STATE OF NEW HAMPSHIRE
PUBLIC UTILITIES COMMISSION

Docket DW 20-117
Hampstead Area Water Company, Inc.
Request for Change in Rates

REBUTTAL TESTIMONY

OF

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New Hampshire Department of Energy

May 4, 2022

Q. Please state your name, by whom you are employed, on whose behalf you are testifying, and your business address.

A. My Name is Douglas W. Brogan. I am a self-employed engineering consultant to the New Hampshire Department of Energy. My business address is 4 Russell Street, Concord, NH 03301.

Q. Please indicate your education and professional background.

A. Please see Exhibit DWB-1, Statement of Qualifications, for my employment history and related background.

Q. Have you previously testified before the New Hampshire Public Utilities Commission?

A. Yes, on many occasions.

Q. What is the purpose of your testimony?

A. A significant portion of the rate increase Hampstead Area Water Company (HAWC or the Company) is requesting in this case relates to the Southern New Hampshire Regional Water Project (SNHRWP or Project). This largely State-funded project involved significant additions and upgrades to HAWC's Atkinson-Hampstead core system as part of bringing water from Manchester to Derry, Windham, Salem and HAWC, and through HAWC to Plaistow. Intervenors in the case have made what I view as fairly serious allegations of excess capacity, imprudence and conflicts of interest in relation to the Project, as well as expressing concerns about things such as system reliability and adequacy of fire flows.

I want to first say I sincerely appreciate the level of effort expended by the intervenors in expressing those concerns, and the light they have shed on various issues as a result. I also realize the regulatory process is an imperfect one and can be challenging to navigate at times. Although it is not my intent to defend the case the Company itself has presented, I felt compelled nonetheless to provide some perspective on a number of the specific issues raised in relation to the design, physical and operational aspects of the system.

Q. Please describe the SNHRWP and its impact on HAWC's water systems.

A. The impetus of the Project was to address MbTE contamination as well as supply needs in the various towns and systems involved. The Project was overseen by the New Hampshire Department of Environmental Services (NHDES). A Memorandum of Understanding was

signed by the various participating entities in September 2018, and the final Southern Interconnect Agreement (SIA) was signed in April 2019.

HAWC itself has 23 separate water systems in southeastern New Hampshire. Of those, the Atkinson-Hampstead core system is the largest by far, with about 2,800 customers (the next largest system has under 200 customers), and is the only one impacted by the Project. Prior to the Project, the core system obtained all of its water from some 30 bedrock wells scattered throughout the two towns. Physical impacts of the Project on the core system involved construction of new pump stations at the Salem/Atkinson and Atkinson/Plaistow town lines, a new 1.0 million gallon (MG) tank in Atkinson (half of the volume allocated to HAWC and half to Plaistow), and various other facility and water main additions and upgrades. While a massive project for HAWC (Project-related capital expenditures approximately equaled total Company-wide capital improvements for the years 2012 - 2019 combined), the Project was largely funded with New Hampshire Drinking Water and Groundwater Trust Fund (DWGTF) monies. HAWC is currently committed to and is receiving Phase I Project flows of 250,000 gallons per day (GPD).

Q. What is the first issue you wish to address?

A. Intervenor Karen Steele makes certain claims in her testimony of excess capacity and of SNHRWP plant not being used and useful (p. 2, lines 6 - 11 and 20-21; p. 4, line 15 through p. 5, line 13). In particular, she suggests that ultimate (combined Phase I and II) Project flows of 750,000 GPD into HAWC's core system will more than triple the amount of water currently sold there (358,502 GPD in 2019); and that Project infrastructure was significantly oversized to accommodate these excessive flows. There are a number of problems with this analysis:

1) The appropriate comparison for design purposes (per 2003 'Ten State Standards' criteria adopted by NHDES) is to compare total future supply with the largest well out of service, to the future maximum day demand (not average day demand as used by Ms. Steele). Maximum day demand is in turn based not on customer consumption alone (again as used by Ms. Steele), but on the totality of demands the supply must meet (total production). For a sense of the magnitudes involved, maximum day demand in 2020

was 636,048 GPD; average day demand was 429,947 GPD; and average consumption (volume sold) was 359,493 GPD. The difference between production and consumption is water used for filter backwashing (about 18,000 GPD), and lost or unaccounted-for water (averaging 14 percent of production from 2015 - 2020, not an unreasonable number in my view). Both are real contributions to demand requirements.

2) Ms. Steele's assessment assumes the full SNHRWP flows will be added on top of existing capacity and flows (flows from the Project itself did not begin until 2020). However, a review of relevant documents clearly anticipates taking a number of wells offline as a result of the Project (see, for example, Exhibit DWB-2, letter of support from NHDES Commissioner Robert R. Scott in docket DW 19-147).

3) The analysis fails to recognize increases in future demand either from normal system growth over the forecast period or from a lessening of water use restrictions as a result of the availability of Project water.

4) The Company, as noted by Ms. Steele, is under no obligation to take all, or even any part, of future Phase II flows. However, even assuming those full flows are one day received by HAWC, they would need to be reduced for design purposes (as noted above) by assuming the largest remaining well (Angle Pond #3) is out of service - a reduction of 163,000 GPD.

5) As the Windham portion of the SNHRWP contains no storage, water flowing through that portion (upstream of HAWC) must meet all peak hour demands in that section (vs. only maximum day demands) - which during brief periods could leave less than HAWC's allotted water available to it.

6) As far as physical oversizing, while it is true that Project infrastructure was designed (under a "no regrets" policy) to accommodate full future Phase II flows, the following comments are relevant:

   a) The Project includes several thousand feet of new 12-inch main installed in, or in conjunction with, HAWC's core system. However, to lay a smaller (for example, 10-inch) main under these circumstances, given the small potential cost savings and very

long life of the asset, would be more likely to be imprudent than laying the 12-inch main itself.

b) Although pump station footprints and associated piping were sized to accommodate future flows (a relatively minimal impact), interior components such as pumps and valves are to be upgraded later as necessary to accommodate those flows.

Q. What are your comments in relation to the 1.0 MG tank constructed in Atkinson as part of the SNHRWP?

A. I first need to introduce Ms. Steele's own comments on the tank as found on page 8, lines 12-18 of her testimony:

> The pipeline project determined that Plaistow needed both a 400,000 gallon tank in Plaistow and a 500,000 gallon tank in Atkinson. Both these tanks were paid for with funds from the state. But then HAWC made the decision to increase the Atkinson tank from 500,000 gallons to 1 million gallons and took on the additional expense of $1 million. This additional 500,000 gallon capacity does not fall under "used and useful" for HAWC's existing customers, thereby violating RSA 378:28. Again, this is spend for future customers which HAWC is trying to get current customers to pay for with these unjust and unreasonable rate increase requests.

Ms. Steele subsequently answered questions about these statements in her response to DOE 1-6 (Exhibit DWB-3). In part to eliminate confusion and clarify some of the issues in my own mind, especially given the gravity of the allegations, I emailed Michael Unger, P.E., at NHDES with a number of related questions - see Exhibit DWB-4 (Unger Email) for the questions and his February 21, 2022 responses. Mr. Unger has been the point person at NHDES responsible for shepherding the overall Project in recent years. While I believe the email exchange speaks for itself, I offer the following additional comments:

1) Both Ms. Steele's response to DOE 1-6 and the Unger Email reference an earlier HAWC email exchange (Exhibit DWB-5) involving two engineering firms (Tank Email; originally provided as an attachment to the Company's response to Staff 3-27 a). In particular, the Steele and Unger documents allude to wording in the Tank Email at about the middle of the first page saying "We're considering if the Atkinson tank could or should be smaller." Without getting overly involved in the details of these documents and exchanges, I

believe the 'smaller tank' wording is in reference to reducing the size of the tank down from a previously contemplated 2.0 MG to the 1.0 MG that was ultimately built; not to reducing the 1.0 MG to half of that, as suggested by Ms. Steele; and therefore does not support her conclusions about the Company doubling the size of the tank.

2) The Tank Email uses actual current average daily flows in its page 1 table in arriving at a 1.0 MG size; not, for example, projections inflated to account for future HAWC development (see later below).

3) While the Company lacks in-house engineering staff, it has indicated that it employed a reputable engineering firm (Lewis Engineering - unrelated to the Lewis family owners of HAWC) in assessing the need for and size and design of the tank. For example, its response to Staff 2-32 b) stated:

> As Part of the SNHRWP the Company retained Bruce Lewis of Lewis Engineering, PLLC to review the core system storage needs. While there is no formal study his analysis indicated that a 1 MG Tank in addition to the Westside Dr. Booster Station would provide adequate storage and system flow capacity for at least the next 10 years.

4) The overall Project was complex, involving input from many different engineers assessing a variety of factors including things such as water age. While I am unable to fill in specific gaps in any of the information the Company has provided, the 0.5 MG portion of the tank allotted to HAWC does not seem unreasonable on its face, given the 0.5 MG tank at the other end of the system and the 0.4 MG of existing pumped storage in Atkinson.

5) As noted in a different letter of support from NHDES Commissioner Robert R. Scott (this one in DW 18-138, see Exhibit DWB-6), it is less expensive to build one tank now, half of which would accommodate HAWC's own needs, than to add a separate HAWC tank later. HAWC also gains access to additional storage in a crisis beyond its 0.5 MG allotment, that it would not otherwise have.

6) The new tank provides the sole gravity storage in the Atkinson portion of the system. The only other gravity storage is some 3.5 miles away and at the far opposite end of the system in Hampstead.

Q. Ms. Steele suggests throughout her testimony that future SNHRWP flows to the two towns are solely intended for anticipated Lewis Builders development in southwest Atkinson; and that the Company's investment in the Project is compromised by conflicts of interest with its parent and affiliated companies and their development interests. What are your thoughts in these regards?

A. In large part I do not share those concerns, and would offer the following:

1) Her concerns about Lewis Builders' development plans do not appear to be supported by the historic pace of that entity's development efforts. As noted by Ms. Steele herself, "The 800 condos were planned in 1988, 288 condos were approved in 2006, but they didn't start building any of them until 2020" (p. 7, lines 20-21). In fact, only the first two buildings, with 64 total units, have now been constructed (p. 10, lines 21-22).

2) Contrary to assertions about otherwise limited development potential in the two towns, it seems reasonable to expect normal customer growth to be a continuing contributor to system demands. The increase in number of customers averaged just over 2 percent per year from 2013 through 2020, and just under 3 percent annually over the last three of those years.

3) As noted previously, Ms. Steele's conclusions rely on flawed assessments of overall supply vs. demand.

4) Her conclusions are also based on what I believe is a misinterpretation, or at least oversimplification, of a chloramine map provided in one of the Project-related engineering studies (her Exhibit KS-11). Again without getting into extensive detail and use of citations: demands in the underlying hydraulic model were placed throughout the two towns based purely on actual current demands, not forecast demands projecting future Lewis resort development; a significant reason for the placement of the Phase II line is simply that there is a much greater well supply to begin with in Hampstead than in Atkinson; and the referenced option was a conceptual one that was rejected by the Company because the Company did not want to revert from a single large system and the many advantages it offers, to two smaller ones.

5) Contrary to Ms. Steele's suggestion that the Commission may be unaware of the inter-related ownership of the various Lewis family companies ("There is a very unique conflict of interest happening of which the PUC may not be aware", p. 3, line 10), the Commission has long been aware of those realities and has attempted to manage potential impacts on both the water Company and customers accordingly. While HAWC's situation is unique, opposing interests involving parent companies, shareholders, profit motives vs. customer interests and other matters are hardly rare and must be appropriately balanced. While HAWC can be viewed through many different lenses, I fail to see a determinantal conflict of interest in HAWC's ownership situation. Certainly, much of the respective towns' tax base - and even the water system itself - would likely not exist apart from those relationships.

Q. How do you view the SNHRWP as a whole?

A. As noted earlier, the Project was a large, multi-town effort shepherded by NHDES and funded by DWGTF money to address MtBE and other concerns. However, I believe some of the benefits to HAWC's own core system have tended to be overlooked:

1) The Project helps in reducing the cost, complexity and liability of continuing to operate a small system with 30 separate wells, a number of which have significant water quality concerns.
2) The Project provides an alternative to hoping to find additional groundwater supply to meet future demands in an area that really is not water-rich. For comparison, Aquarion Water Company of New Hampshire's largest bedrock well (Well 22 in Hampton) is capable of producing nearly seven times what HAWC's largest 'once in a lifetime' well (Angle Pond #3) can produce.
3) Things such as the Kent Farm saga and its very real impacts on residents (Steele testimony p. 4, lines 4 - 14), heightened citizen concerns over Company withdrawals, ongoing Company water use restrictions, and even the prospect of HAWC turning down other developers for lack of water, would all seem to suggest that additional water is a good thing.

Q. What is your position on prudence and the recovery of Project costs through rates?

A. As elaborated throughout my testimony above, I do not believe oversizing and related concerns begin to rise to the level of imprudence. Obviously the Company will need to justify its decisions regarding future uses of the SNHRWP when the time comes. On the cost side, I believe the existence of substantial post-test year Project and other activities and investments, the resulting uncertainty around expense estimates, and temporary 'used and useful' concerns related to the absence of flows from HAWC to Plaistow (which are likely to begin this year), all support spreading cost recovery out over a few years; not denial of that recovery.

Q. Does this conclude your testimony?

A. Yes.