

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 18-101

Supplemental Direct Testimony of John J. Boisvert

March 9, 2020

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1 **I. Purpose of Supplemental Testimony**

2 **Q. What is the purpose of your supplemental testimony?**

3 **A.** Since the Commission approved Pennichuck East Utility, Inc.’s (“PEU” or
4 “Company”) special contract with Pillsbury Realty Development, LLC
5 (“Pillsbury”) for Pillsbury’s development, Woodmont Commons, in the Town of
6 Londonderry, the Town of Londonderry Zoning Board of Adjustment (“ZBA”)
7 denied PEU’s request for a variance for the elevated storage tank. The ZBA also
8 denied rehearing. Since the denials, PEU has filed its appropriate appeals to the
9 Superior Court. Meanwhile, PEU has reexamined the tank height and has come
10 up with a solution that we believe will be better received by the town and
11 residents. Therefore, in this supplemental testimony, I will further speak to:

- 12 • The denial of a height variance and PEU’s subsequent motion for
13 rehearing by the Londonderry ZBA to construct the elevated storage tank
14 on land owned by PEU within the Residential/Agricultural Zone.
- 15 • How the denial of the variance caused PEU to consider legal options,
16 including appeal to the Commission and/or Superior Court, in light of the
17 ZBA denial.
- 18 • PEU’s consideration of other technical options to resolve the water supply
19 needs in lieu of appeals and litigation.
- 20 • PEU’s new technical approach that changes the underlying project but
21 retains the cost share percentages at the same proportions as was approved
22 in Order No. 26,285 and is of a similar price.

1 Since the denial of the variance, PEU engaged the services of an engineering
2 consultant to assess other water supply storage and distribution options to achieve
3 the same objectives as the original elevated storage tank project and assess the
4 relative costs. During this evaluation process, PEU also engaged in discussions
5 with Town of Londonderry staff, our consultants, and the NH Department of
6 Environmental Services (“NHDES”) and impressed upon the Town the need to
7 make system improvements, and that the most technically feasible option was a
8 water storage tank. In addition, PEU met with representatives of Pillsbury to
9 present the alternative system improvement option. During these discussions, the
10 Company requested an easement agreement of Pillsbury. The new proposed
11 project involves a ground-level storage tank, a transmission main across
12 Pillsbury’s land, and water booster pumping station. Although this alternative
13 differs from the prior elevated tank project, it remains consistent with the cost
14 sharing arrangements with Pillsbury in Special Contract approved in Order No.
15 26,285. Importantly, adjusting for 2020 pricing, the cost is slightly less than the
16 elevated tank project by approximately \$248,000.

17 **Q. Please explain why PEU elected to not pursue legal remedies with respect to**
18 **the denial of the variance?**

19 **A.** Pursuing a Commission override of the variance denial, under RSA 674:30, could
20 potentially sour PEU’s relationship with the Town. Such litigation would also
21 add more expense to this approval process, without a guarantee that those extra
22 expenses would yield a different outcome. PEU thought it better to address the
23 Town’s concerns with the height of the original elevated tank project and offer a

1 lower profile tank alternative that would address the Town’s concerns and also
2 meet PEU and Pillsbury’s needs.

3 **II. Description of Londonderry Water System**

4 The new tank project does not change my prior testimony on this subject.

5 **III. Revised Tank Project**

6 **Q. Earlier in your testimony you mentioned that the Company engaged the
7 services of a consultant to perform a detailed evaluation of the existing
8 Londonderry Core System (“LCS”). Please describe.**

9 **A.** PEU engaged the services of Underwood Engineers, Inc. (“UEI”) of Portsmouth,
10 NH. The primary focus of UEI was to assess the water source capacity (the
11 ability of the Company to pump water into the LCS through the Mountain Homes
12 and South Londonderry Stations) and evaluate the hydraulic capacity of the LCS
13 distribution network to meet existing demand requirement for both domestic and
14 fire flow conditions. That report, dated January 29, 2020, is attached as
15 Attachment JJB-E. The general conclusion of the UEI evaluation was that the
16 LCS is not capable of meeting both domestic water demand and fire flow
17 requirements for the existing LCS customers and land uses (schools, public safety
18 facilities, and critical customers such as health care facilities). Hourly flow data
19 from the Cohas meter (the water purchase location from MWW) recently obtained
20 from MWW shows that during high demand periods of the year, and certain hours
21 of the day throughout the year, domestic water demand is high enough to
22 consume much of the reserved fire flow capacity of the Mountain Homes and
23 South Londonderry booster station.

1 **Q. What conclusion did UEI reach?**

2 **A.** UEI concluded that even if PEU were to increase the size of the pumps at
3 Mountain Homes and South Londonderry the ability for MWW and the Town of
4 Derry water systems to support the increase pumping capacity is not readily
5 available, storage (i.e., a tank) within the LCS remains necessary to meet existing
6 customer demand and current fire flow requirements. A water storage tank is
7 necessary irrespective of the Woodmont Commons development. See pages 8
8 and 9 of Attachment JJB-E.

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

10 The new tank project does not change my prior testimony on this subject, except
11 as stated below.

12 **Q. What is the NHDES position on the new tank project??**

13 **A.** The NHDES issued a Sanitary Survey dated January 9, 2018 and stated that
14 “[n]ew development [in Woodmont Commons] cannot be approved until an
15 agreement is reached and PEU can confirm sufficient flow and pressure is
16 available.” This survey was previously provided as Attachment JJB-B to my
17 2018 testimony in this docket. This prohibition does not affect the rest of PEU’s
18 Core Londonderry system. However, considering the results of the UEI report,
19 the NHDES has become aware of the deficiency for the LCS to meet existing
20 domestic and fire flow demands. The NHDES has encouraged PEU to continue
21 to pursue alternatives that address and resolve the delivery deficiency of the LCS.

22 **Q. Please describe the tank locations PEU considered.**

23 **A.** PEU, in consultation with UEI, identified and evaluated eleven alternative sites in

1 Londonderry on which to site an elevated water storage tank. The sites and their
2 characteristics are identified in Attachment JJB-Figure 3. All eleven would
3 require PEU to purchase either property or easement rights. Seven were located
4 on private property which would be difficult to purchase or acquire an easement.
5 Two were owned by the Federal Aviation Administration as active navigation
6 sites. One is owned by the Town of Londonderry and is used for recreational
7 fields and another would have been within power lines owned by Eversource, Inc.
8 Nine were in the same Residential/Agriculture zone and would require the same
9 variance as sought for the earlier proposed tank-which would have no guarantee
10 of approval. At least seven of the locations would require significant pipeline
11 additions to bring water to the existing distribution system and/or to where high
12 flows were required driving up costs of those options even further. PEU
13 concluded that an elevated tank at an alternate location in Londonderry is not
14 feasible due to the cost and because it would face challenges outside of the control
15 of PEU (land acquisition, land use variances, etc.).

16 **Q. Please describe other considerations.**

17 **A.** PEU then assessed the option for a ground level water storage tank combined with
18 a pumping station to generate the flows and pressures (hydraulic grade lines)
19 required for the LCS and would not exceed the height limitation within the land
20 use zone where it was located. Importantly, this would eliminate the need for a
21 variance and avoid litigation but would still require Londonderry Planning Board
22 approval for the tank (site plan review), pump station (site plan review), and the
23 project will also require approval from the Conservation Commission because the

1 transmission main and the station will likely come within the 100-foot buffer from
2 a wetland. Details on the precise location of the transmission main north of
3 Pillsbury Road are still being worked out with Pillsbury because Pillsbury has not
4 yet finalized its road location in this portion of the development. The main,
5 however, will be located within a roadway and within a planned walking trail so
6 as to ensure PEU's access to it through an easement granted by Pillsbury. See
7 Attachment JJB-Figure 2. The PEU property on which the elevated tank was
8 originally proposed, emerged as a viable site for ground level storage. A profile
9 of the tank is provided as Attachment JJB-Figure 4. The pumping station will be
10 located within an easement on Pillsbury property along Michel's Way, as depicted
11 in Attachment JJB-Figure 2.

12 **Q. Please explain why this new alternative became preferred.**

13 **A.** The storage tank would have the same capacity (1.25 million gallons) with 1.1
14 million gallons being useable like the elevated storage tank. It can be constructed
15 with a height less than the 35-foot limitation in the Residential/Agricultural zone
16 and thereby eliminate the need for a variance. The tank would have an 'overflow
17 elevation' of roughly 495 to 500 feet above mean sea level, which allows the tank
18 to fit within the hydraulic grade line of the system at no more than 35-feet in
19 height and still have the capability to supply the 498 zone by gravity. Thus, it can
20 be filled by the pumps at the Mountain Homes booster station or the South
21 Londonderry booster station. That provides the LCS with redundant sources of
22 supply. A new booster station would be required to again raise the water to the
23 620-foot hydraulic grade line in the distribution system to serve all of the LCS.

1 The booster station can be designed with pumps to serve the entire LCS (both the
2 620 zone and the 498 zone). The station will require the construction of three
3 phase electric power service to the site and a substantial size emergency generator
4 to provide water service in case of a power outage. I address how PEU is
5 mitigating the additional expense of these design changes later in my testimony.

6 **Q. Please compare the proposed alternative solution to the original elevated**
7 **tank.**

8 **A.** The capital cost for the ground-level tank option is comparable to the elevated
9 tank costs, when updated to 2020 values, however, the lifecycle cost would be
10 more expensive due to the fact that all of water delivered to LCS customers would
11 have to be double-pumped. The additional pumping will drive up future electrical
12 costs because booster station operations and maintenance costs are typically more
13 than those of an elevated tank. In light of these additional costs, PEU then looked
14 for ways/options to reduce the costs.

15 **Q. Please describe other cost saving measures considered by PEU.**

16 **A.** The new tank itself will be a shorter, less than 35-foot tall, 1.25 million gallon
17 tank. It will be located at the same location as was originally proposed for the
18 elevated water tank. This will save costs. At this location, the tank can be
19 constructed with an overflow (water level) elevation of 498 feet. The overflow
20 elevation matches the required hydraulic grade line for the 498 pressure zone.
21 See Attachment JJB-Figure 5. Thus, this tank can provide water (both domestic
22 and fire flow demand) by gravity via a transmission pipeline connecting the tank
23 directly the 498 zone water distribution system without the need to double pump

1 directly to the 498 pressure zone. Gravity feed is a benefit retained from the
2 original tank design. A booster station will still be required to provide domestic
3 and fire flow to the 620 pressure zone, but this will require less pumping than if
4 all of the water was pumped to the 620 pressure zone. That would be the situation
5 if the booster station were built adjacent to the new tank. An adjacent pump
6 station would also require construction of additional water main to connect the
7 station to the 620 pressure zone. PEU identified a location within Woodmont
8 Commons shown in Attachment JJB-Figure 2, away from the new tank, where the
9 tank transmission main connects to the 498 pressure zone that offers a number of
10 advantages to PEU Customers and to Woodmont Commons that did not exist with
11 the elevated tank and that help offset the additional costs.

12 Q. **Please describe those additional advantages.**

13 A. Locating a pump station at intersection of the 620 and 498 pressure zones as
14 option 8, offers the following advantages:

- 15 • The booster station will be near existing three phase electric power service
16 which saves the cost to construct three phase electric service up to the tank
17 site.
- 18 • The booster station will be in close proximity to where maximum
19 emergency fire flows are required (industrial, commercial, and high
20 density residential). This minimizes the need for immediate investment in
21 the upsizing of existing water main in the LCS, thereby pushing these
22 upsizing projects off into the future.
- 23 • The booster station will be located at the separation point between the

1 498pressure zone and the 620 pressure zone which offers further benefits
2 not previously available with the elevated tank project:

3 ○ The booster station will draw water from the tank transmission
4 main (directly from the tank) eliminating peak flow restrictions
5 currently experienced at the Mountain Homes booster station and
6 the South Londonderry booster station due to limitations in the
7 MWW and Town of Derry water systems.

8 ○ The tank can now be filled by either the Mountain Homes booster
9 station or the South Londonderry booster station giving the LCS
10 redundant sources of supply-which is important in the event that
11 the Mountain Homes booster station becomes inoperable or if
12 water flow from MWW to the Mountain Homes Station were
13 interrupted.

14 ● The pump station at [option 8 location] eliminates double pumping water
15 to the 498 pressure zone. Only water going to the 620 pressure zone will
16 be double-pumped.

17 ● The capital costs of the new tank project (to existing LCS customers and
18 Pillsbury) are approximately the same as the elevated tank option.

19 ● By reducing the amount of water that needs to be double pumped,
20 operational costs of the station are reduced such that the net present value
21 of this option is less than \$2,500 per year of that offered by the elevated
22 storage tank over 20 years. See Revised Attachment JJB-Schedule A,
23 Attachment 6.

- The Project creates a back-up source of supply to the LCS. The transmission main and the booster station allow for the ability to pump water from the 498 zone to the 620 zone using the Town of Derry connection and the new booster station. Because of the micro and macro redundancies, the proposed Project increases the resiliency of the LCS.

Q. Please describe what additional involvement with Pillsbury is required by this new alternative.

A. This option requires Pillsbury to grant PEU easements for the 498 zone transmission main and the booster station. The easement for the transmission main will provide 10 feet on either side of the transmission main. Subject to determining final details, Pillsbury has agreed to grant these easements. The general location of the easements are reflected in the revised Special Contract (revised Attachment JJB-C). More specifically, PEU and Pillsbury have agreed that the transmission main will run under a cross country walking path from Pillsbury Road to the booster station as generally illustrated on Attachment JJB-Figure 2. As noted earlier the exact location north of Pillsbury Road and south of the tank has yet to be determined, however, the location will be within a future road. The final easement locations will be determined during the final design phase of the transmission main and the booster station.

Q. Is the alternate plan to an elevated water storage tank within PEU's capital improvement plan/budget?

A. Yes. PEU prepares an Annual and a Three-Year Capital Budget. These costs are included in the most recent 2020-2022 budget/forecast, dated January 2020. As

1 was the case in my 2108 testimony, PEU would still have considered
2 constructing a smaller tank, if not for the Woodmont Common project, because
3 the existing Londonderry fire flow requirements for the Company's current
4 system in Londonderry are less than what would be required including
5 Woodmont, and future average day demand would be less, as well.

6 **Q. Has PEU's financing plans changed?**

7 **A.** No. PEU still plans to use CoBank for this project, as explained in Staff
8 recommendation letter dated June 28, 2019.

9 **Q. How long does PEU expect construction of the storage tank, transmission
10 main, booster station option to take?**

11 **A.** PEU anticipates the design and permitting of the storage tank to take six months.
12 Construction of a 1.25 million gallon ground level tank generally takes four to six
13 months. The 6,300 foot long, 16-inch transmission main is expected to take three
14 months. The 3,500 gpm booster station will take approximately four to six
15 months. These three elements constitute the "Project" referenced in the special
16 contract. PEU intends to design, bid, and construct the three main components as
17 three separate projects that could run concurrently. The tank, the booster station,
18 and the Transmission main are technically different from each other and lend
19 themselves to different types of contractors. This approach ensures a more
20 efficient bidding environment thus lower construction costs. PEU anticipates the
21 overall project to be complete in late second to early third quarter of 2021
22 assuming construction can begin in 2020.

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

2 **Q. Please explain how PEU estimated the cost of construction.**

3 **A.** As noted in my prior testimony, PEU's engineering staff is experienced with the
4 types of costs of construction listed in the special contract and provided the cost
5 estimates for the project's design, permitting, bidding, construction, and
6 construction administration. Consultants hired to assist with design, permitting,
7 and construction administration will be selected based on qualifications. All
8 construction projects will be publicly bid. The transmission main and the booster
9 station will be awarded to lowest responsible and qualified bidder. Since the
10 precast prestressed reinforced concrete tank is more of a unique type of structure
11 as compared to the elevated tank, tank suppliers/contractors will be prequalified to
12 bid on the project and the construction of the tank will be awarded to the lowest
13 prequalified bidder. This process will ensure PEU and Pillsbury (the Woodmont
14 Commons developer) have a qualified team of consultants and vendors selected,
15 at a fair market rate for the construction.

16 **Q. Please explain how PEU apportioned costs between PEU and Pillsbury.**

17 **A.** PEU analyzed the growth needs of Londonderry and compared that growth to the
18 impact of adding Woodmont Commons to PEU's water system. PEU then
19 allocated the costs between PEU and Pillsbury according to the future demand
20 and incorporated these costs into the proposed special contract. Please see revised
21 Attachment JJB-Schedule A, Attachments 1 through 4. These schedules have
22 been adjusted since my 2018 testimony to reflect the new tank project. Although
23 the costs have been updated, construction of the proposed tank instead of the

1 elevated tank did not change the prior apportionment approved by the
2 Commission.

3 As shown in the revised Attachment JJB-Schedule A, Attachments 3 and 4,
4 Pillsbury will still be funding fifty-one percent (51%) of the capital cost of the
5 storage tank. Pillsbury's cost share remains based on the share of the storage tank
6 size needed to supply Woodmont Commons.

7 **Q. Please describe the specific gallonage and costs of the new tank.**

8 **A.** The Company consulted with two suppliers and determined a tank having a
9 nominal volume of 1,250,000 gallons would be appropriate for the Londonderry
10 Core. The fire flow volume of the new tank is 630,000 gallons, leaving 470,000
11 gallons for domestic storage and 125,000 gallons for dead storage (the bottom of
12 the tank where sediment may accumulate, and where inlet and outlet piping is
13 constructed). The Project estimate, including engineering, permitting, and
14 construction totals \$3,152,000. See, revised Attachment JJB-Schedule A,
15 Attachment 3 which computes the PEU and Woodmont Commons cost allocation
16 percentages for the Project: PEU will incur 49.156% of the estimated tank cost or
17 about \$1,549,404; Woodmont Commons will incur 50.844% of the estimated
18 Project cost or about \$1,602,569. As noted in my prior testimony, the cost of the
19 storage tank associated with future (non-Woodmont Commons) customer growth
20 is proposed to be funded by a system upgrade fee on new customer growth, and
21 by existing customers through decreased purchased water costs. PEU will receive
22 a lower volumetric rate from MWW once the storage tank is completed and in-
23 service. The system upgrade fee on new customer growth is allowed by PEU's

1 existing tariff.

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

3 **Q. Does the new alternative project change the terms of the special contract?**

4 **A.** Not materially. A track-change and clean version of the special contract is
5 attached as Attachment JJB-C. Pillsbury will still pay for 51% of the cost for
6 PEU to construct the 1.25 million-gallon water storage tank, transmission main,
7 and the booster station. Pillsbury will still make periodic payments according to a
8 schedule attached to the special contract. PEU will still oversee the construction
9 of the Project. After the Project components are in service and Pillsbury has
10 made all its payments, PEU's regular tariffs and terms of service will still apply
11 and the special contract will be terminated. The only exception is that the dollar
12 amounts have changed but given that the prior tank project costs were based on
13 2017 estimates, adjusting for 2020 dollars, the expected capital cost will decrease
14 to about \$3,152,000 from \$3,400,000, a reduction of about \$248,000.

15 **Q. Please describe the expected construction timing.**

16 **A.** The first phase of the project would be developing the engineering design, and
17 this is anticipated to take place during the winter of 2019-2020. PEU seeks
18 approval of advance payments from Pillsbury for the construction phases,
19 therefore, the effective date is anticipated in the spring of 2020. PEU requests the
20 Commission approve the special contract no later than April 30, 2020 so that PEU
21 can commence construction to meet the water demands of existing customers in
22 the shortest time possible. Under that timeline, PEU would expect to be able to
23 offer full water service and fire protection service to Woodmont Commons in

1 August, 2021.

2 **VII. Deviation from Tariff**

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

5 **A.** As with the elevated tank, the special circumstances remain the same. Therefore,
6 the Statement of Special Circumstances, attached to my prior testimony as
7 Attachment JJB-D has not changed and I readopt that statement for purposes of
8 my supplemental testimony.

9 **VIII. Public Interest Considerations**

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

11 **A.** The public interest considerations have not changed in light of the new proposed
12 alternative.

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

14 **A.** PEU's water system in Londonderry will still ultimately be more robust and be
15 better able to meet future growth needs with the new proposed water tank
16 alternative.

17 **Q. Please identify the benefits to PEU and its customers as a result of the**
18 **proposed contract.**

19 **A.** Although some costs increased and other benefits are added by the new tank
20 alternative, the overall benefits remain the same as I discussed in my initial
21 testimony.

22 **Q. Do you have an opinion as to whether the proposed special contract with**
23 **Woodmont Commons is in the public interest?**

1 **A.** Yes. I believe that the proposed PEU-Woodmont Commons special contract will
2 still be just and reasonable for both Woodmont and all of PEU's customers and
3 consistent with the public interest.

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

5 **A.** Yes.