STATE OF NEW HAMPSHIRE

BEFORE THE

PUBLIC UTILITIES COMMISSION

Pennichuck Water Works, Inc.

Petition for Authority to Issue Long Term Debt

State Revolving Loan Fund

Merrimack River Raw Water Main Improvements

DW 15-___

DIRECT PREFILED TESTIMONY OF JOHN J. BOISVERT

February 2, 2015

Professional and Educational Background

Q. What is your name and what is your position with Pennichuck Water Works, Inc.?

A. My name is John J. Boisvert. I am the Chief Engineer of Pennichuck Water Works, Inc. (the "Company" or "PWW"). I have worked for the Company since February 1, 2006. I am a licensed professional engineer in New Hampshire and Maine.

Q. Please describe your educational background.

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

Q. Please describe your professional background.

A. Prior to joining the Company, I served as a Team Leader for Weston & Sampson Engineers of Portsmouth, New Hampshire in their Water Practices Group from 2000 to 2006. Prior to Weston & Sampson I was employed by the Layne Christensen Company of Shawnee Mission, Kansas as Regional Manager for their Geosciences Division in Dracut, Massachusetts from 1994 to 2000. I completed graduate school in 1992 and was employed by Hoyle, Tanner, & Associates of Manchester, New Hampshire as a Project Engineer from 1992 to 1994. Prior to entering full time graduate programs at the University of New Hampshire and Vermont Law School I was employed by Civil Consultants of South Berwick, Maine as a Project Engineer from 1986 to 1989 and by Underwood Engineers of Portsmouth, New Hampshire as a project Engineer from 1985 to 1986.

Q. What are your responsibilities as Chief Engineer of the Company?

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

Q. What is the purpose of your testimony?

A. I will be describing the Merrimack River Raw Water Transmission Main Extension (the "Project") that the Company has planned for 2015. The Company is seeking approval to finance the Project with proceeds of a loan being offered by the New Hampshire Department of Environmental Services ("NHDES") through the State Revolving Loan Fund ("SRF"). Please see Exhibit JJB-1 for the NHDES letter offering SRF Loan funds for this Project.

Q What is the Project scope?

A. The Project is, located within the Town of Merrimack and is part of the Nashua Core system EPA #1621010. The Project includes the installation of approximately 6,100 feet of 36-inch diameter raw water transmission main from the existing raw water transmission main at Al Paul Lane to the existing Harris Dam 72-inch diameter penstock as shown in Exhibit JJB-2. Approximately, 2,600 feet of the main will be within the paved surface of Manchester Street. The Company will be completing this Project in conjunction with and ahead of a Town of Merrimack resurfacing of Manchester Street planned for July of 2015. This cooperative effort will reduce street reconstruction costs for the Company. The remaining 3,600 feet of main will be cross country from Manchester Street to a point below Harris Dam. The main will cross land owned by the

Company and HECOP IV, which is 50% owned by Southwood Corporation,. Southwood Corporation is a wholly owned subsidiary of Pennichuck Corporation. The main will connect to the existing 72-inch diameter cement lined steel penstock ("penstock") at a point just below Harris Dam. The penstock passes water from Harris Dam to the Company's Water Treatment Facility.

Q. What is the purpose of the Project?

The Nashua Core system has two raw water sources that supply water to the Company's Water Treatment Facility, namely, Pennichuck Brook and the Merrimack River. Pennichuck Brook is the primary source of supply and has a safe yield of 10 to 12 million gallons per day (mgd).

Pennichuck Brook has two primary reservoirs or impoundments. Water flows from the Bowers Pond impoundment into the Harris Pond impoundment, and then to the Water Treatment Facility by gravity through the penstock. A secondary reservoir, Supply Pond, is downstream from Harris Pond. In order to access water from this secondary reservoir, water has to be pumped into the Water Treatment Facility from Supply Pond. It is only used intermittently, for example, when exercising the raw water pumps or during maintenance activities at Harris Dam.

The Merrimack River is the second source of supply and is used to meet summer demands and provide flows during the fall, after a dry summer, when flows through the Pennichuck Brook are insufficient to meet the daily water system demands. The Company operates an intake and raw water pumping station on the west bank of the Merrimack River in the Town of Merrimack as shown in Exhibit JJB-2. The intake and pumping station were constructed and placed into service in 1985. The Company

maintains a withdrawal permit issued by the Department of the Army Corps of Engineers ("COE"). The COE permit allows the Company to withdraw between 12 mgd and 30 mgd depending on flow and water levels in the Merrimack River. The Merrimack River pumping station has an installed pumping capacity of 22 mgd, which currently sets the upper limit of water supply capacity from this station, regardless of permitted upper limits. Water from the station is conveyed to Bowers Pond via a 30-inch diameter transmission main depicted in Exhibit JJB-2.

Even though Pennichuck Brook and the Merrimack River are two different raw water sources drawing from two independent watersheds, they are not considered independent sources because their waters combine in Bowers Pond before being delivered to the Water Treatment Facility. There is no current means to separate the Pennichuck Brook and Merrimack River raw water supplies prior to the Water Treatment Facility.

The proposed Project will allow operators to:

1. Continue the discharge of Merrimack River water into Bowers Pond as a combined source of supply, which allows the reservoirs to be kept full during periods of low flow in Pennichuck Brook.
2. Use only Pennichuck Brook as a source of supply.
3. Use only the Merrimack River as a source of supply.

The proposed Project also enables the use of the Merrimack River should the water quantity or water quality in Pennichuck Brook be compromised.

Q. What are the benefits of the Project?

Completion of the project enables the Company to operate and manage two completely separate sources of raw water supply. The Project benefits are as follows:

- Two separate/independent sources of raw water supply are created.
- Allows operators to use one source of water should the other raw water supply become compromised (contamination, cyanobacteria, spills, polluted storm water, or other human action/activity).
- Reduces the consequences of a structural failure of the dams, ponds, and intake system, or a water quality emergency in Pennichuck Brook or the Merrimack River, which would have regional consequences considering that these sources supply drinking water to customers in Nashua, Amherst, Hollis, Milford, Merrimack, Hudson, Litchfield, Londonderry, Pelham, Windham, Bedford and Tyngsboro.
- Allows for the installed capacity of 22 MGD from the Merrimack River Station to be directly transferred to the Water Treatment Facility without combining with the Pennichuck Brook Supply.
- The Project is concurrent with the scheduled Town of Merrimack Manchester Street paving project (2015) thereby saving the Company some road restoration costs. A preliminary estimate of these savings is approximately $100,000.
- Provides operational flexibility for:
    - The maintenance of Harris Dam (planned, unplanned, or emergency).
    - Allows operators greater ability to manage raw water quality.

Q. Is the Project consistent with the Company's long term capital improvement plan?

A. Yes. The Project was identified in the "Water Treatment Plant Evaluation & Capital Improvement Plan" prepared by the consulting firm Fay, Spofford, and Thorndyke (FST) in 2004. In this document, FST identified the need for the Project and identified three

potential alternatives. The Project follows the recommended option and the least cost alternative. In addition, the Company's Asset Management Initiative identifies the sources of supply as critical infrastructure with a high consequence of failure, thus further supporting completion of the Project.

Q. Will any Company assets be retired as part of the Project?

A. No.

Q. Will any environmental permits be required for the Project?

A. Possibly. Land use permits from the Town of Merrimack may be required for work in buffer zones to Pennichuck Brook. The need for these permits will be evaluated during the design process. There are no wetlands impacting the pipeline route.

Q. Does the Company intend to complete the Project in 2015?

A. Yes. The ability to complete the project during 2015 is dependent upon getting the project construction underway in the late May to early June . To accomplish this, the NHDES and the Company need to close on these loans in early May.

Q. Please describe the estimated timeline required to complete the project in 2015.

A. The NHDES would like to finalize the loan documents associated with this loan by May 1, 2015. The NHDES cannot finalize the loan documents without the NHPUC approving the proposed financing for this project. The list below provides an estimated timeline for the two projects:

<u>Regulatory Approvals and Permits with Estimated Dates</u>

1. Company Board Resolution approving SRF loan– January 23, 2015. (COMPLETED)
2. File financing petition with Commission – February 2, 2015.

3. File for Shareholder approval of financing – request for approval filed with City of Nashua – February 2, 2015.

4. NHPUC approval of Financing – request for order approving financing on or before April 18, 2015.

4. Sign SRF Loan Documents for Project Loan – on or before May 1, 2015.

Estimated Project Dates

1. Complete Engineering designs – March 15, 2015.

2. NHDES approval of proposed design – April 1, 2015.

3. Bid the Project condition award upon the Company receiving financing – April 15, 2015.

4. Open Bids for the Project – May 15, 2015.

5. Construction begins – June 15, 2015.

6. Project substantial completion – October 30, 2015.

Q. Does this complete your testimony?

A. Yes.