

**STATE OF NEW HAMPSHIRE**  
**BEFORE THE**  
**PUBLIC UTILITIES COMMISSION**

Docket No. DW

**Petition of Pennichuck East Utility, Inc. for Approval of Financings  
From CoBank, ACB For Regulatory Compliance, Maintenance and Non-Recurring  
Projects And Refinancing of Intercompany Loans**

**DIRECT PREFILED TESTIMONY OF JOHN J. BOISVERT**

October 19, 2017

1                    **Professional and Educational Background**

2    **Q.    What is your name and what is your position with Pennichuck East Utility, Inc.?**

3    A.    My name is John J. Boisvert. I am the Chief Engineer of Pennichuck Water Works,  
4           Inc. (“PWW”), which provides services to PEU, Inc. (“PEU” or the “Company”)  
5           pursuant to a management allocation agreement. I have worked for PWW since  
6           February 1, 2006. I am a licensed professional engineer in New Hampshire and  
7           Maine.

8  
9    **Q.    Please describe your educational background.**

10   A.    I have a Bachelor of Science degree and a Master of Science degree in Civil  
11           Engineering from the University of New Hampshire in Durham, New Hampshire. I  
12           also have a Master’s degree in Environmental Law and Policy from Vermont Law  
13           School in South Royalton, Vermont.

14  
15   **Q.    Please describe your professional background.**

16   A.    Prior to joining PWW, I served as a Team Leader for Weston & Sampson Engineers  
17           of Portsmouth, New Hampshire in their Water Practices Group from 2000 to 2006.  
18           Prior to Weston & Sampson, I was employed by the Layne Christensen Company of  
19           Shawnee Mission, Kansas as Regional Manager for their Geosciences Division in  
20           Dracut, Massachusetts from 1994 to 2000. I completed graduate school in 1992 and  
21           was employed by Hoyle, Tanner, & Associates of Manchester, New Hampshire as a  
22           Project Engineer from 1992 to 1994. Prior to entering full time graduate programs at  
23           the University of New Hampshire and Vermont Law School, I was employed by Civil

1 Consultants of South Berwick, Maine as a Project Engineer from 1986 to 1989 and by  
2 Underwood Engineers of Portsmouth, New Hampshire as a project Engineer from  
3 1985 to 1986.

4

5 **Q. What are your responsibilities as Chief Engineer?**

6 A. As Chief Engineer, I am responsible for the planning, design, permitting,  
7 construction, and startup of major capital projects, including pipelines,  
8 reservoirs/dams, building structures, pumping facilities, treatment facilities, and  
9 groundwater supplies. I provide regular technical assistance to PWW's Water Supply  
10 Department, Operations Department, Customer Service Department, and Senior  
11 Management.

12

13 **Q. What is the purpose of your testimony?**

14 A. I will be describing the capital expenditures that the Company is seeking to finance  
15 with CoBank for capital expenditures completed in 2017 and capital expenditures for  
16 2018, 2019, and 2020 not funded by the New Hampshire State Revolving Fund  
17 (SRF).

18

19 **Overview of 2017 Capital Expenditures**

20 **Q. Did the Company make capital expenditures during the period between January**  
21 **1, 2017 and December 31, 2017 which it expects to complete and place into**  
22 **service as "used and useful" to its distribution, storage, treatment, and supply**  
23 **facilities, for which the Company requests term financing through CoBank?**

1 A. Yes, the Company expects to make non-SRF capital expenditures totaling  
2 approximately \$784,000. The \$784,000 of anticipated spending includes a  
3 contingency of about \$131,000 for capital projects that may occur during the  
4 remainder of 2017 that are unforeseen such as failed well or booster pumps, Of this  
5 total approximately \$416,000 was paid for with funds already borrowed from  
6 CoBank at the end of 2015, leaving a remainder requiring debt funding of  
7 approximately \$368,844.

8

9 **Q. Are all of the capital expenditures completed during the period (and described**  
10 **further below) currently used and useful?**

11 A. Yes, or they will be by December 31, 2017.

12

13 **Q. What were the major focal points of the Company's capital projects for 2017?**

14 A. The Company continues to be proactive and responsive to replacing and/or upgrading  
15 water treatment facilities to ensure compliance with all State and Federal Drinking  
16 Water Regulations, replacing aging infrastructure including treatment and pumping  
17 stations and water mains and services, and completing water supply and water quality  
18 improvement projects for its stand-alone community water systems. Each of the  
19 major projects and project areas are described in more detail below.

20 **Locke Lake Varney Road**

21 The Varney road water main went used and useful in 2016. The vast majority of  
22 construction activity was completed in November 2016. Costs incurred through 2016

1 were covered by an SRF loan. However, approximately \$14,700 was spent in 2017 to  
2 complete the final close out of the project.

3 **Installation/Replacement of Treatment Equipment**

4 The Company budgets the installation of new or additional treatment at existing  
5 Company facilities to respond to quality changes in source water or other conditions  
6 in the Company's community water systems. This may include the addition of  
7 disinfection (chlorination), the addition of filtration to reduce raw water iron &  
8 manganese, ion exchange for arsenic reduction, softening, radon reduction, and  
9 chemical feed and storage systems. In 2017 the Company added radon removal to the  
10 Ministerial Heights water system at a cost of \$10,600 and added water softening to  
11 the Shaker Heights water system at a cost of \$10,000.

12 **Pine Haven Land Acquisition**

13 The Company is purchasing land with an expired easement existing on the property,  
14 on which a Company pumping station and wells are located. The company  
15 anticipates closing on the land acquisition in October 2017 at a cost of \$98,500.

16 **Chemical Feed Pump Replacement**

17 Chemical feed pumps for various chemical injection associated water treatment and  
18 disinfection are in place at nearly all of the Company's community water systems.  
19 Capital expenditures covering the replacement of outdated or unrepairable feed  
20 pumps in the Company's community water systems during 2017 were completed at a  
21 cost of \$39,100.

22 **Well Redevelopment and Pump Replacement**

1 The Company is redeveloping Well #13 at Locke Lake, in order to recover lost  
2 capacity and replace the existing well pump, which was determined to be “worn”  
3 based on a recent flow test of the well. The cost of this work will be approximately  
4 \$15,000.

5 **Braemar Woods Condominiums Water Main Extension**

6 The Company will invest one times the annual revenue associated with this water  
7 main extension project, resulting in the connection of 24 residential condominium  
8 units through a master meter at Braemar Woods in Windham NH. The investment is  
9 anticipated to be \$7,900.

10 **WESCO CWS Pressure Tank Replacement**

11 The Company will replace two pressurized storage tanks in the Wesco Station. The  
12 two tanks have deteriorated and replacement is necessary. The pressure tanks allow  
13 station pumps to turn off during low flow periods of the day. The estimated cost to  
14 replace the tanks is \$15,000.

15 **Stone Sled Station Improvements**

16 The improvements included an upgrade of the treatment process to remove iron,  
17 manganese and arsenic in the two existing wells at Stone Sled Station by replacing  
18 the existing water softener and arsenic filters. The existing treatment at Stone Sled  
19 used a water softener to remove iron and manganese followed by two arsenic filters.  
20 High concentrations of brine backwash water from the softener was killing grass and  
21 plantings around the station; and the softener was not effectively removing the high  
22 levels of iron. As such, a new method of treatment for the removal of iron and  
23 manganese was needed. This project added iron and manganese filters eliminating

1 the need for the softener and brine regeneration. Project costs were approximately  
2 \$12,000 and included work required to finish upgrades that began in 2016.

3 **PEU contribution to Town of Hudson Facilities**

4 The Company continues to participate in upgrades to the Town of Hudson water  
5 system for which the Company has a 15% obligation by contract. Expenditures  
6 budgeted in 2017 were for the replacement of the Weinstein Well in Litchfield that  
7 were initiated in 2016. The Company expects to spend \$55,000 by year end on this  
8 project. The completion of the work to the Weinstein Well is dependent upon the  
9 Town of Hudson, and their contractors. Should the Town of Hudson not complete  
10 this effort in 2017, the Company would need to budget the unused funds in 2018.

11 **Hardwood CWS New Source**

12 The three existing wells at Hardwood CWS have declining yields and are not capable  
13 of producing enough water to meet demands during the summer months even with  
14 outside use restrictions. Water had to be trucked in on a weekly basis to keep the  
15 storage tanks full, and to supply customers with enough water for domestic use, in  
16 2016. To restore lost capacity, the Company completed a geophysical survey on the  
17 Hardwood property to identify potential well sites. The geophysics identified two  
18 potential locations and a well was drilled at the location closest to existing  
19 infrastructure and the treatment facility. Testing determined the new well would have  
20 sufficient flow capacity to make up the supply shortfall and it was subsequently  
21 approved by the NHDES. Electric power and pipeline were extended to the new well  
22 and the well was placed into service in August 2017. Total project costs are expected  
23 to be \$164,000.

1 **Q. Did the Company make investments to add or replace customer services plus**  
2 **replace hydrants, valves, and meters in 2017?**

3 A. Yes, the table below presents the value of new and renewed services, new and  
4 renewed hydrants, system valves, and for meters the Company installed/replaced in  
5 2017.

6

<b>Feature/Year</b>	<b>2017</b>
Services (new)	\$33,880
Services (renewed)	\$14,204
Hydrants (renewed)	\$0
Valves	\$0
Meters – Replacement of leaded brass meters	\$163,700

7

8 **Q. What are the major projects planned by PEU in 2018, 2019, and 2020 for which**  
9 **Line of Credit/Term financing through CoBank is anticipated? Can you briefly**  
10 **describe them?**

11 A. Yes. The Company is planning three major projects in this time period including:

12 **PEU - PWW Interconnection (2018)**

13 The Interconnection was originally planned for 2016 but now has been shifted to  
14 2018 because of environmental permitting of the pipeline crossing of the Merrimack  
15 River between Merrimack, NH and Litchfield, NH. The project is being funded in

1 part with an SRF loan as approved in NHPUC Order No. 26,006 and NHPUC Order  
2 No. 26,026. The project budget is approximately \$3.0M of which \$2.4M is funded  
3 through the SRF leaving approximately \$0.6M to be funded through CoBank.

4 **Atkinson Commerce Park CWS Station Improvements (2018)**

5 The Commerce Park Station currently serves five commercial accounts and it is  
6 expected to add three more accounts by the end of 2017. The station provides both  
7 domestic and fire protection flows. An evaluation of the station completed by the  
8 Company in 2016 found the pumping capacity insufficient to meet the required fire  
9 flow due to aging piping internal to the station and undersized pumps and controls.

10 The work anticipates replacement of the station adjacent to the existing station and  
11 the addition of emergency standby power. The project budget is approximately  
12 \$0.3M

13 **Londonderry Core Water Storage Tank (2019-2020)**

14 The Company is in the initial planning stage for a new 1.1 million gallon tank to  
15 serve the Londonderry Core water system. Increases in customer base over time and  
16 the addition of a large private development in the Exit 4 area of Interstate 93 will  
17 begin to exceed the peak pumping capacity of the Mountain Homes Booster Station,  
18 which feeds the majority of the Londonderry Core system. The Company is in  
19 discussions with the private developer to fund approximately 50% of the capital cost  
20 of the tank, while the remaining 50% will be funded by a surcharge on new customer  
21 growth, and by existing customers through decreased purchased water costs. The  
22 Company will receive a lower volumetric rate from Manchester Water Works once  
23 the tank is in service. The project budget is approximately \$2.6M.

1 **Q. Does the Company plan to make investments to add or replace customer services**  
 2 **plus replace hydrants, valves, and meters in 2018-2020?**

3 A. Yes, the table below presents the value of new and renewed services, new and  
 4 renewed hydrants, system valves, and for meters the Company expects to replace  
 5 during this time period.

Feature/Year	2018	2019	2020
Services (new – 5 per year)	\$23,000	\$23,000	\$23,000
Services (renewed – 10 per year)	\$40,000	\$40,000	\$40,000
Hydrants (renewed – 2 per year)	\$10,000	\$10,000	\$10,000
Valves (10 per year)	\$30,000	\$30,000	\$30,000
Meters – Replacement of leaded brass meters (replacement plan completed in 2019)	\$144,000	\$60,000	\$0

6

7 **Lead Free Meter Exchanges (Remaining Budget \$204,000 over 2018 and 2019):**

8 The SDWA was revised in 2011 to require that all wetted surfaces of pipes, fittings,  
 9 and fixtures meet the definition of “lead free” in accordance with NSF International  
 10 (NSF) and American National Standards Institute (ANSI) Standard NSF/ANSI 372  
 11 Annex G. Water meters are encompassed by this standard. The company is in the  
 12 process of exchanging lead containing meters with lead free meters at the testing  
 13 intervals required by NHPUC 600. The Company anticipates exchanging 1,015  
 14 meters in 2018-2019 (installing 1,015 lead free meters as a replacement for the

1 retirement of 1,015 meters containing lead.). This replacement rate is consistent with  
2 the requirements of CHAPTER Puc 600 Section 605.04 Test Schedules for Meters.  
3 Puc 605.04 requires that the Company periodically remove and test meters. All 5/8  
4 inch and ¾ inch meters are required to be removed and tested every 10 years and  
5 more frequently larger meters. The rate of replacement (approximately 719 per year)  
6 coincides with the removal and testing schedule of Puc 605.04. The Company  
7 conducts routine and periodic tests for lead and copper in its systems, in conformity  
8 with EPA and NHDES guidelines, regulations and MCL standards. The results of  
9 these tests are included in the Consumer Confidence Reports supplied to customers  
10 on an annual basis. All of the test results for the lead and copper sampling for all of  
11 Pennichuck's water systems have been well below the established 90% level of 15  
12 parts per billion. This upgrade and exchange of the meters is done solely done to  
13 comply with the revised regulatory standards for lead-free meters.

14  
15 **Hydrant Replacements (Annual Budget \$10,000):** As a part of the Company's  
16 ongoing hydrant replacement program, the Company anticipates replacing two  
17 hydrants in response to age and performance. The Company budgets this work based  
18 on past experience and is currently evaluating the priority of which hydrants are being  
19 replaced during 2018-2020 based on age, condition, and the availability of  
20 replacement parts. This work is done in accordance with the hydrant maintenance and  
21 inspection requirements of Puc 606.03.

22

1           **Valve Replacements (Annual Budget \$14,000):** As a part of the Company's  
2 ongoing gate valve replacement program, the Company anticipates replacing 10 main  
3 line gate valves, in response to age and performance. The Company budgets this  
4 work based on past experience and is currently evaluating the priority of which gate  
5 valves are being replaced during 2018-2020 as part of the valve maintenance and  
6 inspection requirements of Puc 606.04.

7

8   **Q.    What other types of capital expenditures does the Company anticipate**  
9           **completing to maintain and enhance service during 2018-2020?**

10   **A.**    There are likely other efforts which will come to bear as capital projects, based upon  
11 past experience/trends. These projects are predominantly replacements of existing  
12 plant and equipment, as well as technology upgrades, which improve operational  
13 efficiency. Examples of these projects include: booster pump replacements, well  
14 pump replacements, treatment equipment upgrades and replacements, filter media  
15 change outs, improvements to buildings (such as new roofs), electrical system  
16 upgrades, SCADA and communications additions.

17           **Installation/Replacement of Treatment Equipment (Annual Budget \$40,000):**

18 Installation of new or additional treatment at existing Company facilities to respond  
19 to quality changes in source water or other conditions in the Company's community  
20 water systems. This may include the addition of disinfection (chlorination), the  
21 addition of filtration to reduce raw water iron & manganese, ion exchange for arsenic  
22 reduction, softening, and chemical feed and storage systems. Operations staff are  
23 regularly inspecting and evaluating the performance of water treatment equipment in

1 all of the Company facilities. Throughout the course of the year minor repairs are  
2 made when needed and the overall condition and effectiveness of filters, softeners,  
3 monitoring equipment, and storage equipment, is warranted. Equipment which is  
4 requiring an increased level of repair, or equipment that has reached functional  
5 obsolescence, are inventoried and scheduled for replacement. The Company has  
6 budgeted this work based upon past experience and is currently evaluating the priority  
7 of which systems are being upgraded during 2018-2020.

8 **Chemical Feed Pump Replacement (Annual Budget \$20,000):** Chemical feed  
9 pumps for various chemical injection associated water treatment and disinfection  
10 processes are in place at nearly all of the Company's community water systems. This  
11 capital expenditure covers the replacement of out dated or unrepairable feed pumps in  
12 our community water systems during the period 2018-2020. Operations staff are  
13 regularly inspecting and evaluating the performance of chemical feed pumps in all of  
14 the Company facilities. Throughout the course of the year minor repairs are made  
15 when needed and the overall condition and effectiveness of the each pump is  
16 assessed. Pumps that are requiring an increased level of repair, or pumps that have  
17 reached functional obsolescence, are inventoried and scheduled for replacement.

18 **Well Redevelopment (Annual Budget \$20,000):** Over time, wells lose capacity due  
19 to mineral deposits plugging or restricting the flow of water through bedrock fractures  
20 and pumping equipment. Redevelopment is required to restore well capacity. The  
21 Company monitors well performance and is actively monitoring low producing wells  
22 where supply is critical in order to schedule redevelopment before capacity falls  
23 below demand.

1           **Water Main Upsizing (Annual Budget \$24,500):** Water main upsizing is capital  
2           which the Company contributes in projects, along with developers, to upsize the  
3           diameter of water main completed as part of a main extension. The Company  
4           considers the need to upsize developer installed mains, if it will benefit existing  
5           customers by improving supply capacity, pressure, and improved fire protection, or if  
6           the main extension is part of a larger supply plan for the Company, such as closing  
7           “dead ends” by looping pipe, which facilitates the interconnection of water systems,  
8           giving improved reliability of supply for existing customers. The contribution by the  
9           company is for the difference in material costs for the upsized main only (i.e. the  
10          difference in cost between 8 inch diameter pipe material and 12 inch diameter pipe  
11          material).

12   **Q. Does this complete your testimony?**

13   **A. Yes.**

14