

**STATE OF NEW HAMPSHIRE  
PUBLIC UTILITIES COMMISSION  
DW 20-184**

**DIRECT TESTIMONY  
OF  
DAVID M. FOX, SENIOR MANAGER  
RAFTELIS FINANCIAL CONSULTANTS, INC.**

**IN THE MATTER OF THE  
REVISION OF RATES  
FILED BY  
AQUARION WATER COMPANY**

**March 2, 2022**

**PREFILED TESTIMONY OF**  
**David M. Fox**

1

2

3

4 **Q: Please state your name and business address?**

5 A: My name is David M. Fox and my business address is 24 Superior Drive, Suite 107, Natick,  
6 MA 01760.

7

8 **Q: By whom are you employed and in what capacity?**

9 A: I am a Manager of Raftelis Financial Consultants, Inc. a nationwide consulting firm specializ-  
10 ing in water and wastewater rate and financial planning studies.

11

12 **Q: Please describe your qualifications and experience.**

13 A: I have a bachelor's degree in Economics from Coastal Carolina University in Conway, SC and  
14 a master's degree in Economics from Clemson University in Clemson, SC. After graduating  
15 in 2009, I was employed by Raftelis Financial Consultants, Inc. (Raftelis). Over the course of  
16 my career, I have worked on over 100 water and wastewater rate and financial studies within  
17 the United States. I have also had the opportunity to work on numerous financial feasibility  
18 studies in support of revenue bond issues, capital program financing support, customer rate  
19 affordability analyses, utility valuations studies, and rate benchmarking surveys. I currently  
20 lead Raftelis' New England efforts based out of our office in Natick, MA. My resume has  
21 been submitted as part of this testimony as Attachment A.

22

23 **Q: Do you belong to any professional organizations or committees?**

24 A: Yes, I am a member of the American Water Works Association, the New England Water  
25 Works Association, Massachusetts Water Works Association, and the Rhode Island Water  
26 Works Association. I also sit on the Financial Management Committee of the New England  
27 Water Works Association. For the American Water Works Association, I also contributed to

1 the most recent (7<sup>th</sup> edition) of the M1 Manual on rates – *Principles of Water Rates, Fees,*  
2 *and Charges.*

3  
4 **Q: Have you previously been involved in matters before state regulatory commissions on rate**  
5 **related matters?**

6 A: Yes. I have submitted or prepared expert cost of service and cost recovery analyses in sup-  
7 port of water rate filings at the Massachusetts Departments of Public Utilities, and Rhode  
8 Island, New Hampshire, Maine, and California Public Utilities Commissions.

9  
10 **Q: What is your role in this proceeding?**

11 A: The Towns of Hampton and North Hampton retained my services to review the cost of ser-  
12 vice analysis relied upon as the basis for the Company's proposed rates as filed in DW 20-  
13 184.

14  
15 **Q: Do you agree with the Company's cost of service analysis?**

16 A: In general, the Company's cost of service analysis follows industry accepted guidance. How-  
17 ever, I do take issue with two specific assumptions withing the cost of service framework.

18  
19 **Q: Will you summarize the adjustments you would propose to the cost of service study as-**  
20 **sumptions that you take issue with?**

21 A: Yes. In its cost of service analysis, the Company utilized a Base/Extra-Capacity methodology  
22 to allocate utility plant, accumulated depreciation, operation and maintenance costs, and  
23 depreciation expenses, associated with transmission and distribution mains, to Base and  
24 Peak-Hour, but not Max-Day.

25  
26 In my opinion, all allocations associated with transmission and distribution mains should be  
27 allocated based on a three-factor allocation to Base, Peak-Hour and Max-Day. Using the

1 Base/Extra-Capacity methodology, the distribution of allocated Peak-Hour costs is accom-  
2 plished based on the extra-capacity for assumed Peak-Hour demands above those assumed  
3 for Max-Day. Therefore, any use of allocations to Peak-Hour, except for solely providing  
4 storage, must in turn also allow for an allocation to Max-Day.

5  
6 To put this another way, the same mains which are utilized to provide Peak-Hour demand  
7 are also utilized to provide Max-Day demand. It is unreasonable to assume that mains are  
8 not required to supply water for Max-Day demands and only Peak-Hour. As such, utility  
9 plant, accumulated depreciation, operation and maintenance costs, and depreciation ex-  
10 penses, associated with transmission and distribution mains should be allocated to Base,  
11 Max-Day, and Peak-Hour, or allocation factor 4 as utilized in the Company's cost of service  
12 model.

13  
14 In addition to this modification, the allocation of Land and Land Rights (T&D) utility plant  
15 should be allocated based on a composite allocation of other transmission and distribution  
16 utility plant, or allocation factor 42 as utilized in the Company's cost of service model. As  
17 initially filed, Land and Land Rights (T&D) utility plant was allocated exclusively to peak  
18 hour, based on the assumption that all Land and Land Rights (T&D) is attributable to  
19 providing storage.

20  
21 **Q: Are there any other adjustments you would propose to the Company's cost of service study**  
22 **assumptions?**

23 **A:** The Company's initial filing included an assumption of the required flow necessary to re-  
24 spond to a four hour fire event of 4,500 gallons per minute (gpm). Based on industry-recog-  
25 nized equations for estimating required fire flows, it is recommended that this assumption  
26 be modified. These equations are mostly a function of population served and have been  
27 relied upon at the Wisconsin Public Utilities Commission (PUC), which has historically been  
28 at the forefront of establishing and testing methodologies for determining the true cost of

providing fire protection services. In addition to the Wisconsin PUC, the Maine PUC has at times relied on the National Board of Fire Underwriters (NBFU) method for determining appropriate fire flow. So much so that the NBFU method has been used as a basis for the Maine PUC curve which rather than estimating flow, estimates the percent of revenue to be collected from fire protection. Given that there is not an industry accepted methodology for determining the appropriate assumed flow for a fire event, I recommended that the following equations be considered in order to provide for a rational impetus for this important assumption in the cost of service analysis.

- a. Freeman's Formula =  $AVG\left(200 * \left(\left(\frac{population}{5000}\right) + 10\right), 200 * \left(\left(1.7 * \sqrt{\frac{Population}{1000}} + 0.03 * \left(\frac{population}{1000}\right)\right)\right)\right)$
- b. NBFU Method =  $1020 * \sqrt{\left(\frac{population}{1000}\right)} * 1 - 0.01 * \sqrt{\left(\frac{population}{1000}\right)}$
- c. Kuickling Method =  $700 * \frac{\sqrt{population}}{1000}$

The calculation of these formulas produce required fire flow assumptions of 2,729 gpm, 5,509 gpm, and 4,011 gpm respectively. Given the deviation in results, I recommend that an average of the three results be used (which is also referred to as the Milwaukee Method) to arrive at an assumed fire flow of 4,083. As such, I recommend that a fire flow of 4,000 gpm over a four hour fire should be utilized within the cost of service analysis instead of the original proposal of 4,500 gpm.

**Q: Are there other adjustments to the Company's cost of service analysis that you would propose?**

A: No, not at this time.

**Q: If the adjustments to the assumptions you outlined were utilized, would there be changes to the outcome of the cost of service analysis, and subsequent rates?**

A: Yes.

1

2 **Q: Would you please describe those changes?**

3 A: In its original filing, the Company's cost of service analysis produced an increase in public fire  
4 protection charges to the Towns of Hampton and North Hampton of 34.8% and 31.4%, re-  
5 spectively. These increases represent annual cost increases of approximately \$165,000 and  
6 \$81,000, respectively. Using the assumption modifications as outlined in this pre-filed testi-  
7 mony, the Towns' increase in public fire protection charges are reduced to 13.3% and 10.5%,  
8 respectively. Making these changes results in an annual cost increase to the Towns of  
9 \$63,000 and \$27,000, respectively.

10

11 Given that the cost of service analysis assumes revenue neutrality, reducing the allocation  
12 to public fire protection charges results in a cost shift to other customer classes. However,  
13 the goal of rate-making is to ensure that the resulting rates are reasonable and fairly reflect  
14 the cost to provide service to each customer class. Using the Company's proposed revenue  
15 requirement, by way of example only, the adjustments to public fire protection recom-  
16 mended herein would increase Aquarion's proposed increase to other customer classes by  
17 approximately \$300,000 per year. For a single-family residential customer with a 5/8" me-  
18 ter, using 6 Ccf per month, this would represent an increase of \$2.08 per month. However,  
19 it is understood that significant reductions in Aquarion's proposed increase are likely which  
20 will reduce Aquarion's proposed increases to all customer classes.

21

22 **Q: Have you reproduced the Company's cost of service analysis and subsequent schedules**  
23 **reflecting your proposed changes?**

24 A: Yes, and have included the schedules as part of my testimony as Attachment B.

25

26 **Q: Does this conclude your testimony?**

27 A: Yes, it does.

# ATTACHMENT A

# Dave Fox

Senior Manager

## PROFILE

Dave has over a decade of experience in water and wastewater utility financial and rate consulting. He has worked with water, wastewater, and stormwater utilities, both private and public, on a variety of studies including cost-of-service and rate setting, impact fees, financial planning, utility valuation, economic feasibility and modeling, bond feasibility and coverage certificates, utility and customer affordability, data analysis, as well as water and wastewater benchmarking and rate surveys. Dave has served as an expert witness at the Massachusetts Department of Public Utilities (MA DPU), Rhode Island Public Utilities Commission (RI PUC), Maine Public Utilities Commission (ME PUC), New Hampshire Public Utilities Commission (NH PUC), and California Public Utilities Commission (CPUC), as well as provided due diligence research and work papers for the Pennsylvania Public Utilities Commission (PA PUC). Dave leads Raftelis' New England Office based in Natick, MA.

## KEY PROJECT EXPERIENCE

### Whitinsville Water Company (MA)

Dave served as an expert witness for the Whitinsville Water Company's most recent rate application with the Massachusetts Department of Public Utilities (MA DPU). Dave worked closely with Company staff and its legal representation to develop a comprehensive water cost of service study and rate of return calculation, accompanied by supporting schedules, exhibits, and pre-filed testimony. This case involved a rate calculation for customers within and without the Company's service area, and as such, there were intervenors in the case. Dave worked closely with the Company's legal representation to respond to intervenor testimony through both written and oral arguments. Ultimately, the case was settled with MA DPU settlement staff, with the Company receiving all of its requested revenue requirement and rate related items intact.

### East Northfield Water Company (MA)

Dave served as an expert witness for the East Northfield Water Company (ENWC or Company) for matters relating to the Company's most recent filing (D.P.U. 19-57) with the Massachusetts Department of Public Utilities (MA DPU). Dave prepared revenue deficiency, cost of service, and rate of return calculations, work papers, and pre-filed testimony in support of the Company's requested rate increase. Throughout the rate case, Dave worked closely with the Company and its legal representation to respond to data requests, attend hearings at the MA DPU, and review and argue against intervenor (mostly the Massachusetts Attorney General Office) testimony and exhibits. D.P.U. 19-57 was fully litigated, and the Company is awaiting its final order, expected to be delivered in March 2020.

### Pennichuck Water Works (NH)

Dave served as project manager on a cost of service study and rate filing with Pennichuck Water Works for its Pennichuck East subsidiary, and provided schedules and testimony for filing with the New Hampshire Public Utilities Commission (NH PUC). Dave worked closely with Pennichuck staff to develop the cost of service study and present Raftelis' modeling, methodology, and findings at a technical review session with the NH PUC. The cost of service analysis and resulting rates were completely accepted and approved by the NH PUC.



## Specialties

- Utility cost-of-service & rate studies
- Financial planning studies
- Coverage certificates & bond feasibility analyses
- Economic feasibility & forecast studies
- Affordability studies
- Customer demand & data analyses

## Professional History

- Raftelis: Senior Manager (2021-present); Manager (2017-2020); Senior Consultant (2015-2016); Consultant (2013-2014); Associate (2011-2012)

## Education

- Master of Arts in Economics - Clemson University (2010)
- Bachelor of Science in Economics - Coastal Carolina University (2009)

## Professional Memberships

- AWWA
- New England Water Works Association: Member of Financial Management Committee
- Massachusetts Water Works Association
- Rhode Island Water Works Association



### **Narragansett Bay Commission (RI)**

Dave served as project manager on a wastewater cost of service and rate filing project with the Narragansett Bay Commission (NBC). Dave worked closely with NBC staff to develop test and rate year revenue requirements to be utilized in the cost of service analysis. At the direction of Dave, Raftelis analysts developed a comprehensive wastewater cost of service model, which was used to calculate cost of service justified rates and charges for all NBC customers. In addition to user charges, Dave helped develop, calculate, and defend new charges for the NBC, including system development and connection charges.

Dave helped prepare schedules, and pre-filed expert testimony to be included in the NBC's filing with the Rhode Island Public Utilities Commission (RIPUC), in Docket No. 4890. Working with NBC and other Raftelis staff, as well as NBC's outside legal counsel, Dave helped respond to data requests, review and reply to intervenor testimony, and prepare settlement schedules.

Docket No. 4890 was settled with the RIPUC, with NBC receiving most of its initial filing requests.

### **SUEZ Rhode Island (RI)**

Dave served as project manager on a project with SUEZ Rhode Island (SUEZ) to perform a comprehensive water cost of service study for its most recent rate filing (Docket No. 4800) with the Rhode Island Public Utilities Commission (RIPUC). Dave utilized rate year revenue requirements and rate base, provided by SUEZ staff, to functionalize, allocate, and distribute costs to SUEZ's customers based on cost of service principles. Dave worked with SUEZ management and staff to design new rates, designed for SUEZ's filing, for residential, commercial, bulk customer, tank truck, and public and private fire protection classifications. From there Dave prepared an impact analysis associated with the resulting rates compared to the existing rates and discussed with SUEZ staff. Adjustments were made in order to abide by the common rate setting principle of mitigating rate shock to customers or specific customer groups. Ultimately, Dave prepared final exhibits and pre-filed testimony explaining the cost of service and rate design process. The exhibits and pre-filed testimony were included in SUEZ's most recent filing with the RIPUC, which was ultimately settled.

### **City of East Providence (RI)**

Dave served as project manager on a water and sewer rate study for the City of East Providence (City). Dave worked closely with City staff members to assess the appropriateness of the City's rate structures, as well as opine on miscellaneous rate structure options such as establishing a more fixed revenue stream, sewer rate assessment practices, and ensuring cost-of-service justified rates. The City currently allows for an allowance of sewer usage through its existing rate structure, which creates equity issues. Dave, along with his consulting staff, assessed the appropriateness and subsequent customer impacts from reducing or removing the sewer allowance. Raftelis also worked closely with City Staff to build a forecast of operating and capital expenditures over a 10-year planning horizon, and was able to use a mixture and balance of rate increases, debt financing, and reserve fund balances to create a smooth and affordable set of rates. Dave also performed an in-depth analysis of the City's water and sewer billing data. The City had just recently converted billing systems and thus Raftelis analyzed and compared the consumption and demand characteristics, as well as the validity of the data between the two datasets.

### **City of Richmond (VA)**

Dave served as lead consultant on a project with the City of Richmond Department of Public Utilities (DPU) to provide cost-of-service and rate design services for the DPU's electric, gas, water, wastewater, and stormwater utilities. As part of the study, Dave developed a comprehensive cost-of-service model that was used in the redesign of DPU's rate structure. The model was developed with the ability to analyze the impact of various rate structures on both DPU's financial performance and customer base. Dave also aided in the preparation of final deliverables in the form of reports and presentations.

Dave has also been serving as the lead consultant on a project to develop and affordability plan for DPU. This has entailed compiling location specific economic and demographic data, combined with usage data, to determine the most effective affordability program, while at the same time allowing DPU to understand, specifically by locality, where to focus its marketing efforts most heavily, in order to bring the most amount of aid to those in need.

### **City of Northampton (MA)**

Dave served as project manager on a water and sewer rate study for the City of Northampton (City). Dave worked closely with the City's Mayor, Director of Public Utilities, and other key staff members to review the City's current rate structure, determine the City's pricing objectives, and design and develop a revised rate structure to accomplish those pricing objectives. This analysis entailed analyzing seasonal rates, affordability programs, tiered rate structures, class-based rates, sewer charge methodologies, and the combined effects of each alternative on the City and its customers. Dave also worked closely with the City to determine a customer outreach programs to help convey the messages of a rate structure change to the customers of the City.

### **Boston Water and Sewer Commission (MA)**

Dave is currently serving as the financial lead on a project with the Boston Water and Sewer Commission (BWSC) to assess the feasibility of implementing a stormwater utility. This entails a comprehensive cost allocation study between BWSC's current water and sewer utilities, as well as the potential stormwater utility. In doing so, Dave established short- and long-term forecasts of operating and capital costs, in order to design and develop an optimal financing plan to fund all necessary revenue requirements, maintain financial viability and compliance, and minimize impacts on customers.

### **City of Melrose (MA)**

Dave served as project manager on a water and sewer rate study for the City of Melrose (City). Dave performed a comprehensive water and sewer cost-of-service study for the City, while adhering to the City's pricing objectives. Dave analyzed the impact of changes in customer classification, tier structure, fixed rate components, customer affordability programs, billing frequencies, and sewer rate setting methodologies. Ultimately, a plethora of viable options were presented to the City's Board of Aldermen based on their requests, and presented in a clear and concise manner so that the Board could make an informed decision for the City's most recent rate setting year.

### **City of Medford (MA)**

Dave served as project manager on a water and sewer rate study for the City of Medford (City). Dave worked closely with the City to create a 5-year financial and rate plan to fund all necessary operating and capital requirements, while at the same time minimizing impacts on the City's customer base. Dave created a user-friendly spreadsheet model which was used to run multiple water and sewer rate structure scenarios. These scenarios were presented to the City real time during meetings for quick feedback on the effects of rate structure changes, both financially and in terms of impacts on the City's customers.

### **Erie County Water Authority (NY)**

Dave served as project manager for a water cost-of-service and rate structure review study for the Erie County Water Authority (Authority) to better understand the cost of serving the Authority's various customer classes and to determine the most appropriate and equitable way to recover those costs. Raftelis' primary goal of the study was to maintain revenue sufficiency through rates that are equitable and reasonably recover costs for each service provided. Raftelis evaluated the appropriateness of modifications to the Authority's current rate structure to better meet these needs and to recognize a recent dynamic change in water consumption patterns. Further, Raftelis developed a rate structure that discouraged the wasteful use of water, especially when the wasteful use leads to an unnecessary need for additional resources to serve such wasteful demand. Raftelis also helped the Authority with current and future agreements related to the 35 municipalities it currently serves.

### **New York City (NY)**

Dave served as the lead consultant on a project with the New York City Municipal Water Finance Authority (Authority) to develop an enhanced rate model for internal Authority use. Dave worked closely with Authority Staff to ensure necessary functionalities and data inputs were taken into consideration for a tailored modeling and scenario generating experience. The enhanced rate model combines detailed data inputs with a user friendly interface, including a dashboard, allowing for real time analysis of various combinations of rate, financing, and expense scenarios.

Dave also served as the lead consultant with the New York City Water Board and Department of Environmental Protection (DEP) to develop a surcharge rate in the event that its water supply were to diminish temporarily and residents needed to conserve. Dave analyzed hourly and daily billing data, and built an economic rate model, using a Monte Carlo method analysis for price elasticity of demand assumptions, that calculated multiple rate options which adequately reduced consumption through pricing signals.

### **City of Winston-Salem/Forsyth County Utilities (NC)**

Dave served as project manager on a project with the City of Winston-Salem/Forsyth County Utilities (City/County) to provide water and sewer rate financial planning. As part of the study, Dave developed a rate and financial planning model to calculate revenue requirements using the City/County's budget, capital improvements plan, and debt service schedules. The model was developed with the ability to run sensitivity analyses over several years and monitor the impacts on financial performance and customer bill impacts. The model was also developed with a customized dashboard for a user-friendly interface. Raftelis continues to assist the City/County with periodic updates of the rate and financial planning model.

### **DC Water (DC)**

Raftelis is working with the DC Water on a multi-year contract to provide cost-of-service, rate, and financial consulting services. Dave's core responsibilities have been developing a comprehensive water and sewer cost-of-service model and completing a customer segmentation study where a detailed billing analysis defined key characteristics among DC Water's customer categories.

During the most recent cost-of-service study, Dave helped prepare four major project deliverables: assuring the sufficiency of projected revenue to cover projected expenditures; calculating cost-of-service-based rates and comparing them to projected rates; reviewing miscellaneous fees and charges; and, recommending rate structure alternatives that enhance priority pricing objectives of DC Water.

Dave also helped develop a new fixed component, or infrastructure fee, for DC Water's rate structure aimed at recovering funds necessary to pay for the renewal and replacement of DC Water's aging water infrastructure. Results and recommendations from the COS study, along with a comprehensive report and revenue sufficiency/cost-of-service model, were presented to the Retail Rates Committee of the Board in 2015.

## **PROJECT LIST**

- ACE Environmental Processing, LLC (AEP) - Market research; bond feasibility
- Auburn (NY) - Water and sewer rate study, cost-of-service study
- Augusta (GA) - Water and sewer rate study, cost-of-service study
- Belmont (MA) - Water and sewer rate study
- Bethel (CT) - Water and sewer rate study
- Birmingham (AL) - Monthly billing analysis, miscellaneous consulting services
- Burlington (VT) – Water, sewer, and stormwater financial planning and bond feasibility support
- Charleston (WV) - Sewer rate study

- Chicopee (MA) - Financial capability assessment and consent decree assistance
- Concord (NH) - Water and sewer rate study
- Creedmoor (NC) - Economic feasibility study
- Fayetteville (NC) - Cost-of-service study, rate study, investment fee study
- Gainesville (GA) - Outside city differential study
- Greenville (NC) - Water and sewer rate study
- Greenville (SC) - Financial planning and customer demand studies
- Groton Utilities (CT) - Sewer user charge feasibility study
- Hardin County Water District #1 - Financial planning assistance
- Hillsborough (NC) - Water and sewer rate study
- Kittery Water District - Water cost-of-service study
- Milford (NH) - Water and sewer rate study
- Nashville (TN) - Water and sewer cost-of-service study
- Northeast Ohio Regional Sewer District (OH) - Industry research
- North Smithfield (RI) - Sewer assessment fee study
- Oakboro (NC) - Wholesale rate study
- Philadelphia Water Department – Utility financial planning and modeling
- Pennichuck Water Company (NH) - Multiple wholesale rate studies
- Peoria (AZ) - Water and sewer rate study
- Portland Water District (ME) - Water cost-of-service study
- Rockdale County (GA) - Water and sewer rate study
- Rocky Mount (NC) - Development of a multi-enterprise fund financial planning model
- Seabrook (NH) - Water and sewer rate study
- Tucson (AZ) - Water and sewer rate study
- Water Infrastructure Finance Authority (AZ) - Water and wastewater residential rate survey
- Wayland (MA) - Water and sewer financial planning
- White House Utility District (TN)- Financial planning assistance
- Wilson (NC) - Development of a multi-enterprise fund financial planning model

# ATTACHMENT B

## **Aquarion Water Company of New Hampshire**

### **COST OF SERVICE STUDY**

December 2020

**Aquarion Water Company of New Hampshire**

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Exhibit JFG - 1  
Schedule 1  
J.F. GUASTELLA

### Aquarion Water Company of New Hampshire

#### FUNCTIONAL ALLOCATION TO CUSTOMER CLASSES

Function	Total	Residential	Commercial	Industrial	PA	Seasonal	Fire Service	
							Capacity	Hydrants
Base	\$ 2,968,962	\$ 1,990,719	\$ 738,945	\$ 5,522	\$ 64,337	\$ 139,690	\$ 29,749	\$ -
Extra Capacity:								
Maximum Day	\$ 1,908,464	\$ 969,500	\$ 239,837	\$ 1,794	\$ 20,879	\$ 113,363	\$ 563,092	\$ -
Peak Hour	\$ 1,457,098	\$ 533,225	\$ 148,449	\$ 1,224	\$ 13,041	\$ 56,127	\$ 705,017	\$ -
Customer:								
Meters / Services	\$ 1,627,227	\$ 1,221,787	\$ 230,985	\$ 1,074	\$ 22,326	\$ 151,055	\$ -	\$ -
Billing & Accounting	\$ 726,008	\$ 665,176	\$ 49,594	\$ 116	\$ 3,449	\$ 5,256	\$ 2,418	\$ -
Hydrants	\$ 74,149	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 74,149
Total	\$ 8,761,908	\$ 5,380,406	\$ 1,407,809	\$ 9,730	\$ 124,031	\$ 465,492	\$ 1,300,275	\$ 74,149



Exhibit JFG - 1  
Schedule 2  
J.F. GUASTELLA

### Aquarion Water Company of New Hampshire

#### ALLOCATION OF PRO FORMA REVENUE REQUIREMENT TO FUNCTIONAL CLASSIFICATIONS

Description	Total Amount	Code	Base	Extra - Capacity		Customer		Hydrants
				Maximum Day	Peak Hour	Meters and Services	Billing and Accounting	
UTILITY OPERATING INCOME	\$ 2,893,039	31	\$ 1,060,880	\$ 767,454	\$ 696,084	\$ 349,791	\$ 3,071	\$ 15,760
OPERATION & MAINTENANCE	3,281,139	64	1,008,751	503,106	214,484	792,148	729,902	32,749
DEPRECIATION	1,310,407	71	445,246	318,176	216,064	317,916	-	13,005
PROPERTY TAXES	860,716	41	294,841	199,066	232,626	122,650	-	11,532
PAYROLL TAXES	87,976	62	32,393	22,678	1,852	19,744	11,309	-
INCOME TAX	556,294	31	203,993	147,571	133,848	67,260	591	3,030
TOTAL OPERATING REVENUE	\$ 8,989,571	21	\$ 3,046,105	\$ 1,958,052	\$ 1,494,958	\$ 1,669,508	\$ 744,872	\$ 76,076
LESS:								
Late fee revenues	(36,762)	21	(12,457)	(8,007)	(6,114)	(6,827)	(3,046)	(311)
Antenna rental income	(163,511)	21	(55,406)	(35,615)	(27,192)	(30,367)	(13,548)	(1,384)
Misc. charge	(27,389)	21	(9,281)	(5,966)	(4,555)	(5,087)	(2,269)	(232)
REVENUE FROM SALES	\$ 8,761,908	21	\$ 2,968,962	\$ 1,908,464	\$ 1,457,098	\$ 1,627,227	\$ 726,008	\$ 74,149
PERCENTS	100.00%	21	33.88%	21.78%	16.63%	18.57%	8.29%	0.85%

Exhibit JFG - 1  
Schedule 3  
J.F. GUASTELLA

### Aquarion Water Company of New Hampshire

#### ALLOCATION OF RATE BASE ELEMENTS TO FUNCTIONAL CLASSIFICATIONS

Description	Total Amount	Code	Base	Extra - Capacity		Meters and Services	Billing and Accounting	Hydrants
				Maximum Day	Peak Hour			
UTILITY PLANT	\$ 56,033,346	41	\$ 19,194,401	\$ 12,959,380	\$ 15,144,171	\$ 7,984,622	\$ -	\$ 750,772
ACCUMULATED DEPRECIATION	\$ (13,570,348)	51	\$ (3,888,477)	\$ (2,722,094)	\$ (3,620,675)	\$ (2,900,551)	\$ -	\$ (438,552)
CONTRIBUTIONS IN AID OF CONSTRUCTION	\$ (2,431,613)	3	\$ (900,670)	\$ -	\$ (1,530,944)	\$ -	\$ -	\$ -
ADVANCES	\$ (652,006)	3	\$ (241,503)	\$ -	\$ (410,503)	\$ -	\$ -	\$ -
MATERIALS & SUPPLIES	\$ 163,416	41	\$ 55,979	\$ 37,795	\$ 44,167	\$ 23,286	\$ -	\$ 2,190
DEFERRED TAXES	\$ (3,736,572)	51	\$ (1,070,685)	\$ (749,524)	\$ (996,947)	\$ (798,662)	\$ -	\$ (120,755)
CASH WORKING CAPITAL	\$ 172,196	64	\$ 52,940	\$ 26,403	\$ 11,256	\$ 41,572	\$ 38,306	\$ 1,719
PREPAYMENTS	\$ 89,815	41	\$ 30,766	\$ 20,772	\$ 24,274	\$ 12,798	\$ -	\$ 1,203
DEFERRED DEBITS (Tank Painting)	\$ 17,710	5	-	-	17,710	-	-	-
TOTALS	\$ 36,085,944	31	\$ 13,232,751	\$ 9,572,733	\$ 8,682,510	\$ 4,363,067	\$ 38,306	\$ 196,577
PERCENTS	100.00%	31	36.67%	26.53%	24.06%	12.09%	0.11%	0.54%

	B	C	D	E	F	G	H	I	J	K
1										Exhibit JFG - 1
2										Schedule 4
3										J.F. GUASTELLA
4										
5		<b>Aquarion Water Company of New Hampshire</b>								
6										
7										
8		<b>ALLOCATION OF UTILITY PLANT TO FUNCTIONAL CLASSIFICATIONS</b>								
9										
10										
11										
12						Extra - Capacity		Customer		
13								Meters and	Billing and	
14	Account		Total			Maximum	Peak			
15	No.	Description	Amount	Code	Base	Day	Hour	Services	Accounting	Hydrants
16										
17		<u>Intangible Plant</u>								
18	301	Organization	\$ 17,700	1	17,700	-	-	-	-	-
20										
21		<u>Source of Supply Plant</u>								
22	310	Land & Land Rights (Supply)	\$ 635,643	1	635,643	-	-	-	-	-
23	311	Structures & Improvements	\$ 642,550	2	377,948	264,602	-	-	-	-
24	314	Wells & Springs	\$ 4,401,622	2	2,589,034	1,812,588	-	-	-	-
25	316	Supply Mains	\$ 137,490	2	80,872	56,618	-	-	-	-
26	317	Other Water Source Plant	\$ 1,723,261	2	1,013,622	709,639	-	-	-	-
27										
28		<u>Pumping Plant</u>								
30	321	Structures & Improvements	\$ 1,392,388	4	515,699	360,990	515,699	-	-	-
32	325	Electric Pumping Equipment	\$ 940,101	4	348,185	243,730	348,185	-	-	-
34	328	Other Pumping Equipment	\$ 32,076	4	11,880	8,316	11,880	-	-	-
35										
36		<u>Water Treatment Plant</u>								
38	331	Structures & Improvements	\$ 1,068,822	2	628,681	440,141	-	-	-	-
39	332	Water Treatment Equipment	\$ 2,177,877	2	1,281,027	896,850	-	-	-	-
40										
41		<u>Transmission and Distribution Plant</u>								
42	340	Land & Land Rights (T & D)	\$ 314,551	42	84,545	59,182	105,848	59,392	-	5,584
43	341	Structures & Improvements	\$ 32,894	42	8,841	6,189	11,069	6,211	-	584
44	342	Distribution Reservoirs & Standpipes	\$ 2,708,344	5	-	-	2,708,344	-	-	-
45	343	Transmission & Distribution Mains	\$ 29,021,554	4	10,748,724	7,524,106	10,748,724	-	-	-
46	345	Services	\$ 5,731,679	6	-	-	-	5,731,679	-	-
47	346	Meters	\$ 1,620,461	6	-	-	-	1,620,461	-	-
48	347	Meter Installation	\$ 198,719	6	-	-	-	198,719	-	-
49	348	Hydrants	\$ 709,986	8	-	-	-	-	-	709,986
50	349	Other T & D Plant	\$ 178,436	42	47,960	33,572	60,045	33,691	-	3,168
51										
52		<u>General Plant</u>								
53	390	Structures & Improvements	\$ 566,029	41	193,895	130,911	152,981	80,658	-	7,584
54	391	Office Equipment Electronics	\$ 6,650	41	2,278	1,538	1,797	948	-	89
55	391H	Computer Hardware	\$ 241,906	41	82,866	55,948	65,380	34,471	-	3,241
56	391S	Computer Software	\$ 419,295	41	143,631	96,974	113,323	59,749	-	5,618
57	392	Transportation Equipment	\$ 644,403	41	220,742	149,037	174,163	91,826	-	8,634
58	393	Stores Equipment	\$ 331	41	113	77	89	47	-	4
59	394	Tools, Shop & Garage Equipment	\$ 87,849	41	30,093	20,318	23,743	12,518	-	1,177
61	396	Power Operated Equipment	\$ 109,715	41	37,583	25,375	29,653	15,634	-	1,470
62	397	Communications Equipment	\$ 51,553	41	17,660	11,923	13,933	7,346	-	691
63	398	Miscellaneous Equipment	\$ 219,461	41	75,177	50,757	59,314	31,273	-	2,940
64										
65										
66		TOTALS	\$ 56,033,346	41	\$ 19,194,401	\$12,959,380	\$ 15,144,171	\$ 7,984,622	\$ -	\$ 750,772
67										
68		PERCENTS	100.00%	41	34.26%	23.13%	27.03%	14.25%	0.00%	1.34%

Exhibit JFG - 1  
Schedule 5  
J.F. GUASTELLA

**Aquarion Water Company of New Hampshire**

ALLOCATION OF ACCUMULATED DEPRECIATION TO FUNCTIONAL CLASSIFICATIONS

Account No.	Description	Total Amount	Code	Base	Extra - Capacity		Customer		Hydrants
					Maximum Day	Peak Hour	Meters and Services	Billing and Accounting	
	<u>Intangible Plant</u>								
301	Organization	\$ 9,085	2	5,344	3,741	-	-	-	-
303	Miscellaneous Intangible Plant	\$ (15,221)	2	(8,953)	(6,268)	-	-	-	-
	<u>Source of Supply Plant</u>								
311	Structures & Improvements	\$ 236,615	2	139,177	97,438	-	-	-	-
314	Wells & Springs	\$ 1,092,889	2	642,837	450,052	-	-	-	-
316	Supply Mains	\$ 47,489	2	27,933	19,556	-	-	-	-
317	Other Water Source Plant	\$ 949,236	2	558,341	390,895	-	-	-	-
	<u>Pumping Plant</u>								
321	Structures & Improvements	\$ 818,385	4	303,106	212,174	303,106	-	-	-
325	Electric Pumping Equipment	\$ (2,091)	4	(774)	(542)	(774)	-	-	-
326	Diesel Pumping Equipment	\$ 5,202	4	1,927	1,349	1,927	-	-	-
328	Other Pumping Equipment	\$ 29,058	4	10,762	7,534	10,762	-	-	-
	<u>Water Treatment Plant</u>								
331	Structures & Improvements	\$ (56,160)	2	(33,033)	(23,127)	-	-	-	-
332	Water Treatment Equipment	\$ 73,919	2	43,479	30,440	-	-	-	-
	<u>Transmission and Distribution Plant</u>								
341	Structures & Improvements	\$ 31,234	52	6,161	4,313	10,257	9,123	-	1,379
342	Distribution Reservoirs & Standpipes	\$ 1,124,468	5	-	-	1,124,468	-	-	-
343	Transmission & Distribution Mains	\$ 4,566,798	4	1,691,407	1,183,985	1,691,407	-	-	-
345	Services	\$ 2,284,927	6	-	-	-	2,284,927	-	-
346	Meters	\$ 32,560	6	-	-	-	32,560	-	-
347	Meter Installation	\$ 187,135	6	-	-	-	187,135	-	-
348	Hydrants	\$ 378,689	8	-	-	-	-	-	378,689
349	Other T & D Plant	\$ 91,531	52	18,055	12,639	30,059	26,736	-	4,042
	<u>General Plant</u>								
390	Structures & Improvements	\$ 101,931	51	29,208	20,446	27,196	21,787	-	3,294
391	Office Equipment Electronics	\$ 13,811	51	3,957	2,770	3,685	2,952	-	446
391H	Computer Hardware	\$ 261,346	51	74,887	52,424	69,729	55,861	-	8,446
391S	Computer Software	\$ 430,887	51	123,467	86,432	114,964	92,099	-	13,925
392	Transportation Equipment	\$ 557,492	51	159,745	111,828	148,743	119,159	-	18,016
393	Stores Equipment	\$ 4,810	51	1,378	965	1,283	1,028	-	155
394	Tools, Shop & Garage Equipment	\$ 56,417	51	16,166	11,317	15,052	12,059	-	1,823
395	Laboratory Equipment	\$ (508)	51	(146)	(102)	(136)	(109)	-	(16)
396	Power Operated Equipment	\$ 97,089	51	27,820	19,475	25,904	20,752	-	3,138
397	Communications Equipment	\$ 68,257	51	19,559	13,692	18,212	14,589	-	2,206
398	Miscellaneous Equipment	\$ 93,068	51	26,668	18,669	24,831	19,893	-	3,008
	<b>TOTALS</b>	<b>\$ 13,570,348</b>	<b>51</b>	<b>\$ 3,888,477</b>	<b>\$ 2,722,094</b>	<b>\$ 3,620,675</b>	<b>\$ 2,900,551</b>	<b>\$ -</b>	<b>\$ 438,552</b>
	<b>PERCENTS</b>	<b>100.00%</b>	<b>51</b>	<b>28.65%</b>	<b>20.06%</b>	<b>26.68%</b>	<b>21.37%</b>	<b>0.00%</b>	<b>3.23%</b>

Exhibit JFG - 1  
Schedule 6  
J.F. GUASTELLA

**Aquarion Water Company of New Hampshire**

**ALLOCATION OF PRO FORMA OPERATION AND MAINTENANCE EXPENSES TO FUNCTIONAL CLASSIFICATIONS**

Account No.	Description	Total Amount	Code	Base	Extra - Capacity		Customer		Hydrants
					Maximum Day	Peak Hour	Meters and Services	Billing and Accounting	
	<u>Source of Supply</u>								
601	Operation Labor & Expenses - Labor	\$ 130	2	77	54	-	-	-	-
603	Merchandise Expenses	\$ 70,268	2	41,332	28,936	-	-	-	-
604	Rent Expense	\$ 22,650	2	13,323	9,327	-	-	-	-
611	Maint of Structures & Improvemnt	\$ 706	2	415	291	-	-	-	-
612	Maint of Supply Eqmt	\$ 35,929	2	21,133	14,796	-	-	-	-
614	Maint. Of Wells & Springs	\$ 5,286	2	3,109	2,177	-	-	-	-
	<u>Pumping</u>								
620	Supervision & Engineering - Labor	\$ 947	4	351	245	351	-	-	-
623	Power Purchased for Pumping	\$ 232,482	1	232,482	-	-	-	-	-
624	Pumping Labor and Expenses	\$ 138,844	4	51,424	35,997	51,424	-	-	-
626	Misc Expenses	\$ 11,656	4	4,317	3,022	4,317	-	-	-
631	Maint of Structures & Improvemnt	\$ 16,445	4	6,091	4,263	6,091	-	-	-
632	Maint of Power Production Eqmt	\$ 8,147	4	3,017	2,112	3,017	-	-	-
633	Maint of Pumping Equipmt	\$ 15,283	4	5,660	3,962	5,660	-	-	-
	<u>Treatment</u>								
640	Supervision & Engineering - Labor	\$ 4,741	2	2,789	1,952	-	-	-	-
641	Chemicals	\$ 57,619	1	57,619	-	-	-	-	-
642	Treatment Labor and Expenses	\$ 84,613	2	49,770	34,844	-	-	-	-
643	Misc. Expense	\$ 12,658	2	7,445	5,212	-	-	-	-
651	Maint of Structures & Improvemnt	\$ 5,414	2	3,184	2,229	-	-	-	-
652	Maint of Treatment Eqmt	\$ 26,751	2	15,735	11,016	-	-	-	-
	<u>Transmission &amp; Distribution</u>								
662	T&D Lines Expense	\$ 36,114	4	13,376	9,363	13,376	-	-	-
663	Meter Expense	\$ 38,602	6	-	-	-	38,602	-	-
664	Customer Installations Expense	\$ 32,173	6	-	-	-	32,173	-	-
665	Misc Expenses	\$ 106,236	61	14,209	9,946	14,677	62,526	-	4,877
670	Maint Supervision & Engineering	\$ 600	61	80	56	83	353	-	28
671	Maint of Structures & Improvemnt	\$ 59,662	61	7,980	5,586	8,243	35,115	-	2,739
672	Maint of Storage	\$ 1,436	5	-	-	1,436	-	-	-
673	Maint of Mains	\$ 81,462	4	30,171	21,120	30,171	-	-	-
675	Maint of Services	\$ 139,766	6	-	-	-	139,766	-	-
676	Maint of Meters	\$ 19,686	6	-	-	-	19,686	-	-
677	Maint of Hydrants	\$ 14,945	8	-	-	-	-	-	14,945
678	Maint of Other T&D	\$ 21,141	61	2,828	1,979	2,921	12,443	-	970
	<u>Customer Accounting</u>								
902	Meter Reading	\$ 18,428	7	-	-	-	-	18,428	-
903	Records and Collection	\$ 258,707	7	-	-	-	-	258,707	-
904	Uncollectible Accounts	\$ 10,875	7	-	-	-	-	10,875	-
905	Allocated Customer Acct Expense	\$ 110,823	7	-	-	-	-	110,823	-
906	Information Technology	\$ 182,338	63	28,146	19,704	13,401	64,407	54,452	2,227
	<u>Administration &amp; General</u>								
920	Administrative & General Salaries	\$ 434,631	62	160,034	112,039	9,148	97,540	55,870	-
921	Office Supplies & Expense	\$ 70,290	63	10,850	7,596	5,166	24,829	20,991	859
923	Outside Services	\$ 307,273	63	47,431	33,204	22,584	108,538	91,763	3,753
924	Insurance	\$ 1,226	63	189	132	90	433	366	15
925	Injuries & Damages	\$ 65,350	63	10,088	7,062	4,803	23,084	19,516	798
926	Employee Benefits	\$ 392,865	62	144,656	101,273	8,269	88,167	50,501	-
928	Regulatory Commission Exp	\$ 27,070	63	4,178	2,925	1,990	9,562	8,084	331
930	Misc General Expense	\$ 51,229	63	7,908	5,536	3,765	18,096	15,299	626
931	Rents	\$ 109,667	63	16,928	11,851	8,060	38,738	32,750	1,339
932	Maintenance of General Plant	\$ (62,025)	63	(9,574)	(6,703)	(4,559)	(21,909)	(18,523)	(758)
	<b>SUBTOTAL</b>	<b>\$ 3,281,139</b>	<b>64</b>	<b>\$ 1,008,751</b>	<b>\$ 503,106</b>	<b>\$ 214,484</b>	<b>\$ 792,148</b>	<b>\$ 729,902</b>	<b>\$ 32,749</b>
	<b>PERCENTS</b>	<b>100.00%</b>	<b>64</b>	<b>30.74%</b>	<b>15.33%</b>	<b>6.54%</b>	<b>24.14%</b>	<b>22.25%</b>	<b>1.00%</b>

Exhibit JFG - 1  
Schedule 7  
J.F. GUASTELLA

**Aquarion Water Company of New Hampshire**

**ALLOCATION OF DEPRECIATION EXPENSE TO FUNCTIONAL CLASSIFICATIONS**

Account Number	Description	Total Amount	Code	Base	Extra - Capacity		Customer		Hydrants
					Maximum Day	Peak Hour	Meters and Services	Billing and Accounting	
303	<u>Intangible Plant</u> Miscellaneous Intangible Plant	\$ 885	2	521	364	-	-	-	-
311	<u>Source of Supply Plant</u> Structures & Improvements	\$ 14,457	2	8,504	5,953	-	-	-	-
314	Wells & Springs	\$ 159,779	2	93,982	65,797	-	-	-	-
316	Supply Mains	\$ 3,327	2	1,957	1,370	-	-	-	-
317	Other Water Source Plant	\$ 75,148	2	44,202	30,946	-	-	-	-
321	<u>Pumping Plant</u> Structures & Improvements	\$ 22,557	4	8,354	5,848	8,354	-	-	-
325	Electric Pumping Equipment	\$ 77,277	4	28,621	20,035	28,621	-	-	-
328	Other Pumping Equipment	\$ 2,537	4	940	658	940	-	-	-
331	<u>Water Treatment Plant</u> Structures & Improvements	\$ 33,774	2	19,866	13,908	-	-	-	-
332	Water Treatment Equipment	\$ 145,482	2	85,573	59,909	-	-	-	-
341	<u>Transmission &amp; Distribution Plant</u> Structures & Improvements	\$ 46	72	9	6	12	19	-	1
342	Distribution Reservoirs & Standpipes	\$ 46,313	5	-	-	46,313	-	-	-
343	Transmission & Distribution Mains	\$ 354,063	4	131,134	91,794	131,134	-	-	-
345	Services	\$ 129,536	6	-	-	-	129,536	-	-
346	Meters	\$ 161,074	6	-	-	-	161,074	-	-
347	Meter Installation	\$ 4,451	6	-	-	-	4,451	-	-
348	Hydrants	\$ 12,070	8	-	-	-	-	-	12,070
349	Other T & D Plant	\$ 4,407	72	817	572	1,105	1,838	-	75
390	<u>General Plant</u> Structures & Improvements	\$ 28,981	71	9,864	6,905	5,030	6,900	-	282
391	Office Equipment Electronics	\$ 112	71	38	27	19	27	-	1
391H	Computer Hardware	\$ 19,503	71	6,638	4,647	3,385	4,643	-	190
391S	Computer Software	\$ 10,215	71	3,477	2,434	1,773	2,432	-	99
392	Transportation Equipment	\$ 6,380	71	2,171	1,520	1,107	1,519	-	62
394	Tools, Shop & Garage Equipment	\$ 2,457	71	836	585	426	585	-	24
396	Power Operated Equipment	\$ 1,997	71	680	476	347	475	-	19
397	Communications Equipment	\$ 5,155	71	1,755	1,228	895	1,227	-	50
398	Miscellaneous Equipment	\$ 13,399	71	4,560	3,193	2,326	3,190	-	130
	Less: CIAC Amortization	\$ (24,975)	3	(9,251)	-	(15,724)	-	-	-
	TOTAL	\$ 1,310,407	71	\$ 445,246	\$ 318,176	\$ 216,064	\$ 317,916	\$ -	\$ 13,005
	PERCENTS	100.00%	71	33.98%	24.28%	16.49%	24.26%	0.00%	0.99%

**Aquarion Water Company of New Hampshire**

## SUMMARY OF ALLOCATION FACTORS

Description	Code	Base	Extra - Capacity		Customer		Hydrants
			Maximum Day	Peak Hour	Meters and Services	Billing and Accounting	
BASE	1	1.000000					
BASE / MAXIMUM DAY	2	0.588200	0.411800				
BASE / PEAK HOUR	3	0.370400		0.629600			
BASE / MAXIMUM DAY / PEAK HOUR	4	0.370370	0.259259	0.370370			
PEAK HOUR	5			1.000000			
CUSTOMER - METERS & SERVICES	6				1.000000		
CUSTOMER - BILLING & ACCOUNTING	7					1.000000	
HYDRANTS	8						1.000000
TOTAL OPERATING REVENUE	21	0.338849	0.217814	0.166299	0.185716	0.082860	0.008463
RATE BASE	31	0.366701	0.265276	0.240606	0.120908	0.001062	0.005447
UTILITY PLANT IN SERVICE	41	0.342553	0.231280	0.270271	0.142498	0.000000	0.013399
UTILITY PLANT IN SERVICE - T&D OTHER	42	0.268780	0.188146	0.336505	0.188815	0.000000	0.017754
ACCUMULATED DEPRECIATION	51	0.286542	0.200591	0.266808	0.213742	0.000000	0.032317
ACCUMULATED DEPRECIATION - T&D OTHER	52	0.197258	0.138081	0.328398	0.292099	0.000000	0.044164
OPERATION & MAINTENANCE - T&D OTHER	61	0.133751	0.093626	0.138160	0.588561	0.000000	0.045903
LABOR	62	0.368207	0.257780	0.021047	0.224420	0.128545	0.000000
O&M - EXCL POWER, CHEM & PURCH WATER	63	0.154361	0.108061	0.073498	0.353231	0.298635	0.012214
TOTAL OPERATING EXPENSE	64	0.307439	0.153333	0.065369	0.241425	0.222454	0.009981
DEPRECIATION EXPENSE	71	0.339777	0.242807	0.164883	0.242608	0.000000	0.009924
DEPRECIATION EXPENSE - T&D OTHER	72	0.185347	0.129743	0.250807	0.417043	0.000000	0.017060

**Aquarion Water Company of New Hampshire**

## EXPLANATION OF FUNCTIONAL ALLOCATION FACTORS

- 1 Applicable to items considered to be related to "Base" or average day system demands, and allocable to all customers. Allocated 100% to base.
- 2 Applicable to items considered to be related to meeting the maximum day system demands. The calculation of the factors is as follows:

	Ratio	%
Maximum Day Demand	1.70	100.00%
Average Day Demand	1.00	58.82%
Extra Capacity / Maximum Day:	0.70	41.18%

- 3 Applicable to mains, considered to be related to meeting the peak hour system demands. The calculation of the factors is as follows:

	Ratio	%
Peak Hour Demand	2.70	100.00%
Average Day Demand	1.00	37.04%
Extra Capacity/Peak Hour	1.70	62.96%

- 4 Applicable to pumping plant, considered to be related to meeting the max day and peak hour system demands. The calculation of the factors is as follows:

	Ratio	%
Peak Hour Demand	2.70	
Max Day Demand	1.70	
Excess Peak Hour over Max Day	1.00	37.04%
Extra Capacity / Maximum Day:	0.70	25.93%
Average Day Demand	1.00	37.04%

- 5 Applicable to items considered to be related entirely to meeting peak hour system demands. Allocated 100% to Extra-Capacity/Peak Hour.
- 6 Applicable to items considered to be related entirely to meters and services. Allocation 100% to "Meters and Services".
- 7 Applicable to items considered to be entirely related to customer billing and accounting. Allocated 100% to "Billing and Accounts".
- 8 Applicable to items considered to be related entirely to Company owned fire hydrants. Allocated 100% to "Hydrants".
- 21 Applicable to miscellaneous & sales for resale revenue. Factors are based on the overall weighted allocation of revenue requirement.
- 31 Applicable to items considered to be related to the Rate Base. Factors are based on the overall weighted allocation of all elements of the rate base.



**Aquarion Water Company of New Hampshire**

## EXPLANATION OF FUNCTIONAL ALLOCATION FACTORS

- 41 Applicable to utility plant considered to be of an overhead nature, and related expenses. Factors are based on the overall weighted allocation of all items of utility plant, also applicable to property taxes, insurance.
- 42 Applicable to Other Transmission and Distribution plant. Factors are based on the overall weighted allocation of Storage, Mains, Meters, Services and Hydrant plant.
- 51 Resulting overall weighted factors for Accumulated Depreciation.

Description	Total Amount	Code	Base	Base 2	Extra - Capacity			Cust
					Maximum Day	Peak Hour	Peak Hour 2	Meters and Services
TOTAL PERCENT	\$ 13,570,348 100.00%	51	\$ 3,888,477 28.65%	#REF! #REF!	\$ 2,722,094 20.06%	\$ 3,620,675 26.68%	#REF! #REF!	\$ 2,900,551 21.37%

- 52 Applicable to Other Transmission and Distribution Accumulated Depreciation. Factors are based on the overall weighted allocation of Storage, Mains, Meters, Services and Hydrant Accumulated Depreciation.
- 61 Applicable to Other Transmission and Distribution Expense. Factors are based on the overall weighted allocation of Storage, Mains, Meters, Services and Hydrants expense.

Description	Total Amount	Code	Base	Extra - Capacity		Customer		Hydrants
				Maximum Day	Peak Hour	Meters and Services	Billing and Accounting	
T&D - Storage, Mains, Meters Services & Hydrants TOTAL PERCENT	\$ 325,583 100.00%	61	\$ 43,547 13.38%	\$ 30,483 9.36%	\$ 44,982 13.82%	\$ 191,625 58.86%	\$ - 0.00%	\$ 14,945 4.59%

**Aquarion Water Company of New Hampshire**

## EXPLANATION OF FUNCTIONAL ALLOCATION FACTORS

- 62 Applicable to employee benefit and labor administration and general expenses, considered to be of an overhead nature. Factors are based on the overall weighted allocation of all other labor expenses.

Description	Total Amount	Code	Base	Extra - Capacity		Customer		Hydrants
				Maximum Day	Peak Hour	Meters & Services	Billing and Accounting	
TOTAL PERCENT	\$ 143,362 100.00%	62	\$ 52,787 36.82%	\$ 36,956 25.78%	\$ 3,017 2.10%	\$ 32,173 22.44%	\$ 18,428 12.85%	\$ - 0.00%

- 63 Applicable to operation and maintenance expenses considered to be of an overhead nature. Factors are based on the overall weighted allocation of all other operation and maintenance expenses except power, chemicals and purchased water.

Description	Total Amount	Code	Base	Extra - Capacity		Customer		Hydrants
				Maximum Day	Peak Hour	Meters & Services	Billing and Accounting	
TOTAL PERCENT	\$ 1,300,170 100%	63	\$ 200,696 15.44%	\$ 140,498 10.81%	\$ 95,560 7.35%	\$ 459,260 35.32%	\$ 388,276 29.86%	\$ 15,880 1.22%

- 64 Resulting overall weighted allocation of all operation and maintenance expenses. Applicable to cash working capital.
- 71 Resulting overall weighted factors for Depreciation Expense.
- 72 Applicable to Other Transmission and Distribution Depreciation Expense. Factors are based on the overall weighted allocation of Storage, Mains, Meters, Services and Hydrant Depreciation Expense.

Exhibit JFG - 1  
Schedule 9  
J.F. GUASTELLA

**Aquarion Water Company of New Hampshire**

**SUMMARY OF SYSTEM WATER DEMANDS**

Description	Factor	Quantity	Unit
Average Day	1.00	2.17	MGD
Maximum Day	1.70	3.68	MGD
Peak Hour	2.70	5.85	MGD
Fire Demand		4,000	GPM
Maximum Day Fire Use		0.960	MG
Max Day Plus Fire Demand		9.44	MGD
Less: Peak hour		3.60	MGD

Exhibit JFG - 1  
Schedule 10  
J.F. GUASTELLA

**Aquarion Water Company of New Hampshire**

**CUSTOMER CLASS ALLOCATION FACTORS**

Customer Class	Base Average Consumption			Maximum Day				Peak Hour				Customer			
	Annual MG	MGD	%	Ratio	MGD	Extra MGD	%	Ratio	MGD	Extra MGD	%	Meters and Services		Billing and Accounting	
												Number of ERC's	%	Number of Bills	%
METERED SERVICE:															
Residential	395.4	1.083	<b>67.05</b>	2.50	2.708	1.625	<b>50.80</b>	3.00	3.249	2.166	<b>36.60</b>	8,074.3	<b>75.09</b>	90,549	<b>91.62</b>
Commercial	146.8	0.402	<b>24.89</b>	2.00	0.804	0.402	<b>12.57</b>	2.50	1.005	0.603	<b>10.19</b>	1,526.4	<b>14.20</b>	6,751	<b>6.83</b>
Industrial	1.2	0.003	<b>0.19</b>	2.00	0.006	0.003	<b>0.09</b>	2.50	0.008	0.005	<b>0.08</b>	7.1	<b>0.07</b>	16	<b>0.02</b>
Public Authority	12.7	0.035	<b>2.17</b>	2.00	0.070	0.035	<b>1.09</b>	2.50	0.088	0.053	<b>0.90</b>	147.5	<b>1.37</b>	469	<b>0.48</b>
Seasonal	27.7	0.076	<b>4.71</b>	3.50	0.266	0.190	<b>5.94</b>	4.00	0.304	0.228	<b>3.85</b>	998.3	<b>9.28</b>	716	<b>0.72</b>
Subtotal	583.6	1.599	<b>99.00</b>		3.854	2.255	<b>70.50</b>		4.654	3.055	<b>51.61</b>	10,753.6	<b>100.00</b>	98,501	<b>99.67</b>
FIRE SERVICE		0.016	<b>1.00</b>		0.960	0.944	<b>29.51</b>		2.880	2.864	<b>48.39</b>		<b>0.00</b>	329	<b>0.33</b>
Total		1.615	<b>100.00</b>		4.814	3.199	<b>100.00</b>		7.534	5.919	<b>100.00</b>	10,753.6	<b>100.00</b>	98,830	<b>100.00</b>

Exhibit JFG - 1  
Schedule 11  
J.F. GUASTELLA

### Aquarion Water Company of New Hampshire

#### CALCULATION OF ERC's

		Monthly Billing																	
		Residential			Commercial			Industrial			Public Auth			Seasonal			Total		
Monthly	Factor	Bills	Customers	ERCs	Bills	Customers	ERCs	Bills	Customers	ERCs	Bills	Customers	ERCs	Bills	Customers	ERCs	Bills	Customers	ERCs
5/8"	1.0	87,993.0	7,332.8	7,332.8	4,081.0	340.1	340.1	1.0	0.1	0.1	200.0	16.7	16.7				92,275.0	7,689.6	7,689.6
3/4"	1.5	-	-	-	-	-	-	-	-	-	-	-	-				-	-	-
1"	2.5	1,927.0	160.6	401.5	1,112.0	92.7	231.7	-	-	-	60.0	5.0	12.5				3,099.0	258.3	645.6
1 1/2"	5.0	317.0	26.4	132.1	336.0	28.0	140.0	12.0	1.0	5.0	84.0	7.0	35.0				749.0	62.4	312.1
2"	8.0	312.0	26.0	208.0	1,222.0	101.8	814.7	3.0	0.3	2.0	125.0	10.4	83.3				1,662.0	138.5	1,108.0
3"	15.0	-	-	-	-	-	-	-	-	-	-	-	-				-	-	-
4"	22.6	-	-	-	-	-	-	-	-	-	-	-	-				-	-	-
6"	37.6	-	-	-	-	-	-	-	-	-	-	-	-				-	-	-
8"	75.0	-	-	-	-	-	-	-	-	-	-	-	-				-	-	-
10"	120.0	-	-	-	-	-	-	-	-	-	-	-	-				-	-	-
		90,549.0	7,545.8	8,074.3	6,751.0	562.6	1,526.4	16.0	1.3	7.1	469.0	39.1	147.5	716.0	716.0	998.3	97,785.0	8,148.8	9,755.3

Exhibit JFG - 1  
Schedule 12  
J.F. GUASTELLA

### Aquarion Water Company of New Hampshire

#### CALCULATION OF DESIGNED CUSTOMER CHARGE AND USAGE RATE

Customer Charge Cost Component	ERC's/Bills	Allocated Cost	Cost Per ERC/Bill
Meters & Services	10,753.6	\$ 1,627,227	
Billing & Accounting	0	723,590	
Total		\$ 2,350,817	\$ 218.61

#### Customer Charge Design:

Size	Factors	Bills	SC ERC's	ERC \$	Service Charge
Monthly					
5/8"	1.0	92,275	7,689.6	\$ 18.22	\$ <b>18.22</b>
3/4"	1.5	-	-	\$ 27.33	\$ <b>27.33</b>
1"	2.5	3,099	645.6	\$ 45.54	\$ <b>45.54</b>
1 1/2"	5.0	749	312.1	\$ 91.09	\$ <b>91.09</b>
2"	8.0	1,662	1,108.0	\$ 145.74	\$ <b>145.74</b>
Seasonal					
5/8"	15.0	683	853.8	\$ 273.26	\$ <b>273.26</b>
3/4"	22.6	-	-	\$ 411.71	\$ <b>411.71</b>
1"	37.6	27	84.6	\$ 684.97	\$ <b>684.97</b>
1 1/2"	75.0	-	-	\$ 1,366.29	\$ <b>1,366.29</b>
2"	120.0	6	60.0	\$ 2,186.07	\$ <b>2,186.07</b>
Total		98,501	10,753.6		

Usage Rate Design	Total	Residential	Commercial	Industrial	PA	Seasonal
Revenue Requirement	\$ 7,387,469	\$ 5,380,406	\$ 1,407,809	\$ 9,730	\$ 124,031	\$ 465,492
Service Charge Revenue	\$ (2,350,818)	\$ (1,886,963)	\$ (280,578)	\$ (1,190)	\$ (25,774)	\$ (156,312)
Adjustments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Revenue Needed From Usage Rates	\$ 5,036,651	\$ 3,493,443	\$ 1,127,231	\$ 8,540	\$ 98,257	\$ 309,180
All CCF except Sgl Fam Res)	235,878	18,701	196,168	1,584	16,933	2,492
Block 1	364,117	335,980				28,137
Block 2	175,665	169,490				6,175
Rate per CCF	775,660	524,171	196,168	1,584	16,933	36,804
SF-Res Block 1		\$ <b>6.146</b>				\$ <b>8.012</b>
SF-Res Block 2		\$ <b>7.683</b>				\$ <b>10.016</b>
Non-SF Res All Usage		\$ <b>6.761</b>	\$ <b>5.747</b>	\$ <b>5.393</b>	\$ <b>5.805</b>	\$ <b>8.813</b>
Usage Revenue	\$ 5,037,020	\$ 3,493,563	\$ 1,127,377	\$ 8,543	\$ 98,296	\$ 309,241
All Other					\$ -	\$ -
Total Usage Revenue	\$ 5,037,020	\$ 3,493,563	\$ 1,127,377	\$ 8,543	\$ 98,296	\$ 309,241
SC Revenue	\$ 2,350,818	\$ 1,886,963	\$ 280,578	\$ 1,190	\$ 25,774	\$ 156,312
Other Adjustments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Designed Rate Revenue	\$ 7,387,838	\$ 5,380,526	\$ 1,407,956	\$ 9,733	\$ 124,070	\$ 465,553
Revenue Requirement	\$ 7,387,469	\$ 5,380,406	\$ 1,407,809	\$ 9,730	\$ 124,031	\$ 465,492
Difference	\$ 369	\$ 120	\$ 147	\$ 2	\$ 39	\$ 61
Percent	0.00%	0.00%	0.01%	0.02%	0.03%	0.01%

## Aquarion Water Company of New Hampshire

### ALLOCATION OF FIRE TO PUBLIC AND PRIVATE

**Capacity Allocation:**

Description	Units	Capacity Ratio	Weighted Unit	Allocated Cost	Unit Cost
Private Fire Hydrant	0	1.000	-	\$ -	
Private Fire Service					
3" or smaller	96	0.25	24.0	42,564	\$ 443.38
4"	74	0.40	29.6	52,496	\$ 709.41
6"	137	1.00	137.0	242,971	\$ 1,773.51
8"	19	1.80	34.2	60,654	\$ 3,192.33
10"	0	2.80	-	-	
12"	3	4.00	12.0	21,282	\$ 7,094.00
Public Fire Demands	495	1.000	495.0	877,889	\$ 1,773.51
Total Capacity			731.8	\$ 1,297,858	

**Summary:**

Fire Allocation Description	Public	Private	Total
Capacity	\$ 877,889	\$ 419,968	\$ 1,297,858
Billing Hydrants	29 74,149	2,389	2,418 74,149
Total	\$ 952,068	\$ 422,357	\$ 1,374,425

Exhibit JFG - 1  
Schedule 14  
J.F. GUASTELLA

### Aquarion Water Company of New Hampshire

#### DESIGN OF FIRE RATES

##### Private

Description	Hydrants		Bills		Capacity	Total Rate
	Units	Rate	Units	Rate	Rate	
Private Fire Hydrant	495		0	\$ 7.26	\$ -	\$ 7.26
Private Fire Service:						
3" or smaller			96	7.26	443.38	\$ <b>450.64</b>
4"			74	7.26	709.41	\$ <b>716.67</b>
6"			137	7.26	1,773.51	\$ <b>1,780.77</b>
8"			19	7.26	3,192.33	\$ <b>3,199.59</b>
10"			0	7.26	4,965.87	\$ <b>4,973.13</b>
12"			3	7.26	7,094.10	\$ <b>7,101.36</b>
Total			329			

##### Public

Description	Units	Rate	Amount
Revenue Required			\$ 952,068
Individually Billed Hydrants	495	\$ <b>1,923.37</b>	\$ -
Total Annual Public Charge			\$ 952,068



Exhibit JFG - 1  
Schedule 15  
J.F. GUASTELLA

### Aquarion Water Company of New Hampshire

#### DETAILED BILL ANALYSIS - PROPOSED RATES

Revenue From Rates		Proposed														
		Residential		Commercial		Industrial		Public Authority		Seasonal		Total				
	Service Charge	Rate	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue		
Monthly	5/8"	\$ 18.22	87,993	\$ 1,603,232.46	4,081	\$ 74,355.82	1	\$ 18.22	200	\$ 3,644.00	-	-	92,275	\$ 1,681,250.50		
	3/4"	\$ 27.33	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	-	-	\$ -		
	1"	\$ 45.54	1,927	\$ 87,755.58	1,112	\$ 50,640.48	-	\$ -	60	\$ 2,732.40	-	-	3,099	\$ 141,128.46		
	1 1/2"	\$ 91.09	317	\$ 28,875.53	336	\$ 30,606.24	12	\$ 1,093.08	84	\$ 7,651.56	-	-	749	\$ 68,226.41		
	2"	\$ 145.74	312	\$ 45,470.88	1,222	\$ 178,094.28	3	\$ 437.22	125	\$ 18,217.50	-	-	1,662	\$ 242,219.88		
Seasonal	5/8"	\$ 273.26	-	\$ -	-	\$ -	-	\$ -	-	\$ -	683	\$ 186,636.58	683	\$ 186,636.58		
	3/4"	\$ 411.71	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -		
	1"	\$ 684.97	-	\$ -	-	\$ -	-	\$ -	-	\$ -	27	\$ 18,494.19	27	\$ 18,494.19		
	1 1/2"	\$ 1,366.29	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -	-	\$ -		
	2"	\$ 2,186.07	-	\$ -	-	\$ -	-	\$ -	-	\$ -	6	\$ 13,116.42	6	\$ 13,116.42		
Subtotal SC			90,549	\$ 1,765,334.45	6,751	\$ 333,696.82	16	\$ 1,548.52	469	\$ 32,245.46	716	\$ 218,247.19	98,501	\$ 2,351,072.44		
Residential Usage		CCF														
Monthly - Single Family	0-6 ccf Usage	\$ 6.146	335,980.0	\$ 2,064,933.08											335,980.0	\$ 2,064,933.08
	Over 6 ccf	\$ 7.683	169,490.1	\$ 1,302,192.44											169,490.1	\$ 1,302,192.44
Monthly - Multi Family	All Usage	\$ 6.761	18,701.0	\$ 126,437.46											18,701.0	\$ 126,437.46
Commercial Usage																
Monthly	All Usage	\$ 5.747			196,168.0	\$ 1,127,377.50									196,168.0	\$ 1,127,377.50
Industrial Usage																
Monthly	All Usage	\$ 5.393					1,584.0	\$ 8,542.51							1,584.0	\$ 8,542.51
Public Authority Usage																
Monthly	All Usage	\$ 5.805							16,933.0	\$ 98,296.07					16,933.0	\$ 98,296.07
Seasonal Residential Usage																
Monthly	0-6 ccf Usage	\$ 8.012									9,698.0	\$ 77,700.38	9,698.0	\$ 77,700.38		
	Over 6 ccf	\$ 10.016									6,174.7	\$ 61,845.54	6,174.7	\$ 61,845.54		
Monthly - Multi Family	All Usage	\$ 8.813									2,492.0	\$ 21,962.00	2,492.0	\$ 21,962.00		
Seasonal Non-Residential Usage																
Monthly	All Usage	\$ 8.012									18,439.0	\$ 147,733.27	18,439.0	\$ 147,733.27		
Subtotal Usage			524,171.1	\$ 3,493,562.98	196,168.0	\$ 1,127,377.50	1,584.0	\$ 8,542.51	16,933.0	\$ 98,296.07	36,803.7	\$ 309,241.18	775,659.8	\$ 5,037,020.24		
Total				\$ 5,258,897.43		\$ 1,461,074.32		\$ 10,091.03		\$ 130,541.53		\$ 527,488.37		\$ 7,388,092.68		

Exhibit JFG - 1  
Schedule 16  
J.F. GUASTELLA

### Aquarion Water Company of New Hampshire

#### DETAILED BILL ANALYSIS - PRESENT RATES

Revenue Present Rates		Present													
		Residential		Commercial		Industrial		Public Authority		Seasonal		Total			
Service Charge	Rate	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue
Monthly	5/8"	\$ 15.60	87,993 \$ 1,372,690.80	4,081 \$ 63,663.60	1 \$ 15.60	200 \$ 3,120.00						92,275 \$ 1,439,490.00			
	3/4"	\$ 23.40	- \$ -	- \$ -	- \$ -	- \$ -						- \$ -			
	1"	\$ 39.01	1,927 \$ 75,172.27	1,112 \$ 43,379.12	- \$ -	60 \$ 2,340.60						3,099 \$ 120,891.99			
	1 1/2"	\$ 78.05	317 \$ 24,741.85	336 \$ 26,224.80	12 \$ 936.60	84 \$ 6,556.20						749 \$ 58,459.45			
	2"	\$ 124.87	312 \$ 38,959.44	1,222 \$ 152,591.14	3 \$ 374.61	125 \$ 15,608.75						1,662 \$ 207,533.94			
Seasonal	5/8"	\$ 234.00								683 \$ 159,822.00		683 \$ 159,822.00			
	3/4"	\$ 351.00								- \$ -		- \$ -			
	1"	\$ 585.15								27 \$ 15,799.05		27 \$ 15,799.05			
	1 1/2"	\$ 1,170.75								- \$ -		- \$ -			
	2"	\$ 1,873.05								6 \$ 11,238.30		6 \$ 11,238.30			
<b>Subtotal SC</b>			90,549 \$ 1,511,564.36	6,751 \$ 285,858.66	16 \$ 1,326.81	469 \$ 27,625.55	716 \$ 186,859.35	98,501 \$ 2,013,234.73							
<u>Residential Usage</u>	CCF														
Monthly	All Usage	\$ 4.536	528,517.0 \$ 2,397,353.11									528,517.0 \$ 2,397,353.11			
<u>Commercial Usage</u>															
Monthly	All Usage	\$ 4.536		196,168.0 \$ 889,818.05								196,168.0 \$ 889,818.05			
<u>Industrial Usage</u>															
Monthly	All Usage	\$ 4.536			1,584.0 \$ 7,185.02							1,584.0 \$ 7,185.02			
<u>Public Authority Usage</u>															
Monthly	All Usage	\$ 4.536				16,933.0 \$ 76,808.09						16,933.0 \$ 76,808.09			
<u>Seasonal</u>															
Monthly	All Usage	\$ 5.619								36,961.0 \$ 207,683.86		36,961.0 \$ 207,683.86			
<b>Subtotal Usage</b>			528,517.0 \$ 2,397,353.11	196,168.0 \$ 889,818.05	1,584.0 \$ 7,185.02	16,933.0 \$ 76,808.09	36,961.0 \$ 207,683.86	780,163.0 \$ 3,578,848.13							
<b>Total</b>			\$ 3,908,917.47	\$ 1,175,676.71	\$ 8,511.83	\$ 104,433.64	\$ 394,543.21	\$ 5,592,082.86							

## Aquarion Water Company of New Hampshire

## COMPARISON OF PRESENT AND PROPOSED RATES AND REVENUES

Description		Bills/Usage	Present		Proposed		Percent Increase				
			Rates	Revenue	Rates	Revenue					
Service Charge:											
Monthly	5/8"	92,275	\$	15.60	\$	1,439,490	\$	18.22	\$	1,681,251	16.8%
	3/4"	-	\$	23.40	\$	-	\$	27.33	\$	-	16.8%
	1"	3,099	\$	39.01	\$	120,892	\$	45.54	\$	141,128	16.7%
	1 1/2"	749	\$	78.05	\$	58,459	\$	91.09	\$	68,226	16.7%
	2"	1,662	\$	124.87	\$	207,534	\$	145.74	\$	242,220	16.7%
Seasonal											
	5/8"	683	\$	234.00	\$	159,822	\$	273.26	\$	186,637	16.8%
	3/4"	-	\$	351.00	\$	-	\$	411.71	\$	-	17.3%
	1"	27	\$	585.15	\$	15,799	\$	684.97	\$	18,494	17.1%
	1 1/2"	-	\$	1,170.75	\$	-	\$	1,366.29	\$	-	16.7%
	2"	6	\$	1,873.05	\$	11,238	\$	2,186.07	\$	13,116	16.7%
Subtotal SC		98,501			\$	2,013,235			\$	2,351,072	16.8%
<u>Residential Usage</u>											
	ccf										
Monthly - Single Family	0-6 ccf Usage	335,980	\$	4.536	\$	2,397,353	\$	6.146	\$	2,064,933	45.7%
	Over 6 ccf	169,490	\$	4.536		N/A	\$	7.683	\$	1,302,192	
Monthly - Multi Family	All Usage	18,701	\$	4.536		N/A	\$	6.761	\$	126,437	
<u>Commercial Usage</u>											
Monthly	All Usage	196,168	\$	4.536	\$	889,818	\$	5.747	\$	1,127,377	26.7%
<u>Industrial Usage</u>											
Monthly	All Usage	1,584	\$	4.536	\$	7,185	\$	5.393	\$	8,543	18.9%
<u>Public Authority Usage</u>											
Monthly	All Usage	16,933	\$	4.536	\$	76,808	\$	5.805	\$	98,296	28.0%
<u>Seasonal Residential Usage</u>											
Monthly	0-6 ccf Usage	9,698	\$	5.619	\$	104,075.12	\$	8.012	\$	77,700	55.2%
	Over 6 ccf	6,175	\$	5.619		N/A	\$	10.016	\$	61,846	
Monthly - Multi Family	All Usage	2,492	\$	5.619		N/A	\$	8.813	\$	21,962	
<u>Seasonal Non-Residential Usage</u>											
Monthly	All Usage	18,439	\$	5.619	\$	103,609	\$	8.012	\$	147,733	42.6%
Subtotal UC		775,660			\$	3,578,848			\$	5,037,020	40.7%
Total GMS					\$	5,592,083			\$	7,388,093	32.1%
Private Services											
	3"	96	\$	441.12	\$	42,348	\$	450.64	\$	43,261	2.2%
	4"	74	\$	751.68	\$	55,624	\$	716.67	\$	53,034	-4.7%
	6"	137	\$	1,793.28	\$	245,679	\$	1,780.77	\$	243,966	-0.7%
	8"	19	\$	3,188.64	\$	60,584	\$	3,199.59	\$	60,792	0.3%
	10"	-	\$	4,983.72	\$	-	\$	4,973.13	\$	-	-0.2%
	12"	3	\$	7,041.24	\$	21,124	\$	7,101.36	\$	21,304	0.9%
Total Private		329			\$	425,359			\$	422,357	-0.7%
Public Fire Charge		495	\$	1,740.41			\$	1,923.37			
Annual Public Charge By System											
	Hampton	280			\$	475,132			\$	538,544	13.3%
	North Hampton	149			\$	259,321			\$	286,582	10.5%
	Rye Beach	24			\$	41,770			\$	46,161	10.5%
	Jenness Beach	42			\$	73,097			\$	80,782	10.5%
Total Public Fire		495			\$	849,320			\$	952,068	12.1%
Total Fire					\$	1,274,679			\$	1,374,425	7.8%
Total Revenue From Rates					\$	6,866,762			\$	8,762,518	27.6%
WICA Surcharge					\$	515,007				N/A	
Other Revenue						221,871				227,663	2.6%
					\$	7,603,640			\$	8,990,180	18.2%

Exhibit JFG-1  
Schedule 18  
J. F. GUASTELLA

## Aquarion Water Company of New Hampshire

### TYPICAL BILL COMPARISON

		Size	Usage	Present	Proposed	Increase
<b>Residential</b>	Monthly	5/8"				
Sgle-Fam			6	\$ 42.82	\$ 55.10	28.7%
			10	\$ 60.96	\$ 85.83	41%
			25	\$ 129.00	\$ 201.07	56%
Multi-Fam	Monthly	5/8"				
			6	\$ 42.82	\$ 58.79	37%
			10	\$ 60.96	\$ 85.83	41%
			25	\$ 129.00	\$ 187.25	45%
<b>Commercial</b>	Monthly	5/8"				
			25	\$ 129.00	\$ 161.90	26%
			50	\$ 242.40	\$ 305.57	26%
			100	\$ 469.20	\$ 592.92	26%
<b>Industrial</b>	Monthly	2"				
			25	\$ 238.27	\$ 280.57	18%
			50	\$ 351.67	\$ 415.39	18%
			100	\$ 578.47	\$ 685.04	18%
<b>Public Authority</b>	Monthly	2"				
			25	\$ 238.27	\$ 290.87	22%
			50	\$ 351.67	\$ 435.99	24%
			100	\$ 578.47	\$ 726.24	26%
<b>Res. Seasonal</b>	Avg 7 Mo. Seasonal	5/8"				
Sgle-Fam			42	\$ 470.00	\$ 609.76	30%
			70	\$ 627.33	\$ 890.21	42%
			175	\$ 1,217.33	\$ 1,941.89	60%
			350	\$ 2,200.65	\$ 3,694.69	68%
Multi-Fam	Avg 7 Mo. Seasonal	5/8"				
			42	\$ 470.00	\$ 643.41	37%
			70	\$ 627.33	\$ 890.17	42%
			175	\$ 1,217.33	\$ 1,815.54	49%
			350	\$ 2,200.65	\$ 3,357.81	53%
<b>Non-Res. Seasonal</b>	Avg 7 Mo. Seasonal	5/8"				
			42	\$ 470.00	\$ 609.76	30%
			70	\$ 627.33	\$ 834.10	33%
			175	\$ 1,217.33	\$ 1,675.36	38%

350 \$ 2,200.65 \$ 3,077.46 40%

	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	<b>Aquarion Water Company of New Hampshire</b>														
2															
3	BILL ANALYSIS														
4	Company's Existing Rate Per Current Rate Study														
5															
6															
7															
8		Service Charge	Rate	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue	Units	Revenue
9	Monthly	5/8"	\$ 15.60	87,993	\$ 1,372,690.80	4,081	\$ 63,663.60	1	\$ 15.60	200	\$ 3,120.00			92,275	\$ 1,439,490.00
10		3/4"	\$ 23.40	-	\$ -	-	\$ -	-	\$ -	-	\$ -			-	\$ -
11		1"	\$ 39.01	1,927	\$ 75,172.27	1,112	\$ 43,379.12	-	\$ -	60	\$ 2,340.60			3,099	\$ 120,891.99
12		1 1/2"	\$ 78.05	317	\$ 24,741.85	336	\$ 26,224.80	12	\$ 936.60	84	\$ 6,556.20			749	\$ 58,459.45
13		2"	\$ 124.87	312	\$ 38,959.44	1,222	\$ 152,591.14	3	\$ 374.61	125	\$ 15,608.75			1,662	\$ 207,533.94
14															
15	Seasonal	5/8"	\$ 234.00									683	\$ 159,822.00	683	\$ 159,822.00
16		3/4"	\$ 351.00									-	\$ -	-	\$ -
17		1"	\$ 585.15									27	\$ 15,799.05	27	\$ 15,799.05
18		1 1/2"	\$ 1,170.75									-	\$ -	-	\$ -
19		2"	\$ 1,873.05									6	\$ 11,238.30	6	\$ 11,238.30
20	<b>Subtotal SC</b>			90,549	\$ 1,511,564.36	6,751	\$ 285,858.66	16	\$ 1,326.81	469	\$ 27,625.55	716	\$ 186,859.35	98,501	\$ 2,013,234.73
21															
22	<u>Residential Usage</u>	CCF													
23	Monthly	All Usage	\$ 4.536	528,517.0	\$ 2,397,353.11									528,517	\$ 2,397,353.11
24															
25	<u>Commercial Usage</u>													-	\$ -
26	Monthly	All Usage	\$ 4.536			196,168	\$ 889,818.05							196,168	\$ 889,818.05
27	<u>Industrial Usage</u>													-	\$ -
28	Monthly	All Usage	\$ 4.536					1,584.0	\$ 7,185.02					1,584	\$ 7,185.02
29	<u>Public Authority Usage</u>													-	\$ -
30	Monthly	All Usage	\$ 4.536							16,933.0	\$ 76,808.09			16,933	\$ 76,808.09
31	<u>Seasonal</u>													-	\$ -
32	Monthly	All Usage	\$ 5.619									36,961.0	\$ 207,683.86	36,961	\$ 207,683.86
33	<b>Subtotal Usage</b>			528,517.0	\$ 2,397,353.11	196,168.0	\$ 889,818.05	1,584.0	\$ 7,185.02	16,933.0	\$ 76,808.09	36,961.0	\$ 207,683.86	780,163.0	\$ 3,578,848.13
34															
35		<b>GMS Total</b>			\$ 3,908,917.47		\$ 1,175,676.71		\$ 8,511.83		\$ 104,433.64		\$ 394,543.21		\$ 5,592,082.86
36															
37	Public Fire	Annual Rate	Hydrants												Revenue
38	Hampton	\$ 1,740.41	273												\$ 475,131.93
39	North Hampton	\$ 1,740.41	149												\$ 259,321.09
40	Rye Beach	\$ 1,740.41	24												\$ 41,769.84
41	Jenness Beach	\$ 1,740.41	42												\$ 73,097.22
42															\$ 849,320.08
43	Private Fire														
44		3"	\$ 441.12	96											\$ 42,347.52
45		4"	\$ 751.68	74											\$ 55,624.32
46		6"	\$ 1,793.28	137											\$ 245,679.36
47		8"	\$ 3,188.64	19											\$ 60,584.16
48		10"	\$ 4,983.72	0											\$ -
49		12"	\$ 7,041.24	3											\$ 21,123.72
50															\$ 425,359.08
51															
52		<b>Fire Service</b>													\$ 1,274,679.16
53															
54		<b>WICA Surcharge</b>	7.50%												\$ 515,007.15
55															
56															
57															
58														Late Payments	\$ 30,972.00
59														Turn on Charges	\$ 33,305.00
60														Antenna Leases	\$ 163,510.00
61														Other	\$ (5,916.00)
62														Miscellaneous Revenues	\$ 221,871.00
63	<b>TOTAL OPERATING REVENUES</b>														\$ 7,603,640.17
64															