

BEFORE THE STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

In the matter of:)
Hampstead Area Water Company)
Authority to Borrow Long Term Debt,)
to Construct Water System Interconnection,)DW 08-088
Approval to Extend Franchise Area,)
and for Step Rate Increase)

CORRECTED
Direct Pre-filed Testimony
of
William Bennett
Resident of Atkinson, NH
(Retired Mechanical Engineer)

Submitted by
John Wolters
Intervenor

Dated October 27, 2008
Corrected November 14, 2008

INTERVENOR JOHN WOLTERS. TESTIMONY OF WILLIAM BENNETT
DW 08-088 Hampstead Area Water Company

1 Q: Please state your name, address, occupation, and qualifications relevant to the subject
2 petition.

3
4 A: My name is William Bennett; I reside at 9 Summit Drive, Atkinson, NH 03811; I am a
5 retired mechanical engineer. My degree is from the Massachusetts Institute of
6 Technology and was awarded in 1968.

7
8 Q. Hampstead Area Water Company (HAWC, or the Company) has petitioned to construct an
9 interconnection between its Atkinson and Hampstead Core Systems (the Interconnection).
10 Should this Interconnection be allowed, how would that affect the Town of Atkinson with
11 respect to the Atkinson Water Withdrawal Control Ordinance?

12
13 A. The Atkinson Water Withdrawal Control Ordinance (the Ordinance) regulates several
14 activities with respect to the groundwater resources of the Town of Atkinson (the Town) and
15 its people. One activity prohibited by the Ordinance is the export of groundwater from the
16 Town.

17
18 An interconnection of HAWC's Atkinson Core System, which is supplied by deep wells
19 within Atkinson, with HAWC's Hampstead Core System would provide HAWC with
20 the means to unilaterally and at will violate the prohibition on export of Atkinson's
21 groundwater.

1 HAWC has stated [in its answer to Intervenor's (John Wolters and Carol Grant) Discovery Set 2
2 Question 6(a)] an intent to construct the Interconnection with no provision for any
3 metering equipment that would allow the quantity and direction of water flows through
4 the Interconnection to be determined. Such an interconnection with no metering or
5 flow control infrastructure would prejudice the Town's ability and legal right to enforce
6 the Ordinance against HAWC.

7
8 While HAWC has taken the position that the Ordinance is legally unenforceable under
9 existing law, the Ordinance may in fact be enforceable under existing law, or may
10 become enforceable under a different interpretation of existing law, through the
11 amendment of existing law, or through the enactment of new law. The legal
12 enforceability of the Ordinance may become the subject of future litigation and
13 determination by the courts, but HAWC's construction of the Interconnection as
14 proposed would prevent the Town's even determining whether or not a violation of the
15 Ordinance existed.

16
17 These reasons alone should provide sufficient grounds for denial of HAWC's Petition.

18
19 Q. Has HAWC provided, in the Petition or in other documents presented to the Public Utilities
20 Commission (the PUC, or the Commission), justification for the need for the Interconnec-
21 tion?

1
2 A. HAWC, in the Petition, in pre-filed testimony by Stephen St. Cyr and Harold Morse, and in
3 answers to Discovery Questions in this matter, has stated several “benefits” to accrue from
4 the construction of the Interconnection. None of those alleged “benefits” have been
5 adequately explained, despite several attempts during Discovery by Intervenor John
6 Wolters and Carol Grant and by the Office of the Consumer Advocate (the OCA) to elicit
7 such explanation. HAWC has presented no engineering studies or even a rough outline of
8 reasoning to support any of these supposed benefits. None of the hypothesized “benefits”
9 stand up to scrutiny.

10
11 Q. Can you be more specific?

12
13 A. Certainly.

14
15 In the Petition, and reiterated in pre-filed testimony by Harold Morse, it is stated, "The
16 project would enhance the Company's ability to provide safe and reliable drinking water to
17 its customers in its franchise areas at a reasonable cost."

18
19 Without an explanation of how the Interconnection allows HAWC to provide *safer* or *more*
20 *reliable* water to its customers and to *what degree*, and how the *cost* of that quantified
21 increase in safety and reliability is a *reasonable cost* for the *degree of enhancement* in safety

1 and reliability, that statement is nothing more than a platitude. Further, a simple pipe
2 connecting two "safe" water systems cannot logically improve the "safety" of the water being
3 carried; in fact, the nearly three miles of additional mains lying under or adjacent to a State
4 highway (Rt. 121) heavily traveled by vehicles of all weights provides more opportunity for
5 potential breaks and leaks, thus increasing the risk of contamination, lost water, and
6 reliability problems.

7
8 In the Petition, and reiterated in pre-filed testimony by both Stephen St. Cyr and Harold
9 Morse, it is claimed that the Interconnection will provide "stability" to the two core systems.

10
11 If by "stability" is meant dynamic stability in the hydraulic engineering sense, i.e., the
12 absence or near absence of system pressure fluctuations (surges) and undamped flow
13 oscillations, that would be worrisome in a technical sense, as those are serious system issues.
14 If they are experiencing problems of dynamic instability, the Interconnection would be more
15 likely to make the problem worse rather than better. If HAWC does have dynamic instability
16 problems, a detailed engineering analysis would be required to determine the best solution to
17 the problem. HAWC has presented no evidence that such an analysis exists.

18
19 If by "stability" HAWC means the maintenance of a more uniform system pressure as
20 demand fluctuates, the Interconnection is also unlikely to help. Since the towns of Atkinson
21 and Hampstead are very similar demographically, demand in the two towns would be

1 expected to rise and fall in near synchrony. If both core systems have sufficient supply
2 capacity to meet peak demand, the Interconnection would make no difference in service
3 pressures to customers; if one core system or the other lacks sufficient supply capacity, *that*
4 problem is the problem that should be remedied.

5
6 This raises the issue of supply capacity in the Atkinson Core System. The Atkinson Core
7 System has an unaccounted-for water loss of approximately 33%, possibly more. That's
8 140,000 gallons per day, or 51 million gallons per year.

9
10 If the system leaks that allow for that egregiously large loss rate were fixed, the Atkinson
11 Core System would have ample production capacity to supply both normal peak and
12 emergency demands.

13
14 HAWC's customer growth rate is approximately 5 new customers per year; from January 1st,
15 2007, to June 30th, 2008, a period of 18 months, they added 6 new customers. With each
16 residential customer using less than 250 gallons per day, If HAWC's water losses were fixed,
17 there would be reserve production capacity for customer growth at that rate for the next 100
18 or more years. It is unlikely HAWC could experience growth in Atkinson at any faster rate
19 than approximately 5 customers per year because the Town has no more large tracts of
20 undeveloped land.

1 As an aside, I would like to point out that the Office of the Consumer Advocate asked in its
2 second set of discovery questions, question 22, for HAWC to explain the volumetric
3 difference between the 197,625,000 gallons of water sold and the 251,756,000 gallons
4 produced in 2007 (both numbers are aggregates for all HAWC sub-systems). The OCA
5 specifically asked if the difference represented a loss factor. Had HAWC been forthcoming
6 in its answer, the Company would have revealed the existence and the extent of its water
7 loss problem at that time. Instead, it obfuscated and danced around the truth. Its answer
8 was, "Part is due to water loss and part is due to other factors such as backwash, and any
9 unmetered uses such as water used by the fire departments to put out fires and for practice
10 and for any fire protection systems in homes and businesses. Also the gallons sold figure is
11 from the actual fiscal quarterly billings for the year which do not always coincide with the
12 monthly production numbers which are read on a calendar basis."

13
14 Only with a *very* specific and pointed question about water losses was the OCA able to
15 extract information about HAWC's water loss problem. In its discovery set 3, question 3(b),
16 the OCA asked, [with respect to the Public Water System Check-up & Self-Assessment
17 Form attached to the DWSRF application] "On page 5, the Company responded "yes" to
18 question 31, 'Is unaccounted-for water less than 15 percent of the total water delivered to the
19 water mains?' Please explain this answer. Please include the calculation details which
20 support the Company's response."

1 HAWC answered: "When this question was answered it was based on 2006 unaccounted for
2 water data. In 2006 the Hampstead core system had -1.7% unaccounted-for water and the
3 Atkinson core system had -36.5% unaccounted-for water. Based on that data the combined
4 systems had a combined average of -22% unaccounted-for water. Therefore question 31
5 should have been answered as no. It is important to note in 2006 HAWC was not accounting
6 for backwash water and routine system flushing. Recent analysis has shown backwash and
7 flushing has accounted for up to 7-10% of the unaccounted-for water."

8
9 (The loss rate numbers of 33% and 140,000 gallons per day for the Atkinson Core System
10 are based on the above answer by HAWC. 7% to 10% of 36.5% is at most 3.6%, leaving at
11 minimum 32.9% of total production unaccounted for. Thus, 33% is a conservative estimate
12 of water loss in the Atkinson Core System. The Atkinson Core System produced an average
13 of 426,000 (426,129) gallons per day in 2006, leading to the daily loss figure of 140,000
14 (139,983) gallons per day (or 51,128,944 gallons per year).)

15
16 Q. Would an expansion of HAWC's franchise area possibly result in a large increase in the
17 number of active HAWC customers?

18
19 A. There is no data to support such an assumption. In the Petition, HAWC states, "It is
20 anticipated that homeowners along the route would be connecting to the system in the
21 future[.]" But when the company surveyed the 49 potential new customers along the route

1 of the Interconnection in Atkinson, ~~not a single person was~~ only 9 said they were interested
2 in more information; ~~9~~ none said they were “not interested ... at this time;” the other 40
3 either replied that they were not interested at all or did not reply.
4

5 Q. Has HAWC provided any other justifications for the Interconnection?
6

7 A. No. They have provided a list of opinions, catch-phrases actually, that they refer to as
8 justifications. None is supported and none stands up to reason.
9

10 The Company has said that the Interconnection will provide “more uniform delivery during
11 peak demand periods” (Discovery questions OCA 1-18, Intervenor Wolters 2-10), and improve
12 “responsiveness of the two core systems” (Harold Morse, pre-filed testimony). These are just
13 alternative catch-phrases for the “stability” previously discussed. Again, because of
14 expected synchrony of demand in the two core systems, each system must have production
15 capacity to meet peak demand, and the Interconnection would not be expected to provide
16 any benefit. If there are current deficits in “uniform delivery” or “responsiveness,” an
17 engineering analysis should be presented to show that the Interconnection would be able to
18 have any beneficial effect.
19

20 Also, the company has stated (Discovery questions OCA 1-18 and Intervenor Wolters 2-10) that the
21 Interconnection will provide “better control of the combined distribution system.” What

1 control are they talking about? What control do they currently not have or find inadequate?

2 Representatives of the Company have refused even to discuss it.

3
4 The Interconnection is also expected to “improve overall system reliability.” (*Ibid.*) Do they

5 have a reliability problem now that they hope will be ameliorated by the Interconnection?

6 The Company has been asked to explain, but has refused to do so. If they have marginal
7 capacity, they need to fix their water loss problem. That would provide a 50% increase in
8 available supply (from (using 2006 data) the 271,000 gallons per day sold, to 411,000 gallons
9 per day, the production rate less backwash & flush, which would then be available to be
10 sold).

11
12 HAWC says the Interconnection will “augment compliance with the Safe Drinking Water
13 Act.” (*Ibid.*) This is supposed to be an indirect benefit of the “improvement in reliability”
14 (answer to Discovery OCA 1-18). If the Company cannot present facts to support the claim of
15 improved reliability, this claim also collapses.

16
17 HAWC expects the Interconnection to “significantly improve flushing capabilities.” (Pre-filed
18 testimony of Stephen St.Cyr, Discovery questions OCA 1-18 and Intervenor Wolters 2-10) Depending on
19 system architecture, there might be an improvement. But the Company presents this as a
20 fact, with no explanation for why this should be or by how much flushing would improve.
21 However, absent particularly poor system design, flushing is still possible without the

1 Interconnection. Improving flushing by an unknown amount over a current capability that
2 may be quite adequate hardly justifies spending 1.1M taxpayer dollars.

3
4 Finally, HAWC has raised the issue of emergencies to justify the Interconnection. That is a
5 legitimate consideration, but are emergency needs already being met or can they be met in a
6 more economical way than by building the \$1.1 Million Interconnection?

7
8 Harold Morse, President of HAWC, in his pre-filed testimony, raised the specter of drought
9 as one emergency to be guarded against. That is a bit of a reach. It's not likely that there
10 would ever be a drought that affected Atkinson and not Hampstead, or the other way around.

11
12 Other threats raised (answers to Discovery questions Intervenor Wolters 2-10 and OCA 3-3(a)):

13 ■ Largest well off-line – with 1/3 of water produced going to loss, fixing the water
14 loss problem would give sufficient reserve capacity to allow several of the largest
15 wells to be off-line simultaneously.

16 ■ Terrorism/Vandalism – same answer; if the water that is currently going missing
17 were available for use, the system would be very resistant to degradation from
18 some sources becoming unavailable.

19 ■ Water main break – same answer; the excess capacity that would be realized by
20 fixing HAWC's loss problem could feed a large break until repair measures could
21 be implemented. (Note: the existence of an additional three miles of water main

1 under/adjacent to a heavily traveled State highway, as the Interconnection
2 represents, *increases* the risk of a water main break.)

3 ■ System failure or loss of water supply – these terms are too vague to be
4 effectively addressed. A total loss of the water supply, as in “the groundwater of
5 the entire town of Atkinson just dried up,” means we are all in considerable
6 trouble. Otherwise, I think these risks are subsumed by the preceding risk
7 categories.

8 ■ Contamination – depending on the event scenario, the existence of the
9 Interconnection could as well serve to spread the contamination as to contain
10 and/or flush it. The Interconnection itself provides additional entry points for
11 contamination.

12 ■ Town-wide power outage – I would expect HAWC to already have emergency
13 generators, either fixed units installed at well heads or portable units to be
14 deployed where needed. \$1.1 million can buy a great many generators. The
15 Interconnection would be a very expensive way to address this risk.

16 ■ Fire emergency – Without data, it is difficult to assess this concern, and HAWC
17 has provided no supporting data at all. The water requirements for fire- fighting
18 *can* be quite large, and it is not clear whether or not HAWC has the production
19 and storage capacity to support intense fire fighting for more than an a short time,
20 with or without the Interconnection. However, water requirements for typical
21 residential fires are more modest. HAWC would need to provide at least a back-

1 of-an-envelope analysis to show a need for the Interconnection based on fire
2 emergencies. Furthermore, both Atkinson and Hampstead Fire Departments were
3 fighting fires long before HAWC installed its first hydrant. Both departments
4 have secured adequate water supplies to meet their needs independent of HAWC.
5

6 Q. Has HAWC, in its filings with the Commission or in Discovery, offered any other
7 justifications for the proposed Interconnection?
8

9 A. No. When asked in Discovery, multiple times coming from multiple sources, the Company's
10 response has mostly been, "See the Petition." I have looked in the Petition; I have looked
11 between the lines of the Petition; I have held the Petition up to the light ... I cannot find any
12 statement of actual justification in there.
13

14 The OCA, in its Discovery question 2-10(a), specifically asks the company to give "all
15 *reasons* (e.g., conditions within each of the Company's two core systems) which cause
16 the proposed interconnection to be required or necessary (i.e., what are the *reasons* that
17 the systems need the interconnection as opposed to what the *results or impacts* of the
18 interconnection will be). HAWC's response was, "The addressing of those impacts
19 were the substantial part of the reasoning."
20

1 Apparently, HAWC thinks it should have approval for this project without having to
2 state *any* need for it.

3
4 Q. In its Petition to the Commission, HAWC asks the Commission to find that the
5 Interconnection is “consistent with the public good,” and “prudent and consistent with the
6 public interest.” In your opinion, does HAWC’s proposed Interconnection meet those
7 criteria?

8
9 A. Most certainly not. In its Petition, HAWC states, “HAWC is presently franchised in most
10 areas of [...] Atkinson[.]” That is true. But what the Company does not state is that it has as
11 customers only 1049 of the Town’s 2858 residences, or a little less than 38%. The
12 remaining almost 2/3 of the Town’s citizens depend on private wells for their water, and they
13 want to continue their independence from HAWC. That is borne out by the underwhelming
14 response the Company had to its survey of potential new customers along the Interconnec-
15 tion route, and by the vote tally at the Town’s Special Town Meeting in which the voters
16 supported groundwater control articles by an overwhelming 3 to 1 ratio.

17
18 HAWC’s proposed interconnection is *not* in the interest of that 2/3 majority of Town
19 residents who are not HAWC customers and rely on private wells. The Interconnection also
20 goes directly against the wishes of that 3/4 majority of voters who voted to make piping

1 Atkinson water out of the Town illegal. The interests and protection of these people, where
2 in lies the true public good and public interest, should take precedence.

3
4 HAWC also states in its Petition, and it is reiterated in the pre-filed testimony of Harold
5 Morse, "This interconnection would be in the best interest for the Company in terms of
6 system operation and resource planning and has the support of the Department of
7 Environmental Services." *There* is HAWC's true justification for the Interconnection: it is
8 good for the Company.

9
10 I sometimes get the impression that there is an assumption, *a priori*, that the provision of
11 services through utility companies is *good*, and that expansion and growth of utility
12 companies is good. If not so, then why does this Interconnection have such fervent support
13 of the Department of Environmental Services (DES)?

14
15 There are many circumstances in which service delivery by a utility company is the most
16 effective and efficient way society has to deliver that service. Electric power is an example
17 that comes to mind. But water decidedly does *not* fit that mold. As HAWC has recognized,
18 terrorism, vandalism, and contamination are threats to a public water system, and the
19 centralization of the system infrastructure that supports the delivery of the service provides
20 points of attack or mishap and the opportunity for single-point failures to adversely affect
21 large numbers of people. On the other hand, a terrorist or vandal would be hard pressed to

1 attack even one private well, and attacking many simultaneously is a practical impossibility.

2 And when a private well pump fails, a neighbor strings a garden hose from his house to his
3 affected neighbor's; that is what New Hampshire neighbors do – they help each other out.

4
5 But HAWC's activities pose a threat to Town residents who are not HAWC customers.
6 There can come a tipping point where HAWC is withdrawing enough water from its deep
7 wells to cause shallower private wells to begin running dry, and the construction of the
8 Interconnection raises the probability of reaching that point. Harold Morse, in his pre-filed
9 testimony, spoke of protecting HAWC's system against drought, but, ironically, it is the rest
10 of us, the non-HAWC customers, who really need protection from HAWC in time of
11 drought, because it would probably be in a time of mild to moderate drought when private
12 wells began failing, while HAWC's deep wells remained unaffected. Once that point is
13 reached, non-HAWC customers would have no choice but to become HAWC customers.
14 Talk about "in the best interest for the Company!"

15
16 Q. Would you like to summarize your previous statements?

17
18 A. Yes, please. HAWC has presented no explanation of need for the Interconnection that
19 would justify building it, even were it free. There is *absolutely* no justification to spend
20 \$1.1M of anyone's money, much less the taxpayer's money, to build it. And it would be
21 wrong to ask HAWC's customers to pay for HAWC to gain an asset that would be of no

1 benefit to them, or would only provide benefits that could be obtained at a far cheaper cost

2 through other means. I ask the Commission to disapprove HAWC's Petition.

3

4 Q. Does that conclude your testimony?

5

6 A. Yes. Thank you.