	6,344	141,180	39,882	1,165,193	126,721	194,138	21,854	3,500,918	287,426	6,943,534

City of Newport
OPEB Liability by Group
Ongoing

	Total	Beach/Harbor Equip Ops & General Govt	Planning	Public Works	Recreation	Public Safety	School	Water	WPC	Library	Amount to Allocate
FY2012 Pay-go	7,530,368	385,302	41,011	110,455	52,235	2,271,422	4,200,224	429,513		40,206	
Contributions to Trust Based on City Allocation Percentage Only	2,892,067	212,750 8.51%	41,500 1.66%	59,000 2.36%	25,250 1.01%	2,074,750 82.99%	392,317	-	-	86,500 3.46%	2,500,000 City 392,317 School <u>2,892,317</u>
FY2012 OPEB Cost	9,380,150	344,623	72,331	147,276	32,673	2,941,503	5,303,241	386,730		151,773	
OPEB Interest and Adjustments	299,965	36,089				94,069 31.36%	169,600 56.54%				
Balance Sheet Liability at 6/30/12	7,678,173 6,938,522	(209,578)	61,444	(66,547)	36,106	421,331	6,683,909	739,651		312,191	
FY2013 Pay-go	7,020,601	405,303	37,386	95,686	54,170	2,349,107	3,632,792	405,951		40,206	
Contributions to Trust Based on City Allocation Percentage Only	2,300,000	189,060 8.22%	30,590 1.33%	135,930 5.91%	20,470 0.89%	1,843,450 80.15%	-	-	-	80,500 3.50%	2,300,000 City - School <u>2,300,000</u>
FY2013 OPEB Cost	7,687,252	276,380	50,679	217,083	25,208	2,855,996	3,756,192	343,222		162,492	
OPEB Interest and Adjustments	-	-	-	-	-	37.15%	48.86%				
Balance Sheet Liability at 6/30/13	6,044,824 5,368,024	(527,561)	44,147	(61,080)	(13,326)	(1,215,230)	6,807,309	676,800		353,977	
FY2014 Pay-go	7,336,934	355,693	38,620	114,259	56,260	2,508,619	3,826,676	389,295		47,512	Note: start allocating to school and water here
Contributions to Trust Based on Percentage Below	500,000	15,100 3.01%	2,750 0.55%	16,050 3.21%	-	169,950 33.99%	268,900 53.78%	19,200 3.84%		8,050 1.61%	500,000
FY2014 OPEB Cost	7,304,803	219,875	40,176	234,484	-	2,482,903	3,928,523	280,504		117,607	7,304,073
Percentage of Total Liability	0.00%	3.01%	0.55%	3.21%		33.99%	53.78%	3.84%		1.61%	
Balance Sheet Liability at 6/30/14	5,572,693 4,963,884	(623,459)	2,353	23,086	(63,583)	(1,103,397)	6,640,256	545,803		476,927	
Increase (decrease) from PY	(532,131) 404,810	(150,918)	(1,194)	104,175	(56,260)	(195,666)	(167,053)	(127,991)		62,045	(404,871) without water <u>(127,991)</u> water (532,861)
July 1, 2013 Total Liability	118,221,315	3,561,307	653,858	3,790,891	-	40,188,439	63,585,235	4,544,026		1,897,560	
Percentage of Total Liability		3.01%	0.55%	3.21%	0.00%	33.99%	53.78%	3.84%	0.00%	1.61%	

City of Newport
 Cost Allocation - Council Meetings Count
 as of October 28, 2014

Date	General	Water	WPC	Parking	Maritime
7/10/2013	23			2	2
7/24/2013	17			1	3
8/14/2013	23		1		1
8/28/2013	20	2			1
9/11/2013	9				
9/25/2013	9			1	1
10/9/2013	10			1	1
10/23/2013	19	1			
11/13/2013	25				4
12/4/2013	2				
12/11/2013	21	1		1	3
1/8/2014	12				
1/22/2014	7	3			1
2/12/2014	15				1
2/26/2014	21		1	1	2
3/12/2014	13			2	1
3/26/2014	11				1
4/9/2014	16	4	3	2	
4/23/2014	36	1		4	
5/14/2014	22	1	1		
5/28/2014	29	1	3	1	
6/11/2014	26	1	1		
6/25/2014	17	1		1	
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
	403	16	10	17	22
Percentage	86.11%	3.42%	2.14%	3.63%	4.70%

City of Newport

Cost Allocation - Count of Hires and New Hires: Full-time, part-time and temporary/seasonal as of November 3, 2014

Fund	Count	Percent
General	129	75.00%
Water	3	1.74%
Maritime	20	11.63%
Parking	20	11.63%
Total	172	

no employees in WPC at this time

City of Newport
Cost Allocation - Investment Counts
as of November 4, 2014

	Counts	Percentage
General and all other than below	15	28.85%
Water	16	30.77%
WPC	10	19.23%
Maritime	4	7.69%
Parking	7	13.46%
	<hr/>	
	52	

PO Activity By Source Report

PO285 Date: 10/23/14
Time: 12:06

JOB SUBMISSION PARAMETERS

User Name: ul0jem00
Job Name : NEWFY131
Step Nbr : 1

Company Group:
or
Company:
Location:

1 City Of Newport

Report Detail: N No
Delivery Date: 070113 - 063014
Buyer Attribute List:

PO Count For
Cost Allocation

Harbor/Maritime 3.86%
Water 18.47 ~~13.23~~%
WPC 0.99%
Parking 1.51%

Planning Zoning Etc. 3.02%

PO Activity By Source Report

PO285 Date 10/23/14
Time 12:06

Company 1 - City Of Newport
PO Activity by Source Report
07/01/13 - 06/30/14

DETAIL
---Percentage Split By Source ---
RQ PO IC CX OE

Location	Number of POs	Delivery Date	PO Lines	Total Value	Average Value	Average Amount/Line	Percentage RQ	Percentage PO	Percentage IC	Percentage CX	Percentage OE
City Hall-City Clerk	65		96	79,286.29	1,219.79	825.90	100%				
City Hall-Probate Court	12		13	5,686.00	473.83	437.38	100%				
City Hall-Land Evidence	30		31	60,523.86	2,017.46	1,952.38	97%	3%			
City Hall-Mayor	28		57	10,541.17	376.47	184.93	95%	5%			
City Hall-City Manager	2		2	469.88	234.94	234.94	100%				
City Hall-Solicitors Office	47		110	29,259.99	622.55	266.00	100%				
City Hall-Canvassing Office	6		8	344.36	57.39	43.05	100%				
Harbor Master Manager	133		248	148,700.35	1,118.05	599.60	100%				3.86%
Eastons Beach-Beach Manager	185		473	183,946.96	994.31	388.89	97%				3%
City Hall-Economic Dev - Parking	52		70	448,200.95	8,619.25	6,402.87	100%				1.51%
Fire Dept-Administration	207		639	147,822.16	714.12	231.33	100%				
Fire Dept-Fire Prevention	23		60	10,404.49	452.37	173.41	98%				2%
Fire Dept-Firefighting	238		962	988,271.13	4,152.40	1,027.31	99%				1%
City Hall-Municipal Court	3		15	690.57	230.19	46.04	100%				
City Hall-Purchasing	41		98	642,385.42	15,667.94	6,554.95	95%				5%
City Hall-MIS/IT Dept	212		365	1,125,533.29	5,309.12	3,083.65	98%				2%
City Hall-Tax Assessor	24		54	15,883.74	661.82	294.14	96%				4%
City Hall-Accounting	10		61	4,091.26	409.13	67.07	97%				3%

PO Activity By Source Report

PO285 Date 10/23/14
Time 12:06

Company 1 - City Of Newport
PO Activity by Source Report
07/01/13 - 06/30/14

DETAIL
Split By Source
IC CX OE
PO PO
Percentage
RQ 97% 3%

Average
Amount/Line
67.07

Total Value
Average Value
409.13

Total Value
Average Value
409.13

PO
Lines
61

Number
of POs
10

Delivery Date

Location	Number of POs	Delivery Date	PO Lines	Total Value	Average Value	Average Amount/Line	Percentage RQ	Percentage PO
City Hall-Accounting	7		39	23,332.16	3,333.17	598.26	100%	
City Hall-Tax Collections	79		145	2,014,610.51	25,501.40	13,893.87	99%	1%
City Hall-Finance Admin	118		192	60,822.30	515.44	316.78	98%	2%
City Hall-Human Resources	313		777	510,684.25	1,631.58	657.25	96%	4%
Newport Police-Supply	39		139	150,702.33	3,864.16	1,084.19	100%	
Newport Police-Patrol	8		31	21,743.39	2,717.92	701.40	100%	
Newport Police-CID	33		55	543,477.88	16,469.03	9,881.42	95%	5%
City Hall-Planning Dept	42		83	26,657.93	634.71	321.18	100%	
City Hall-Zoning Dept	29		73	74,062.51	2,553.88	1,014.55	99%	1%
City Hall-Inspections Dept	321		801	2,422,795.48	7,547.65	3,024.71	97%	3%
Public Svc-Administration	12		26	40,085.89	3,340.49	1,541.77	100%	
Public Svc-Engineering	79		140	67,362.19	852.69	481.16	99%	1%
Public Svc-Street and Sidewalk	62		121	57,352.49	925.04	473.99	100%	
Public Svc-Traffic Division	15		22	174,614.67	11,640.98	7,937.03	100%	
Public Svc-Snow	10		27	6,331.27	633.13	234.49	100%	
Public Svc-Facilities Bdwy	67		131	133,075.42	1,986.20	1,015.84	95%	5%
Public Svc-Grounds Dept	1		1	4,428.66	4,428.66	4,428.66	100%	
Public Svc-Urban Tree Mgmt								

104

PO Activity By Source Report

PO285 Date 10/23/14
Time 12:06

Company 1 - City Of Newport
PO Activity by Source Report
07/01/13 - 06/30/14

DETAIL
Split By Source
PO IC CX OE

Delivery Date	Number of POs	PO Lines	Total Value	Average Value	Average Amount/Line	Percentage RQ	Percentage PO	Percentage IC	Percentage CX	Percentage OE
Location: PS09 Public Svc-Urban Tree Mgmt	1	1	4,428.66	4,428.66	4,428.66	100%	100%			
Location: PS11 Public Svc-Street Cleaning	2	8	17,472.66	8,736.33	2,184.08	100%				
Location: PS12 Public Svc-Clean City	66	200	2,164,640.81	32,797.59	10,823.20	96%	4%			
Location: PS13 Public Svc-Fleet Management	63	93	1,536,335.20	24,386.27	16,519.73	100%				
Location: RD01 Newport Recreation-Admin	33	45	16,414.62	497.41	364.77	96%	4%			
Location: RD02 Newport Recreation-Activities	60	134	45,897.79	764.96	342.52	91%	9%			
Location: UD01 Utilities Dept-Water Admin	181	453	2,000,698.62	11,053.58	4,416.55	98%	2%			
Location: UD02 Utilities Dept-Water Cust Svc	76	151	205,794.71	2,707.83	1,362.88	95%	5%			
Location: UD03 Utilities-Water Supply Island	57	109	98,001.22	1,719.32	899.09	100%				
Location: UD04 Utilities-Water Supply Mainlnd	9	16	4,588.46	509.83	286.78	100%				
Location: UD05 Utilities-Water Treat-Newport	57	145	483,446.30	8,481.51	3,334.11	98%	2%			
Location: UD06 Utilities-Water Treat-Portsmouth	15	21	21,614.66	1,440.98	1,029.27	95%	5%			
Location: UD07 Utilities-Water Laboratory	47	180	55,942.40	1,190.26	310.79	96%	4%			
Location: UD08 Utilities-Water Distribution	172	410	163,111.05	948.32	397.83	98%	2%			
Location: UD09 Utilities-Water Fire Protectn	23	39	30,691.50	1,334.41	786.96	97%	3%			
Location: UD10 Utilities-Water Fire Protectn	3	71	9,808,104.19	288,473.65	138,142.31	93%	7%			
<div style="text-align: right;"> <p>18.47% 18.47%</p> <p>99% 99%</p> </div>										
Company Totals:	3,448	8,240	26,886,935.39	7,797.84	3,262.98	98%	2%			

City of Newport
 Cost Allocation - Wires counts
 as of October 28, 2014

Note: The wires done by the City are repetitive. The count is for 1/2 year which won't vary significantly with the rest of the year.
 All payroll, health insurance, dental insurance wires are removed as they apply to all funds

	General	Water	WPC	Parking	Maritime	All Funds	
Binder Wires 1-70, FY2014	6	17	1	2	0	44	70
Binder Wires 71-135, FY2014	6	18	0	0	0	40	64
Totals	12	35	1	2	0	50	
Percentage	24.00%	70.00%	2.00%	4.00%	0.00%		

City of Newport
 Combined Vendor, EFT, Payroll and Automatic Deposits
 Cost Allocation
 October 27,2014

The combined counts are for the fiscal year 2014.

	Payroll Checks	Auto Deposits	Vendor Checks	EFT Payments	Total	Percentage by Fund
Maritime Fund (Fund 4)	148	176	542	20	886	2.96%
Parking Fund (Fund 7)	335	0	156	11	502	1.68%
Water Pollution Control (Fund 10)	0	0	104	3	107	0.36%
Water Fund (Fund 15)	469	1,270	1,475	73	3,287	10.97%
Total Count	3,721	11,183	14,569	495	29,968	

STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION
DOCKET NO. 4595
Response Of The City Of Newport,
Utilities Division, Water Department
To The Portsmouth Water And
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Set 1

PWFD 1-15: Please update the data in HJS Schedules D1 and D2 as of January 1, 2016

Response: Updated HJS Schedules D-1 and D-2 are attached. Newport's billing system does not allow for the printing of reports for a specific date in the past, therefore the values in the updated schedule are values as of February 11, 2016.

Prepared by: Harold Smith

Rhode Island Public Utilities Commission
 Response to PWFD 1-15
 FY 2017 Rate Filing
 HJS Schedule D-1
 Water Accounts, by Size and Class

Connection Size	Meter Factors	NON-RESIDENTIAL		RESIDENTIAL		WHOLESALE (Monthly)			
		Meter Read Frequency	Equivalent Meters	Meter Read Frequency	Equivalent Meters	Navy		Portsmouth	
		Monthly	Monthly	Monthly	Monthly	Meters	Equivalents	Meters	Equivalents
5/8	1.0	890	890	9,854	9,854	5	5	0	0
3/4	1.1	305	336	2,190	2,409	1	1	0	0
1	1.4	220	308	346	484	1	1	0	0
1.5	1.8	197	355	178	320	1	2	0	0
2	2.9	168	487	94	273	1	3	0	0
3	11.0	40	440	18	198	0	0	0	0
4	14.0	14	196	2	28	0	0	1	14
5	18.0	-	-	-	-	0	0	0	0
6	21.0	16	336	8	168	8	168	0	0
8	29.0	-	-	1	29	0	0	0	0
10	43.5	-	-	-	-	1	44	0	0
Total	14,560	1,850	3,348	12,691	13,763	18	224	1	14

	Equivalent Billing Units	
Billed Monthly	14,560	174,720
Billed Quarterly	-	-
Billed Annually	364	364
Total	175,084	

	Equivalent Meter Units	
	17,349	208,188
	-	-
	N/A	N/A
Total		208,188

Rhode Island Public Utilities Commission
 Docket 4595
 Response to PWFD 1-15
 HJS Schedule D-2
 Fire Protection Accounts

	Connection Size	Existing Differential	Number of Connections	Equivalent Connections (2)	
Public Hydrants					
Newport	6	111.31	620	69,013	
Middletown	6	111.31	410	45,637	
Portsmouth	6	111.31	9	1,002	% of Equiv Connections
Subtotal: Public Hydrants			1039	115,652	73%
Private Fire Connections					
	2	6.19	0	-	
	4	38.32	74	2,836	
	6	111.31	235	26,158	
	8	237.21	55	13,046	
	10	426.58	0	-	% of Equiv Connections
	12	689.04	0	-	
Subtotal: Private Fire Connections			364	42,040	27%
Total Fire Connections			1,403	157,692	100%

- (1) Demand factors are based on the principles of the Hazen-Williams equation for flow through pressure conduits. For more information, see the AWWA M1 rate manual chapter on fire protection charges.
- (2) Equivalent connections are arrived at by multiplying the number of connections by the demand factor.

General Water Service

Connection Size	Service Cost	No. of Services	Equivalent Connections	
5/8	1.000	10,749	10,749	
3/4	1.000	2,496	2,496	
1	1.860	567	1,055	
1.5	4.630	376	1,741	
2	6.150	263	1,617	
3	11.060	58	641	
4	11.060	17	188	
5	11.060	0	0	
6	11.060	32	354	
8	11.060	1	11	% of Equiv Connections
10	11.060	1	11	
Subtotal General Service		14,560	18,863	82%
Private Fire Connections				
	2	6.150	0	-
	4	11.060	74	818
	6	11.060	235	2,599
	8	11.060	55	608
	10	11.060	0	-
	12	11.060	0	-
Subtotal: Private Fire Connections		364	4,026	18%
Annualized			12	
Total Retail & Private Fire Connections		14,924	274,672	100%

STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION
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PWFD 1-16: The Tab "Demand Detail" shows the monthly water sales by customer class through June 2015. Please provide the monthly data for July through December 2015 by class.

Response: The table below shows monthly billed consumption by class for the Residential and Non-Residential classes and the Navy for July, 2015 through December, 2015. Also shown is monthly consumption data for PWFD taken from the Excel file named "D-FY-16 SYSTEM DEMAND" provided by W. McGlinn via email on 10/13/15. All PWFD demand data used in the cost of service model is derived from similar files provided by Mr. McGlinn. Since we do not have PWFD demand data for October, 2015 through December, 2015 we are not able to provide that information.

	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
Residential	62,242	69,260	61,479	63,115	57,986	41,935
Non-Residential	44,850	52,691	48,367	49,180	43,969	28,392
Navy	15,179	12,606	13,167	18,681	15,982	12,308
Portsmouth*	42,043	40,939	38,899			

Prepared by: Harold Smith

STATE OF RHODE ISLAND
PUBLIC UTILITIES COMMISSION
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PWFD 1-17: The City's on-line budget document (<http://www.cityofnewport.com/home/showdocument?id=7374>) says the City had no increase from Blue Cross and Blue Shield in FY 2016 and was notified of an approximate 3% increase for FY 2017. In light of this, please explain why there is a nearly 8% increase in Employee Benefits from FY 2015 (\$110,408) to FY 2017 (\$119,057).

Response: The cause of the nearly 8% increase in the Employee Benefits account for the Administration section is due to an open position existing in Administration during part of fiscal year 2015 as well as the addition of an employee to the Health Insurance Plan in fiscal year 2017. In fiscal year 2015 this employee was not covered by insurance and instead had chosen the Health Buy Back.

Prepared by: William Yost

STATE OF RHODE ISLAND
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PWFD 1-18: Provide a summary of rate case expenses, broken down by consultant, for each of the past five years.

Response: Please see the attached summary of rate case expenses by consultant.

Prepared by: William Yost

PWFD Data Request 1.18

City of Newport
Water Division
PWFD Data Request 1.18
Summary of Rate Case Expenses by Consultant

<u>Fiscal Year</u>	<u>PUC</u>	<u>Keough + Sweeney</u>	<u>Raftelis</u>	<u>Total</u>
2011	\$4,143	\$50,189	\$49,521	\$103,853
2012	\$20,142	\$50,226	\$93,891	\$164,258
2013	\$28,801	\$68,421	\$84,072	\$181,293
2014	\$1,140	\$45,875		\$47,015
2015	<u>\$0</u>	<u>\$9,435</u>	<u>\$9,410</u>	<u>\$18,845</u>
Total	\$54,226	\$224,146	\$236,893	\$515,265

STATE OF RHODE ISLAND
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PWFD 1-19: Provide a summary of consultant expenses (acct 50220), by consultant for the past five years.

Response: Please see the attached summary of consultant expenses.

Prepared by: William Yost

PWFD Data Request 1.19

City of Newport
Water Division
PWFD Data Request 1.19
Summary of Consultant Expenses

<u>Fiscal Year</u>	<u>PUC</u>	<u>Keough + Sweeney</u>	<u>Raftelis</u>	<u>Wells Fargo Bank</u>	<u>US Bank</u>	<u>Fuss & O'Neill</u>	<u>Winborne & Summertree</u>	<u>Total</u>
2011	\$7,588	\$50,189	\$82,599	\$5,000				\$145,376
2012	\$27,258	\$69,602	\$107,371	\$7,500				\$211,730
2013	\$28,801	\$68,421	\$96,407	\$7,500	\$4,750			\$205,878
2014	\$1,140	\$45,875	\$29,565			\$3,697		\$80,278
2015	<u>\$0</u>	<u>\$9,435</u>	<u>\$11,070</u>	<u>\$0</u>	<u>\$9,000</u>	<u>\$0</u>	<u>\$1,160</u>	<u>\$30,665</u>
Total	\$64,787	\$243,521	\$327,012	\$20,000	\$13,750	\$3,697	\$1,160	\$673,927

PWFD 1-20: Regarding HJS D9 to D16:

a. Source of Supply Island: Why is there a new expense of \$26,180 in FY 2017 when there was no cost in FY 2015?

b. Electricity costs: NWD has shown different electric costs per kWh for Source of Supply Island (\$0.1424), Source of Supply Mainland (\$0.1334), Station 1 (\$0.1342), and Lawton Valley (\$0.2150). Please explain why these rates differ and from where they were derived.

c. Repair & Maintenance at Sta. 1 and LV:

- i. Please explain why the costs at Lawton Valley are so high in light of its new equipment and facilities.
- ii. Please explain why the costs are the same for nearly every item.

Response: a. Recent Dam Inspections revealed deficiencies with vegetation maintenance, and with a significant amount of unwanted vegetation requiring removal. NWD evaluated use of outside contractors, work performed by NWD staff, and/or incorporation into capital projects. It was determined that the work would be performed by NWD staff with the use of two part time employees. Two part-time employees are budgeted for 19 weeks at a rate of \$16/hour plus 7.65% FICA Tax totaling \$26,180. It is projected that the part-time employees will be needed for the next five years.

b. The different electric rates referred to in this Data Request are based on calculations made from the comments column shown on HJS schedules D9 to D16. The Total cost was included in the comments column which is made up of a delivery charge and a supply charge. As a result the per kWh calculations are different because the electric delivery charge differs from section to section. For example, both Source of Supply Island and Lawton Valley have two meters and two delivery charges which results in higher calculated kWh rates. Conversely both

Station One and Source of Supply Mainland have just one meter each and lower calculated kWh rates.

c. Repair & Maintenance at Sta. 1 and LV:

i. The Repair & Maintenance account includes expenditures at Lawton Valley that are principally comprised of preventative maintenance. Preventative Maintenance Contracts fulfill the maintenance needs on a systematic, scheduled basis, virtually eliminating unplanned downtime, maintaining useful life and operability of the facilities. The new plants have Automation and Control Systems that require ongoing preventative maintenance that is specialized and can't be self-performed.

ii. The costs are the same for nearly every item because the required preventative maintenance is virtually identical despite the Water Treatment Plant Capacity difference (i.e. Sta. No. 1 9MGD and LVWTP 7 MGD). The treatment plants are purposefully analogous in treatment train and equipment (i.e. 2 -Rapid Mix, 3- Dissolved Air Flotation (DAF) Units, 4-GAC Filter, 2-Chlorine Contactors and 2-Clearwells).

Instrumentation is required at analogous points in the treatment process regardless of plant capacity and therefore results in identical pricing. It should be noted that the required Analyzer Service covers ten (10) Turbidimeters, a Particle Counter, Fluoride Analyzer and two (2) pH Analyzers. Other components (e.g. Hach CL17 Chlorine Analyzers) receive self-performed maintenance and service thereby reducing the required annual contract.

There are three (3) DAF Units at each plant. The required DAF maintenance is not capacity dependent. Each unit requires two (2) preventative maintenance visits. The visits include detailed inspections, cleaning, oil and filter changes and other tasks.

Prepared by: Robert Schultz and William Yost

CERTIFICATION

I hereby certify that on February 12, 2016, 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
Julia Forgue, Director of Public Works Newport Water Department 70 Halsey St. Newport, RI 02840	jforgue@cityofnewport.com ;	401-845-5601
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<p>William McGlinn Portsmouth Water & Fire District 1944 East Main Rd. PO Box 99 Portsmouth, RI 02871</p>	<p>wmcglinn@portsmouthwater.org;</p>	<p>401-683-2090 ext. 224</p>
<p>Christopher Woodcock Woodcock & Associates, Inc. 18 Increase Ward Drive Northborough, MA 01532</p>	<p>Woodcock@w-a.com;</p>	<p>508-393-3337</p>
<p>Allison Genco, Esq. NAVFAC HQ- Building 33 Dept. of the Navy 1322 Patterson Ave SE, Suite 1000 Washington Navy Yard, D.C. 20374-5065</p>	<p>allison.genco@navy.mil;</p>	
<p>Dr. Kay Davoodi, P.E., Director Utility Rates and Studies Office NAVFAC HQ- Building 33 Dept. of the Navy 1322 Patterson Ave SE, Suite 1000 Washington Navy Yard, D.C. 20374-5065</p>	<p>Khojasteh.davoodi@navy.mil;</p>	
<p>Larry R. Allen, Public Utilities Specialist Dept. of the Navy</p>	<p>Larry.r.allen@navy.mil;</p>	
<p>Maurice Brubaker Brubaker and Associates, Inc. PO Box 412000 St. Louis, MO 63141-2000</p>	<p>mbrubaker@consultbai.com;</p> <p>bcollins@consultbai.com;</p>	<p>401-724-3600</p>
<p>File an original and nine (9) copies w/: Luly E. Massaro, Commission Clerk Public Utilities Commission 89 Jefferson Blvd. Warwick, RI 02888</p>	<p>Luly.massaro@puc.ri.gov;</p> <p>Cynthia.WilsonFrias@puc.ri.gov;</p> <p>Sharon.ColbyCamara@puc.ri.gov;</p>	<p>401-780-2107</p>

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Utilities Division, Water Department
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Fire District's
Data Requests
Set 1



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