

THE STATE OF NEW HAMPSHIRE

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PUBLIC UTILITIES COMMISSION

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NHPUC 15DEC17PM2:52

December 15, 2017

Debra A. Howland
Executive Director
New Hampshire Public Utilities Commission
21 S. Fruit St., Suite 10
Concord, New Hampshire 03301

Re: DW 17-154, Aquarion Water Company of New Hampshire, Inc.
Water Infrastructure and Conservation Adjustment (WICA)
2018-20 Capital Projects and 2018 WICA Surcharge
Staff Recommendation for Approval

Dear Ms. Howland:

On October 16, 2017, Aquarion Water Company of New Hampshire, Inc. (Aquarion) filed a petition for approval of its 2018 WICA surcharge and its 2018-20 capital projects under its WICA tariff provisions. Accompanying the petition was the testimony of Carl McMorran, Operations Manager, and Troy M. Dixon, Director of Rates and Regulation of Aquarion Water Company of Connecticut, Inc., an affiliate of Aquarion. Aquarion seeks approval of a 2018 WICA surcharge of 7.08%, based on its completed 2013, 2014, 2015, 2016 and 2017 WICA capital projects, said surcharge to be effective for service rendered on and after January 1, 2018. Aquarion also requests approval of its planned 2018 capital expenditures, estimated to cost approximately \$880,000. Aquarion further seeks preliminary approval of its planned 2019 projects with a budget set at approximately \$864,000. Aquarion also submitted its preliminary budget for its 2020 WICA projects, for informational purposes. The specific water main replacement projects for these three years, as well as the other WICA capital investments, are all detailed in Attachment CM-1 to Mr. McMorran's testimony¹.

¹ On December 13, 2017 Aquarion submitted a letter in this docket, advising that it was proposing a change to its 2018 project list. The Hampton River crossing project is to be postponed and replaced by a portion of the Mill Road main replacement project scheduled for 2019. Similar cost estimates are to be maintained. Aquarion's letter is included herewith as Attachment 3.

Upon receipt of Aquarion's filing and in accordance with the procedure approved by the Commission in Docket No. DW 08-098, Staff contacted the Office of the Consumer Advocate (OCA), the North Hampton Water Commission, and the Towns of Hampton, North Hampton and Rye to establish a timeframe to review the filing and submit recommendations to the Commission. Staff and the Town of Hampton conducted discovery, and Staff, the North Hampton Water Commission, the Town of Hampton and Aquarion met in a technical session on December 5, 2017 to review and discuss the filing and Aquarion's recent discovery responses².

On December 13, 2017, Bridget Nelson, an Examiner for the Commission's Audit Division, prepared a memorandum summarizing her review of Aquarion's proposed 2018 WICA surcharge. Ms. Nelson reviewed the calculation of the proposed surcharge of 7.08%, which is based on total completed WICA investment of \$3,801,069 for the five program years 2013-17. Total 2017 spending was \$813,883, and was for a single main replacement along Lafayette Road in the Town of Hampton. Ms. Nelson also attached her Audit Report relating to documentation of that completed 2017 WICA project. A single minor discrepancy noted by Ms. Nelson did not change the requested WICA surcharge, and she supports the company's request for a 2018 surcharge of 7.08%³. Ms. Nelson's memorandum and Audit Report are attached to this letter as Attachment 1.

On December 14, 2017, Staff received a memorandum from Douglas W. Brogan, a consulting engineer for Staff. Mr. Brogan provides the details of his review of the completed 2017 WICA project. He further comments on Aquarion's proposed WICA projects for 2018 and 2019. Mr. Brogan concludes that the company's 2017 WICA capital investment on Lafayette Road in Hampton is used and useful and the costs, although higher than originally budgeted, were prudently incurred. He further recommends approval of Aquarion's WICA budgets for 2018 and 2019, and comments on Aquarion's request to substitute the Mill Road main replacement project for the Hampton River Crossing. Mr. Brogan's memorandum is attached to this letter as Attachment 2.

At the technical session on December 5, Staff and the parties discussed certain calculations in the schedules attached to Mr. Dixon's testimony as Attachment TD-3. These schedules represent the impact on the WICA surcharge that would result from the proposed WICA spending in future years. Staff and the parties agreed certain small revisions were necessary relating to accumulated depreciation. Aquarion submitted Revised Attachment TD-3, included herewith as Attachment 5, which also incorporates an additional minor correction related to property tax recovery. These revisions result in a total surcharge estimate for 2019 of 8.69%, as compared to 8.71% in the original filing, when including the proposed 2018 WICA spending to that of the prior program years.

² Responses to Staff's discovery are attached herewith as Attachment 6. Aquarion also responded to discovery propounded by the Town of Hampton. Hampton is providing its own recommendation in this matter.

³ Aquarion provided replacement pages reflecting correction of the error. These are Revised Attachment TD-1 from Mr. Dixon's testimony, and are attached to this letter as Attachment 4.

Since Aquarion's WICA tariff provisions limit the WICA surcharge to a maximum of 7.5% between rate cases, however, these forecasts are for illustrative purposes only.

Based on its review, Staff recommends that the Commission approve the requested 2018 WICA surcharge of 7.08% effective for service on and after January 1, 2018, consistent with Aquarion's WICA tariff provisions. Staff further recommends the Commission approve Aquarion's 2018 WICA project list as amended by its December 13 letter, and provide its preliminary approval of the 2019 projects.

If there is anything further I can provide, please let me know.

Sincerely,



Mark A. Naylor
Director, Gas & Water Division

Attachments
cc: Service List

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: December 13, 2017
AT (OFFICE): NHPUC

FROM: Bridget Nelson, Examiner

SUBJECT: DW 17-154, Aquarion Water Company of New Hampshire, Inc.
2018 Water Infrastructure and Conservation Adjustment Filing

TO: Mark A. Naylor
Director, Gas-Water Division

This memo is being submitted at your request to summarize my review of Docket DW 17-154, the petition of Aquarion Water Company of New Hampshire, Inc. (Aquarion) relative to its 2018 Water Infrastructure and Conservation Adjustment (WICA) filing. Aquarion's petition, submitted in accordance with its WICA tariff provisions, requested approval of a WICA surcharge of 7.08% for effect as of January 1, 2018, on a service-rendered basis, as well as final approval of proposed projects for 2018, and preliminary approval of proposed projects for 2019. Aquarion also provided a preliminary proposal of 2020 projects for information purposes only. Aquarion's petition was accompanied by the direct testimonies of Carl McMorran, Operations Manager for Aquarion, and Troy M. Dixon, Director of Rates and Regulation of Aquarion Water Company of Connecticut, Inc. After reviewing Aquarion's filing in this case and other associated information, I am recommending approval of a WICA surcharge of 7.08% for effect as of January 1, 2018. An explanation for the basis of my recommendation follows.

My review focused primarily on Aquarion's calculation of the proposed WICA surcharge for 2018 as described in Mr. Dixon's testimony. I reviewed the calculation of the 7.08% WICA surcharge percentage as presented on Attachment TD-1 of Mr. Dixon's testimony and noticed a slight discrepancy. Page 3 of 3, Line 31, Column 6a – Total Capital Costs and Column 6b – Eligible Capital Costs shows a total of \$555,641. Per revised Attachment TD-1 page 3 of 3 from the prior Docket, DW 16-828, the total project costs were \$555,541. This slight discrepancy results in the total projects approved in DW 16-828, page 3 of 3, line 39, to be overstated by \$100. This \$100 overstatement is carried over to Attachment TD-1 page 1 of 3, line 2. The Total Investment through 9/30/2017 should be stated as \$3,801,069 not \$3,801,169. I made the correction and followed it through the calculation of the surcharge percentage and it had no effect on the 7.08% requested.

Aquarion's filing proposed a total of \$813,883 in 2017 project costs for one main replacement project on Lafayette Road from High Street to Winnacunnet Road. I reviewed copies of invoices and other schedules in support of this amount which represents the eligible WICA investment placed in service by Aquarion during the 2017 program year (10/1/16-9/30/17). The results of this review can be found in the Staff Audit Report dated November 16, 2017 attached to this recommendation.

In conclusion, I recommend approval of the proposed WICA surcharge for 2018 of 7.08%. This amount has been shown to be adequately supported and calculated appropriately. I believe that

the proposed calculation of the 2018 surcharge will result in just and reasonable rates for both Aquarion and its customers.

STATE OF NEW HAMPSHIRE
Inter-Department Communication

DATE: November 13, 2017
AT (OFFICE): NHPUC

FROM: Bridget Nelson, Examiner

SUBJECT: Aquarion Water Company of New Hampshire, Inc.
DW 17-154 Water Infrastructure and Conservation Adjustment Mechanism
Final Audit Report

TO: Mark Naylor, Director Gas-Water Division, NHPUC
Jayson Laflamme, Utility Analyst IV
Robyn Descoteau, Utility Analyst III

Introduction

Aquarion Water Company of New Hampshire, Inc. (Aquarion) has been participating in the Water Infrastructure and Conservation Adjustment (WICA) since the Commission approved it as a pilot program in Order 25,019 issued September 25, 2009. The WICA program was extended and modified in Order 25,539 issued June 28, 2013.

In Docket DW 16-828, Aquarion petitioned for approval of its proposed 2017 projects to be eligible for recovery through the WICA surcharge mechanism. Order 25,977, issued January 13, 2017 granted the approval for the 2017 project costs estimated to be \$360,000 to \$523,500. On June 6, 2017 Aquarion provided a memorandum to the PUC stating that the approved project was being expended and the costs were now expected to be \$854,000. The actual costs totaled \$813,883.

On October 16, 2017, Aquarion filed the 2017 costs to be considered for recovery through the WICA surcharge to be implemented January 1, 2018. The filing included costs incurred from October 1, 2016 through September 30, 2017 and was docketed DW 17-154.

Projects Placed in Service through September 30, 2017

On October 14, 2016, Aquarion petitioned for approval of one proposed project, Lafayette Road, that was completed and deemed used and useful prior to September 30, 2017. The total costs that Aquarion is seeking through the WICA mechanism are \$813,883.

Lafayette Road – High Street to Winnacunnet Road

The 2017 project costs in DW 16-828, schedule CM-1, were estimated to be \$360,000 to \$523,500 for the Lafayette Road project.

On June 6, 2017 in Docket DW 16-828, Aquarion informed the PUC that the Lafayette Road project was going to be expanded from the approved project filing. The approved project estimated costs, which were based on historical averages, were between \$360,000 and \$520,000. After two rounds of competitive bidding, a total of six bids were received with the lowest being \$854,000, which reflects the current market conditions. The Company proceeded with the project, even with the higher costs, because the unlined cast iron main has hydraulic deficiencies, is 67 years old and interferes with the Town of Hampton's sewer replacement project, as the water main is too close to the sewer main.

The E-22, which was updated on May 26, 2017, provided a project start date of May, 2017 and a projected finish date of September, 2017. The estimated cost of the project shown on the E-22 was listed at \$854,000. The actual costs for the Lafayette Road project totaled \$813,883.

The project replaced approximately 1,515 feet of existing 8-inch main with new 12-inch Ductile Iron main, including new customer side service connections.

Audit reviewed all invoices, labor expenses and overhead that sum to the \$813,883 total.

Six invoices totaling \$71,640 were reviewed from the Company's consulting firm, Tighe & Bond. These invoices were for professional services and referenced the Lafayette Road project. Supporting documentation showed the breakdown of the individual charges.

Five invoices, in the amount of \$560,320, were reviewed from the construction company Jamco Excavators. Audit recalculated the completed and stored amount, retainage amount, and the payment due noted on the invoices. Supporting documentation for the total charges was provided.

One invoice paid to the Town of Hampton in the amount of \$21,957 was reviewed. The invoice was for the permanent paving contribution of Lafayette Road. This amount was per an agreement for the paving and sidewalk repair.

\$105,647 of invoices from HD Supply Waterworks were reviewed by Audit. Fourteen invoices were verified for the Lafayette Road Purchase Order number, dates, and amounts.

Two invoices, totaling \$212, were reviewed from Core & Main. Dates, amounts and customer POs were verified to the Lafayette Road project.

One invoice for Ferguson Waterworks was reviewed by Audit. The invoice was in the amount of \$485 for project supplies and materials.

\$490 in materials was used from Aquarion's inventory. Supporting documentation was provided that showed the posting date of 7/28/2017, the material number and description of the item. The support also shows that the materials used were in fact for the Lafayette Road project.

Labor in the amount of \$22,019 was also reviewed by Audit. Supporting documentation shows the employee's name, the posting date and the amount of labor charged to the project. The support also shows that the labor is for the Lafayette Road project.

Audit verified the total overhead of \$31,113 to the rates provided by Aquarion. An overhead calculation spreadsheet was provided in which Audit verified the calculations and amount charged to the project.

No exceptions were noted with regards to material, labor and overhead costs.

Hydrants, Services and Valve Replacements

Per Commission Order 25,539, dated June 28, 2013 "The first \$50,000 in costs related to the emergency/reactive replacement of services, valves, and hydrants in a given year's WICA filing shall not be eligible for recovery through the WICA surcharge".

During the period of October 1, 2016 through September 30, 2017, the Company incurred \$30,578 in service line replacement costs and \$160 in valve replacement costs. The total of \$30,738 is less than the \$50,000 threshold and therefore has not been included in the filing.

Bid Summary

The Company's consulting firm, Tighe & Bond provided a design budget for each WICA project which specified the scope of the work to be performed along with bidding support. Their support included the preparation of a construction budget, bid assistance, answering requests for information (RFI's) and attending pre-bid conferences.

Tighe & Bond performed two rounds of bidding for the Lafayette project. The Procurement Department from Aquarion's Connecticut affiliate was involved with reviewing the bidding information during both rounds of the bid process.

Bids were received from six separate contractors with the lowest bidder, Jamco Excavators, being awarded the project.

Continuing Property Records (CPRs)

Audit requested CPRs for the Lafayette Road project that was completed in 2017. Aquarion provided several schedules with the filing and the Asset Detail Listing which fulfills the five requirements for CPRs.

1. The date on which the job was complete – The schedule notes a “Completion Date” which is the date the asset was deemed used and useful and placed into service. **Attachment CM-1 and Attachment TD-1**
2. The number of units added to this account and the cost – The spreadsheet notes the plant in service account to which the asset was booked; a brief description, including how many feet of main; and the acquisition costs. **Attachment CM-1**
3. The number of units retired and cost – The Company states the number of feet replaced is the number of feet retired. **Attachment CM-1 and Attachment TD-1**
4. The net amount of units and the cost. **Attachment CM-1 and Attachment TD-1**
5. The Remarks or Location column to be used for clarification or to list the location of the property – The Asset description provides a location along with a location number code and the town. **Attachment CM-1 and Attachment TD-1**

Audit verified the “Eligible Projects Placed in Service” attachments to the project costs with no exceptions noted.

Retirements

Filing schedule Attachment TD-1, page 3 of 3, notes the Lafayette Road project had \$73,367 of eligible asset retirements.

Aquarion provided a spreadsheet showing the asset number that was retired, the amount retired and if it was a full or partial retirement. No exceptions were noted.

General Ledger

Audit requested a copy of the general ledger for the Lafayette project. The GL shows \$1,762 being charged to, 408 - Payroll Taxes, \$37,177 being charged to 920 – Administrative & General Salaries, and \$14,193 going to 926 – Employee Pensions & Benefits. All contractor charges in the amount of \$760,751 were held in a 500 account.

The 500 account is a sub-account of the 107 - Work in Process account. Because Aquarion’s largest service territory is Connecticut, they maintain their SAP system using the Connecticut chart of accounts. When providing annual reports for NH, they convert the account numbers to follow the NH PUC Chart of Accounts. Aquarion provided a conversion chart to Audit.

When a project is initially set up in the system, the Utility Plant in Service account is identified. All contractor charges for that particular project are placed in the 500 account until the project is complete. Once Aquarion’s personnel note in the system that the project is complete, the system automatically moves the total of all of the costs to the 101 account specified during set up.

The general ledger provided to Audit shows the total costs for the year for each of the 408, 500, 920 and 926 accounts. Audit was able to tie those costs back to Asset Detail Listing and Attachment CM-1, which identifies the plant in service account of 331 - Transmission and Distribution Mains as the account the project costs were charged.

Summary

Audit reviewed the used and useful WICA projects through September 30, 2017. Support for all the costs was provided in the form of the general ledger accounts, work orders and invoices. Audit was able to verify the \$813,883 in expenses for the Lafayette Road project without exception.

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: December 14, 2017

AT (OFFICE): NHPUC

FROM: Douglas W. Brogan

SUBJECT: DW 17-154, Aquarion Water Company of New Hampshire
2018 WICA Filing

TO: Mark A. Naylor
Director, Gas & Water Division

This memo is being submitted at your request to provide observations and recommendations in docket DW 17-154, the 2018 Water Infrastructure and Conservation Adjustment (WICA) filing of Aquarion Water Company of New Hampshire (Aquarion or company). I have filed recommendations as a consultant to the Commission in the company's four most recent WICA cases, DW 13-314, DW 14-300, DW 15-476, and DW 16-828. In the current docket the company is seeking approval of a WICA surcharge for one project completed in 2017, approval of projects proposed for 2018, and preliminary approval of 2019 projects. My review is limited primarily to the engineering and operational aspects of the current filing and is based on review of the filing itself and case discovery.

Project Completed in 2017 (for 2018 WICA Surcharge)

Water main replacement projects were proposed and approved in DW 16-828 for construction in 2017 on Lafayette Road between High Street and Winnacunnet Road in Hampton, and on the short associated side street of Swain Court. Total cost estimates for the projects ranged from a low of \$360,000 to a high of \$520,000. The projects were timed to benefit from coordination with an anticipated town sewer replacement in the same area. The company filed a letter with the Commission June 6, 2017 stating that the lowest bid, even after two bidding cycles, increased the estimate to \$854,000. The company decided to proceed with the projects nonetheless.

Reasons for the higher cost included the fact that initial estimates were based on historic average pricing, without any attempt to adjust for current market conditions; the requirement to work in the confined and heavily traveled Lafayette Road (Route 1) roadway; and the presence of drainage pipes, sewer laterals and other utilities there. The company did, however, make efforts to minimize the cost. These included eliminating the Swain Court replacement since it was not a part of the town's sewer project; and using ductile iron main instead of HDPE, as installation of the latter would have required additional time and effort.

Reasons for continuing with the project in spite of the higher cost included the hydraulic improvements that would result from a new, larger main; the fact the existing mains were 67 years old, unlined cast iron, and served as an important transmission line to key customers; and significant cost and other benefits from doing the replacements in conjunction with the town sewer project. The project was ultimately completed at a cost of \$813,883¹. As noted in my memo from last year, the WICA spending as proposed for 2017 had been below average for Aquarion. The higher actual cost is more in line with recent total annual WICA expenditures, as seen below:

2013	\$734,050
2014	\$596,646
2015	\$741,465
2016	\$915,024.

(Sources of information for the above discussion of 2017 projects include the referenced June 6, 2017 letter, McMorran testimony pp. 5-6, the response to Staff 1-1, and material from previous filings.)

Future Projects

Future year projects as initially proposed consisted of dual Hampton River crossing replacements as well as other water main replacements on Sixth, Seventh, Ninth and Tenth Streets in Hampton (2018); on Mill Road from Atlantic Avenue to Pine Road in North Hampton (2019); and on Ocean Boulevard from Dumas Avenue to Highland Avenue in Hampton (2020). These projects are described in McMorran testimony pages 7-9 and associated attachments (see also responses to Staff 1-2 and 1-3). Reasons for their selection are project-specific but include: hydraulic deficiencies; the existence of old galvanized, asbestos-cement, or unlined cast iron mains; higher break frequencies; and anticipated paving by NHDOT. The company continues to use a detailed replacement prioritization rating system, engineering studies, a system hydraulic model and staff expertise for project selection.

It is noteworthy that even the 2018 projects alone, if included in their entirety in next year's WICA filing, could result in exceeding the overall tariffed 7.5% rate cap between rate cases. When questioned on this issue, the company affirmed only that it "will seek WICA surcharges [next year] consistent with its approved tariff." (response to Hampton 1-9; see also Dixon testimony p. 7, lines 10-15 and responses to Hampton 1-10 through 1-12).

On today's date Aquarion submitted an update proposing to delay the 2018 Hampton River crossings to a future year due to unforeseen planning complications, and to bring a roughly equivalent portion of the 2019 Mill Road replacement forward as a substitute (by adjusting the length of the latter to be completed in 2018). This leaves a relatively low balance (by Aquarion WICA standards - approximately \$221,000 to \$317,000) of the Mill Road replacement as the only project to be preliminarily approved for 2019. However, it could be that the river crossings will be back in play by that time. The four numbered streets would remain on the list for 2018.

¹ This amount was the sole WICA expenditure for 2017.

Conclusion

In light of the above comments and the information provided in the case, I believe the 2017 investments are used and useful and were prudently incurred, and recommend approval. I also recommend approval of the 2018 and 2019 projects as currently proposed by Aquarion.

I trust these comments are responsive to your request. Please let me know if you need anything further in this regard.



December 13, 2017

Via Federal Express

Debra A. Howland
Executive Director and Secretary
New Hampshire Public Utilities Commission
21 S. Fruit Street, Suite 10
Concord, NH 03301

RE: Docket No. DW 17-154, Aquarion Water Company of New Hampshire, Inc.
2018 Water Infrastructure and Conservation Adjustment (WICA) Project Update

Dear Ms. Howland:

This letter is to inform the Public Utilities Commission, Office of the Consumer Advocate, and the Towns of Hampton, North Hampton, and Rye that a different main replacement project will be performed than proposed in the 2017 WICA project filing.

Update to WICA Project Schedule for 2018

Aquarion Water Company of New Hampshire's ("Aquarion" or "Company") ordinarily changes Year 1 projects pursuant to its tariff, which states:

"Project Changes: If, after the Company has received Commission approval for Year 1 projects, because of changed circumstances or significant new information the Company plans to undertake projects in Year 1 that were not included on the list of approved WICA projects for that year or it has decided not to proceed with one or more projects that were included on the Commission-approved list, it shall promptly notify the Commission and all parties to the proceeding in which the list of WICA projects was approved that the Company plans to add to or delete projects and the reason for the proposed changes."

Since the filing of its Year 1 projects in Docket No. DW 17-154, however, events have developed which warrant the Company changing its proposed projects. Specifically, the Company had proposed replacement of the mains on Sixth, Seventh, Ninth and Tenth Streets; and the Hampton River crossing (parallel to Ocean Boulevard); all in Hampton. See Attachment CM-1, page 3 of 9. The numbered street will proceed as proposed, but the Hampton River crossing will be postponed.

The Hampton River crossing project proposed to replace 3,000 feet of plastic pipe at an estimated cost between \$643,000 and \$926,000. See Attachment CM-1, page 6 of 9. However, as company staff began to work on the design aspects of this project, they identified several problems that make the project nonviable for 2018. Mainly, it cannot be pipe bursted across the river as originally planned, and there are other siting issues that will take more time and effort to resolve.



Stewards of the Environment

Therefore, we are postponing the Hampton River crossing to future years, and moving up a portion of the Mill Road main replacement originally proposed for 2019. The Company will maintain similar cost estimates for Mill Road as proposed for the Hampton River project by adjusting the length of pipe being replaced.

Please let me know if you have any questions. I can be reached at (203) 337-5990.

Sincerely,

A handwritten signature in cursive script that reads "Joshua Unger".

Joshua Unger
Senior Regulatory Compliance Specialist

CC: DW 17-154 Docket-Related Service List

Aquarion Water Company of New Hampshire
2018 Annual WICA Surcharge Filing

**WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT
 CALCULATION OF SURCHARGE**

Line					<u>Schedule Ref.</u>	
1						
2	Total Investment through 09/30/2017				TD-1, Pg 3 Col 6b Ln 45	\$ 3,801,069
3						
4	Accumulated Depreciation				TD-1, Pg 3 Col 8a Ln 45	(109,259)
5						
6	Net Investment				Ln 2 + Ln 4	<u>\$ 3,691,811</u>
7						
8	Allowed Return on Rate Base				TD-1, Pg 2 Col 10	<u>7.49%</u>
9						
10	Allowed Return on Investment				Ln 6 x Ln 8	\$ 276,517
11						
12	Income Tax on Equity Component					
13						
14		(a)	(b)	(c)	(d)	
15		Weighted	Tax	Pre tax	Tax Gross Up	
16		Cost	Multiplier	Cost	Col (c) - Col (a)	
17						
18	Debt	3.58%	1.00	3.58%	0.00%	
19	Equity	<u>3.91%</u>	1.68	<u>6.57%</u>	<u>2.66%</u>	
20						
21		7.49%		10.15%	2.66%	
22						
23	Total Eligible Investment (Line 6 above)				\$	3,691,811
24						
25						
26	Income Tax Expense				Ln 21 Col D X Ln 23	98,202
27						
28	Depreciation Expense				TD-1, Pg 3 Col 8 Ln 45	44,921
29						
30	Property Tax Expense				TD-1, Pg 3 Col 10 Ln 45	71,585
31						
32	Adjustment: Annual Revenues Allowed				Lines 10 + 26 + 28 + 30	<u>\$ 491,225</u>
33						
34						
35	Base Revenues on which Adjustment will be applied					
36	Revenues allowed DW 12-085				\$	7,129,043
37	Misc. Charges not subject to WICA					<u>(189,059)</u>
38					\$	<u>6,939,984</u>
39						
40	Surcharge Percent (Line 32 divided by Line 38)					7.08%

Aquarion Water Company of New Hampshire
 2018 Annual WICA Surcharge Filing

WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT
 ELIGIBLE PROJECTS PLACED IN SERVICE

Line	Description of Project	Street	Town	1 PUC Acct	2 Depr Rate	3 Type of Project**	4 Date in Service	5 Date of 1st Filing	6a Total Capital Costs	6b Eligible Capital Costs	7a Total Retirements	7b Eligible Retirements	8 = (6b - 7b) x 2 Depreciation Expense	8a = 8 x 50% Accumulated Depreciation	9 Mil Rates Town State Total	10 = (((6b-8a)/1000) x 12) Prop. Tax Expense
1																
2	Project Surcharge Approved in DW 13-314															
3																
4	Production Meters		Rye	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 3,432	\$ 3,432	\$ 3,033	\$ 3,033	\$ 18	\$ 79	8.19	6.60 14.79 \$ 50
5	Production Meters		North Hampton	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 4,511	\$ 4,511	\$ 2,331	\$ 2,331	\$ 96	\$ 432	15.28	6.60 21.88 \$ 89
6	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 8,522	\$ 8,522	\$ -	\$ -	\$ 375	\$ 1,687	13.92	6.60 20.52 \$ 140
7	Church Street-Highland Avenue to Williams Street		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 133,335	\$ 133,335	\$ 6,243	\$ 6,243	\$ 1,525	\$ 6,883	13.92	6.60 20.52 \$ 2,595
8	Auburn Avenue		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 206,750	\$ 206,750	\$ 10,346	\$ 10,346	\$ 2,357	\$ 10,606	13.92	6.60 20.52 \$ 4,025
9	Auburn Avenue Extension		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 85,554	\$ 85,554	\$ 359	\$ 359	\$ 1,022	\$ 4,601	13.92	6.60 20.52 \$ 1,661
10	Perkins Avenue		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 264,216	\$ 264,216	\$ 1,760	\$ 1,760	\$ 3,149	\$ 14,173	13.92	6.60 20.52 \$ 5,131
11	Hydrants*		Hampton	348	2.40%	Hydrants	9/30/2013	10/31/2013	\$ 22,839	\$ 8,147	\$ 2,498	\$ 891	\$ 174	\$ 784	13.92	6.60 20.52 \$ 151
12	Services*		Hampton	345	1.85%	Services	9/30/2013	10/31/2013	\$ 33,941	\$ 12,108	\$ 1,994	\$ 711	\$ 211	\$ 949	13.92	6.60 20.52 \$ 229
13	Services*		Rye	345	1.85%	Services	9/30/2013	10/31/2013	\$ 6,464	\$ 2,306	\$ 230	\$ 82	\$ 41	\$ 185	8.19	6.60 14.79 \$ 31
14	Valves*		Hampton	349	5.00%	Other T&D Plant	9/30/2013	10/31/2013	\$ 6,351	\$ 2,265	\$ -	\$ -	\$ 113	\$ 510	13.92	6.60 20.52 \$ 36
15	Valves*		North Hampton	349	5.00%	Other T&D Plant	9/30/2013	10/31/2013	\$ 8,133	\$ 2,901	\$ -	\$ -	\$ 145	\$ 653	15.28	6.60 21.88 \$ 49
16									\$ 784,050	\$ 734,050	\$ 28,794	\$ 25,757	\$ 9,227	\$ 41,520		\$ 14,188
17	Project Surcharge Approved in DW 14-300															
18																
19	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2014	10/31/2014	\$ 3,044	\$ 3,044	\$ 264	\$ 264	\$ 122	\$ 428	13.92	6.60 20.52 \$ 54
20	Well 9 Transmission Main		Hampton	343	1.20%	Main Replacement	9/30/2014	10/31/2014	\$ 57,506	\$ 57,506	\$ 3,160	\$ 3,160	\$ 652	\$ 2,283	13.92	6.60 20.52 \$ 1,133
21	Ocean Boulevard- Dumas Ave to Winnacunnet Rd		Hampton	343	1.20%	Main Replacement	9/30/2014	10/31/2014	\$ 536,096	\$ 536,096	\$ 6,801	\$ 6,801	\$ 6,352	\$ 22,230	13.92	6.60 20.52 \$ 10,545
22									\$ 596,646	\$ 596,646	\$ 10,225	\$ 10,225	\$ 7,126	\$ 24,941		\$ 11,731
23	Project Surcharge Approved in DW 15-476															
24																
25	Great Boars Head - Cliff Circle to Ocean Blvd		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$ 169,733	\$ 169,733	\$ 551	\$ 551	\$ 2,030	\$ 5,075	13.92	6.60 20.52 \$ 3,379
26	Kings Hwy - 11th, 13th, 14th & 15th St		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$ 385,374	\$ 385,374	\$ 2,324	\$ 2,324	\$ 4,597	\$ 11,491	13.92	6.60 20.52 \$ 7,672
27	Ross Avenue		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$ 186,358	\$ 186,358	\$ 2,637	\$ 2,637	\$ 2,205	\$ 5,512	13.92	6.60 20.52 \$ 3,711
28									\$ 741,465	\$ 741,465	\$ 5,512	\$ 5,512	\$ 8,831	\$ 22,079		\$ 14,762
29	Project Surcharge Approved in DW 16-828															
30																
31	Lafayette Road - Park Ave to Winnacunnet Rd		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$ 555,541	\$ 555,541	\$ 7,561	\$ 7,561	\$ 6,576	\$ 9,864	13.92	6.60 20.52 \$ 11,197
32	Manchester St. off Ashworth Ave		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$ 187,725	\$ 187,725	\$ 1,810	\$ 1,810	\$ 2,231	\$ 3,346	13.92	6.60 20.52 \$ 3,783
33	Sunsurf Ave: off Cliff Ave		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$ 135,632	\$ 135,632	\$ 739	\$ 739	\$ 1,619	\$ 2,428	13.92	6.60 20.52 \$ 2,733
34	Hydrants*		Hampton	348	2.40%	Hydrants	9/30/2016	10/31/2016	\$ 5,486	\$ 2,301	\$ 708	\$ 297	\$ 48	\$ 72	13.92	6.60 20.52 \$ 46
35	Hydrants*		North Hampton	348	2.40%	Hydrants	9/30/2016	10/31/2016	\$ 3,140	\$ 1,317	\$ 1,036	\$ 435	\$ 21	\$ 32	15.28	6.60 21.88 \$ 28
36	Services*		Hampton	345	1.85%	Services	9/30/2016	10/31/2016	\$ 71,364	\$ 29,935	\$ 31,998	\$ 13,422	\$ 305	\$ 458	13.92	6.60 20.52 \$ 605
37	Services*		North Hampton	345	1.85%	Services	9/30/2016	10/31/2016	\$ 4,770	\$ 2,001	\$ 1,997	\$ 838	\$ 22	\$ 32	15.28	6.60 21.88 \$ 43
38	Valves*		Hampton	349	5.00%	Other T&D Plant	9/30/2016	10/31/2016	\$ 1,367	\$ 573	\$ -	\$ -	\$ 29	\$ 43	13.92	6.60 20.52 \$ 11
39									\$ 965,025	\$ 915,025	\$ 45,850	\$ 25,102	\$ 10,850	\$ 16,276		\$ 18,447
40	Project Surcharge Proposed Herein															
41																
42	Lafayette Road - Park Ave to Winnacunnet Rd		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$ 813,883	\$ 813,883	\$ 73,367	\$ 73,367	\$ 8,886	\$ 4,443	13.92	6.60 20.52 \$ 12,457
43									\$ 813,883	\$ 813,883	\$ 73,367	\$ 73,367	\$ 8,886	\$ 4,443		\$ 12,457
44																
45									\$ 3,901,069	\$ 3,901,069	\$ 163,748	\$ 139,963	\$ 44,921	\$ 109,259		\$ 71,585
46																
47	*Total capital costs are reduced by \$50,000 proportionately per Order No. 25,539. Retirements are also proportionately reduced.															
48	** Type of Project (designations will be given for various types of projects)															

to TD-1, Pg 1, Ln 2 to TD-1, Pg 1, Ln 28 to TD-1, Pg 1, Ln 4 to TD-1, Pg 1, Ln 30

Aquarion Water Company of New Hampshire
2019 Annual WICA Surcharge Filing (2017 Estimate)

**WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT
 CALCULATION OF SURCHARGE**

Line		<u>Schedule Ref.</u>	
1			
2	Total Investment through 09/30/2018	2018 3 Col 6b Ln 43	\$ 4,684,669
3			
4	Accumulated Depreciation	2018 3 Col 8a Ln 43	(159,461)
5			
6	Net Investment	Ln 2 + Ln 4	<u>\$ 4,525,209</u>
7			
8	Allowed Return on Rate Base	2018 2 Col 10	<u>7.49%</u>
9			
10	Allowed Return on Investment	Ln 6 x Ln 8	\$ 338,938
11			
12	Income Tax on Equity Component		
13			
14			
15		(a)	(b)
16		Weighted	Tax
17		Cost	Multiplier
18	Debt	3.58%	1.00
19	Equity	<u>3.91%</u>	<u>1.68</u>
20			
21			
22		(c)	(d)
23		Pre tax	Tax Gross Up
24		Cost	Col (c) - Col (a)
25			
26		3.58%	0.00%
27		<u>6.57%</u>	<u>2.66%</u>
28			
29		7.49%	10.15%
30			2.66%
31	Total Eligible Investment (Line 6 above)		\$ 4,525,209
32			
33			
34			
35	Income Tax Expense	Ln 21 Col D X Ln 23	120,371
36			
37	Depreciation Expense	2018 3 Col 8 Ln 43	55,479
38			
39	Property Tax Expense	2018 3 Col 10 Ln 43	88,334
40			
41	Adjustment: Annual Revenues Allowed	Lines 10 + 26 + 28 + 30	<u>\$ 603,122</u>
42			
43			
44	Base Revenues on which Adjustment will be applied		
45	Revenues allowed DW 12-085		\$ 7,129,043
46	Misc. Charges not subject to WICA		(189,059)
47			<u>\$ 6,939,984</u>
48			
49			
50	Surcharge Percent (Line 32 divided by Line 38)		8.69%

Aquarion Water Company of New Hampshire
 2019 Annual WICA Surcharge Filing (2017 Estimate)

WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT
 ELIGIBLE PROJECTS PLACED IN SERVICE

Line	Description of Project	Street	Town	1 PUC Acct	2 Depr Rate	3 Type of Project**	4 Date in Service	5 Date of 1st Filing	6a Total Capital Costs	6b Eligible Capital Costs	7a Total Retirements	7b Eligible Retirements	8 = (6b - 7b) x 2 Depreciation Expense	8a = 8 x 50% Accumulated Depreciation	9 Mil Rates Town State	Total	10 = (((6b-8a)/1000) x 12) Prop. Tax Expense		
2013 Projects																			
1	Production Meters		Rye	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 3,432	\$ 3,432	\$ 3,033	\$ 3,033	\$ 18	\$ 97	8.19	6.60	14.79	\$ 49	
2	Production Meters		North Hampton	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 4,511	\$ 4,511	\$ 2,331	\$ 2,331	\$ 96	\$ 528	15.28	6.60	21.88	\$ 87	
3	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 8,522	\$ 8,522	\$ -	\$ -	\$ 375	\$ 2,062	13.92	6.60	20.52	\$ 133	
4	Church Street-Highland Avenue to Williams Street		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 133,335	\$ 133,335	\$ 6,243	\$ 6,243	\$ 1,525	\$ 8,388	13.92	6.60	20.52	\$ 2,564	
5	Auburn Avenue		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 206,750	\$ 206,750	\$ 10,346	\$ 10,346	\$ 2,357	\$ 12,963	13.92	6.60	20.52	\$ 3,977	
6	Auburn Avenue Extension		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 85,554	\$ 85,554	\$ 359	\$ 359	\$ 1,022	\$ 5,623	13.92	6.60	20.52	\$ 1,640	
7	Perkins Avenue		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 264,216	\$ 264,216	\$ 1,760	\$ 1,760	\$ 3,149	\$ 17,322	13.92	6.60	20.52	\$ 5,066	
8	Hydrants*		Hampton	348	2.40%	Hydrants	9/30/2013	10/31/2013	\$ 22,839	\$ 8,147	\$ 2,498	\$ 891	\$ 174	\$ 958	13.92	6.60	20.52	\$ 148	
9	Services*		Hampton	345	1.85%	Services	9/30/2013	10/31/2013	\$ 33,941	\$ 12,108	\$ 1,994	\$ 711	\$ 211	\$ 1,160	13.92	6.60	20.52	\$ 225	
10	Services*		Rye	345	1.85%	Services	9/30/2013	10/31/2013	\$ 6,464	\$ 2,306	\$ 230	\$ 82	\$ 41	\$ 226	8.19	6.60	14.79	\$ 31	
11	Valves*		Hampton	349	5.00%	Other T&D Plant	9/30/2013	10/31/2013	\$ 6,351	\$ 2,265	\$ -	\$ -	\$ 113	\$ 623	13.92	6.60	20.52	\$ 34	
12	Valves*		North Hampton	349	5.00%	Other T&D Plant	9/30/2013	10/31/2013	\$ 8,133	\$ 2,901	\$ -	\$ -	\$ 145	\$ 798	15.28	6.60	21.88	\$ 46	
13									\$ 784,050	\$ 734,050	\$ 28,794	\$ 25,757	\$ 9,227	\$ 50,747				\$ 13,999	
14	2014 Projects																		
15	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2014	10/31/2014	\$ 3,044	\$ 3,044	\$ 264	\$ 264	\$ 122	\$ 551	13.92	6.60	20.52	\$ 51	
16	Weil 9 Transmission Main		Hampton	343	1.20%	Main Replacement	9/30/2014	10/31/2014	\$ 57,506	\$ 57,506	\$ 3,160	\$ 3,160	\$ 652	\$ 2,935	13.92	6.60	20.52	\$ 1,120	
17	Ocean Boulevard- Dumas Ave to Winnacunnet Rd		Hampton	343	1.20%	Main Replacement	9/30/2014	10/31/2014	\$ 536,096	\$ 536,096	\$ 6,801	\$ 6,801	\$ 6,352	\$ 28,532	13.92	6.60	20.52	\$ 10,414	
18									\$ 596,646	\$ 596,646	\$ 10,225	\$ 10,225	\$ 7,126	\$ 32,067				\$ 11,585	
19	2015 Projects																		
20	Great Boars Head - Cliff Circle to Ocean Blvd		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$169,733	\$ 169,733	\$551	\$ 551	\$ 2,030	\$ 7,106	13.92	6.60	20.52	\$ 3,337	
21	Kings Hwy - 11th, 13th, 14th & 15th St		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$385,374	\$ 385,374	\$2,324	\$ 2,324	\$ 4,597	\$ 16,088	13.92	6.60	20.52	\$ 7,578	
22	Ross Avenue		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$186,358	\$ 186,358	\$2,637	\$ 2,637	\$ 2,205	\$ 7,716	13.92	6.60	20.52	\$ 3,666	
23									\$ 741,465	\$ 741,465	\$ 5,512	\$ 5,512	\$ 8,831	\$ 30,910				\$ 14,581	
24	2016 Projects																		
25	Lafayette Road - Park Ave to Winnacunnet Rd		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$555,641	\$ 555,641	\$ 7,561	\$ 7,561	\$ 6,577	\$ 16,442	13.92	6.60	20.52	\$ 11,064	
26	Manchester St: off Ashworth Ave		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$187,725	\$ 187,725	\$ 1,810	\$ 1,810	\$ 2,231	\$ 5,577	13.92	6.60	20.52	\$ 3,738	
27	Sunsurf Ave: off Cliff Ave		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$135,632	\$ 135,632	\$ 739	\$ 739	\$ 1,619	\$ 4,047	13.92	6.60	20.52	\$ 2,700	
28	Hydrants*		Hampton	348	2.40%	Hydrants	9/30/2016	10/31/2016	\$5,486	\$ 2,301	\$ 708	\$ 297	\$ 48	\$ 120	13.92	6.60	20.52	\$ 45	
29	Hydrants*		North Hampton	348	2.40%	Hydrants	9/30/2016	10/31/2016	\$3,140	\$ 1,317	\$ 1,036	\$ 435	\$ 21	\$ 53	15.28	6.60	21.88	\$ 28	
30	Services*		Hampton	345	1.85%	Services	9/30/2016	10/31/2016	\$71,364	\$ 29,935	\$ 31,998	\$ 13,422	\$ 305	\$ 764	13.92	6.60	20.52	\$ 599	
31	Services*		North Hampton	345	1.85%	Services	9/30/2016	10/31/2016	\$4,770	\$ 2,001	\$ 1,997	\$ 838	\$ 22	\$ 54	15.28	6.60	21.88	\$ 43	
32	Valves*		Hampton	349	5.00%	Other T&D Plant	9/30/2016	10/31/2016	\$1,387	\$ 573	\$ -	\$ -	\$ 29	\$ 72	13.92	6.60	20.52	\$ 10	
33									\$ 965,125	\$ 915,125	\$ 45,850	\$ 25,102	\$ 10,852	\$ 27,129				\$ 18,226	
34	2017 Projects																		
35	Main Replacements		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$813,883	\$813,883	\$ 73,367	\$ 73,367	\$ 8,886	\$ 13,329	13.92	6.60	20.52	\$ 16,427	
36									\$ 813,883	\$ 813,883	\$ 73,367	\$ 73,367	\$ 8,886	\$ 13,329				\$ 16,427	
37	2018 Projects																		
38	2018 Projects																		
39	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2017	10/31/2017	\$ 3,500	\$ 3,500	\$ 303	\$ 303	\$ 141	\$ 70	13.92	6.60	20.52	\$ 53	
40	Main Replacements		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$880,000	\$ 880,000	\$ 11,975	\$ 11,975	\$ 10,416	\$ 5,208	13.92	6.60	20.52	\$ 13,463	
41									\$ 883,500	\$ 883,500	\$ 12,278	\$ 12,278	\$ 10,557	\$ 5,278				\$ 13,516	
42																			
43									TOTALS	\$ 4,784,869	\$ 4,684,869	\$ 176,027	\$ 152,241	\$ 55,479	\$ 159,461				\$ 88,334
44																			
45	*Total capital costs are reduced by \$50,000 proportionately per Order No. 25,539. Retirements are also proportionately reduced.																		
46	** Type of Project (designations will be given for various types of projects)																		

Aquarion Water Company of New Hampshire
2020 Annual WICA Surcharge Filing (2017 Estimate)

**WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT
 CALCULATION OF SURCHARGE**

Line		<u>Schedule Ref.</u>	
1			
2	Total Investment through 09/30/2019	2018 3 Col 6b Ln 48	\$ 5,552,169
3			
4	Accumulated Depreciation	2018 3 Col 8a Ln 48	(220,124)
5			
6	Net Investment	Ln 2 + Ln 4	<u>\$ 5,332,046</u>
7			
8	Allowed Return on Rate Base	2018 2 Col 10	<u>7.49%</u>
9			
10	Allowed Return on Investment	Ln 6 x Ln 8	\$ 399,370
11			
12	Income Tax on Equity Component		
13			
14			
15		(a)	(b)
16		Weighted	Tax
17		Cost	Multiplier
18	Debt	3.58%	1.00
19	Equity	<u>3.91%</u>	<u>1.68</u>
20			
21		7.49%	10.15%
22			2.66%
23	Total Eligible Investment (Line 6 above)		\$ 5,332,046
24			
25			
26	Income Tax Expense	Ln 21 Col D X Ln 23	141,832
27			
28	Depreciation Expense	2018 3 Col 8 Ln 48	65,847
29			
30	Property Tax Expense	2018 3 Col 10 Ln 48	105,848
31			
32	Adjustment: Annual Revenues Allowed	Lines 10 + 26 + 28 + 30	<u>\$ 712,896</u>
33			
34			
35	Base Revenues on which Adjustment will be applied		
36	Revenues allowed DW 12-085		\$ 7,129,043
37	Misc. Charges not subject to WICA		<u>(189,059)</u>
38			<u>\$ 6,939,984</u>
39			
40	Surcharge Percent (Line 32 divided by Line 38)		10.27%

Aquarion Water Company of New Hampshire
 2020 Annual WICA Surcharge Filing (2017 Estimate)

**WATER INFRASTRUCTURE & CONSERVATION ADJUSTMENT
 COMPLETED PROJECTS**

Line	Project Name or Class Category	1 Estimated Completion Date**	2 Actual Completion Date	3 Estimated Project Cost**	4 Actual Project Cost	5 Accumulated Depreciation	6 Project Cost minus Accumulated Depreciation	7 Depreciation Expense	8 Property Tax Expense	9 Income Tax Expense	10 Rate of Return	11 Annual Retail Revenues	12 = ((4-5) x 10) + 7 + 8 + 9 WICA Adjustment Dollars
2013 Projects													
3	Production Meters	30-Sep-13	30-Sep-13	\$ 18,030	\$ 16,466	\$ 3,175	\$ 13,291	\$ 488	\$ 259	\$ 354	7.49%	\$ 7,129,043	2,096
4	Main Replacements	30-Sep-13	30-Sep-13	\$ -	\$ 689,856	\$ 52,350	\$ 637,507	\$ 8,054	\$ 13,082	\$ 16,958	7.49%	\$ 7,129,043	85,842
5	Hydrants*	30-Sep-13	30-Sep-13	\$ 32,700	\$ 8,147	\$ 1,132	\$ 7,015	\$ 174	\$ 144	\$ 187	7.49%	\$ 7,129,043	1,030
6	Services*	30-Sep-13	30-Sep-13	\$ 80,600	\$ 14,414	\$ 1,638	\$ 12,776	\$ 252	\$ 250	\$ 340	7.49%	\$ 7,129,043	1,799
7	Valves*	30-Sep-13	30-Sep-13	\$ 10,800	\$ 5,167	\$ 1,679	\$ 3,488	\$ 258	\$ 74	\$ 93	7.49%	\$ 7,129,043	687
				\$ 142,130	\$ 734,050	\$ 59,974	\$ 674,076	\$ 9,227	\$ 13,809	\$ 17,930			91,455
2014 Projects													
11	Production Meters	30-Sep-14	30-Sep-14	\$ 1,600	\$ 3,044	\$ 673	\$ 2,371	\$ 122	\$ 49	\$ 63	7.49%	\$ 7,129,043	412
12	Main Replacements	30-Sep-14	30-Sep-14	\$ 937,968	\$ 593,603	\$ 38,520	\$ 555,082	\$ 7,004	\$ 11,390	\$ 14,765	7.49%	\$ 7,129,043	74,735
				\$ 939,568	\$ 596,646	\$ 39,193	\$ 557,453	\$ 7,126	\$ 11,439	\$ 14,828			75,146
2015 Projects													
16	Main Replacements	30-Sep-15	30-Sep-15	\$ 741,465	\$ 741,465	\$ 39,741	\$ 701,723	\$ 8,831	\$ 14,399	\$ 18,666	7.49%	\$ 7,129,043	94,456
				\$ 741,465	\$ 741,465	\$ 39,741	\$ 701,723	\$ 8,831	\$ 14,399	\$ 18,666			94,456
2016 Projects													
20	Main Replacements	30-Sep-16	30-Sep-16	\$ 766,000	\$ 878,998	\$ 36,493	\$ 842,505	\$ 10,427	\$ 17,288	\$ 22,411	7.49%	\$ 7,129,043	113,229
21	Hydrants*	30-Sep-16	30-Sep-16	\$ 12,000	\$ 3,618	\$ 242	\$ 3,376	\$ 69	\$ 71	\$ 90	7.49%	\$ 7,129,043	483
22	Services*	30-Sep-16	30-Sep-16	\$ 29,000	\$ 31,936	\$ 1,145	\$ 30,791	\$ 327	\$ 634	\$ 819	7.49%	\$ 7,129,043	4,087
23	Valves*	30-Sep-16	30-Sep-16	\$ 5,000	\$ 573	\$ 100	\$ 473	\$ 29	\$ 10	\$ 13	7.49%	\$ 7,129,043	86
				\$ 812,000	\$ 915,125	\$ 37,981	\$ 877,145	\$ 10,852	\$ 18,003	\$ 23,332			117,885
2017 Projects													
27	Main Replacements	30-Sep-17	30-Sep-17	\$ 520,000	\$ 813,883	\$ 22,215	\$ 791,668	\$ 8,886	\$ 16,245	\$ 21,058	7.49%	\$ 7,129,043	105,485
				520,000	813,883	22,215	791,668	8,886	16,245	21,058			105,485
2018 Projects													
31	Production Meters	30-Sep-18	30-Sep-18	\$ 3,500	\$ 3,500	\$ 211	\$ 3,289	\$ 141	\$ 67	\$ 87	7.49%	\$ 7,129,043	542
32	Main Replacements	30-Sep-18	30-Sep-18	\$ 880,000	\$ 880,000	\$ 15,624	\$ 864,376	\$ 10,416	\$ 17,737	\$ 22,992	7.49%	\$ 7,129,043	115,887
				883,500	883,500	15,835	867,665	10,557	17,804	23,080			116,429
2019 Projects													
36	Production Meters	30-Sep-19	30-Sep-19	\$ 3,500	\$ 3,500	\$ 70	\$ 3,430	\$ 141	\$ 53	\$ 91	7.49%	\$ 7,129,043	542
37	Main Replacements	30-Sep-19	30-Sep-19	\$ 864,000	\$ 864,000	\$ 5,113	\$ 858,887	\$ 10,227	\$ 14,094	\$ 22,848	7.49%	\$ 7,129,043	111,498
				867,500	867,500	5,184	862,316	10,368	14,147	22,938			112,040
40	TOTALS			\$ 4,906,163	\$ 5,552,169	\$ 220,124	\$ 5,332,046	\$ 65,847	\$ 105,848	\$ 141,832			\$ 712,897

* Emergency Replacement
 ** Per Docket Filing DW 14-300

Aquarion Water Company of New Hampshire
 2020 Annual WICA Surcharge Filing (2017 Estimate)

WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT
 ELIGIBLE PROJECTS PLACED IN SERVICE

Line	Description of Project	Street	Town	1 PUC Acct	2 Depr Rate	3 Type of Project**	4 Date in Service	5 Date of 1st Filing	6a	6b	7a	7b	8 = (6b - 7b) x 2	8a = 8 x 50%	9			10 = (((6b-8a)/1000)	
									Total Capital Costs	Eligible Capital Costs	Total Retirements	Eligible Retirements	Depreciation Expense	Accumulated Depreciation	Town	State	Total	Prop. Tax Expense	
2013 Projects																			
1	Production Meters		Rye	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 3,432	\$ 3,432	\$ 3,033	\$ 3,033	\$ 18	\$ 114	8.19	6.60	14.79	\$ 49	
2	Production Meters		North Hampton	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 4,511	\$ 4,511	\$ 2,331	\$ 2,331	\$ 96	\$ 624	15.28	6.60	21.88	\$ 85	
3	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 8,522	\$ 8,522	\$ -	\$ -	\$ 375	\$ 2,437	13.92	6.60	20.52	\$ 125	
4	Church Street-Highland Avenue to Williams Street		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 133,335	\$ 133,335	\$ 6,243	\$ 6,243	\$ 1,525	\$ 9,913	13.92	6.60	20.52	\$ 2,533	
5	Auburn Avenue		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 206,750	\$ 206,750	\$ 10,346	\$ 10,346	\$ 2,357	\$ 15,320	13.92	6.60	20.52	\$ 3,928	
6	Auburn Avenue Extension		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 85,554	\$ 85,554	\$ 359	\$ 359	\$ 1,022	\$ 6,645	13.92	6.60	20.52	\$ 1,619	
7	Perkins Avenue		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 264,216	\$ 264,216	\$ 1,760	\$ 1,760	\$ 3,149	\$ 20,472	13.92	6.60	20.52	\$ 5,002	
8	Hydrants*		Hampton	348	2.40%	Hydrants	9/30/2013	10/31/2013	\$ 22,839	\$ 8,147	\$ 2,498	\$ 891	\$ 174	\$ 1,132	13.92	6.60	20.52	\$ 144	
9	Services*		Hampton	345	1.85%	Services	9/30/2013	10/31/2013	\$ 33,941	\$ 12,108	\$ 1,994	\$ 711	\$ 211	\$ 1,370	13.92	6.60	20.52	\$ 220	
10	Services*		Rye	345	1.85%	Services	9/30/2013	10/31/2013	\$ 6,464	\$ 2,306	\$ 230	\$ 82	\$ 41	\$ 267	8.19	6.60	14.79	\$ 30	
11	Valves*		Hampton	349	5.00%	Other T&D Plant	9/30/2013	10/31/2013	\$ 6,351	\$ 2,285	\$ -	\$ -	\$ 113	\$ 736	13.92	6.60	20.52	\$ 31	
12	Valves*		North Hampton	349	5.00%	Other T&D Plant	9/30/2013	10/31/2013	\$ 8,133	\$ 2,901	\$ -	\$ -	\$ 145	\$ 943	15.28	6.60	21.88	\$ 43	
13									\$ 784,050	\$ 734,050	\$ 28,794	\$ 25,757	\$ 9,227	\$ 59,974				\$ 13,809	
2014 Projects																			
15	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2014	10/31/2014	\$ 3,044	\$ 3,044	\$ 264	\$ 264	\$ 122	\$ 673	13.92	6.60	20.52	\$ 49	
16	Well # Transmission Main		Hampton	343	1.20%	Main Replacement	9/30/2014	10/31/2014	\$ 57,506	\$ 57,506	\$ 3,160	\$ 3,160	\$ 652	\$ 3,587	13.92	6.60	20.52	\$ 1,106	
17	Ocean Boulevard- Dumas Ave to Winnacunnet Rd		Hampton	343	1.20%	Main Replacement	9/30/2014	10/31/2014	\$ 536,096	\$ 536,096	\$ 6,801	\$ 6,801	\$ 6,352	\$ 34,933	13.92	6.60	20.52	\$ 10,284	
18									\$ 596,646	\$ 596,646	\$ 10,225	\$ 10,225	\$ 7,126	\$ 39,193				\$ 11,439	
2015 Projects																			
20	Great Boars Head - Cliff Circle to Ocean Blvd		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$169,733	\$ 169,733	\$551	\$ 551	\$ 2,030	\$ 9,136	13.92	6.60	20.52	\$ 3,295	
21	Kings Hwy - 11th, 13th, 14th & 15th St		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$385,374	\$ 385,374	\$2,324	\$ 2,324	\$ 4,597	\$ 20,685	13.92	6.60	20.52	\$ 7,483	
22	Ross Avenue		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$186,358	\$ 186,358	\$2,637	\$ 2,637	\$ 2,205	\$ 9,921	13.92	6.60	20.52	\$ 3,620	
23									\$ 741,465	\$ 741,465	\$ 5,512	\$ 5,512	\$ 8,831	\$ 39,741				\$ 14,399	
2016 Projects																			
25	Lafayette Road - Park Ave to Winnacunnet Rd		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$555,641	\$ 555,641	\$ 7,561	\$ 7,561	\$ 6,577	\$ 23,019	13.92	6.60	20.52	\$ 10,929	
26	Manchester St. off Ashworth Ave		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$187,725	\$ 187,725	\$ 1,810	\$ 1,810	\$ 2,231	\$ 7,808	13.92	6.60	20.52	\$ 3,692	
27	Sunsurf Ave: off Cliff Ave		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$135,632	\$ 135,632	\$ 739	\$ 739	\$ 1,619	\$ 5,665	13.92	6.60	20.52	\$ 2,667	
28	Hydrants*		Hampton	348	2.40%	Hydrants	9/30/2016	10/31/2016	\$5,486	\$ 2,301	\$ 708	\$ 297	\$ 48	\$ 168	13.92	6.60	20.52	\$ 44	
29	Hydrants*		North Hampton	348	2.40%	Hydrants	9/30/2016	10/31/2016	\$3,140	\$ 1,317	\$ 1,036	\$ 435	\$ 21	\$ 74	15.28	6.60	21.88	\$ 27	
30	Services*		Hampton	345	1.85%	Services	9/30/2016	10/31/2016	\$71,364	\$ 29,935	\$ 31,998	\$ 13,422	\$ 305	\$ 1,069	13.92	6.60	20.52	\$ 592	
31	Services*		North Hampton	345	1.85%	Services	9/30/2016	10/31/2016	\$4,770	\$ 2,001	\$ 1,997	\$ 838	\$ 22	\$ 75	15.28	6.60	21.88	\$ 42	
32	Valves*		Hampton	349	5.00%	Other T&D Plant	9/30/2016	10/31/2016	\$1,367	\$ 573	\$ -	\$ -	\$ 29	\$ 100	13.92	6.60	20.52	\$ 10	
33									\$ 965,125	\$ 915,125	\$ 45,850	\$ 25,102	\$ 10,852	\$ 37,981				\$ 18,003	
2017 Projects																			
35	Main Replacements		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$813,883	\$813,883	\$ 73,367	\$ 73,367	\$ 8,886	\$ 22,215	13.92	6.60	20.52	\$ 16,245	
36									\$ 813,883	\$ 813,883	\$ 73,367	\$ 73,367	\$ 8,886	\$ 22,215				\$ 16,245	
2018 Projects																			
39	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2017	10/31/2017	\$ 3,500	\$ 3,500	\$303	\$ 303	\$ 141	\$ 211	13.92	6.60	20.52	\$ 67	
40	Main Replacements		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$880,000	\$ 880,000	\$ 11,975	\$ 11,975	\$ 10,416	\$ 15,624	13.92	6.60	20.52	\$ 17,737	
41									\$ 883,500	\$ 883,500	\$ 12,278	\$ 12,278	\$ 10,557	\$ 15,835				\$ 17,804	
2019 Projects																			
44	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2017	10/31/2017	\$ 3,500	\$ 3,500	\$303	\$ 303	\$ 141	\$ 70	13.92	6.60	20.52	\$ 53	
45	Main Replacements		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$864,000	\$ 864,000	\$ 11,758	\$ 11,758	\$ 10,227	\$ 5,113	15.28	6.60	21.88	\$ 14,094	
46									\$ 867,500	\$ 867,500	\$ 12,061	\$ 12,061	\$ 10,368	\$ 5,184				\$ 14,147	
47																			
48																			
49																			
50									TOTALS	\$ 5,552,169	\$ 5,552,169	\$ 188,087	\$ 164,302	\$ 65,847	\$ 220,124				\$ 105,848
51																			

*Total capital costs are reduced by \$50,000 proportionately per Order No. 25,539. Retirements are also proportionately reduced.

** Type of Project (designations will be given for various types of projects)

Aqurion Water Company of New Hampshire
2021 Annual WICA Surcharge Filing (2017 Estimate)

**WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT
CALCULATION OF SURCHARGE**

Line		<u>Schedule Ref.</u>	
1			
2	Total Investment through 09/30/2020	2018 3 Col 6b Ln 48	\$ 6,475,669
3			
4	Accumulated Depreciation	2018 3 Col 8a Ln 48	(291,485)
5			
6	Net Investment	Ln 2 + Ln 4	<u>\$ 6,184,184</u>
7			
8	Allowed Return on Rate Base	2018 2 Col 10	<u>7.49%</u>
9			
10	Allowed Return on Investment	Ln 6 x Ln 8	\$ 463,195
11			
12	Income Tax on Equity Component		
13			
14			
15		(a)	(b)
16		Weighted	Tax
17		Cost	Multiplier
18	Debt	3.58%	1.00
19	Equity	<u>3.91%</u>	<u>1.68</u>
20			
21		7.49%	10.15%
22			2.66%
23	Total Eligible Investment (Line 6 above)		\$ 6,184,184
24			
25			
26	Income Tax Expense	Ln 21 Col D X Ln 23	164,499
27			
28	Depreciation Expense	2018 3 Col 8 Ln 48	76,877
29			
30	Property Tax Expense	2018 3 Col 10 Ln 48	123,326
31			
32	Adjustment: Annual Revenues Allowed	Lines 10 + 26 + 28 + 30	<u>\$ 827,897</u>
33			
34			
35	Base Revenues on which Adjustment will be applied		\$ 7,129,043
36	Revenues allowed DW 12-085		(189,059)
37	Misc. Charges not subject to WICA		<u>\$ 6,939,984</u>
38			
39			
40	Surcharge Percent (Line 32 divided by Line 38)		11.93%

Aquarion Water Company of New Hampshire
 2021 Annual WICA Surcharge Filing (2017 Estimate)

WATER INFRASTRUCTURE & CONSERVATION ADJUSTMENT
 COMPLETED PROJECTS

Line	Project Name or Class Category	1	2	3	4	5	6	7	8	9	10	11	12 = ((4-5) x 10) + 7 + 8 + 9
		Estimated Completion Date**	Actual Completion Date	Estimated Project Cost**	Actual Project Cost	Accumulated Depreciation	Project Cost minus Accumulated Depreciation	Depreciation Expense	Property Tax Expense	Income Tax Expense	Rate of Return	Annual Retail Revenues	WICA Adjustment Dollars
1													
2	2013 Projects												
3	Production Meters	30-Sep-13	30-Sep-13	\$ 18,030	\$ 16,466	\$ 3,664	\$ 12,802	\$ 488	\$ 249	\$ 341	7.49%	\$ 7,129,043	2,037
4	Main Replacements	30-Sep-13	30-Sep-13	\$ -	\$ 689,856	\$ 60,403	\$ 629,453	\$ 8,054	\$ 12,916	\$ 16,743	7.49%	\$ 7,129,043	84,860
5	Hydrants*	30-Sep-13	30-Sep-13	\$ 32,700	\$ 8,147	\$ 1,306	\$ 6,841	\$ 174	\$ 140	\$ 182	7.49%	\$ 7,129,043	1,009
6	Services*	30-Sep-13	30-Sep-13	\$ 80,600	\$ 14,414	\$ 1,890	\$ 12,524	\$ 252	\$ 246	\$ 333	7.49%	\$ 7,129,043	1,769
7	Valves*	30-Sep-13	30-Sep-13	\$ 10,800	\$ 5,167	\$ 1,938	\$ 3,229	\$ 258	\$ 69	\$ 86	7.49%	\$ 7,129,043	655
8				\$ 142,130	\$ 734,050	\$ 69,200	\$ 664,850	\$ 9,227	\$ 13,620	\$ 17,685			90,329
9													
10	2014 Projects												
11	Production Meters	30-Sep-14	30-Sep-14	\$ 1,600	\$ 3,044	\$ 795	\$ 2,249	\$ 122	\$ 46	\$ 60	7.49%	\$ 7,129,043	397
12	Main Replacements	30-Sep-14	30-Sep-14	\$ 937,968	\$ 593,603	\$ 45,524	\$ 548,079	\$ 7,004	\$ 11,247	\$ 14,579	7.49%	\$ 7,129,043	73,880
13				\$ 939,568	\$ 596,646	\$ 46,319	\$ 550,327	\$ 7,126	\$ 11,293	\$ 14,639			74,277
14													
15	2015 Projects												
16	Main Replacements	30-Sep-15	30-Sep-15	\$ 741,465	\$ 741,465	\$ 48,573	\$ 692,892	\$ 8,831	\$ 14,218	\$ 18,431	7.49%	\$ 7,129,043	93,378
17				\$ 741,465	\$ 741,465	\$ 48,573	\$ 692,892	\$ 8,831	\$ 14,218	\$ 18,431			93,378
18													
19	2016 Projects												
20	Main Replacements	30-Sep-16	30-Sep-16	\$ 766,000	\$ 678,998	\$ 46,920	\$ 832,078	\$ 10,427	\$ 17,074	\$ 22,133	7.49%	\$ 7,129,043	111,957
21	Hydrants*	30-Sep-16	30-Sep-16	\$ 12,000	\$ 3,618	\$ 312	\$ 3,307	\$ 69	\$ 70	\$ 88	7.49%	\$ 7,129,043	474
22	Services*	30-Sep-16	30-Sep-16	\$ 29,000	\$ 31,936	\$ 1,472	\$ 30,464	\$ 327	\$ 628	\$ 810	7.49%	\$ 7,129,043	4,047
23	Valves*	30-Sep-16	30-Sep-16	\$ 5,000	\$ 573	\$ 129	\$ 444	\$ 29	\$ 9	\$ 12	7.49%	\$ 7,129,043	83
24				\$ 812,000	\$ 915,125	\$ 48,832	\$ 866,293	\$ 10,852	\$ 17,781	\$ 23,043			116,561
25													
26	2017 Projects												
27	Main Replacements	30-Sep-17	30-Sep-17	\$ 520,000	\$ 813,883	\$ 31,102	\$ 782,781	\$ 8,886	\$ 16,063	\$ 20,822	7.49%	\$ 7,129,043	104,401
28				520,000	813,883	31,102	782,781	8,886	16,063	20,822			104,401
29													
30	2018 Projects												
31	Production Meters	30-Sep-18	30-Sep-18	\$ 3,500	\$ 3,500	\$ 352	\$ 3,148	\$ 141	\$ 65	\$ 84	7.49%	\$ 7,129,043	525
32	Main Replacements	30-Sep-18	30-Sep-18	\$ 880,000	\$ 880,000	\$ 26,041	\$ 853,959	\$ 10,416	\$ 17,523	\$ 22,715	7.49%	\$ 7,129,043	114,616
33				883,500	883,500	26,392	857,108	10,557	17,588	22,799			115,141
34													
35	2019 Projects												
36	Production Meters	30-Sep-19	30-Sep-19	\$ 3,500	\$ 3,500	\$ 211	\$ 3,289	\$ 141	\$ 67	\$ 87	7.49%	\$ 7,129,043	542
37	Main Replacements	30-Sep-19	30-Sep-19	\$ 864,000	\$ 864,000	\$ 15,340	\$ 848,660	\$ 10,227	\$ 18,569	\$ 22,574	7.49%	\$ 7,129,043	114,935
38				867,500	867,500	15,551	851,949	10,368	18,636	22,662			115,477
39													
40	2020 Projects												
41	Production Meters	30-Sep-20	30-Sep-20	\$ 3,500	\$ 3,500	\$ 70	\$ 3,430	\$ 141	\$ 53	\$ 91	7.49%	\$ 7,129,043	542
42	Main Replacements	30-Sep-20	30-Sep-20	\$ 920,000	\$ 920,000	\$ 5,445	\$ 914,555	\$ 10,890	\$ 14,075	\$ 24,327	7.49%	\$ 7,129,043	117,792
43				923,500	923,500	5,515	917,985	11,030	14,128	24,418			118,334
44													
45	TOTALS			\$5,829,663	\$ 6,475,669	\$ 291,485	\$ 6,184,184	\$ 76,877	\$ 123,326	\$ 164,499			\$ 827,898

* Emergency Replacement
 ** Per Docket Filing DW 14-300

Aquarion Water Company of New Hampshire
 2021 Annual WICA Surcharge Filing (2017 Estimate)

WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT
 ELIGIBLE PROJECTS PLACED IN SERVICE

Line	Description of Project	Street	Town	1 PUC Accd	2 Depr Rate	3 Type of Project**	4 Date in Service	5 Date of 1st Filing	6a Total Capital Costs	6b Eligible Capital Costs	7a Total Retirements	7b Eligible Retirements	8 = (6b - 7b) x 2 Depreciation Expense	8a = 8 x 50% Accumulated Depreciation	9		10 = (((6b-8a)/1000) x 12) Prop. Tax Expense		
															Mil Rates	Total			
2013 Projects																			
1	Production Meters		Rye	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 3,432	\$ 3,432	\$ 3,033	\$ 3,033	\$ 18	\$ 132	8.19	6.60	14.79	\$ 49	
2	Production Meters		North Hampton	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 4,511	\$ 4,511	\$ 2,331	\$ 2,331	\$ 96	\$ 719	15.28	6.60	21.88	\$ 83	
3	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2013	10/31/2013	\$ 8,522	\$ 8,522	\$ -	\$ -	\$ 375	\$ 2,812	13.92	6.60	20.52	\$ 117	
4	Church Street-Highland Avenue to Williams Street		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 133,335	\$ 133,335	\$ 6,243	\$ 6,243	\$ 1,525	\$ 11,438	13.92	6.60	20.52	\$ 2,501	
5	Auburn Avenue		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 206,750	\$ 206,750	\$ 10,346	\$ 10,346	\$ 2,357	\$ 17,676	13.92	6.60	20.52	\$ 3,880	
6	Auburn Avenue Extension		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 85,554	\$ 85,554	\$ 359	\$ 359	\$ 1,022	\$ 7,668	13.92	6.60	20.52	\$ 1,598	
7	Perkins Avenue		Hampton	343	1.20%	Main Replacement	9/30/2013	10/31/2013	\$ 264,216	\$ 264,216	\$ 1,760	\$ 1,760	\$ 3,149	\$ 23,621	13.92	6.60	20.52	\$ 4,937	
8	Hydrants*		Hampton	348	2.40%	Hydrants	9/30/2013	10/31/2013	\$ 22,839	\$ 8,147	\$ 2,498	\$ 891	\$ 174	\$ 1,306	13.92	6.60	20.52	\$ 140	
9	Services*		Hampton	345	1.85%	Services	9/30/2013	10/31/2013	\$ 33,941	\$ 12,108	\$ 1,994	\$ 711	\$ 211	\$ 1,581	13.92	6.60	20.52	\$ 216	
10	Services*		Rye	345	1.85%	Services	9/30/2013	10/31/2013	\$ 6,464	\$ 2,306	\$ 230	\$ 82	\$ 41	\$ 309	8.19	6.60	14.79	\$ 30	
11	Valves*		Hampton	349	5.00%	Other T&D Plant	9/30/2013	10/31/2013	\$ 6,351	\$ 2,265	\$ -	\$ -	\$ 113	\$ 850	13.92	6.60	20.52	\$ 29	
12	Valves*		North Hampton	349	5.00%	Other T&D Plant	9/30/2013	10/31/2013	\$ 8,133	\$ 2,901	\$ -	\$ -	\$ 145	\$ 1,088	15.28	6.60	21.88	\$ 40	
13									\$ 784,050	\$ 734,050	\$ 28,794	\$ 25,757	\$ 9,227	\$ 69,200				\$ 13,620	
14	2014 Projects																		
15	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2014	10/31/2014	\$ 3,044	\$ 3,044	\$ 264	\$ 264	\$ 122	\$ 795	13.92	6.60	20.52	\$ 46	
16	Well 9 Transmission Main		Hampton	343	1.20%	Main Replacement	9/30/2014	10/31/2014	\$ 57,506	\$ 57,506	\$ 3,160	\$ 3,160	\$ 652	\$ 4,239	13.92	6.60	20.52	\$ 1,093	
17	Ocean Boulevard- Dumas Ave to Winnacunnet Rd		Hampton	343	1.20%	Main Replacement	9/30/2014	10/31/2014	\$ 536,096	\$ 536,096	\$ 6,801	\$ 6,801	\$ 6,352	\$ 41,285	13.92	6.60	20.52	\$ 10,154	
18									\$ 596,646	\$ 596,646	\$ 10,225	\$ 10,225	\$ 7,126	\$ 46,319				\$ 11,293	
19	2015 Projects																		
20	Great Boars Head - Cliff Circle to Ocean Blvd		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$ 169,733	\$ 169,733	\$ 551	\$ 551	\$ 2,030	\$ 11,166	13.92	6.60	20.52	\$ 3,254	
21	Kings Hwy - 11th, 13th, 14th & 15th St		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$ 385,374	\$ 385,374	\$ 2,324	\$ 2,324	\$ 4,597	\$ 25,281	13.92	6.60	20.52	\$ 7,389	
22	Ross Avenue		Hampton	343	1.20%	Main Replacement	9/30/2015	10/31/2015	\$ 186,358	\$ 186,358	\$ 2,637	\$ 2,637	\$ 2,205	\$ 12,126	13.92	6.60	20.52	\$ 3,575	
23									\$ 741,465	\$ 741,465	\$ 5,512	\$ 5,512	\$ 8,831	\$ 48,573				\$ 14,218	
24	2016 Projects																		
25	Lafayette Road - Park Ave to Winnacunnet Rd		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$ 555,641	\$ 555,641	\$ 7,561	\$ 7,561	\$ 6,577	\$ 29,596	13.92	6.60	20.52	\$ 10,794	
26	Manchester St. off Ashworth Ave		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$ 187,725	\$ 187,725	\$ 1,810	\$ 1,810	\$ 2,231	\$ 10,039	13.92	6.60	20.52	\$ 3,646	
27	Sunsurf Ave. off Cliff Ave		Hampton	343	1.20%	Main Replacement	9/30/2016	10/31/2016	\$ 135,632	\$ 135,632	\$ 739	\$ 739	\$ 1,619	\$ 7,284	13.92	6.60	20.52	\$ 2,634	
28	Hydrants*		Hampton	348	2.40%	Hydrants	9/30/2016	10/31/2016	\$ 5,486	\$ 2,301	\$ 708	\$ 297	\$ 48	\$ 216	13.92	6.60	20.52	\$ 43	
29	Hydrants*		North Hampton	348	2.40%	Hydrants	9/30/2016	10/31/2016	\$ 3,140	\$ 1,317	\$ 1,038	\$ 435	\$ 21	\$ 95	15.28	6.60	21.88	\$ 27	
30	Services*		Hampton	345	1.85%	Services	9/30/2016	10/31/2016	\$ 71,364	\$ 29,935	\$ 31,998	\$ 13,422	\$ 305	\$ 1,375	13.92	6.60	20.52	\$ 586	
31	Services*		North Hampton	345	1.85%	Services	9/30/2016	10/31/2016	\$ 4,770	\$ 2,001	\$ 1,997	\$ 838	\$ 22	\$ 97	15.28	6.60	21.88	\$ 42	
32	Valves*		Hampton	349	5.00%	Other T&D Plant	9/30/2016	10/31/2016	\$ 11,367	\$ 573	\$ -	\$ -	\$ 29	\$ 129	13.92	6.60	20.52	\$ 9	
33									\$ 965,125	\$ 915,125	\$ 45,850	\$ 25,102	\$ 10,852	\$ 48,832				\$ 17,781	
34	2017 Projects																		
35	Main Replacements		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$ 813,883	\$ 813,883	\$ 73,367	\$ 73,367	\$ 8,886	\$ 31,102	13.92	6.60	20.52	\$ 16,063	
36									\$ 813,883	\$ 813,883	\$ 73,367	\$ 73,367	\$ 8,886	\$ 31,102				\$ 16,063	
37																			
38	2018 Projects																		
39	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2017	10/31/2017	\$ 3,500	\$ 3,500	\$ 303	\$ 303	\$ 141	\$ 352	13.92	6.60	20.52	\$ 65	
40	Main Replacements		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$ 880,000	\$ 880,000	\$ 11,975	\$ 11,975	\$ 10,416	\$ 26,041	13.92	6.60	20.52	\$ 17,523	
41									\$ 883,500	\$ 883,500	\$ 12,278	\$ 12,278	\$ 10,557	\$ 26,392				\$ 17,588	
42																			
43	2019 Projects																		
44	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2017	10/31/2017	\$ 3,500	\$ 3,500	\$ 303	\$ 303	\$ 141	\$ 211	13.92	6.60	20.52	\$ 67	
45	Main Replacements		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$ 864,000	\$ 864,000	\$ 11,758	\$ 11,758	\$ 10,227	\$ 15,340	15.28	6.60	21.88	\$ 18,569	
46									\$ 867,500	\$ 867,500	\$ 12,061	\$ 12,061	\$ 10,368	\$ 15,551				\$ 18,636	
47																			
48	2020 Projects																		
49	Production Meters		Hampton	328	4.40%	Other Pumping	9/30/2017	10/31/2017	\$ 3,500	\$ 3,500	\$ 303	\$ 303	\$ 141	\$ 70	13.92	6.60	20.52	\$ 53	
50	Main Replacements		Hampton	343	1.20%	Main Replacement	9/30/2017	10/31/2017	\$ 920,000	\$ 920,000	\$ 12,520	\$ 12,520	\$ 10,890	\$ 5,445	13.92	6.60	20.52	\$ 14,075	
51									\$ 923,500	\$ 923,500	\$ 12,823	\$ 12,823	\$ 11,030	\$ 5,515				\$ 14,128	
52																			
53																			
54									TOTALS	\$ 6,575,669	\$ 6,475,669	\$ 200,910	\$ 177,124	\$ 76,877	\$ 291,485				\$ 123,326
55																			
56																			
57																			

*Total capital costs are reduced by \$50,000 proportionately per Order No. 25,539. Retirements are also proportionately reduced.
 ** Type of Project (designations will be given for various types of projects)

DW 17-154
AQUARION WATER COMPANY OF NEW HAMPSHIRE, INC.
WICA FILING
STAFF DATA REQUESTS – SET 1

Date Request Received: November 3, 2017
Request No.: Staff 1-1

Date of Response: November 8, 2017
Witness: Carl McMorran

REQUEST: Regarding the 2017 Lafayette Road project:

- a) Was the project able to benefit from coordination with the Town of Hampton sewer replacement and/or drain work in that area as anticipated? Please provide details.
- b) Please comment on any unanticipated difficulties, benefits or other factors encountered during construction.
- c) Please comment on the critical customers served by the main (McMorran p. 5, line 14)
- d) Regarding the choice to use ductile iron pipe instead of HDPE (McMorran p. 5, line 20 through p. 6, line 2), please indicate whether either salt water or corrosive soils were a factor during construction and, if so, how those factors were addressed.
- e) Does the company have any indication of the actual cost savings achieved by use of ductile iron instead of HDPE?
- f) What size new main was installed?
- g) Were any construction methods employed other than direct bury? If so, please explain.
- h) Was the Swain Court replacement eliminated from the project? If so, please indicate why. If not, please reconcile the overall sizes and footages of main replaced in the current filing with the figures from DW 16-828.
- i) Do any paving, landscaping or other costs remain from the project?
- j) Please confirm that the full length of new main was used and useful as of Sept 30, 2017.

RESPONSE:

- a) Yes, the largest benefit was that the new main allowed the existing main to be removed from service before the town sewer project started. Since it was not a live water main, there was no risk of a main break or service interruption due to the work on the sewer main. Paving and other restoration costs were also reduced because final paving and restoration will be done by the town after the sewer project is finished.
- b) There were no unanticipated difficulties, benefits or other factors encountered during construction.
- c) Critical customers directly served by the main are a retirement home at 377 Lafayette Road. The main is also one of several that support water service to the high school on Park Avenue.
- d) Salt water or corrosive soils were not a factor on this project.

- e) This cannot be directly quantified because we did not bid the project for HDPE pipe. In discussions with contractors, it was clear to us that attempting to fuse and maneuver any long lengths of HDPE pipe in the urban workspace (close buildings, narrow roadway and sidewalks, numerous sewer, drain and natural gas pipes) was going to be a time-consuming process and would extend the project schedule. In our opinion, using ductile iron pipe was clearly less expensive and schedule-friendly.
- f) Twelve-inches in diameter.
- g) No.
- h) Yes, because most of the Swain Court main was outside of the town sewer project area, and reducing the overall project scope reduced the cost of the project.
- i) No.
- j) All segments of the new main were in service as of July 28, 2017.

DW 17-154
AQUARION WATER COMPANY OF NEW HAMPSHIRE, INC.
WICA FILING
STAFF DATA REQUESTS – SET 1

Date Request Received: November 3, 2017
Request No.: Staff 1-2

Date of Response: November 8, 2017
Witness: Carl McMorran

REQUEST: Regarding the proposed Hampton River Crossings:

- a) Are the crossings in the vicinity of Ocean Boulevard? If not, please indicate their approximate location.
- b) The projected pricing appears to be based on replacing existing dual mains, of approximately 1500 feet each, with new dual mains. Please confirm or explain.

RESPONSE:

- a) Yes, the crossings are approximately 100 feet west of the Hampton River drawbridge.
- b) That is correct.

DW 17-154
AQUARION WATER COMPANY OF NEW HAMPSHIRE, INC.
WICA FILING
STAFF DATA REQUESTS – SET 1

Date Request Received: November 3, 2017
Request No.: Staff 1-3

Date of Response: November 8, 2017
Witness: Carl McMorran

REQUEST: Why is Eighth Street not included in the 2018 projects?

RESPONSE: Eighth Street is a six-inch, cast-iron main and does not need to be replaced at this time. The other numbered streets are 2-inch, galvanized mains that are prone to leaks.

DW 17-154
AQUARION WATER COMPANY OF NEW HAMPSHIRE, INC.
WICA FILING
STAFF DATA REQUESTS – SET 1

Date Request Received: November 3, 2017
Request No.: Staff 1-4

Date of Response: November 8, 2017
Witness: Carl McMorran

REQUEST: In the past, WICA price projections were based on historic average costs. To what extent do current projections reflect more recent, significantly higher bid pricing?

RESPONSE: Main replacement costs from 2017 are included in the long term average cost used to estimate project costs for 2018.

SERVICE LIST - EMAIL ADDRESSES - DOCKET RELATED

Pursuant to N.H. Admin Rule Puc 203.11 (a) (1): Serve an electronic copy on each person identified on the service list.

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Docket #: 17-154-1 Printed: December 15, 2017

FILING INSTRUCTIONS:

- a) Pursuant to N.H. Admin Rule Puc 203.02 (a), with the exception of Discovery, file 7 copies, as well as an electronic copy, of all documents including cover letter with:**

DEBRA A HOWLAND
EXECUTIVE DIRECTOR
NHPUC
21 S. FRUIT ST, SUITE 10
CONCORD NH 03301-2429

- b) Serve an electronic copy with each person identified on the Commission's service list and with the Office of Consumer Advocate.**
- c) Serve a written copy on each person on the service list not able to receive electronic mail.**