

STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

Pennichuck East Utility, Inc.

Petition for Approval of Special Contract for Service to Woodmont Commons

DW 18-_____

Direct Testimony of John J. Boisvert

June 27, 2018

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1 **I. Professional and Educational Background**

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

4 **A.** My name is John J. Boisvert. I am the Chief Engineer of Pennichuck Water
5 Works, Inc. (“PWW”). PWW performs the operations and maintenance on
6 Pennichuck East Utility, Inc.’s (“PEU” or “Company”) assets on a work order
7 basis. I have worked for PWW and PEU since February 1, 2006. I am a licensed
8 professional engineer in New Hampshire and Maine.

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.
12 I also have a Master’s degree in Environmental Law and Policy from Vermont
13 Law School in South Royalton, Vermont.

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

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

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

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

4 **A.** I am responsible for the planning, design, permitting, construction, and startup of
5 major capital projects, including pipelines, reservoirs/dams, building structures,
6 pumping facilities, treatment facilities, and groundwater supplies. I also oversee
7 and direct Asset Management Initiatives of PWW and PEU and provide regular
8 technical assistance to the Water Supply Department, Operations Department,
9 Customer Service Department, and Senior Management.

10 **II. Purpose of Testimony and Background of Water System**

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

12 **A.** I will be providing details of the Company's need to address projected growth in
13 the Londonderry Core system as well as growth in the Woodmont Commons
14 Planned Unit Development ("Woodmont Commons"). I will also explain why the
15 payments proposed in the special contract with Pillsbury Realty Development,
16 LLC, ("Pillsbury") the principal developer of Woodmont Commons, are just and
17 reasonable and consistent with the public interest.

18 **III. Description of Londonderry Water System**

19 **Q. Please describe PEU's water system in Londonderry.**

20 **A.** PEU serves an estimated 4,165 people through approximately 1,243 service
21 connections in the southeasterly section of Londonderry. This system constitutes
22 PEU's Core Londonderry system. The system also serves about 200 service
23 connections within the Mountain Home Estates development ("Mountain

1 Homes”). This development is connected to the Core Londonderry system via a
2 pumping station master meter. PEU also serves the Town of Londonderry’s
3 municipal center, which includes the Town Offices, and the Londonderry Public
4 Schools along Mammoth Road. The Londonderry Core water system has two
5 pressure zones. The higher zone (elevation 610) is established by the Mountain
6 Homes booster pump station. Pumping capacity at this station is limited to 1,500
7 Gallons Per Minute (“GPM”) due to suction pressure limitations. A pressure
8 reducing valve reduces the pressure to the lower zone (elevation 498) along the
9 south end of Gilcreast Road. This pressure reducing valve station serves as the
10 hydraulic boundary between the low and high-pressure zones within the
11 distribution system. There is no means to pump water into the higher-pressure
12 zone.

13 The South Road pump station has been converted to an emergency supply station
14 which can pump to the lower zone of the Londonderry Core water system from
15 the Derry Water Department, activated by a loss of system pressure in this zone.
16 This station has an installed pumping capacity of 1,300 GPM. This station can
17 also be bypassed manually to provide water to the Town of Derry's water system,
18 which operates at a lower hydraulic grade line. This station is equipped with dual
19 boosters to supply fire flow to the Home Depot in Londonderry.

20 **Q. How does PEU obtain its water supply?**

21 **A.** PEU obtains water supply for its Core Londonderry system through a purchased
22 water agreement with Manchester Water Works (“MWW”). PEU also obtains
23 water from the Town of Derry at retail rates for fire flows required by a contract

1 with The Home Depot. Under the contract, PEU must maintain an available fire
2 flow of 2,400 GPM.

3 **IV. Growth Projections and Sanitary Survey**

4 **Q. Please describe the projected future water demand anticipated by PEU in**
5 **Londonderry.**

6 **A.** As can be seen on Attachment JJB-A, Schedule 1, Londonderry Core Demand
7 Estimates, and Schedule 2, Woodmont Commons Demand, the present Core
8 Londonderry system demand is approximately 382,402 gallons per day (“GPD”).
9 Over the next ten years, PEU anticipates future growth in Londonderry to increase
10 water demand by about 89,000 GPD based on average customer growth between
11 2006 and 2015. At present, in the 610 Zone, the Woodmont Commons consists
12 mostly of redevelopment of existing developed properties that were existing PEU
13 customers. As development progresses into previously undeveloped property,
14 this will create new demand on the Core Londonderry system. Woodmont
15 Commons’ new development is estimated to increase demand by approximately
16 405,488 GPD. This brings the total estimated future demand over the next ten
17 years to approximately 877,506 GPD. Maximum day demand in the Londonderry
18 Core increases by a factor of 1.4 times average day demand resulting in a
19 maximum day demand of 1,228,508 GPD. The demand for fire flows will also
20 increase. For example, Woodmont Commons will require 3,500 GPM fire flow
21 protection as opposed to 2,400 GPM in the 498 Zone. A map of Woodmont
22 Commons is attached as Attachment JJB-A, Page 7.

23 **Q. Are there any regulatory restrictions on growth in PEU’s Londonderry Core**

1 **system?**

2 **A.** Yes, with respect to the Woodmont Commons development. The Department of
3 Environmental Services (“NHDES”) issued a Sanitary Survey dated January 9,
4 2018 and stated that “[n]ew development [in Woodmont Commons] cannot be
5 approved until an agreement is reached and PEU can confirm sufficient flow and
6 pressure is available.” See, Attachment JJB-B. This prohibition does not affect
7 the rest of PEU’s Core Londonderry system.

8 **Q.** **Please describe the options PEU has considered to address the anticipated**
9 **growth in demand.**

10 **A.** PEU’s Core Londonderry system does not have storage capability presently,
11 therefore, all demand must be matched by pumping capacity. PEU has discussed
12 with the NHDES two options to address future growth. One option is to upgrade
13 the existing pumping capacity at the Mountain Homes pump station and make
14 significant pipeline upgrades from MWW to the Mountain Homes pump station.
15 The second option is to construct an elevated, 1.1 million-gallon water storage
16 tank in the high-pressure zone, Zone 610. PEU already owns property adjacent to
17 Woodmont Commons which can accommodate a storage tank. As illustrated in
18 Attachment JJB-A, Page 7, PEU’s parcel abuts the north-west corner of
19 Woodmont Commons. The storage tank would be designed to supply 100% of
20 the required fire flow (3,500 GPM for 180 minutes) for Woodmont Commons and
21 provide a buffer for fluctuations in peak daily demand. Building the storage tank
22 would also avoid the need for costly and disruptive off-site pipeline upgrades.
23 Because the construction of the storage tank addresses more concerns than the

1 pipe upgrades would, PEU prefers to address the future growth in Londonderry by
2 constructing the water storage tank.

3 **Q. Is the water storage tank within PEU's capital improvement plan?**

4 **A.** Yes.

5 **Q. Please describe.**

6 **A.** PEU prepares an Annual and a Three-Year Capital Budget. In the most recent
7 2018-2020 budget/forecast, dated January 2018, PEU included the tank. The
8 Company would have considered constructing a smaller tank, if not for the
9 Woodmont Common project, because the existing Londonderry fire flow
10 requirements for the Company's current system in Londonderry are less than what
11 would be required including Woodmont, and future average day demand would
12 be less, as well.

13 **Q. How long does PEU expect construction of the storage tank to take?**

14 **A.** PEU anticipates the design and permitting of the storage tank to take six months.
15 Construction of the tank generally takes eighteen months, or two construction
16 seasons. Ideally, design and permitting could be done over a winter and put out to
17 bid in the spring. This timing would allow concrete to be poured for the base in
18 the summer/fall. The steel tank would be fabricated in the second spring/summer,
19 and then painted in late summer. An estimate of the construction phases is
20 attached to the special contract.

21 **V. Cost to Serve Woodmont Commons**

22 **Q. How did PEU determine the estimated fees contained in the proposed**
23 **contract?**

1 **A.** PEU’s engineering staff is experienced with the types of costs of construction
2 listed in the special contract and provided the cost estimates for the project’s:
3 design, permitting, bidding, construction, and construction administration.
4 Consultants hired to assist with design, permitting, and construction
5 administration will be selected based on qualifications. Tank
6 suppliers/contractors will be prequalified to bid on the project and the
7 construction of the tank will be awarded to the lowest responsible and qualified
8 bidder. This process will ensure PEU and Pillsbury (the Woodmont Commons
9 developer) have a qualified team of consultants and vendors selected, at a fair
10 market rate for the construction. As stated earlier, PEU conducted an analysis of
11 the growth needs of Londonderry and compared that growth to the impact of
12 adding Woodmont Commons to PEU’s water system. PEU then allocated the
13 costs between PEU and Pillsbury according to the future demand and
14 incorporated these costs into the proposed special contract. Please see
15 Attachment JJB-A, Schedules 1 through 4.

16 **Q.** **Please describe the cost-sharing arrangement with Pillsbury.**

17 **A.** As shown in the Attachment JJB-A, Schedules 3 and 4, Pillsbury will be funding
18 fifty-one percent (51%) of the capital cost of the storage tank. This Pillsbury cost
19 share is based on the share of the storage tank size needed to supply Woodmont.
20 The cost sharing arrangement results from a required storage volume calculation
21 based on domestic demand and fire flow demand. Beginning with domestic
22 demand, existing PEU Londonderry Core customers used an average daily
23 volume of 382,402 GPD (based on 2015 data). The average daily flow equates to

1 approximately 256 GPD per equivalent meter unit (EMU). An equivalent meter
2 is the standard 5/8-inch meter (a 5/8-inch meter equals 1 EMU) while larger
3 diameter meters equate to more than one EMU. The existing Londonderry Core
4 has roughly 1,100 meters equating to approximately 1,494 EMUs. Between 2006
5 through 2015 approximately 35 new customers per year were added to the
6 Londonderry Core. The Company estimates future (non-Woodmont Commons)
7 growth in Londonderry to be at the annual growth rate of 35 customers per year
8 resulting in an additional 350 customers over 10 years. The additional 350
9 customers equates to 350 EMUs. The total Londonderry Core EMUs is estimated
10 at 1,844 EMUs. Woodmont Commons projects an average day demand of
11 405,488 GPD. The Woodmont Commons demand equates to 1,584 EMUs
12 (405,488 GPD/256 GPD per EMU). The combined total projected EMUs is equal
13 to 3,427. Woodmont Commons is 46% of the total while the Londonderry Core is
14 about 54% of the total. Therefore, Woodmont Commons is responsible for about
15 46% of the cost of the tank and PEU is responsible for about 54% of cost of the
16 tank associated with domestic demand.

17 Fire flow demand is the other component of the required tank volume.
18 Woodmont Commons anticipates a 3,500 GPM fire flow requirement, for a
19 duration of 60 minutes, plus an additional 1,100 GPM for 120 minutes. The
20 Londonderry Core requires 2,400 GPM in the low-pressure zone for 120 minutes.
21 The required fire flow volume for the Londonderry Core is 288,000 gallons
22 (2,400 GPM x 120 minutes). The required fire flow volume for Woodmont
23 Commons is 342,000 gallons (1,100 GPM x 120 minutes plus 3,500 GPM x 60

1 minutes) for a total fire flow volume required of 630,000 gallons. The
2 Londonderry Core is responsible for 46% of the fire flow volume (288,000
3 gallons/630,000 gallons). Woodmont Commons is responsible for 54% of the fire
4 flow volume (342,000 gallons/630,000 gallons). Based on the total number of
5 3,427 EMUs, the average day demand of the Londonderry Core is estimated at
6 877,506 GPD (3,427 EMUs x 256 GPD/EMU). This volume may be reduced by
7 the pumping capacities of the Londonderry Core pumping stations over the
8 duration a fire flow may occur. The stations can contribute approximately
9 405,000 gallons, thus the required domestic volume for the tank is 472,506
10 gallons. The total volume is the estimated fire flow volume of 630,000 gallons
11 plus the required domestic volume of 472,506 gallons. The total of is calculated
12 at 1,102,506 gallons. Although it is possible to construct a tank to store this
13 specific volume, most tank suppliers furnish tanks in nominal volume increments.
14 The Company consulted with two suppliers and determined a tank having a
15 nominal volume of 1,100,000 gallons would be appropriate for the Londonderry
16 Core. The fire flow volume is 630,000 gallons, leaving 470,000 for domestic
17 storage. The estimate to construct the tank including engineering, permitting, and
18 construction is \$2,835,000. Proportionately, domestic volume accounts for
19 \$1,211,318 (470,000 gallons/1,100,000 gallons) of the tank cost while fire flow
20 volume accounts for \$1,623,682 (630,000 gallons/1,100,000 gallons) of the tank
21 cost. Attachment JJB-A Schedule 4 computes the PEU and Woodmont Commons
22 cost allocation percentages (weighted) for the tank. PEU will incur 49.156% of
23 the estimated tank cost or \$1,393,579. Woodmont Commons will incur 50.844%

1 of the estimated tank cost or \$1,441,421. The cost of the storage tank associated
2 with future (non-Woodmont Commons) customer growth is proposed to be
3 funded by a system upgrade fee on new customer growth, and by existing
4 customers through decreased purchased water costs. PEU will receive a lower
5 volumetric rate from MWW once the storage tank is completed and in-service.
6 The system upgrade fee on new customer growth is allowed by PEU's existing
7 tariff.

8 **Q. Is there any overlap between the proposed tank project and the proposed**
9 **surcharge to customers (Qualified Capital Project Annual Adjustment**
10 **Charge or "QCPAC"), PEU has requested in its rate case, Docket No. DW**
11 **17-128?**

12 **A.** The Company will not earn a return or seek to recover from customers
13 contributed capital from Pillsbury. The Company will track its costs associated
14 with the tank project and anticipates submitting the costs not paid for by Pillsbury
15 for approval as part of PEU's proposed QCPAC program, should the QCPAC
16 program be approved by the Commission in docket DW 17-128.

17 **VI. Terms of the Special Contract**

18 **Q. Please summarize the key terms of the proposed contract.**

19 **A.** The terms are more fully described in the contract (Attachment JJB-C) but
20 essentially, Pillsbury will pay for 51% of the cost for PEU to construct a 1.1
21 million-gallon water storage tank. Pillsbury will make periodic payments
22 according to a schedule attached to the special contract. PEU will oversee the
23 construction of the water storage tank. After the tank is in service and Pillsbury

1 has made all of its payments, PEU's regular tariffs and terms of service will apply
2 and the special contract can be terminated.

3 **Q. What is the proposed effective date of the special contract?**

4 **A.** The special contract will be effective upon the Commission's approval.
5 Construction of the water storage tank is expected to take two construction
6 seasons. The first phase of the project would be developing the engineering
7 design, and this is anticipated to take place during the summer of 2018. PEU
8 seeks approval of advance payments from Pillsbury for the construction phases,
9 therefore, the effective date is anticipated in the summer of 2019. PEU requests
10 the Commission approve the special contract no later than July 31, 2018 so that
11 PEU can commence the tank design and stay on track with the construction
12 timeline. Under that timeline, PEU would expect to be able to offer water service
13 and fire protection service to Woodmont Commons in October, 2020. October
14 2020 is when Pillsbury anticipates needing fire protection service for its
15 development.

16 **VII. Deviation from Tariff**

17 **Q. Please explain why special circumstances exist which render a departure
18 from the general schedules and terms of service contained in PEU's tariff.**

19 **A.** Although PEU's tariff does not directly authorize PEU to charge for the cost to
20 provide service to Woodmont Commons, it does set forth a path for approving the
21 charging of costs. PEU's tariff (Original Page 35 and First Revised Page 36)
22 enables PEU to collect from customers, in advance, for the cost of constructing
23 main extensions necessary to serve the new customer. Also, System Upgrade

1 Fees (Second Revised Page 37) may be charged customers for the construction of
2 new water facilities. Pursuant to paragraph 5 on First Revised Page 36, “[s]pecial
3 contracts will be negotiated whenever in the opinion of the Company this regular
4 extension tariff should not be used or is not feasible or economical. Each special
5 contract shall be submitted to the Commission for approval.” Because a larger
6 storage tank is necessary to serve Woodmont Commons, the larger tank is of
7 considerable expense and does not benefit the entire water system, and it is not a
8 main extension project, PEU believes special circumstances exist and that
9 Commission approval is necessary. Please see the attached Statement of Special
10 Circumstances (Attachment JJB-D).

11 **VIII. Public Interest Considerations**

12 **Q. Why should PEU enter a special contract for Woodmont Commons?**

13 **A.** Woodmont Commons is a unique planned community with a variety of uses that
14 will resemble a stand-alone town. Its water service needs are unique as compared
15 to PEU’s existing customers. If PEU did not partner with Pillsbury to share in the
16 cost of the proposed water storage tank, Pillsbury would face very high costs to
17 secure water supply for fire protection and these costs could adversely affect the
18 Woodmont Commons project. Partnering with PEU allows Pillsbury to secure
19 cost-effective water service for Woodmont Commons.

20 **Q. Please identify the public benefits of the proposed contract.**

21 **A.** PEU’s water system in Londonderry will ultimately be more robust and be better
22 able to meet future growth needs.

23 **Q. Please identify the benefits to PEU and its customers as a result of the**

1 **proposed contract.**

2 **A.** PEU will have improved capacity to meet the growth needs of Londonderry. PEU
3 will benefit from a funding source to offset the cost of its water storage tank.
4 PEU's customers will benefit from lower future rates because a portion of the
5 storage tank cost is being paid for by the developer of Woodmont Commons,
6 which, in turn, enables PEU to not charge that portion of the tank cost to
7 customers. PEU customers will also benefit by lower volumetric rates from
8 MWW once the storage tank is completed. Current volumetric rates from MWW
9 are \$1.450 per 100 cubic feet (CCF) without the storage tank and will reduce to
10 \$1.109 per CCF once the tank is completed. There are three options PEU is
11 evaluating to finance PEU's \$1,393,579 share of the tank. The three are CoBank,
12 the NH State Revolving Fund (loan), and the NN Drinking & Groundwater Trust
13 Fund (loan). The terms of each option are provided in Attachment JJB A
14 Schedule 5. Calculations of purchased water cost savings and the P&I payments
15 for each option show a rate impact to existing PEU customers at the time the tank
16 goes into service (P&I payments are more than the anticipated purchased water
17 cost savings) if CoBank was the financing option. Rate impacts are not
18 anticipated at the time the tank goes into service (P&I payments are less than the
19 anticipated purchased water cost savings) if either of the other two State of NH
20 financing options are used. As time goes on with the buildout of Woodmont
21 Commons and new customer growth the reduction in purchased water expenses
22 eventually exceeds the P&I payments on the tank regardless of which financing
23 option is used.

1 **Q. Do you have an opinion as to whether the proposed special contract with**

2 **Woodmont Commons is in the public interest?**

3 **A.** Yes. I believe that the proposed PEU-Woodmont Commons special contract is
4 just and reasonable for both Woodmont and all of PEU's customers and consistent
5 with the public interest.

6 **Q. Does that complete your testimony?**

7 **A.** Yes.