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

**RE: PENNICHUCK EAST UTILITY, INC.
DW 24- ____**

2024 QUALIFIED CAPITAL PROJECT ADJUSTMENT CHARGE FILING

**DIRECT TESTIMONY
OF
John J. Boisvert**

February 15, 2024

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4 **Professional and Educational Background**

5 **Q. Please state your name and position with Pennichuck Water Works, Inc.;**

6 A. My name is John J. Boisvert. I am currently the Chief Engineer of Pennichuck Water
7 Works, Inc. (the “Company” or “PWW”) located at 25 Walnut Street in Nashua, New
8 Hampshire. I have worked for the Company since February 1, 2006. On January 1,
9 2024, I assumed the role of Chief Executive Officer (CEO) of Pennichuck Corporation
10 (Penn Corp), and its subsidiaries, while retaining the role of Chief Engineer, following
11 the retirement of Mr. Larry D. Goodhue on December 29, 2023. I am a licensed
12 professional engineer in New Hampshire and Maine. Pennichuck East Utility, Inc.
13 (“PEU”) and Pittsfield Aqueduct Company, Inc. (“PAC”) are subsidiaries of Pennichuck
14 Corporation (“Pennichuck,” “Penn Corp” or “Corporation”) along with PWW.

15 **Q. Please describe your educational background.**

16 A. I have a Bachelor of Science degree and a Master of Science degree in Civil Engineering
17 from the University of New Hampshire in Durham, New Hampshire. I also hold a
18 Master’s Degree in Environmental Law and Policy from Vermont Law School in South
19 Royalton, Vermont.

20 **Q. Please describe your professional background.**

21 A. Prior to joining the Company, I served as a Team Leader for Weston & Sampson
22 Engineers of Portsmouth, New Hampshire in their Water Practices Group from 2000 to
23 2006. Prior to Weston & Sampson I was employed by the Layne Christensen Company
24 of Shawnee Mission, Kansas as Regional Manager for their Geosciences Division in

1 Dracut, Massachusetts from 1994 to 2000. I completed graduate school in 1992 and was
2 employed by Hoyle, Tanner, & Associates of Manchester, New Hampshire as a Project
3 Engineer from 1992 to 1994. Prior to entering full time graduate programs at the
4 University of New Hampshire and Vermont Law School I was employed by Civil
5 Consultants of South Berwick, Maine as a Project Engineer from 1986 to 1989 and by
6 Underwood Engineers of Portsmouth, New Hampshire as a project Engineer from 1985
7 to 1986.

8 In addition to my work and educational experiences, I have served on two statewide
9 commissions created by the NH Legislature. These were the SB60 Water Sustainable
10 Funding Commission and the New Hampshire Water Sustainable Funding Commission.
11 I currently serve on the New Hampshire Water Council, representing drinking water
12 interests. I am a member of the NH Water Works Association (“NHWWA”) and the
13 New England Water Works Association (“NEWWA”). In 2023, I recently completed the
14 second of two three-year terms on the NEWWA Board of Directors serving as the NH
15 State Director. This same year I was elected to be the Vice President of NEWWA.

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

17 A. As Chief Engineer, I manage and oversee the Company’s Engineering Department. I
18 lead the Company’s Asset Management program. As head of the Engineering
19 Department, I am ultimately responsible for the planning, design, permitting,
20 construction, and startup of major capital projects, including pipelines, reservoirs/dams,
21 building structures, pumping facilities, treatment facilities, and groundwater supplies.
22 The Engineering Department staff provides regular technical assistance to the Company’s

1 Water Supply Department, Distribution Department, Customer Service Department, and
2 Senior Management.

3 **Q. What will be your responsibilities as Chief Executive Officer of Penn Corp, and the**
4 **subsidiaries?**

5 A. As Chief Executive Officer for Penn Corp, I am responsible for the overall management
6 of Penn Corp and its subsidiaries, including PWW and I report to the Board of Directors.
7 I work with the Chief Operating Officer, the Chief Financial Officer, Treasurer/Assistant
8 Treasurer, Corporate Secretary, and the Director of Human Resources and the Director of
9 Information Technology to: (1) implement short and long-term financial and operating
10 strategies, (2) ensure the adequate funding of debt and expenses, (3) effectuate ongoing
11 and consistent corporate governance and compliance, and (4) enable Penn Corp's utility
12 subsidiaries to provide high quality water service at affordable rates, on a consistent basis
13 in addition to my responsibilities as Chief Engineer.

14 **Q. Have you previously testified before this or any other regulatory commission or**
15 **governmental authority?**

16 A. Yes. I have provided written testimony before the Commission in my role as Chief
17 Engineer. My testimony was in support of rate making (prior to the implementation of
18 the PWW and PEU QCPAC), PWW/PEU QCPAC filings since their inception, numerous
19 financing dockets, and other dockets relating to franchise expansion/modification,
20 permits/licenses, and special contracts/agreements. In addition, as a member of the
21 NHWWA Legislative Committee, I have had the opportunity to provide written and oral
22 testimony regarding legislation relating to drinking water before NH House and NH
23 Senate committees.

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Q. What is the purpose of your testimony?

A. I will be providing details of the major capital projects planned and budgeted/forecasted for 2024-2026 as part of the Company’s 2024 Qualified Capital Project Adjustment Charge (“QCPAC”) filing. This testimony will also present and describe the major QCPAC projects initiated and completed in 2023, as well as the budgeted or proposed projects for 2024, 2025, and 2026. My testimony supports, and is in addition to, testimony being provided by the Company’s Chief Operating Officer Donald L. Ware for this docket. Detailed project listings mentioned in this testimony are detailed in Mr. Ware’s testimony (Exhibit DLW-1, Pages 1 – 8).

Q. What types of projects can be described as “major capital projects”?

A. Major capital projects require significant capital investment and are approved annually in the Company’s capital budget by the Company’s Board of Directors. Projects are associated with treatment facilities, pumping facilities, storage tanks, water main replacements, valve replacements and hydrant replacements, building facility improvements and refurbishments, equipment purchases, as well as non-structural efforts to improve Company performance, such as engineering studies. These generally include:

- The replacement of infrastructure that has reached, or is reaching, the end of its useful life, does not achieve the level of service required of it (water quality, capacity, and efficiency), or the Company’s ability to properly maintain it (outdated/lack of repair parts, etc.) and is either impractical or more costly to repair or rehabilitate, than replacing it.

- 1 • Infrastructure upgrades to improve system performance.
- 2 • Investments to ensure compliance with the primary and secondary Safe Drinking
- 3 Water Act standards.
- 4 • Replacement of meter reading radios.
- 5 • Engineering studies and evaluations to assess infrastructure and system
- 6 performance to aid in planning future capital investment needs.

7

8 **Q. What is the process that the Company employs and what are the factors the**
9 **Company considers when developing the capital budget for water main**
10 **replacements?**

11 A. The Company considers a number of factors in developing a capital budget for water
12 main rehabilitation, replacement, and/or new construction. The Company has completed
13 the first phase of its Asset Management Initiative. The Company inventoried its pipeline
14 assets and documented them within its Geographical Information System (“GIS”)
15 database. Also, an initial condition assessment and a preliminary evaluation of the
16 consequence of failure of certain water main assets has been completed. This application
17 and effort have thus far served as effective tools to determine which assets are most
18 critical and should be evaluated in more detail for possible inclusion in the current 2024 –
19 2026 capital budgets/forecasts. Since 2020, when the Company transitioned to a new
20 Computerized Management and Maintenance System (CMMS) software, the Asset
21 Management Initiative has and is being expanded to look more closely at specific assets
22 to identify the risk of failure, whether there is a structural failure (break) or the asset is
23 not attaining the required level of service (water quality, flow, or pressure). This is being

1 done to facilitate more predictive guidance to plan for and implement future capital
2 expenditures. This approach is ongoing and being refined or enhanced as more data and
3 information on the Company's assets become available. This Asset Management
4 approach considers the following for all assets including:

- 5 • Water main break/failure history.
- 6 • Water quality problems.
- 7 • Fire protection flows.
- 8 • The proximity of and support provided to key critical customers (public safety,
9 government, hospitals, etc.),
- 10 • Coordination with gas company (or other buried utility assets) replacement projects,
- 11 • Geographic grouping of streets where mains are to be replaced/rehabilitated for
12 improved efficiency by aggregating main replacement work in close proximity.
- 13 • The opportunity to take advantage of efficiencies gained from coordinating with the
14 paving, storm water, and sewer projects of cities and towns served by the Company,
15 and in the replacement of water mains where substandard plastic water pipes were
16 originally installed by the water company or developer at the time of installation.
17 There are cost savings in pavement repair and traffic control costs associated with
18 completing projects while the municipality or another utility company is also working
19 on a street.
- 20 • Industry guidelines of the American Water Works Association for the replacement of
21 water mains using an average life expectancy for water mains of 100 years absent
22 specific information on a particular asset. The Company considers this rate and
23 modality of replacement to be reasonable until the Asset Management System allows

1 for a more system/asset specific assessment to be performed, giving more precision to
2 replacement time frames. While all the Company's water mains are less than 60
3 years old, a portion of those water mains are substandard plastic water mains that
4 were installed by the original developer prior to the NHDES setting minimum
5 standards on water main materials. As such, those plastic water mains break or fail
6 with much greater frequency than water mains constructed with today's approved
7 materials, such as ductile iron pipe. By example, the break per mile on substandard
8 plastic (Sch 40 Polyvinyl Chloride (PVC), 100 psi High-Density Polyethylene
9 (HDPE) or Polybutylene (PB) – 496 breaks on about 68 miles of substandard plastic
10 over the past 24 years) is about 7.2 breaks per mile versus 0.16 breaks per mile on
11 ductile iron pipe (51 breaks on about 324 miles of DIPCL) between 1998 and 2021,
12 or about 45 times greater in frequency.

- 13 • There are also geographic areas of the PEU system where environmental/soil
14 conditions have likely caused water main leaks and failure due to external corrosion
15 primarily pipes that are ductile iron. The number/occurrence of failures is not large
16 enough at this time to require immediate action. It is, however, a situation that the
17 Company will continue to monitor and assess with respect to existing water mains.
18 With the use of GIS and Asset Management tools, soils exhibiting corrosive potential
19 and other environmental conditions such as wetlands, high water groundwater tables,
20 and other anthropogenic facilities (landfills) that could foster corrosive conditions
21 have been mapped and overlaid on to the water main networks. This has allowed to
22 Company to note/designate areas of the distribution system monitored for leakage and
23 for further investigation (excavation and inspection) should failures in these areas

1 increase. With the knowledge of where these conditions exist, it allows the Company
2 to select/specify pipe materials for new water main construction that are more
3 resistant to corrosion or to specify measures such as zinc coating of ductile iron (now
4 the Company standard for ductile iron and most favored) and polyethylene
5 encasement (plastic wrapping), if added protection is warranted.

6
7 Replacement of aging and substandard infrastructure will continue to be a major driver of
8 the Company's water main replacement for the foreseeable future.

9 **Q. What were the major water main projects completed in 2023?**

10 A. The following water main projects were completed in 2023 with carry over expenditures
11 into 2024, or deferred from 2023 into 2024:

12 Gage Hill CWS – Pelham (W/O's 2300525, 2300526, 2300527, 2300528, 2207847,
13 2207845, 2207844, & 2207843) Water Main Replacement and Final Paving – 2023 Cost
14 \$177,613: The Gage Hill CWS water distribution system was a developer installed water
15 system that was constructed with substandard pipe and fitting materials. Much of the
16 original piping was 2-inch diameter polyethylene tied together with nylon (plastic) “stab
17 fittings” secured by hose clamps. Since 2000 the Company has recorded 88 main and
18 service breaks/repairs in this system. The break/repair frequency was likely to continue
19 at that level or become worse over time. Because of the geometry of the pipe network
20 (no loops) and the lack of distribution valves, sometimes large section of the system, if
21 not the entire system, would need to be depressurized and drained risking contamination
22 from groundwater. The frequency of these situations was an inconvenience to customers
23 and costly for the Company. The Company had planned for the full replacement of the

1 distribution system with approximately 4,200 feet of new 4 inch diameter C-900 PVC
2 water main and all 28 of all Company owned main to stop services (Vassar Drive,
3 Radcliff Drive, Wellesley Drive, and Bridge Street). Street restoration was completed in
4 the summer of 2023.

5

6 **Q. Please identify and describe water main projects budgeted or planned for 2024,**
7 **2025, and 2026.**

8 A. Budgeted (2024) or planned (2025-2026) water main replacements and additions are
9 listed below by year.

10 **2024 Water Main Replacements/Additions**

11 The Londonderry Transmission Main discussed above is the only planned pipeline
12 replacement/addition in 2024 (Budget \$760,000).

13 **2025 Water Main Replacements/Additions**

14 There are no planned distribution water main improvements planned for 2025.

15 **2026 Water Main Replacements/Additions**

16 There are no planned distribution water main improvements planned for 2026.

17

18 **Q. Your testimony states that water main replacement varies each year (2024-2026)**
19 **due to balancing the investment in water main replacements with other major**
20 **capital projects. What are those projects completed in 2023 or Budgeted/Planned**
21 **for 2024-2026?**

22 A. These “other major capital projects” investments are associated with vertical assets,
23 including storage tanks, pumping stations, treatment facilities, source of supply and

1 process related improvements (SCADA, Asset Management, etc.). In some years there
2 may be more need for horizontal asset investment (main replacements) rather than
3 vertical assets, in other years the opposite may be true. The balancing of these focused
4 objectives is necessary to maintain a balance between timely replacement of aging
5 infrastructure, while also keeping water rates from increasing too quickly, in order to
6 fund those incurred costs. A large vertical asset can consume most of the targeted annual
7 PEU capital investment dollars and result in the Company delaying a horizontal project
8 for a number of years to lessen rate impacts. These deferments are weighed and
9 considered carefully, such that the deferment is not an adverse decision as it relates to the
10 ability to meet the core objectives of delivering water to customers as needed.

11 **2023 Completed Vertical Projects**

12 Londonderry System Improvements (W/O# 2200455 at a cost of \$113,134) Permitting
13 and Design: Design and local Town of Londonderry land use permitting, and design
14 efforts in 2022 resulted in the acceptance and approval of site plan designs for the storage
15 tank and the booster station on December 7, 2022. Final designs of the storage tank and
16 the booster station completed and were bid in 2023. Final design of the transmission
17 main was delayed due to the potential for arsenic to be present in the soil of the former
18 commercial apple orchard land on which the transmission main will be installed. An
19 environmental assessment took place in late 2023 and early 2024. A soils management
20 plan was developed to keep soils with elevated levels of arsenic on site allowing the
21 bidding and construction of the project to proceed. Construction is expected to begin in
22 the second quarter of 2024 complete before the end of 2024 for all three project
23 components.

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Sunrise Estates – Middleton NH Station and Storage Tank Replacement (2301285, 2003613, & 2209824) Design and Construction – Cost \$902,069: The Sunrise Estates CWS was acquired by the Company in 2006. It was a developer built system of substandard distribution materials and a confined space pumping station that housed pumping equipment and electrical controls. The distribution system was replaced in 2011. The station and associated equipment, as well as, the buried steel storage tanks have reached their useful life where all of the station components required replacement. To maintain service during construction, the Company determined it was best to move to a new location on site and construct a new above-ground station building and concrete storage tanks sized for system demand. The new station included relocation and replacement of well piping, yard distribution piping, new electrical service, new electrical controls within the station, generator, new pumps, and new storage tanks.

2024 Vertical Projects

Londonderry System Improvements Station, Tank, & Transmission Main Construction (Budget \$2,916,000): Design and local Town of Londonderry land use permitting, and design efforts in 2022 resulted in the acceptance and approval of site plan designs for the storage tank and the booster station on December 7, 2022. Final designs of the storage tank and the booster station completed and were bid in 2023. Final design of the transmission main was delayed due to the potential for arsenic to be present in the soil of the former commercial apple orchard land on which the transmission main will be installed. An environmental assessment took place in late 2023 and early 2024. A soils management plan was developed to keep soils with elevated levels of arsenic on site

1 allowing the bidding and construction of the project to proceed. Construction is expected
2 to begin in the second quarter of 2024 complete before the end of 2024 for all three
3 project components.

4 **2025 Vertical Projects**

5 The Company anticipates the need to address PFAS treatment in at least four systems
6 including White Rock in Bow (Budget \$125,400), Williamsburg in Pelham (Budget
7 \$627,000), Spruce Pond in Windham (Budget \$125,400), and Gage Hill in Windham
8 (Budget \$940,500)

9 **2026 Vertical Projects**

10 The Company anticipates the need to address PFAS treatment in at least two systems
11 including Ministerial Heights in Londonderry (Budget \$512,440) and Hardwood in
12 Windham (Budget \$547,370).

13
14 **Q. Are there other capital expenditures completed in 2023 and/or budgeted/proposed**
15 **for 2024, 2025, and 2026 that the Company plans to complete?**

16 A. Yes. The Company has a number of routine capital activities that are not classified as
17 “major” but are necessary to operate the business and serve our customers. The
18 Company carries “run rate” budgeted amounts for well rehabilitation, pump
19 replacements, SCADA improvements, security enhancements, along with other treatment
20 and pumping equipment. The Company also budgets a number of hydrant, valve, and
21 service (main to stop) replacements each year.

22

1 These Capital expenditures will be funded through the FALOC with CoBank, for which
2 drawdowns are annually refinanced with a term loan from CoBank.

3 **Q. Does this conclude your testimony?**

4 A. Yes.