

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: November 16, 2018

AT (OFFICE): NHPUC

FROM: Karen Moran, Chief Auditor

SUBJECT: Aquarion Water Company of New Hampshire, Inc.
DW 17-154 and DW 18-161 Water Infrastructure and Conservation
Adjustment Mechanism
FINAL Audit Report

TO: Steve Frink, Director Gas-Water Division, NHPUC
Jayson Laflamme, Assistant Director Gas-Water Division, NHPUC
Anthony Leone, Utility Analyst

Introduction

Aquarion Water Company of New Hampshire, Inc. (Aquarion) has been participating in the annual Water Infrastructure and Conservation Adjustment (WICA) since the Commission approved it as a pilot program by Order 25,019 issued on September 25, 2009 in docket DW 08-098. The WICA program was extended and modified by Order 25,539 issued June 28, 2013 in docket DW 12-085.

On October 15, 2018, Aquarion filed the October 1, 2017 – September 30, 2018 costs to be considered for recovery through the WICA surcharge, which is petitioned for implementation January 1, 2019.

Projects Approved for 10/1/2017 through 9/30/2018

In Docket DW 17-154, Aquarion petitioned for approval of its proposed 2018 projects to be eligible for recovery through the WICA surcharge mechanism. Order 26,094, issued December 29, 2017, approved a WICA surcharge of 7.08 percent, approved the planned 2018 WICA projects, and preliminarily approved the 2019 projects.

By letters to the Commission, the Company adjusted the proposed 2018 projects as follows:

Proposed 2018 Aquarion WICA Projects, per DW17-154				
			Per 12/13/2017	5/23/2018
	<u>SAPID</u>	<u>Original Estimate</u>	<u>Revised Estimate</u>	<u>Revised Estimate</u>
Hampton River Project-north	10009068	\$322,000 - \$464,000	Postponed	Postponed
Hampton River Project-south	10697147	\$421,000 - \$462,000	Postponed	Postponed
Ninth Street	10009219	\$59,000 - \$89,000		Postponed
Seventh Street	10009781	\$58,000 - \$83,000		Postponed
Sixth Street	10009828	\$51,000 - \$73,000		Postponed
Sixth Street	10768378	\$10,000 - \$14,000		Postponed
Sixth Street	10768379	\$2,000 - \$3,000		Postponed
Tenth Street	10009946	\$58,000 - \$83,000		Postponed
Total 2018 Proposed Projects		\$981,000 - \$1,271,000		

Proposed 2019 Aquarion WICA Projects, per DW17-154				
			Per 12/13/2017	5/23/2018
			<u>Revised Estimate</u>	<u>Revised Estimate</u>
Mill Road-North Hampton	10010873	\$864,000 - \$1,243,000	\$864,000 - \$1,243,000	\$864,000 - \$1,243,000

On December 13, 2017 Aquarion provided a memorandum to the PUC stating that the listing of projects for 2018 was being adjusted. Specifically, the Hampton River crossing would be delayed, and a portion of the Mill Road replacement was being moved from 2019 to 2018.

On December 15, 2017, Staff filed a recommendation for approval of, among other things, the proposed 2018 WICA projects, which were estimated to cost approximately \$880,000.

By letter dated May 23, 2018, a further adjustment to the approved projects list was communicated. The Company postponed main replacements on Sixth, Seventh, Ninth, and Tenth Streets in Hampton, and included additional sections of Mill Road in North Hampton for replacement, to coordinate with the NH DOT for cost savings related to pavement restoration.

Tariff

The tariff filed for effect January 1, 2018, in docket DW17-154 outlined the WICA and its components. Specifically, to be WICA-eligible, the property “will consist of the following:

- *services over and above an annual \$50,000 (account 333) and hydrants (account 335) installed as in-kind (i.e., same size) replacements for customers;*
- *mains and valves (account 331) installed as replacements for existing facilities that have either reached the end of their useful life, are worn out, or are in deteriorated condition;*
- *replacement of production meters (account 304); and*
- *replacement of pressure reducing valves (accounts 309, 331)”*

Projects Placed in Service through September 30, 2018

The WICA period runs from October 1 through September 30 annually. The Mill Road project was the replacement of distribution mains at a reported cost of \$1,045,877, of which

3,956 linear feet of 8” AC had been installed in 1953. Service Lines installed amounted to \$18,918 which did not exceed the \$50,000 threshold, and were thus not included in the WICA calculation for the petitioned 2019 rate. Audit did not review the Service Line total as part of this audit work.

The running additions from inception of the WICA through 9/30/2018 are summarized in the DW18-161 filing, attachment DS-1. The account numbers identified are those of Connecticut. Audit requested and was provided the conversion of the CT numbers to the NH PUC Uniform System of Accounts’ numbers.

<u>Connecticut</u>	<u>New Hampshire</u>
328 Production Meters	311 Other Pumping Equipment
343 Mains	331 Transmission and Distribution Mains
345 Services	333 Services
348 Hydrants	335 Hydrants
349 Valves	339 Other Transmission and Distribution Plant

Eligible WICA Additions Identified in DW18-161 Schedule DS-1

CT		DW 13-314	DW 14-300	DW 15-476	DW 16-828	DW 17-154	DW 18-161
Account #	Account Name	completed 9/30/2013	completed 9/30/2014	completed 9/30/2015	completed 9/30/2016	completed 9/30/2017	completed 9/30/2018
328	Production Meters	\$ 16,465	\$ 3,044	\$ -	\$ -	\$ -	\$ -
343	Mains	\$ 689,855	\$ 593,602	\$ 741,465	\$ 878,998	\$ 813,883	\$ 1,045,877
345	Services	\$ 14,414	\$ -	\$ -	\$ 31,936	\$ -	\$ -
348	Hydrants	\$ 8,147	\$ -	\$ -	\$ 3,618	\$ -	\$ -
349	Valves	\$ 5,166	\$ -	\$ -	\$ 573	\$ -	\$ -
		<u>\$ 734,047</u>	<u>\$ 596,646</u>	<u>\$ 741,465</u>	<u>\$ 915,125</u>	<u>\$ 813,883</u>	<u>\$ 1,045,877</u>
					*		<u>\$ 4,847,043</u>

*The total \$915,125 of projects completed by 9/30/2016 is overstated by \$100 based on the audit report issued for those assets placed in service. Specifically overstated is the Lafayette Road-Park Ave to Winnacunnet Road main replacement \$555,641. The audited total was \$555,541. As a result, the figure used in the 2019 WICA Calculation of Surcharge, DS-1 page one, \$4,847,046 (rounded) is incorrect. However, the \$100 overstatement has an impact of less than \$10 on the Net investment, and less than \$2 on the Income Tax Expense figure of \$68,432, and is considered immaterial.

Mill Road – North Hampton \$1,045,877 9/30/2018

The 2018 project costs in DW 17-154, schedule CM-1, were estimated to be within a range of \$864,000 to \$1,243,000 for the Mill Road project, based on historical averages.

The Company solicited bids for the Mill Road project from seven approved contractors, two of whom responded to the request. Aquarion uses an Ebid system which allows contractors to submit bids electronically after requests for proposals are emailed to the approved contractors.

Jamco was selected for the Mill Road project, based on its expertise and the fact that it was the lower bidder of the two respondents.

Audit requested the 2018 E-22. The Company provided a copy of the report in response to the request, and noted that May 15 filing date was not achieved due to a change in the reporting process. The Company indicated that *“Starting in 2017, there was a change in our process where the Connecticut Engineering Department began handling the larger capital project in New Hampshire.”* The Company requested the contact person to whom E-22 reports should be sent, and Audit communicated that the Assistant Director of the Gas/Water Division, and the division’s Administrative Assistant should receive the reports electronically. Their email addresses were provided. The 2018 report, provided in response to the Audit Staff request, was forwarded by Audit to the noted PUC contacts. **Audit Issue #1**

The Company provided a summary of the cost elements which comprise the total:

<u>Element</u>	<u>Title</u>	<u>Amount</u>
500010	Outside Services	\$ 7,203.03
500011	Contractor-General	\$ 737,087.29
500012	Contractor-Engineering	\$ 94,277.20
500020	Materials-WBS Elements	\$ 150,701.35
920001	Labor-CT Employees	\$ 37.76
920002	Supervisory Labor	\$ 3,728.36
920003	Labor-Non CT	\$ 18,829.17
920400	Indirect Labor-GO	\$ 19,950.16
920500	Indirect Labor-GO	\$ 844.23
926500	PR OH-Cap Fringes	\$ 11,410.62
408500	PR OH-Cap PR Taxes	<u>\$ 1,807.62</u>
	Total All Cost Elements	\$1,045,876.79

Audit requested how the cost elements tie into the plant in service account 331, and was informed that the elements are general ledger (SAP) terms and tracking mechanisms used as the asset is under construction and included in CWIP account 107000. Each “element” is the general ledger account, which is reconciled monthly to the 107 account based on the project master data fields which include the final account number determination in the WBS element title: XC230-2017-003-E04-343. 230 represents Aquarion NH. 343 represents Transmission and Distribution Mains (Connecticut chart of accounts).

Audit was provided with the journal entries which moved \$1,031,520.93 of the project out of CWIP and into 101000, General Plant in Service as of 9/30/2018. \$14,355.86 remained in CWIP at 9/30/2018. The Company indicated that the amount was part of a Jamco invoice (which Audit did receive) for the period ended 9/25/2018, but due to the timing, the accrual journal entry moving the amount from CWIP to Plant did not occur in September. The entry will be booked as part of the month end close October 2018. Items within CWIP are typically not

allowed for inclusion as plant in service. However, Audit did note that all work performed by Jamco had been completed prior to 9/30/2018, and the lack of accrual was an oversight.

Cost elements 920400, 920500, 926500, and 408500 represent the overheads allocated to the Mill Road project. The Company provided a summary of the project specific allocations, by month, which was verified to the four cost elements' total of \$34,012.63. Refer to the Labor and Overheads section below for additional details.

The project replaced approximately 4,050 linear feet of existing 8-inch main with new 12-inch HDPE main, including approximately 20 service connections from the new main to the curb stops, new hydrants, gate valves, and fittings.

Audit requested all of the supporting documentation relating to the project and was provided with the source documentation related to:

Invoices from Tighe & Bond	\$ 94,277.20
Invoices from Jamco Excavators	\$ 737,087.29
Invoices from North Hampton Police Department	\$ 3,716.25
Invoices from the town of Hampton	\$ 2,315.78
Invoices from Greenland Police Department	\$ 891.00
Invoices from Robert Pike Construction	\$ 280.00
Invoices from Core & Main	\$ 150,701.35
Labor	\$ 22,595.29
Overhead	<u>\$ 34,012.63</u>
Total Cost for Project XC230-2017-003 Mill Road	\$1,045,876.79

The costs were also identified as:

Design	\$ 89,443.45
Execution	<u>\$ 956,433.34</u>
Total	\$1,045,876.79

Tighe & Bond Engineers/Environmental Specialists \$94,277.20

The Company provided copies of eleven invoices dated from February 2018 through September 2018. Tighe & Bond is an engineering firm involved with municipal and investor owned water and waste water infrastructure projects. Each invoice reflected the Aquarion Mill Road Water Main Improvement project, along with hours worked and the related salaries of the Principal Engineer, Project Engineer, Staff Engineer, GIS Technician, Construction Observer, Senior Drafter/Designer, and Administrative Support as applicable. Mileage, photocopy charges, freight/overnight mail charges, lodging/meals, and meals were also included as applicable.

Audit also requested the contract details between Tighe & Bond and Aquarion relating to the Mill Road project. The October 23, 2017 proposal and related task order identified the Mill Road Water Replacement in North Hampton, the drawings, contract documents, and technical specifications related to replacing approximately 4,050 linear feet of existing 8" main with 12" HDPE main on Mill Road between Pine Road and Atlantic Road. The scope of work included

reference to installation of approximately 20 service connections from the new main to curb stops, new hydrants, gate valves, and fittings, with the work designed for open-trench construction (to coincide with the NH DoT pavement schedule). The proposed cost basis for the engineering services for a not-to-exceed estimate of \$33,650. The initial task order #186 was signed by Aquarion and Tighe & Bond on 1/5/2018. A second task order #202, which included construction observation, was signed by both parties on 5/1/2018 with a not-to-exceed price of \$76,200. The overall payment to Tighe & Bond for the two task orders was \$94,277.20.

Jamco Excavators \$737,087.29

Jamco was hired as the general contractor for the Mill Road project, based on their winning bid. Audit requested the Jamco contract, which the Company indicated was signed 5/1/2018 (330 pages). Document 00300, Bid Form, identified Wells 9 and 11 and Mill Road Water Main Improvements as the bid response. A detailed listing of equipment and the hourly rate Jamco would charge for each was provided. On a Tighe & Bond bid schedule were twenty-seven specific lines for which Jamco prepared individual unit pricing and cost extensions. The lines, such as mobilization/demobilization, traffic, removal of old mains, services, hydrants, piping, etc. summed to \$956,028.75.

Progress payment applications were provided, demonstrating the work completed, the total contract (for a combined well project and the water main upgrade on Mill Road) \$956,028.75. The payment applications were signed by the Jamco general manager, notarized, and certified that the information was accurate.

One change order in September, in the amount of \$55,425.90, brought the contract figure up to \$1,011,454.65. The change order represented the following:

1.Additional materials for Wells 9 and 11 Water Main Improvements (bends + hydrants)	\$14,346.96
2.Additional materials for Mill Road Water Main (water service boxes)	\$ 1,483.50
3.Additional materials for Mill Road Water Main(Foster Adapters and service materials)	\$ 6,868.46
4.Conduit Installation between Wells 9, 11, and 6	<u>\$32,726.98</u>
Total Change Order	\$55,425.90

Of the total change order, modifications 2 and 3 were those associated specifically for the Mill Road portion of the project. Audit requested clarification of the final invoice paid to Jamco, \$116,644.24, and the Company indicated it was inclusive of the following:

	<u>Mill Road</u>	<u>Wells 9,11</u>	<u>TOTAL</u>
Previous Work	\$ 716,580.14	\$ 265,042.81	\$ 981,622.95
Current period	\$ 12,137.19	\$ -0-	\$ 12,137.19
Current Change Order	<u>\$ 55,425.90</u>	<u>\$ -0-</u>	<u>\$ 55,425.90</u>
Total	\$ 784,143.23	\$ 265,042.81	\$1,049,186.04
Wells 9, 11 Change Order	<u>\$ (47,073.94)</u>	<u>\$ 47,073.94</u>	<u>\$ -0-</u>
Corrected Total Cost	\$ 737,069.29	\$ 312,116.75	\$1,049,186.04
Paid prior to Final Invoice	<u>\$(680,751.13)</u>	<u>\$(251,790.67)</u>	<u>\$ (932,541.80)</u>
Final Invoice	\$ 56,318.16	\$ 60,326.08	\$ 116,644.24

Audit noted that the Corrected Total Cost for Mill Road (above) was \$737,069.29. The filing reflects a total which is \$18 higher, \$737,087.29. It appears that the system figure of \$737,087.29 is accurate, based on the comparison to the payment applications. \$18 appears to be a transposition within the response to the audit request for clarification.

Specifically noted was the allocation by Jamco of change order items 1 and 4, or \$47,073.94, as costs associated with the Mill Road portion of the project. Aquarion identified those as costs associated with the wells, and allocated the invoice proportionally to the Mill Road Project.

The overall Jamco contract total was comprised of:

	<u>Original</u>	<u>Change</u>	<u>TOTAL</u>
Wells #9 and #11	\$259,939.75	\$47,073.94	\$ 307,013.69
Mill Road Replacement	<u>\$696,089.00</u>	<u>\$ 8,351.96</u>	<u>\$ 704,440.96</u>
Contract	\$956,028.75	\$55,425.90	\$1,011,454.65
5% Retainage			<u>\$ 37,731.39</u>
Total Jamco			\$1,049,186.04

The retainage (5%) held during the contract period was \$52,459.30, paid as work was completed as contracted. The total retainage, part of the overall \$1,049,186.04 was:

Wells	\$15,605.84
Mill Road	<u>\$36,853.46</u>
	\$52,459.30

A portion of the retainage was paid as part of the fourth application for payment, with the final amounts paid as part of the fifth and final application for payment \$116,644.24. That final payment was made in two remittances. \$15,337.86 was paid to Jamco on 10/5/2018, and \$101,306.37 on 10/22/2018 for completion of the project in compliance with the terms of the contract.

Police and Fire \$38,345.33

Audit reviewed 61 individual police and fire duty days which were spread among the eight departments below. Each indicated the hours and the rate charged. An average of the daily figures ranged from \$463 to \$864.

	<u>Billed to Jamco</u>	<u>Billed to Aquarion</u>	<u>Total</u>
Hampton Police	\$ -0-	\$2,315.78	\$ 2,315.78
Rockingham County Sheriff	\$ 4,080.00	\$ -0-	\$ 4,080.00
North Hampton Police	\$ 1,927.05	\$3,716.25	\$ 5,643.30
North Hampton Fire	\$11,981.05	\$ -0-	\$11,981.05
Greenland Police	\$ 9,031.50	\$ 819.00	\$ 9,922.50
Stratham Police	\$ 1,341.00	\$ -0-	\$ 1,341.00
Seabrook Police	\$ 2,592.00	\$ -0-	\$ 2,592.00
Brentwood Police	\$ 469.69	\$ -0-	\$ 469.69
TOTALS	\$31,422.29	\$6,923.03	\$38,345.33

Audit verified that none of the invoices billed to both Jamco and Aquarion were for the same day. However, the invoice from the Stratham Police was for an officer and cruiser at a location in Rye. \$629 should therefore be deducted from the filing.

Robert Pike Construction \$280.00

Audit was provided with a copy of a four-page invoice on which a variety of purchase orders relating to specific items had been handwritten by Aquarion. At the top of the invoice was handwritten “all hydrant work”. The fee charged to the Mill Road project was for hours spend by a detail officer on June 8, 2018. Audit requested clarification of the “hydrant” notation, and was informed that “*hydrant replacements during a main replacement are included in the overall cost of the main replacement project*” (email response from the Company dated 10/19/2018). **Audit Issue #2**

Core & Main \$150,701.35

Core & Main is a water equipment supplier with facilities throughout the United States. Aquarion provided photocopies of invoices for a variety of supplies relating to valves, joints, service boxes, couplings, hydrants, saddles, adapter accessory kits, HDPE piping, tubing, bushings, tracer wire, valve boxes top and bottom sections, ductile iron pipe, among others.

Audit recommends that the Company identify specifically that portion of the total Core & Main invoices which relate to hydrants and services, and that that portion of the cost be included within the plant in service additions within the context of the next rate case. For example, one invoice dated 6/15/2018 reflected three pages of specific items, which totaled \$18,120.37. Of that invoice, one specific line item for 5’6” hydrants was \$3,550.38. Audit cannot quantify the related materials which were used to install the hydrant. Hydrants and Services may be included within the WICA only for those costs in excess of the \$50,000 identified in the approved tariff. **Audit Issue #2**

Labor and Overheads

Aquarion provided Audit with a summary of the payroll charged to the project, along with the associated overhead calculation. As noted above, the \$22,595.29, Labor, and \$34,012.63, Overhead, were recognized through the cost elements below.

920001	Labor-CT Employees	\$ 37.76	
920002	Supervisory Labor	\$ 3,728.36	
920003	Labor-Non CT	<u>\$18,829.17</u>	<u>\$22,595.29 Labor</u>
920400	Indirect Labor-GO	\$19,950.16	
920500	Indirect Labor-GO	\$ 844.23	
926500	PR OH-Cap Fringes	\$11,410.62	
408500	PR OH-Cap PR Taxes	<u>\$ 1,807.62</u>	<u>\$34,012.63 Overhead</u>

Total Labor, \$22,595.29, was verified to a payroll print detail, by employee and posting date, which demonstrated five specific employees who had identified the Mill Road project for certain portions of the posting date.

- Cost element 920001 was verified to one Connecticut employee with time spent for three days from April through September 2018. Due to the immateriality of the total, further review was not conducted.
- Cost element 920002 was verified to one Connecticut supervisor, who had identified time from March through September 2018 relating to the Mill Road project. Audit requested, and was provided with timecard details which validated the amount tested for May 11, 2018.
- Cost element 920003, was verified to the total of three New Hampshire employees. One employee who represented the majority of labor costs incurred relating to the Mill Road project was chosen for further review. Timecard details which included the hourly rate and hours charged supported the cost noted for August 17, 2018.

Overhead calculations were provided to Audit, based on 12/31/2017 year-end balances. The calculations represent only NH related payroll and associated benefits. The breakout of the 58% overhead calculation was provided:

<u>NH Account #</u>	<u>Description</u>	<u>12/2017</u>	
408001	Payroll Taxes	\$ 59,334	
			Adjustments
926011/92601	Fringe Benefits, Interdivision Allocation	\$ 118,733	\$ 118,733
926500	Fringe Benefits Cleared	\$ (45,178)	\$ (45,178)
926201	Pensions	\$ 132,311	
926204	FAS 106 Expense	\$ 35,837	\$ 168,148
926202	Thrift Plan	\$ 30,295	
926000	Benefits, Recreational	\$ 17,085	
926206	Benefits-Medical Plan	\$ 205,362	
926207	Employee Contributions-Medical Plan	\$ (24,407)	
926212	Group Life Insurance	\$ 1,083	
926213	Long and Short Term Disability	\$ 1,522	
926214	Seminars and Conferences-non-labor	\$ 205	
926222	Medical Opt-out	\$ 2,600	
	Total account 926	\$ 475,448	
	Exclude Interdivisional Allocation	\$ (118,733)	
	Add back fringes cleared	\$ 45,178	
	Less 2017 Pension and OPEB	\$ (168,148)	
	Add 2018 Estimated Pension	\$ 123,199	
	Add 2018 Estimated OPEB	\$ 31,171	
	Adjusted 926 Expenses	\$ 388,114	
	Total NH Wages	\$ 769,930	
	Account 926 Expenses as % of Wages	50%	
	Account NH 408 as % of Wages	8%	
	Combined Overhead Rate	58%	

Audit verified the total 926 account balance of \$475,448 to the 2017 NH PUC annual report. The payroll taxes and wages listed above are lower than those figures noted in the NH PUC annual report, as the report includes wages and related payroll taxes for Connecticut employees as well as New Hampshire. The payroll overhead rates are set based on NH wages and expenses only.

Audit requested and was provided with the annual account details for 2017, Account 926000, Benefits-Recreational which indicated expenses related to Unifirst Corporation. The company is a provider of uniform rentals. Invoices and accruals were noted within the account. Four months had no accruals, and December reflected two debit accrual entries. The Company indicated that if they were aware for the month that other invoices would or would not be anticipated, would result in an accrual or not. Accruals in one month were reversed in the

subsequent month. December 2017 reflected two accruals, both of which were reversed in January 2018. No exception.

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, 2017 through September 30, 2018, the Company indicated that it incurred \$18,918 in service line replacement costs, thus below the \$50,000 threshold. Therefore, the \$18,918 has not been included in the filing. Audit did not review the asset details related to service line replacements. Refer to **Audit Issue #2 and Audit Issue #3**

Depreciation Expense and Accumulated Depreciation

Within attachment DS-1, pages 1 through 3, are depreciation expense and accumulated depreciation figures. Audit verified that the depreciation rate of 1.20% for mains has been consistently applied in the current and prior WICA proceedings.

For WICA calculation purposes, the Company calculates depreciation expense in the following manner:

$$(\text{Eligible Capital Cost} - \text{Eligible Retirements}) * \text{Depreciation Rate}$$

For the 2018 Mill Road main replacement, the annual depreciation expense was calculated as follows:

$$(\$1,045,877 - \$91,840) * 1.20\% = \$11,448$$

The ½ year expense was noted to be \$5,724, which was also properly reflected in the Accumulated Depreciation column for this project.

Continuing Property Records (CPR)

Audit requested CPR for the Mill Road project that was completed in 2018, and an explanation of the fixed asset system used by Aquarion. The Company indicated that they use *“the Project system within SAP for our fixed assets. For each project, characteristics such as the PUC code (mains, meter, services, etc.) and location (Hampton, North Hampton, etc.) are defined. Costs are accumulated in the project and posted to CWIP until the project status is manually changed in the system to “technically complete”. At the end of the month, SAP automatically creates a plant asset, based on the characteristics already defined within the project, for any project whose status has been changed to “technically complete”. SAP then moves all the cumulative costs for that project from CWIP (107) to Utility Plant in Service (101). Depreciation expense is calculated outside the system in Excel for each PUC group. The value of plant in service by PUC group is extracted from SAP and the applicable group PUC depreciation rate is applied.”*

Aquarion provided several schedules within the filing which fulfill the requirements for continuing property records. Within DS-1, Audit was able to verify the reported Mill Road-Atlantic Ave to Pine Road, North Hampton main replacement value of \$1,045,877, the associated retirements of \$91,840, with the asset set to depreciate at a rate of 1.20%, with ½ year convention applied to both the addition and the retirement.

Retirements

Filing schedule Attachment DS-1, page 3 of 3, notes the Mill Road project had \$91,839.77 of eligible asset retirements.

Aquarion provided a spreadsheet showing the asset number of 32 specific assets that were retired, the amount retired and if it was a full or partial retirement. A request for more detailed information was made, and the Company provided the details of the SAP general ledger retirement entries which took place in August, September, and revised in October 2018. The detail identified the location, account number, number of feet, type of pipe, and original year of capitalization. Retirements were properly credited to account 101000 and debited to Accumulated Depreciation-Retirements, account 111010.

Calculated Rate of Return, Cost of Capital and Return on Equity

For comparison and informational purposes, Audit has compiled the calculated rate of return, cost of capital, and return on equity percentages, as determined within the context of each year's annual report desk audit. The most recently approved rate case DW 12-085, by Order 25,539 issued 6/28/2013 authorized an overall Rate of Return of 7.49% based on a cost of equity 9.6% and cost of debt 6.05%. The Company appears to have been overearning based on the Rate of Return calculations below, since 2013.

<u>Year</u>	<u>Rate of Return</u>	<u>Cost of Capital</u>	<u>Return on Equity</u>
2012	05.67%	05.69%	05.21%
2013	10.83%	05.81%	17.35%
2014	10.43%	07.55%	12.58%
2015	09.60%	07.54%	11.13%
2016	11.70%	07.57%	14.76%
2017	09.22%	07.63%	11.16%

Summary

Audit reviewed the used and useful WICA eligible Mill Road project through September 30, 2018. Support for the costs was provided in the form of the general ledger accounts, work orders, confidential payroll information, contracts, change orders, and invoices.

Audit recommends the following adjustments to the requested filing figure of \$1,045,876.79, based on Order 26,094 and the tenth revised page 16 of the Company's tariff:

	Filing Total	\$1,045,876.79
Exclusion of police invoice from Stratham for coverage in Rye		<u>\$ (629.00)</u>
Adjusted WICA project total for 2018 additions		\$ 1,045,247.79

Audit identified \$280 on a Robert Pike Construction invoice and \$3,550 on a Core & Main invoice as hydrant related. The reader is advised that any other item used to connect the hydrants and services, noted on several Core & Main invoices could not be quantified by Audit. Refer to Audit Issues #2 and #3.

Audit Issue #1

E-22 Report of Proposed Expenditures for Additions, Extensions and Capital Improvements to Fixed Capital

Background

The NH Administrative Code Puc 609.12 requires that a form, E-22 Report of Proposed Expenditures for Additions, Extensions and Capital Improvements to Fixed Capital, be filed with the Commission on or before May 15 of each year.

Issue

The 2018 E-22 was not filed until requested by the PUC Audit Staff within the context of this WICA audit work.

Recommendations

Audit understands that responsibilities regarding large capital projects shifted from NH staff of the Company to the Connecticut Engineering Department. Aquarion should ensure a process has been instituted to ensure that the annual (or more frequent as outlined in Puc 609.12) E-22 forms are filed in a timely manner.

Company Comment

The Company will ensure that E-22 forms are filed in a timely manner, as required.

Audit Comment

Audit concurs with the Company comment.

Audit Issue #2

Hydrants and Services

Background

Audit was provided with documentation supporting a charge from Robert Pike Construction, which included a notation that all work related to hydrants. Audit also noted hydrant and service costs in Core & Main invoices.

Issue

Audit requested clarification of the “hydrant” notation, and was informed that “*hydrant replacements during a main replacement are included in the overall cost of the main replacement project*” (email response from the Company dated 10/19/2018).

Audit clarified that hydrants and services replaced (or removed and reinstalled) are booked to the general ledger as mains, when they are replaced as part of a “main project”, and that such accounting treatment has always been done in that manner.

Recommendations

The Company must differentiate the specific asset types, in compliance with the Uniform System of Accounts. Because of the blending of replacement hydrants and services during the replacement of the Mill Road main, Audit cannot quantify the impact of the overstatement of mains nor the understatement of services and hydrants, based on the clarification above.

Company Comment

The Company confirms that the cost of replaced hydrants and services (or removed and reinstalled) during a main replacement project are booked to the general ledger main account. The associated hydrant and service retirements are also booked to the main account thus mitigating any misstatement of mains.

Audit Comment

Audit restates the issue. Through booking the replacement of hydrants and services to mains continues the misstatement of mains, services, and hydrants.

Audit Issue #3

Hydrants and Services

Background

Aquarion files an annual WICA tariff at the conclusion of each annual WICA docket.

Issue

The Order which authorized the original WICA specified that 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”.

The tariffs subsequently filed, however, do not include reference to the emergency/reactive replacement of services, valves, and hydrants, nor did Commission Order 26,094, for calculation of the 2018 WICA surcharge.

The tenth revised page 16, effective January 1, 2018 reflects:

the WICA eligible property will consist of the following:

Services over and above an annual; \$50,000 threshold (account 333) and hydrants (account 335) installed as in-kind (i.e., same size) replacements for customers;

mains and valves (account 331) installed as replacements for existing facilities that have either reached the end of their useful life, are worn out or are in deteriorated condition, main cleaning and re-lining projects and relocations that are non-reimbursable (account 331);

replacement of production meters (account 304); and
replacement of pressure reducing valves (accounts 309, 331)...

Recommendation

The Company and Staff at the Commission must ensure that the Order and subsequent tariff filing reflect consistent terms for the 2019 WICA and any subsequent WICA.

Company Comment

The Company will ensure the appropriate language is incorporated within the final compliance tariff language in this docket.

Audit Comment

Audit agrees with the Company comment and encourages specific clarity in any subsequent docket as well.

BEFORE THE NEW HAMPSHIRE PUBLIC UTILITIES COMMISSION
Docket Nos. DW18-054 and DW 18-161
Aquarion Water Company of New Hampshire
Tax Change Effect Analysis

INTRODUCTION

At the end of December 2017, the United States Congress voted, and the President signed into law, the Federal Tax Cuts and Jobs Act (“2017 Tax Act”), effecting major changes beginning January 1, 2018. Among other actions, the 2017 Tax Act substantially reduced the maximum corporate income tax rate from 35 percent to 21 percent. It also impacted deferred tax reserves on the balance sheet, which had to be revalued with the resulting excess deferred income taxes (EDIT) flowed back to customers. In addition, in 2018, the New Hampshire Business Enterprise Tax (BET) rate was reduced from 0.72 percent to 0.675 percent, and the Business Profits Tax (BPT) was reduced from 8.2 percent to 7.9 percent.

In Order No. 26,096 in IR 18-001, the New Hampshire Public Utilities Commission (“Commission”) initiated an investigation into how the 2017 Tax Act and the reductions to the BPT and BET would affect the expenses of each New Hampshire public utility. If the changes in the tax laws reduced the tax obligations and increased the net incomes of those utilities, it would be necessary to determine how those reduced obligations should be reflected in rates. The Commission also ordered each utility to calculate its interim tax savings and record a deferred liability.¹

Blue Ridge Consulting Services, Inc. (“Blue Ridge”) was asked to review the tax-change-effect calculations of Aquarion Water Company of New Hampshire, Inc. (“Aquarion” or “Company”) in Docket Nos. DW 18-054 and DW 18-161. This report reflects our analysis of the information provided by the Company in response to the Commission Order No. 26,096 and the updated tax savings provided in the pre-filed testimony and responses to data requests in DW 18-161, the Company’s petition for approval of its 2019 Water Infrastructure and Conservation Adjustment (WICA) surcharge filing.

SUMMARY OF COMPANY’S FILINGS

On April 2, 2018, Aquarion filed a response to the Commission’s Order No. 26,096 in IR 18-001. Aquarion’s filing was assigned Docket No. DW 18-054. The Company determined its EDIT balance as of December 31, 2017, to be \$1,271,000. Amortizing this balance over the remaining useful lives of the underlying assets resulted in an annual income tax surcredit of approximately \$36,000, which equated to an excess revenue requirement of approximately \$49,000, after applying a 1.374 revenue conversion factor. After combining this amount with the Company’s reduced revenue requirement of \$202,000 related to its estimated 2018 income tax savings, a total reduction of \$251,000 is realized. The Company proposed passing the benefit back to customers through its annual WICA reconciliation process.²

On October 15, 2018, the Company filed a petition for approval of the 2019 WICA surcharge, which incorporates depreciation, property tax expense, income tax expense, and return on investment associated with completed projects submitted in the approved WICA program. Additionally, the 2019 WICA filing reflected the return of excess revenues as a result of the 2017 Tax Act.³

¹ NHPUC Order No. 26,096, page 2.

² DW-18-054 Aquarion Response to IR 18-001, dated March 30, 2018, page 2.

³ DW 18-161 Direct Testimony of Debra A. Szabo, page 3, line 25–page 4, line 7.

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The Company asserted the overall 2019 surcharge of 4.43 percent, to be applied to customers' existing water service bills, represented a decrease of 2.65 percent to the 7.08 percent overall surcharge previously allowed by Order No. 26,094. The reduction in the surcharge was attributed to the reduced corporate federal tax rate under the 2017 Tax Act.⁴

The Company stated that the 2017 Tax Act change impacted the Company's revenue requirement in two ways. First, the lower tax rate reduced the Company's accumulated deferred income tax liability (ADIT). The excess reserve was reclassified to a regulatory liability on December 31, 2017, and will be amortized over the average life of the Company's assets. Second, the lower tax rates also reduced the cost of service and thereby the Company's revenue requirement.⁵ The Company's updated filing on the effect of the 2017 Tax Act changed the initially proposed revenue requirement reduction from \$251,000⁶ to \$262,000, which was reflected as a reduction to WICA annual revenues.⁷

The overall WICA surcharge of 4.43% represents a decrease of 2.65 percent from the 7.08 percent previously authorized under Order No. 26,094. The WICA mechanism approved by the Commission has an annual cap of 5 percent and an aggregate cap of 7.5 percent between rate cases. The Company stated that the proposed 2019 surcharge did not exceed either of these two caps.⁸

Aquarion outlined the following reasons for using the WICA to pass through the tax savings to customers:

Passing the tax savings through the WICA mechanism will allow Aquarion-NH to continue to invest through the WICA mechanism without the need for a rate case for a prolonged period of time. In the absence of passing the tax savings through the WICA mechanism, Aquarion-NH had anticipated filing its next general rate case in 2020, using a 2019 test year because it projects it will not earn its authorized rate of return in 2018. Because of these considerations, Aquarion-NH proposes refunding the tax savings through the WICA so as to pass the savings to customers quickly and delay a general rate case.

In conclusion, Aquarion-NH believes that the proposal to pass the savings to customers through the WICA is beneficial for the following reasons: (a) it will provide a direct and prompt benefit to customers in the amount by which the Company benefits from the changes in tax rates; (b) it will help stabilize or reduce customers' bills and offset the impact of anticipated future WICA surcharges; (c) the WICA is a ready true-up mechanism that is reviewed and audited by the Commission which will protect customers; (d) choosing the WICA mechanism will result in less regulatory costs than creating a separate mechanism to process the savings; and (e) the Commission approved the WICA as the preferred mechanism to pass savings to customers when the IRS changed the TPRs. See Order No. 25,750.⁹

⁴ DW 18-161 Direct Testimony of Debra A. Szabo, page 4, lines 8–13.

⁵ DW 18-161 Direct Testimony of Debra A. Szabo, page 9, lines 7–14.

⁶ DW 18-054 Aquarion Response to Docket No. IR 18-001, Order 26,096, page 2 and Schedule A.

⁷ DW 18-161 Direct Testimony of Debra A. Szabo, Attachment DS-1, page 1 and Attachment DS-4, page 1.

⁸ DW 18-161 Direct Testimony of Debra A. Szabo, page 4, lines 15–17.

⁹ DW-18-054 Aquarion Response to IR 18-001, dated March 30, 2018, page 3.

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In a footnote, the Company reminded the Commission that “in September 2013, the IRS adopted final rules allowing taxpayers to expense certain repair and maintenance costs that had historically been capitalized for tax and ratemaking purposes. See Treasury Decision 9636 pertaining to Internal Revenue Code §§162(a), 167, 168, and 263(A). This resulted in a credit of approximately \$905,000, which the Commission authorized Aquarion-NH to credit to customers over three years (2015, 2016, and 2017) through its existing WICA. See Commission Order No. 25,750, dated January 12, 2015.”¹⁰

If the Commission approval of the 2019 WICA surcharge is delayed beyond January 1, 2019, the Company proposed an alternative recovery period of ten months instead of 12 months. In such a case, the surcharge would be billed effective March 1, 2019.¹¹

OBSERVATIONS AND RECOMMENDATIONS

WICA Surcharge and Safeguard Cap

- 1) The WICA tariff has two Safeguard Caps: “The amount of the WICA applied between general rate case filings shall not exceed seven and one-half percent (7.5%) of the Company’s annual retail water revenues as approved in its most recent rate filing, and shall not exceed five percent (5%) of such revenues for any twelve-month period.”¹² The Company stated that the proposed 2019 WICA surcharge does not exceed either of these two caps.¹³ Blue Ridge finds the Company’s representation of a 4.43 percent surcharge above base revenues includes the return of interim tax savings and amortization of EDIT. Without the tax offsets, the Company acknowledges (in response to Blue Ridge’s inquiry) that its 2019 surcharge proposal would exceed the aggregate safeguard allowed under the tariff by 0.7 percent.¹⁴ The Company offered, “If the Commission does not permit the tax savings to be included in the determination of the aggregate percentage increase over base revenues (as presented in the 2019 WICA proposal), an alternative method would be necessary because the 2019 WICA surcharge (based on the 2018 projects) would exceed the aggregate cap. Alternative methods could entail withdrawal of the 2019 WICA surcharge petition or revision of the petition to seek recovery of only those costs up to the cap.”¹⁵

¹⁰ DW 18-161 Direct Testimony of Debra A. Szabo, page 10, footnote 2.

¹¹ DW 18-161 Direct Testimony of Debra A. Szabo, page 4, line 21–page 5, line 13.

¹² DW 18-161 Direct Testimony of Debra A. Szabo, Attachment DS-2, page 3 of 4, Section III.

¹³ DW 18-161 Direct Testimony of Debra A. Szabo, page 4, lines 15–17.

¹⁴ DW 18-161, Company response to Staff DR 3-1.

¹⁵ DW 18-161, Company response to Staff DR 3-4(d).

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Aquarion Water Company of New Hampshire
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Table 1: WICA Surcharge Against Safeguard Cap without 2017 Tax Act Effect

	<u>Per Company</u>	<u>Without Tax Savings</u>
1 Total Eligible Investment	\$ 4,687,140	\$ 4,687,140
2 Allowed Return on Rate Base	7.49%	7.49%
3 Allowed Return on Investment	351,067	351,067
4		
5 Income Tax Expense	68,432	68,432
6 Depreciation Expense	56,370	56,370
7 Property Tax Expense	93,377	93,377
8 2017 Tax Act	(262,000)	-
9 Adjustment: Annual Revenues Allowed	307,246	569,246
10		
11 Base Revenues on which Adjustment will be applied		
12 Revenues allowed DW 12-085	7,129,043	7,129,043
13 Misc. Charges not subject to WICA	<u>(189,059)</u>	<u>(189,059)</u>
14	6,939,984	6,939,984
15		
16 Surcharge Percent	4.43%	8.20%
17 Aggregate WICA Cap Between Rate Cases	7.50%	7.50%
18 Over/(Under)	-3.07%	0.70%

Source: Aquarion NH 2019 WICA Filing, Attachment DS-1, Page 1 of 3

- 2) When the Commission approved using the WICA mechanism to pass back to customers savings for the change in IRS tangible property rules, the cap measured, *without the credit*, did not exceed the aggregate limit of 7.5 percent as shown below. The total liability of approximately \$905,000 was credited to customers over three years (2015, 2016 and 2017).¹⁶

Table 2: WICA Increases Measured without Offsets from Tax Savings 2014–2019¹⁷

Effective Year	Reference	Annual Increase	Aggregate Increase
2014	Order No. 25,668	1.37%	1.37%
2015	Order No. 25,751	1.17%	2.54%
2016	Order No. 25,857	1.45%	3.99%
2017	Order No. 25,977	1.70%	5.69%
2018	Order No. 26,094	1.39%	7.08%
2019		1.12%	8.20%

Tax Savings Computation

- 3) Aquarion computed its interim tax savings based on estimated 2018 pre-tax income, as opposed to adjusted pre-tax income reflected in current base rates. The Company stated that

¹⁶ DW 18-161 Direct Testimony of Debra A. Szabo, page 10, footnote 2.

¹⁷ DW 18-161, Company response to Staff DR 3-2.

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“applying the change in tax rate to the revenue requirement approved in DW 12-085 would be considered *single issue ratemaking* and *confiscatory* as it yields a result greater than the tax savings earned by the Company since January 1, 2018.”¹⁸ The Company’s argument that this is single-issue ratemaking is inconsistent with its application for a WICA. By its nature, the WICA is single-issue ratemaking.

The Company’s confiscatory argument diverts attention from the fact that the money is not the Company’s. Therefore, requiring it to be returned cannot be confiscatory. Rather, for the Company to continue to collect taxes through base rates established using the higher tax rate and then to retain that money is confiscatory. Since income taxes have decreased substantially, the collection based on the higher tax rate is a windfall to the Company, and therefore, the funds should be returned to the ratepayers. The tax rate is beyond the Company’s control. If the rate had increased, the Company would likely have requested relief. If the Company has experienced higher costs in other areas, the options available to the Company are to decide whether to apply for a rate increase or to attempt to control costs. However, using ratepayer money simply to maintain corporate profits should not be left to the Company’s discretion. At least, the Company should present a compelling reason to retain ratepayer funds to cover those higher costs.

We attempted to understand the Company’s calculations that led to their contention that tax savings based on the most recent approved base rate case would be confiscatory. When asked to provide its calculated savings based on DW 12-085, the Company produced a workpaper that applied an inconsistent method relative to the computed savings based on estimated 2018 pre-tax income. The DW 12-085 savings calculation reflected only income taxes assessed on the equity return component, to the exclusion of the net income component, in cost of service.¹⁹ Based on the information provided by the Company, we were unable to calculate the tax savings using the final revenue requirements in DW 12-085.

The NHPUC adopted the precedent under the 1986 FERC order which established the formula method and provided the following alternatives for the utilities: 1) voluntarily accept the formula method, 2) initiate a general base rate proceeding to review all issues, or 3) do nothing, in which case the agency would use its authority to open an investigation. Many utilities have based their tax savings computation on the revenue requirement approved in the utility’s last general rate proceeding and the benefits have been passed along to ratepayers (Option 1). Other utilities have rolled the tax change effect into a rate case filing which reflected recent operations (Option 2). Aquarion seems to propose a hybrid approach by ignoring that the level of income tax expense established in DW 12-085. The result leads to an over collection of income tax expense relative to computing the savings based on estimated 2018 pre-tax income. If Aquarion desires consideration of recent operations, then all issues should be opened and addressed in a rate case, not just the change in the tax rates.

Regardless, the Company’s proposal does not comport with the FERC formula method, which the Commission has previously accepted. Moreover, the Company did not indicate any unique facts or circumstances to justify adopting a standard different from other New Hampshire utilities. Blue Ridge finds that the Company’s use of estimated 2018 pre-tax income understates the tax savings due to ratepayers. Blue Ridge recommends the tax savings should

¹⁸ DW 18-161, Company response to Staff DR 1-9.

¹⁹ DW 18-161, Company response to Staff DR 3-3.

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Tax Change Effect Analysis

be calculated based on the most recently approved base rate case in DW 12-085 using the FERC formulaic approach adopted by other utilities in New Hampshire. Blue Ridge recommends the Commission maintain a consistent methodology across all companies, unless a utility is able to present a compelling argument why it should be treated differently.

- 4) The initial plan did not explain whether the Company intended to true up the tax savings computation based on estimated 2018 pre-tax income to actual and, if so, how it will recalibrate the savings in future years. In response to Blue Ridge's inquiry, the Company offered, "If the Commission permits the tax savings to be included in the determination of the aggregate percentage increase over base revenues (as presented in the 2019 WICA proposal), then the Company would true up its tax savings reflected in the 2019 WICA surcharge when the actual 2018 pretax income becomes known, which is anticipated to be prior to the next technical session on February 14, 2019."²⁰
- 5) The tax savings computation provided by the Company does not reflect the reduction in the state statutory tax rate from 8.2 percent to 7.9 percent. The before and after computation reflects 7.9 percent in both cases.²¹ While the change in state tax rate yielding a difference of approximately \$3,000 is immaterial, Blue Ridge recommends addressing this oversight for purposes of consistent treatment across all utilities under the Commission's jurisdiction.

Excess Deferred Income Taxes (EDIT)

- 6) Blue Ridge reviewed the derivation of the reported EDIT liabilities and assets.²² We find the composite income tax rates applied to the gross temporary differences are consistent with the statutory rates in place before and after December 31, 2017 and are reasonable.
- 7) Aquarion proposes to amortize the EDIT liability related to accelerated depreciation using the Reverse South Georgia Method (RSGM) because it does not have vintage data prior to 2007 (pre-SAP implementation) to employ the Average Rate Assumption Method (ARAM).²³

Under the Reverse South Georgia method, the excess tax reserve on all utility property in the plant account is computed based on the weighted average life or composite rate used to calculate depreciation for regulatory purposes. The excess tax reserve so computed is then reduced ratably over the regulatory life of the property. Because the RSGM frequently results in reductions to a utility's deferred tax reserve sooner and to a greater extent than would be the case under the ARAM, the use of the RSGM represents a departure from the strict normalization requirement. Under Rev. Proc. 88-12, a Company is permitted to use the alternative normalization accounting method of RSGM instead of ARAM if the following two conditions are met:

- a) The utility is required by its regulatory commission to use an average life or composite rate method in computing depreciation expense for regulatory purposes; and

²⁰ DW 18-161, Company response to Staff DR 3-4(b).

²¹ DW 18-161, Company response to Staff 1-9, Attachment A (line 28) should reflect the state tax rate of 8.2 percent.

²² DW 18-161, Company response to Staff DR 1-10.

²³ DW 18-161, Company response to Staff DR 1-11 and Staff DR 2-2.

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Tax Change Effect Analysis

- b) The utility's books and underlying property records do not contain the vintage account data necessary to apply the ARAM.²⁴

Blue Ridge finds the Company's explanation for adopting RSGM to be reasonable.

- 8) The Company's computation of the average remaining book life yields an amortization period of 29.75 years and results in a computed annual amortization of \$(49,000) for the depreciation related liability.²⁵ Blue Ridge finds the Company's calculation of the 29.75 amortization period under the RSGM for EDIT for the depreciation related liability to be reasonable.
- 9) Aquarion proposes to amortize the EDIT related to actuarial gains and losses related to pension and OPEB of \$(195,000) over 20 years. The annual amortization is \$(10,000).²⁶ We found that, while we have observed other companies recovering similar items over 15 years, in this situation, the EDIT is an asset. Therefore, the longer amortization period lowers rates and benefits customers. Blue Ridge finds the Company's proposal to be reasonable.
- 10) Aquarion proposes to amortize minor EDIT assets and liabilities over one year. Other normalized items include \$(6,000) and deferred debits of \$3,000 with a net total of \$(3,000).²⁷ Blue Ridge finds the Company's proposal of recovering these minor EDIT and asset liabilities over one year to be reasonable.

Interim Tax Savings Outside of Base Rates

- 11) Blue Ridge finds the Company did not include the 2018 WICA surcharge in its interim tax savings calculation. The Commission approved the 2018 WICA surcharge reflecting a federal statutory rate of 35% and state tax rate of 8.2% on December 29, 2017; the effective date was January 1, 2018. The Company stated it "did not include a reconciliation for the over-collected 2018 taxes associated with the WICA surcharge approved under DW 17-154 in its October 15, 2019 WICA surcharge proposal because the Commission had not ordered it to do so under IR 18-001 (Order No. 26,096)."²⁸ Notwithstanding, other New Hampshire utilities have proposed and returned the interim tax savings above and beyond the benefit realized in base rates, specifically Liberty Utilities (EnergyNorth) in DG 17-048 and Northern Utilities, Inc. in DG 17-070. Blue Ridge recommends the Commission determine and apply a consistent standard across all utilities.

²⁴ Hayne, Robert L. and Aliff, Gregory E., Accounting for Public Utilities, Release No, 35, November 2018, page 17-47.

²⁵ DW 18-161 Direct Testimony of Debra A. Szabo, Attachment DS-4, line 11.

²⁶ DW 18-161 Direct Testimony of Debra A. Szabo, Attachment DS-4, line 12.

²⁷ DW 18-161 Direct Testimony of Debra A. Szabo, Attachment DS-4, lines 13-14.

²⁸ DW 18-161, Company response to Staff DR 3-5.

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Aquarion Water Company of New Hampshire
Tax Change Effect Analysis

INFORMATION RELIED UPON

- 1) IR 18-001, Order No. 26,096, January 3, 2018
- 2) DW 18-054, Company response to IR 18-001, Order No. 26,096, dated March 30, 2018
- 3) DW 18-161
 - a) Petition for Approval of 2019 Water Infrastructure and Conservation Adjustment Surcharge and Proposed Projects
 - b) Direct Testimony of Debra A. Szabo, dated October 15, 2018
 - c) Company's Responses to Staff Data Requests
 - i) Staff 1-5
 - ii) Staff 1-8
 - iii) Staff 1-9
 - iv) Staff 1-10
 - v) Staff 1-11
 - vi) Staff 1-12
 - vii) Staff 2-2
 - viii) Staff Set 3
- 4) DW-17-154
 - a) Direct Testimony and Attachments of Troy M. Dixon, dated October 13, 2017
 - b) Order No. 26,094, December 29, 2017
- 5) DW 16-828, Order No. 25,977, January 13, 2017
- 6) DW 15-476, Order No. 25,857, January 7, 2016
- 7) DW 14-300, Order No. 25,751, January 12, 2015
- 8) DW 13-314, Order No. 13-314, May 23, 2014
- 9) Hayne, Robert L. and Aliff, Gregory E., Accounting for Public Utilities, Release No. 35, November 2018

BEFORE THE NEW HAMPSHIRE PUBLIC SERVICE COMMISSION

Docket Nos. DW18-054 and DW 18-161

Aquarion Water Company of New Hampshire

Tax Change Effect Analysis

Workpapers-WICA Cap

	<u>Per Company</u>	<u>Without Tax Savings</u>	<u>Effective Year</u>	<u>Reference</u>	<u>Annual Increase</u>	<u>Aggregate Increase</u>
1 Total Eligible Investment	\$ 4,687,140	\$ 4,687,140	2014	Order No. 25,668	1.37%	1.37%
2 Allowed Return on Rate Base	7.49%	7.49%	2015	Order No. 25,751	1.17%	2.54%
3 Allowed Return on Investment	351,067	351,067	2016	Order No. 25,857	1.45%	3.99%
4			2017	Order No. 25,977	1.70%	5.69%
5 Income Tax Expense	68,432	68,432	2018	Order No. 26,094	1.39%	7.08%
6 Depreciation Expense	56,370	56,370	2019		1.12%	8.20%
7 Property Tax Expense	93,377	93,377				
8 2017 Tax Act	(262,000)	-				
9 Adjustment: Annual Revenues Allowed	307,246	569,246				
10						
11 Base Revenues on which Adjustment will be applied						
12 Revenues allowed DW 12-085	7,129,043	7,129,043				
13 Misc. Charges not subject to WICA	(189,059)	(189,059)				
14	6,939,984	6,939,984				
15						
16 Surcharge Percent	4.43%	8.20%				
17 Aggregate WICA Cap Between Rate Cases	7.50%	7.50%				
18 Over/(Under)	-3.07%	0.70%				

Source: Aquarion NH 2019 WICA Filing, Attachment DS-1, Page 1 of 3

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Aquarion Water Company of New Hampshire
Tax Change Effect Analysis
Workpapers-State Tax Savings

	(A)	(B)	(C)	(D)	(E)	
<u>M-1 Items</u>	<u>Per Company</u>			<u>BRCS</u>		
	<u>As Provided</u>	<u>Recomputed</u>				
1 State Rate	7.9%	7.9%		8.2%	7.9%	
2 Federal Rate	35.0%	21.0%		35.0%	21.0%	
3 Estimated 2018 pretax income	1,759	1,759		1,759	1,759	
<u>Temporary Flowthrough Differences</u>						
4 Excess flowthrough depreciation	87	87		87	87	
5 Capitalized repairs	(712)	(712)		(712)	(712)	
6 Total Flowthrough Differences	(625)	(625)		(625)	(625)	
<u>Timing / Normalized Differences</u>						
7 Normalized depreciation	188	188		188	188	
8 Bonus depreciation	(2,088)	(2,088)		(2,088)	(2,088)	
9 Bad debt expense	1	1		1	1	
10 Deferred debits & Amort Cust. List	(403)	(403)		(403)	(403)	
11 Pension expense and contributions	344	344		344	344	
12 Total timing / normalized differences	(1,958)	(1,958)		(1,958)	(1,958)	
13 Taxable Income (Loss)	(824)	(824)		(824)	(824)	
<u>State Income Tax Expense</u>						
14 State taxable income	(824)	(824)		(824)	(824)	
15 Disallowed bonus depreciation	1,853	1,853		1,853	1,853	
16 State taxable income	1,029	1,029		1,029	1,029	
17 State statutory tax rates	7.9%	7.9%	0.00%	8.2%	7.9%	-3.66%
18 State taxes payable	81	81	0.00%	84	81	-3.66%
19 Deferred state tax expense	155	155	0.00%	161	155	-3.66%
20 Less: deferred taxes on bonus depreciation	(146)	(146)	0.00%	(152)	(146)	-3.66%
21 AM Flowthrough depreciation	(2)	(2)	0.00%	(2)	(2)	-3.66%
22 Deferred FCIC credits generated	-	-		-	-	
23 Total deferred state taxes	6	6		7	6	
24 Total state book tax expense	88	88	0.00%	91	88	-3.66%
<u>Federal Income Tax Expense</u>						
25 State taxable income	(824)	(824)		(824)	(824)	
26 Less State income tax	(81)	(81)		(84)	(81)	
27 Federal taxable income	(905)	(905)		(908)	(905)	
28 Federal statutory tax	35%	21%	-40.00%	35%	21%	-40.00%
29 Federal tax payable	(317)	(190)	-40.00%	(318)	(190)	-40.20%
30 Deferred Federal tax expense	682	409	-40.00%	682	409	-39.99%
31 American Flowthrough depreciation	22	13	-40.00%	22	13	-40.00%
32 Total deferred Federal taxes	704	423	-40.00%	704	423	-39.99%
33 Total Federal book tax expense	388	233	(155)	386	233	(154)
34 Revenue conversion factor			1.374			
35 Tax Savings			(213)			
36 Total State and Federal Tax Expense				477	320	(157)
37 Revenue conversion factor						1.374
38 Tax Savings						(216)

Source:

Column A: Response to Staff DR 1-9, Attachment A. Ties to 2019 WICA Filing; Attachment DS-4 (Line 6)

Column B: Recomputation of Aquarion NH Staff DR 1-9, Attachment A. Ties to 2019 WICA Filing; Attachment DS-4 (Line 5)

BEFORE THE NEW HAMPSHIRE PUBLIC SERVICE COMMISSION
Docket Nos. DW18-054 and DW 18-161
Aquarion Water Company of New Hampshire
Tax Change Effect Analysis
Workpapers-EDIT Calculation

	Gross Temporary Differences	Federal and State DTL		EDIT
		35 % Fed Rate	21 % Fed Rate	
Depreciation	(11,201,515)	(4,412,684)	(2,943,268)	(1,469,416)
Pension and retiree medical	1,511,434	610,543	415,312	195,231
Deferred debits	(21,175)	(8,554)	(5,818)	(2,736)
Other	43,953	17,754	12,078	5,676
Total	(9,667,302)	(3,792,941)	(2,521,696)	(1,271,245)

	Period	Amortization
Depreciation	29.75	(49,392)
Pension and retiree medical	20.00	9,762
Deferred debits	1.00	(2,736)
Other	1.00	5,676
Total		(36,691)
		1,374
Total with Gross-up		(50,428)
Company Filing		(49,000)
Difference (likely rounding error)		(1,428)

Source: Response to Staff DR 1-9, Attached A.

Composite Tax Rate	35 % Fed Rate	21 % Fed Rate
Depreciation	39.4%	26.3%
Pension and retiree medical	40.4%	27.5%
Deferred debits	40.4%	27.5%
Other	40.4%	27.5%
Total	39.2%	26.1%

Revenues	100.0%	100.0%
State Tax	8.2%	7.9%
	91.8%	92.1%
Federal Statutory Rate	35.0%	21.0%
Effective Rate	32.1%	19.3%

Composite Tax Rate	40.3%	27.2%
Complement	59.7%	72.8%
Revenue Conversion Factor	1.676	1.374

ACCOUNTING FOR PUBLIC UTILITIES

Volume 1

ROBERT L. HAHNE

GREGORY E. ALIFF

DELOITTE & TOUCHE LLP

Contributing Authors: The following were the original contributing authors of Accounting for Public Utilities. While much of what these individuals originally wrote has been removed or replaced through the annual update process, we wish to continue to recognize their contributions in the creation of this book.

FRANCIS J. ANDREWS, JR.

WILLIAM W. EYERS

JOHN S. FERGUSON

HERNAN GONZALEZ

JOHN D. MCCLELLAN

RICHARD W. MCCULLOUGH

JAMES E. MORRIS

RANDALL A. SNOWLING

JAN A. UмбаUGH

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QUESTIONS ABOUT THIS PUBLICATION?

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Christine Lee-Pao at (848) 702-4541
Email: christine.lee-pao@lexisnexis.com
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Editorial Office
230 Park Ave., 7th Floor, New York, NY 10169 (800) 543-6862
www.lexisnexis.com

MATTHEW BENDER

[d] Reverse South Georgia Method

A utility's property records might not contain the vintage account data that is necessary to apply the ARAM. In this situation, utilities are permitted to use an alternative normalization accounting method, known as the "Reverse South Georgia" method, to reduce their reserves for deferred taxes.⁷¹

The Reverse South Georgia method is a variation of the South Georgia method. (The South Georgia method is discussed in § 17.01[5], above.) Under the Reverse South Georgia method, the excess tax reserve on all public utility property in the plant account is computed based on the weighted average life or composite rate used to calculate depreciation for regulatory purposes. The excess tax reserve so computed is then reduced ratably over the regulatory life of the property.

Because the Reverse South Georgia method frequently results in reductions to a utility's deferred tax reserve sooner and to a greater extent than would be the case under the ARAM, the use of the Reverse South Georgia method represents a departure from the strict normalization requirements of TRA 1986. Therefore, the Reverse South Georgia method may be used by a utility only if the following two conditions are met:

- (1) The utility is required by its regulatory commission to use an average life or composite rate method in computing depreciation expense for regulatory purposes; and
- (2) The utility's books and underlying property records do not contain the vintage account data necessary to apply the ARAM.

If a utility's books and underlying property records do contain sufficient vintage year data to apply the ARAM, the use of the Reverse South Georgia method by the utility constitutes a normalization violation.

[2] Alternative Minimum Tax

Before the passage of the TRA 1986, corporations were subject to an add-on minimum tax equal to 15 percent of the corporation's tax preferences, to the extent that the preferences exceeded the greater of \$10,000 or the regular income tax paid.⁷² These preferences were set forth in the IRC and included, among others items, excess ACRS deductions on real estate, excess of percentage depletion over cost basis, and the "untaxed" portion of capital gains.⁷³ TRA 1986 repealed the add-on minimum tax for corporations after 1986 and replaced it with a new corporate alternative minimum tax (AMT) encompassing additional tax adjustments and preferences.⁷⁴ This section discusses the major provisions of the AMT and how it affects public utilities.

[a] Alternative Minimum Tax Base

The tax base for the corporate AMT is the corporation's regular taxable income. After certain adjustments, the resulting amount, known as alternative minimum

⁷¹ See Rev Proc 88-12, 1988-1 CB 637; Ltr Ruls 8910012, 8825032, 8825033, and 8825035.

⁷² See IRC § 56 (1954).

⁷³ See IRC § 57 (1954).

⁷⁴ Pub L No 99-514, 99th Cong, 2d Sess (Oct 22, 1986) at § 701, codified at IRC §§ 53-59 (1986).

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: March 12, 2019
AT (OFFICE): NHPUC

FROM: Joseph M. Vercellotti, P.E.
Utility Engineer *JMV*

SUBJECT: DW 18-161 Aquarion Water Company of New Hampshire
2019 Water Infrastructure and Conservation Adjustment (WICA) Filing

TO: Steve Frink, Director NHPUC Gas-Water Division
Jayson Laflamme, Asst. Director NHPUC Gas-Water Division

This memo was prepared to summarize observations and recommendations in docket DW 18-161, the 2019 Water Infrastructure and Conservation Adjustment (WICA) filing by Aquarion Water Company of New Hampshire (Aquarion or Company). The Company is seeking approval of a WICA surcharge for projects completed in 2018. This review is limited primarily to the engineering and operational aspects of the current filing and based on filed information as well as case discovery.

Project Completed in 2018 (for 2019 WICA Surcharge)

In the 2018 project year, Aquarion completed and placed into service one WICA eligible project in the Town of Hampton. The Company replaced an 8-inch asbestos cement and unlined cast iron water main on Mill Road that has previously been prone to main breaks with a new 8-inch main. The work was completed in conjunction with a State of New Hampshire Department of Transportation (NHDOT) paving project, which resulted in pavement restoration cost savings to the Company.

Commission Order No. 26,094 in Docket DW 17-154 previously approved the project for inclusion in the 2018 WICA construction season. As referenced in the testimony of Carl McMorrان, the estimated cost of the project changed significantly after the Company went out to bid for the project. The reasons for the changes were explained in the Company's letter filed in Docket No. DW 17-154, dated May 18, 2018. The Company did not incur valve, service line or hydrant replacement costs in excess of the \$50,000 threshold, and therefore those costs were not included in the proposed 2019 WICA surcharge total of \$1,045,877.

Conclusion

Based on the assessment of the engineering and operational aspects of the 2018 water main replacement project described in the petition, testimony, data requests and technical session, the Company's 2018 projects and investments are used and useful and were prudently incurred. Please let me know if you need anything further in this regard.

**DW 18-054 and DW 18-161
 AQUARION WATER COMPANY OF NEW HAMPSHIRE, INC.
 CALCULATION OF 2019 WICA SURCHARGE**

	<u>Calculation of WICA Revenues</u>	<u>Calculation of WICA Surcharge %</u>		
(1) Total Investment through 09/30/2018	\$ 4,846,417			
(2) Less: Accumulated Depreciation	<u>(159,903)</u>			
(3) Net Investment	4,686,514			
(4) Allowed Return on Rate Base	x <u>7.49%</u>			
(5) Allowed Return on Investment	<u>351,020</u>			
(6) Equity Gross-up Percentage	x <u>1.46%</u>			
(7) Income Tax Expense [(3) x (6)]	68,423			
(8) Depreciation Expense	56,363			
(9) Property Tax Expense	93,367			
(10) Less: WICA Maximum Cap Adjustment (7.50%)	<u>(48,674)</u>			
(11) Maximum WICA Annual Revenues [(5) + (7) . . . (10)]	520,499	<u>7.50%</u>	[(11) ÷ (18)]	12-Month Basis
(12) Less: Income Tax Adjustment Relative to 2018 Earned WICA Revenues [Attachment G]	<u>(44,302)</u>			
(13) Proposed 2019 WICA Annual Revenues (12-month basis)	476,197	<u>6.86%</u>	[(13) ÷ (18)]	12-Month Basis
(14) Less: 2019 WICA Revenues Previously Earned: Jan - May '19 @ 7.08% [(26)] (Estimated)	<u>(195,010)</u>			
(15) Proposed 2019 WICA Revenues to be Earned: Jun - Dec '19 (Estimated)	<u>\$ 281,187</u>	<u>6.72%</u>	[(15) ÷ (20)]	7-Month Basis

Base Revenues on which WICA Applied

(16) Revenues Allowed per DW 12-085	\$ 7,129,043
(17) Miscellaneous Charges not Subject to WICA	<u>(189,059)</u>
(18) Adjusted Base Revenues on which WICA Applied	6,939,984
(19) Less: Base Revenues Earned: Jan - May '19 [(26)] (Estimated)	<u>(2,754,379)</u>
(20) Base Revenues on which WICA Applied: Jun - Dec '19 (Estimated)	<u>\$ 4,185,605</u>

	<u>Calculation of Estimated Jan - May '19 WICA and Base Revenues</u>			
	<u>WICA Revenues Per Company</u>		<u>WICA Surcharge Jan - May '19</u>	<u>Estimated Base Revenues Jan - May '19</u>
(21) <u>WICA Revenues Previously Earned: Jan - May 2019 (Estimated)</u> January-19 (Actual)	\$ 57,699	÷	7.08%	= \$ 814,958
(22) February-19 (Actual)	29,029	÷	7.08%	= 410,014
(23) March-19 (Actual)	28,282	÷	7.08%	= 399,463
(24) April-19 (Estimate)	36,000	÷	7.08%	= 508,475
(25) May-19 (Estimate)	<u>44,000</u>	÷	7.08%	= 621,469
(26) Total 2019 WICA Revenues Previously Earned: Jan - May '19 (Estimated)	<u>\$ 195,010</u>			<u>\$ 2,754,379</u>

**DW 18-054 and DW 18-161
 AQUARION WATER COMPANY OF NH, INC.
 RE-CALCULATION OF DW 17-154 WICA REVENUES
 ADJUSTING FOR FEDERAL AND STATE CORPORATE INCOME TAX RATE REDUCTIONS**

	(A)	(B)	(C)
	Per Order No. 26,094	Adjusted Per Income Tax Rate Reductions	Revenue Differential
(1) Total Investment through 09/30/2017	\$ 3,801,069	\$ 3,801,069	
(2) Accumulated Depreciation	(109,259)	(109,259)	
(3) Net Investment	3,691,810	3,691,810	
(4) Allowed Return on Rate Base	x 7.49%	7.49%	
(5) Allowed Return on Investment	276,517	276,517	\$ -
(6) Equity Gross-up Percentage	x 2.66%	1.46%	
(7) Income Tax Expense [(3) x (6)]	98,202	53,900	(44,302)
(8) Depreciation and Property Tax Expense	116,506	116,506	-
(9) WICA Annual Revenues Allowed [(5) + (7) + (8)]	<u>\$ 491,225</u>	<u>\$ 446,923</u>	<u>\$ (44,302)</u>
<u>Base Revenues on which WICA Applied</u>			
(10) Revenues Allowed per DW 12-085	\$ 7,129,043	\$ 7,129,043	
(11) Miscellaneous Charges not Subject to WICA	(189,059)	(189,059)	
(12) Adjusted Base Revenues on which WICA Applied	<u>\$ 6,939,984</u>	<u>\$ 6,939,984</u>	
(13) WICA Surcharge Percentage [(9) ÷ (12)]	<u>7.08%</u>	<u>6.44%</u>	

**AQUARION WATER COMPANY OF NEW HAMPSHIRE
 WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT**

CONTACT: Carl McMorran, Operations Manager
cmcmorran@aquarionwater.com
 603-926-3319 ext 116

Contents:
 Project Summary Estimated capital expenses by major category
 All projected figures for 2018-2020 are estimates.

Hydrants	Aquarion has historically replaced 2 hydrants per year, on average.
Services	Aquarion has historically replaced 5 services per year, on average.
Main Replacements	Main replacements are prioritized based on GIS information. As of this date, the distribution system is separated into 1,291 pipe segments. Each segment is rated on each of the categories described below. Most ratings are based on a scale of 0 (low) to 3 (high); exceptions are noted below. The ratings for each category are summed to produce an overall rating for each pipe segment as shown in CM-2. The highest rated pipe segments are scheduled for replacement.

.....
PRIMARY FACTORS

Bleeder (Non-revenue water)	3 - Main requires a bleeder to prevent freezing 0 - Main does not require a bleeder to prevent freezing
Hydraulic Capacity	3 - Hydrants do not provide satisfactory fire flow rates 2 - Hydraulic model indicates less than expected flow rates with little redundancy (i.e., parallel mains) 1 - Hydraulic model indicates less than expected flow rates with some redundancy 0 - Hydrants provide satisfactory fire flow rates
Main Break History Ratings	One point per break.
Pipe Material Ratings	3 - Galvanized Steel (GS) 3 - Universal Pipe (UP) 3 - Lead joint (LJ) 3 - Asbestos-cement (AC) 2 - Cast iron 0 - Copper (CU) 0 - Ductile iron (DI) 0 - High density polyethylene (HDPE) 0 - Plastic wrapped ductile iron (PWDI) 0 - Poly-vinyl-chloride (PVC) 0 - Unknown (UNK)
Pipe Age / Useful Life Ratings	3 - Installed in 1915 or sooner 2 - Installed between 1916 and 1925 1 - Installed between 1926 and 1940 0 - Installed after 1940

.....
SECONDARY FACTORS

Critical System Component Ratings	3 - Primary transmission line w/ no redundancy 2 - Primary transmission line w/ redundancy 1 - Secondary transmission line 0 - Regular distribution main
-----------------------------------	---

.....

**AQUARION WATER COMPANY OF NEW HAMPSHIRE
 WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT**

CONTACT: Carl McMorran, Operations Manager
cmcmorran@aquarionwater.com
 603-926-3319 ext 116

Contents:	
Lining	1 - unlined cast iron
Scheduled Work	3 - Paving or excavation projects by others scheduled in next two years
Coordination	2 - Paving or excavation projects by others scheduled in next three or four years 1 - Paving or excavation projects by others scheduled in more than four years 1 - Adjacent to another high scoring pipe segment 0 - No other scheduled projects -1 - Street was paved five years ago -2 - Street was paved four years ago -3 - Street was paved three years ago -4 - Street was paved two years ago -5 - Street was paved one year ago
Staff Concerns / Other Factors	Staff judgment is simply a way of expressing subjective factors that can have a large impact on projects. Some examples are to avoid disrupting the same neighborhood in consecutive years and choosing to postpone a project for more time to evaluate alternative replacement methods.
Budget Constraints	Execution of top priority main replacement projects may not leave enough funding for the runner up projects, so lower scoring and lower cost projects may be done instead.
Water Quality Issues	Dropped because water quality problems cannot be reliably linked to individual main segments. Most water quality issues have been traced back to source wells, not mains. Even water quality tuberculated mains tends to show up somewhere downstream of the source.
Main Replacement Project Management	Some main replacement projects are split into design and construction phases. Due to the amount of time required for surveys, design, permitting and other design phase factors, these activities are typically scheduled for the year prior to construction. Attempts to squeeze design and construction into a single calendar year have caused scheduling and budgeting problems. The design phase typically cannot be completed early enough in the year to allow for a sufficient construction period with respect to cold weather, road opening bans and year end accounting constraints.
Control Valves	Includes pressure reducing valves and other control valves; none are currently scheduled for replacement, but a breakdown or failure could occur that would require a replacement.
Valves	Aquarion has historically replaced 1 valve per year, on average.
Production Meters	Replacement / capitalized repairs of production meters is performed on an as needed basis when routine calibration show that the meters are not functioning accurately. Sometimes these replacements can be scheduled in advance when included as part of a pumping station upgrade.

Aquarion Water Company of New Hampshire
Water Conservation and Infrastructure Adjustment Project Summary

	Actual completed thru 30-Sep-18	Projected thru 30-Sep-19		Projected thru 30-Sep-20		Projected thru 30-Sep-21		Project Totals	
		Low	High	Low	High	Low	High	Low	High
MAIN REPLACEMENTS									
Mill Rd - Atlantic Avenue to Pine Road	\$ 1,045,248								
Rt 101		\$ 885,000	\$ 1,273,000					\$ 885,000	\$ 1,273,000
Seventh Street		\$ 58,000	\$ 83,000					\$ 58,000	\$ 83,000
Ninth Street		\$ 59,000	\$ 85,000					\$ 59,000	\$ 85,000
Tenth Street		\$ 59,000	\$ 85,000					\$ 59,000	\$ 85,000
Lafayette Rd @ North Rd (bridge)				\$ 670,000	\$ 960,000			\$ 670,000	\$ 960,000
Ocean Boulevard - Dumas Avenue to Highland Avenue						\$ 920,000	\$ 1,323,000	\$ 920,000	\$ 1,323,000
CONTROL VALVES	\$ -								
PRODUCTION METERS	\$ -	\$ 3,500		\$ -		\$ -		\$ 3,500	
HYDRANTS	\$ -	\$ 5,000		\$ 5,000		\$ 5,000		\$ 15,000	
SERVICE LINES	\$ 18,918	\$ 33,000		\$ 33,000		\$ 33,000		\$ 99,000	
VALVES	\$ -	\$ 1,000		\$ 1,000		\$ 1,000		\$ 3,000	
Hydrant / Service Line / Valve Threshold	\$ (50,000)	\$ 50,000		\$ 50,000		\$ 50,000		\$ 150,000	
Hydrant / Service Line / Valve Net	\$ -	\$ -		\$ -		\$ -		\$ -	
ANNUAL TOTALS	\$ 1,045,248	\$ 1,061,000	\$ 1,529,500	\$ 670,000	\$ 960,000	\$ 920,000	\$ 1,323,000	\$ 2,651,000	\$ 3,812,500

Aquarion Water Company of New Hampshire
 WICA Main Replacement Projects

Account 331

Project	Town	Material	Length (feet)	Diameter (inches)	Total Cost/ Estimated Costs	Actual thru Sep 30, 2018	Projected Low	2019 High	Projected Low	2020 High	Projected Low	2021 High	Prioritization Factors	Comments
Mill Rd - Atlantic Avenue to Pine Road	North Hampton	Asbestos / Cast iron	4,000	8		\$ 1,045,248								
Rt 101	Hampton	Cast iron	4,050	12			\$ 885,000	\$ 1,273,000					Leak / high potential repair costs / critical transmission pipe	This is not the highest scoring pipe segment; see C.McMorran testimony for explanation
Seventh Street	Hampton	Galvanized	260	2			\$ 58,000	\$ 83,000					Relatively low cost projects with fewer scheduling and construction obstacles than most main replacement projects.	
Ninth Street	Hampton	Galvanized	270	2			\$ 59,000	\$ 85,000					Relatively low cost projects with fewer scheduling and construction obstacles than most main replacement projects.	
Tenth Street	Hampton	Galvanized	260	2			\$ 59,000	\$ 85,000					Relatively low cost projects with fewer scheduling and construction obstacles than most main replacement projects.	
Lafayette Rd @ North Rd (bridge)	North Hampton	Ductile iron	304	12					\$ 670,000	\$ 960,000			DOT bridge project	See C McMorran testimony for explanation
Ocean Boulevard - Dumas Avenue to Highland Avenue	Hampton	Cast iron	4,200	8							\$ 920,000	\$ 1,323,000	Pipe age and material	
TOTALS						\$ 1,045,248	\$ 1,061,000	\$ 1,526,000	\$ 670,000	\$ 960,000	\$ 920,000	\$ 1,323,000		

Aquarion Water Company of New Hampshire
 WICA Valve Replacements

Account 331

A		B		C	D	E	F
COMPLETED PROJECTS				1-Oct-17	to	30-Sep-18	
Valve #		Location		Town		Actual Cost	Completion Date
		None in 2018					
				TOTAL	-	\$ -	
PROPOSED PROJECTS							
		Valve Replacements		Town	Projected Number	Average Annual Cost	Completion Date
1-Oct-18	to	30-Sep-19		To be determined	1	\$ 1,000	30-Sep-2019
1-Oct-19	to	30-Sep-20		To be determined	1	\$ 1,000	30-Sep-2020
1-Oct-20	to	30-Sep-21		To be determined	1	\$ 1,000	30-Sep-2021
				TOTAL	3	\$ 3,000	

Comments

Valve replacements are not scheduled more than a year in advance because valves are not replaced unless identified as malfunctioning during valve exercising activities.

Aquarion Water Company of New Hampshire
 WICA Production Meter Replacements

Project	Town	Estimated Cost	Actual 2018	Projected 2019	Projected 2020	Projected 2021	Comments
							Production meters have been very reliable; and
							none have been replaced for several years
Average one production meter replacement every couple of years	Average cost: \$3,500 / meter	\$ 3,500	\$ -	\$ 3,500	\$ -	\$ -	
	TOTALS	\$ 3,500	\$ -	\$ 3,500	\$ -	\$ -	

WATER INFRASTRUCTURE AND CONSERVATION ADJUSTMENT

In addition to the net charges provided for in this Tariff, a Water Infrastructure and Conservation Adjustment (“WICA”) surcharge of ~~7.084.626.72%~~ will apply to all bills with services rendered on or after ~~June~~ January 1, ~~2018~~ 2019.

I. General Description

Purpose: To recover the fixed costs (depreciation, property taxes and pre-tax return) of certain Commission-approved non-revenue producing system improvement projects completed and placed in service and to be recorded in the individual accounts, as noted below, between base rate cases. In addition, WICA provides the Company with the resources to accelerate asset replacement for infrastructure for the purpose of improving or protecting water quality and the reliability of service and to comply with evolving regulatory requirements imposed by the Safe Drinking Water Act.

Eligible Property: The WICA-eligible property will consist of the following:

Services* ~~over and above an annual; \$50,000 threshold~~ (account 333) and hydrants* (account 335) installed as in-kind (i.e., same size) replacements for customers;

mains and valves* (account 331) installed as replacements for existing facilities that have either reached the end of their useful life, are worn out or are in deteriorated condition;

main cleaning and re-lining projects and relocations that are non-reimbursable (account 331);

replacement of production meters (account -304-); and

replacement of pressure reducing valves (accounts- 309, 331).

*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.

II. Computation of the WICA

Calculation: The initial charge, effective January 1, 2011, will be calculated to recover the fixed costs of eligible plant additions that have not previously been reflected in the Company's rate base and will have been placed in service between January 1, 2010 and September 30, 2010. Thereafter, the WICA will be updated on an annual basis to reflect eligible plant additions placed in service during the twelve month period ending three months prior to the effective date of each WICA update (the “Project Year”). Thus, changes in the WICA rate will occur as follows:

Issued: ~~June~~ January 1, 201~~8~~ 9

Issued by: Donald Morrissey
~~Donald Morrissey~~

Effective: ~~June~~ January 1, 201~~8~~ 9

Title: Chief Financial Officer

As authorized by Order No. ~~26,094XX.XXX~~ in Docket No. DW ~~18-16147-154~~

BEFORE THE NEW HAMPSHIRE PUBLIC SERVICE COMMISSION

Docket Nos. DW18-054 and DW 18-161

Aquarion Water Company of New Hampshire

Tax Change Effect Analysis

Workpapers-EADIT Calculation

	Gross Temporary Differences	Federal and State DTL		EADIT
		35 % Fed Rate	21 % Fed Rate	
Depreciation	(11,201,515)	(4,412,684)	(2,943,268)	(1,469,416)
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Deferred debits	(21,175)	(8,554)	(5,818)	(2,736)
Other	43,953	17,754	12,078	5,676
Total	(9,667,302)	(3,792,941)	(2,521,696)	(1,271,245)

	<u>Period</u>	<u>Amortization</u>
Depreciation	29.75	(49,392)
Pension and retiree medical	20.00	9,762
Deferred debits	1.00	(2,736)
Other	1.00	5,676
Total		(36,691)
		1,374
Total with Gross-up		(50,428)
Company Filing		(49,000)
Difference (likely rounding error)		(1,428)

Source: Response to Staff DR 1-9, Attached A.

<u>Composite Tax Rate</u>	<u>35 % Fed Rate</u>	<u>21 % Fed Rate</u>
Depreciation	39.4%	26.3%
Pension and retiree medical	40.4%	27.5%
Deferred debits	40.4%	27.5%
Other	40.4%	27.5%
Total	39.2%	26.1%

Revenues	100.0%	100.0%
State Tax	8.2%	7.9%
	<u>91.8%</u>	<u>92.1%</u>
Federal Statutory Rate	35.0%	21.0%
Effective Rate	<u>32.1%</u>	<u>19.3%</u>
Composite Tax Rate	40.3%	27.2%
Complement	59.7%	72.8%
Revenue Conversion Factor	1.676	1.374

DW 18-054 and DW 18-161
AQUARION WATER COMPANY OF NH, INC.
SUMMARY OF REVENUE REQUIREMENT CALCULATION APPROVED IN
DW 12-085: COMMISSION ORDER NO. 25,539 (JUNE 28, 2013)

Proforma Test Year Revenue Requirement:

(1) Rate Base	\$ 22,507,606
(2) Rate of Return	x <u>7.49%</u>
(3) Operating Income Requirement	1,685,820
(4) Adjusted Net Operating Income	<u>(1,135,450)</u>
(5) Revenue Deficiency before Tax Effect	550,370
(6) Revenue Requirement Tax Divisor	+ <u>59.48%</u>
(7) Tax Effectuated Revenue Requirement	925,380
(8) Proforma Test Year Operating Revenues	<u>6,086,673</u>
(9) Proforma Test Year Revenue Requirement	<u><u>\$ 7,012,053</u></u>
(10) Percentage Increase in Annual Revenue Requirement [(7) ÷ (8)]	<u><u>15.20%</u></u>

Step Adjustment:

(11) Investment through 09/30/12	\$ 834,663
(12) Rate of Return	x <u>7.49%</u>
(13) Return on Investment	62,516
(14) Income Tax Expense [(11) x 2.66%]	22,202
(15) Depreciation and Property Tax Expense	<u>32,527</u>
(16) Step Adjustment in Annual Revenues	<u><u>\$ 117,245</u></u>
(17) Percentage Increase in Annual Revenue Requirement [(16) ÷ (8)]	<u><u>1.93%</u></u>

Combined Proforma Test Year Revenue Requirement and Step Adjustment:

(18) Combined Increase in Annual Revenue Requirement [(7) + (16)]	<u><u>\$ 1,042,625</u></u>
(19) Combined Revenue Requirement [(8) + (18)]	<u><u>\$ 7,129,298</u></u>
(20) Combined Percentage Increase in Annual Revenue Requirement [(18) ÷ (8)]	<u><u>17.13%</u></u>

DW 18-054 and DW 18-161
AQUARION WATER COMPANY OF NH, INC.
SUMMARY OF REVENUE REQUIREMENT CALCULATION APPROVED IN
DW 12-085: COMMISSION ORDER NO. 25,539 (JUNE 28, 2013)

Income Tax Expense Reflected in Combined Revenue Requirement

(21) Proforma Test Year Income Tax Expense Prior to Tax Effect Gross-up	\$ 253,814
(22) Income Tax Effect Gross-up [(7) - (5)]	<u>375,010</u>
(23) Composite Income Tax Expense Reflected in Test Year Revenue Requirement	628,824
(24) Income Tax Expense Reflected in Step Adjustment	<u>22,202</u>
(25) Total Income Tax Expense Reflected in Combined Revenue Requirement	<u>\$ 651,026</u>

**DW 18-054 and DW 18-161
 AQUARION WATER COMPANY OF NH, INC.
 RE-CALCULATION OF DW 12-085 REVENUE REQUIREMENT
 ADJUSTING FOR FEDERAL AND STATE CORPORATE INCOME TAX RATE REDUCTIONS**

Proforma Test Year Revenue Requirement:

(1) Rate Base	\$ 22,507,606
(2) Rate of Return	x <u>7.49%</u>
(3) Operating Income Requirement	1,685,820
(4) Adjusted Net Operating Income	<u>(1,135,450)</u>
(5) Revenue Deficiency before Tax Effect	550,370
(6) Revenue Requirement Tax Divisor	÷ <u>59.48%</u>
(7) Tax Effected Revenue Requirement	925,380
(8) Composite Income Tax Adjustment for Rate Changes [(20)]	<u>(283,301)</u>
(9) Adjusted Tax Effected Revenue Requirement	642,079
(10) Proforma Test Year Operating Revenues	<u>6,086,673</u>
(11) Proforma Test Year Revenue Requirement	<u>\$ 6,728,752</u>
(12) Percentage Increase in Annual Revenue Requirement [(9) ÷ (10)]	<u><u>10.55%</u></u>
<u>Income Tax Rate Change Effect - FERC Method:</u>	
(13) Proforma Test Year Income Tax Expense Prior to Tax Effect Gross-up	\$ 253,814
(14) Income Tax Effect Gross-up [(7) - (5)]	<u>375,010</u>
(15) Composite Income Tax Expense	<u>628,824</u>
(16) 2018 Tax Rate Factor	0.374400
(17) Tax Rate Factor per DW 12-085	÷ <u>0.681379</u>
(18) Tax Rate Factor Adjustment	<u>0.549475</u>
(19) Adjusted Composite Income Tax Expense [(15) x (18)]	<u>345,523</u>
(20) Composite Income Tax Adjustment for Rate Changes [(19) - (15)]	<u><u>\$ (283,301)</u></u>

**DW 18-054 and DW 18-161
 AQUARION WATER COMPANY OF NH, INC.
 RE-CALCULATION OF DW 12-085 REVENUE REQUIREMENT
 ADJUSTING FOR FEDERAL AND STATE CORPORATE INCOME TAX RATE REDUCTIONS**

Step Adjustment:

(21) Investment through 09/30/12	\$ 834,663
(22) Rate of Return	x <u>7.49%</u>
(23) Return on Investment	62,516
(24) Income Tax Expense [(21) x 1.46%]	12,186
(25) Depreciation and Property Tax Expense	<u>32,527</u>
(26) Step Adjustment in Annual Revenues	<u>\$ 107,229</u>
(27) Percentage Increase in Annual Revenue Requirement [(26) ÷ (10)]	<u><u>1.76%</u></u>

Combined Proforma Test Year Revenue Requirement and Step Adjustment:

(28) Combined Increase in Annual Revenue Requirement [(9) + (26)]	<u>\$ 749,308</u>
(29) Combined Revenue Requirement [(11) + (26)]	<u>\$ 6,835,981</u>
(30) Combined Percentage Increase in Annual Revenue Requirement [(28) ÷ (10)]	<u><u>12.31%</u></u>

Income Tax Expense Reflected in Combined Revenue Requirement

(31) Proforma Test Year Income Tax Expense Prior to Tax Effect Gross-up [(13)]	\$ 253,814
(32) Income Tax Effect Gross-up [(7) - (5)]	<u>375,010</u>
(33) Composite Income Tax Expense Reflected in Test Year Revenue Requirement	628,824
(34) Less: Composite Income Tax Adjustment for Income Tax Rate Changes [(20)]	<u>(283,301)</u>
(35) Adjusted Composite Income Tax Expense Reflected in Test Year Revenue Requirement	345,523
(36) Income Tax Expense Reflected in Step Adjustment [(24)]	<u>12,186</u>
(37) Total Income Tax Expense Reflected in Combined Revenue Requirement	<u><u>\$ 357,709</u></u>

**DW 18-054 and DW 18-161
 AQUARION WATER COMPANY OF NH, INC.
 RE-CALCULATION OF DW 12-085 REVENUE REQUIREMENT
 ADJUSTING FOR FEDERAL AND STATE CORPORATE INCOME TAX RATE REDUCTIONS**

Income Tax Expense Adjustment Reflected in DW 12-085 Approved Revenue Requirement	<u>Amount</u>
(38) Combined Revenue Requirement Approved in DW 12-085 (Order No. 25,539)	<u>\$ 7,129,298</u>
(39) Income Tax Expense Reflected in Adjusted Revenue Requirement [(37)]	357,709
(40) Less: Income Tax Expense Reflected in DW 12-085 Revenue Requirement	<u>(651,026)</u>
(41) Income Tax Expense Adjustment Reflected in DW 12-085 Approved Revenue Requirement	<u>(293,317)</u>
(42) Combined Revenue Requirement as Adjusted for Income Tax Rate Reduction	<u><u>\$ 6,835,981</u></u>

DW 18-054 and DW 18-161
AQUARION WATER COMPANY OF NH, INC.
CALCULATION OF INCOME TAX EFFECT

	<u>DW 12-085</u>	<u>2018</u>
(1) Total Taxable Income	100.00%	100.00%
(2) Less: NH Business Profits Tax	<u>-8.50%</u>	<u>-7.90%</u>
(3) Federal Taxable Income	91.50%	92.10%
(4) Federal Income Tax Rate	x <u>35.00%</u>	<u>21.00%</u>
(5) Effective Federal Income Tax Rate	32.03%	19.34%
(6) Add: NH Business Profits Tax Rate	<u>8.50%</u>	<u>7.90%</u>
(7) Total Effective Tax Rate	<u><u>40.53%</u></u>	<u><u>27.24%</u></u>
(8) Total Taxable Income	100.00%	100.00%
(9) Less: Total Effective Tax Rate	<u>-40.53%</u>	<u>-27.24%</u>
(10) Revenue Requirement Divisor	<u><u>59.48%</u></u>	<u><u>72.76%</u></u>
(11) Income Tax Multiplier [(7) ÷ (10)]	<u><u>0.681379</u></u>	<u><u>0.374400</u></u>

DW 18-054 and DW 18-161
AQUARION WATER COMPANY OF NH, INC.
CALCULATION OF WEIGHTED AVERAGE COST OF CAPITAL AND EQUITY GROSS-UP PERCENTAGE

	(A)	(B)	(C)	(D)	(E)	(F)
PER DW 12-085:	Component Ratio	Cost Rate	Weighted Average Cost	Income Tax Multiplier	Pre- Income Tax Cost	Equity Gross-up Percentage [(E) - (C)]
(1) Long-term Debt	59.24%	6.05%	3.58%	1.000000	3.58%	0.00%
(2) Preferred Stock	0.01%	6.00%	0.00%	1.681379	0.00%	0.00%
(3) Common Equity	40.75%	9.60%	3.91%	1.681379	6.57%	2.66%
(4) Total	100.00%		7.49%		10.15%	2.66%

ADJUSTED FOR INCOME TAX RATE REDUCTIONS:

	Component Ratio	Cost Rate	Weighted Average Cost	Income Tax Multiplier	Pre- Income Tax Cost	Equity Gross-up Percentage [(E) - (C)]
(5) Long-term Debt	59.24%	6.05%	3.58%	1.000000	3.58%	0.00%
(6) Preferred Stock	0.01%	6.00%	0.00%	1.374400	0.00%	0.00%
(7) Common Equity	40.75%	9.60%	3.91%	1.374400	5.37%	1.46%
(8) Total	100.00%		7.49%		8.95%	1.46%