



**BEFORE THE STATE OF NEW HAMPSHIRE  
PUBLIC UTILITIES COMMISSION**

**Docket No. DG 18-092**

**Liberty Utilities (EnergyNorth Natural Gas) Corp. d/b/a Liberty Utilities**

**Petition for a License to Construct and Maintain a Natural Gas Pipeline beneath the**

**Ashuelot River in Keene**

**DIRECT TESTIMONY**

**OF**

**PATRICIA A. MARTIN**

**November 26, 2018**

1       **I.       INTRODUCTION**

2       **Q. Please state your name, affiliation, and business address.**

3       A. My name is Patricia A. Martin. I am retired, but actively involved as a volunteer for  
4       several clean energy organizations. The testimony I give today is not intended to  
5       represent the views of any of my affiliations but is solely my responsibility. My home  
6       address is 17 Farrar Road, Rindge, New Hampshire 03461.

7       **Q. On whose behalf are you submitting this testimony?**

8       A. I am submitting this testimony before the New Hampshire Public Utilities  
9       Commission (the “Commission”) on behalf of Terry M. Clark.

10      **Q. Please describe your educational background.**

11      A. I hold a bachelor’s degree in electrical engineering from the University of New  
12      Hampshire.

13      **Q. Please describe your professional experience.**

14      A. I have more than 30 years of experience as an engineer and system designer. The bulk  
15      of my career was spent designing portable computer systems and custom integrated  
16      circuits. I worked for Wang Laboratories as a program manager, and Quantum, and NEC  
17      as a principal engineering consultant. I am currently chair of the Rindge Energy  
18      Commission and have been a volunteer member of energy committees and commissions  
19      in the towns where I’ve lived since the 1980s.

1 **Q. Have you previously provided testimony before the Commission?**

2 No. I have not previously provided testimony before the Commission.

3 **Q. Have you sponsored testimony in other jurisdictions?**

4 A. No. I have not previously provided testimony in other jurisdictions.

## II. PURPOSE OF TESTIMONY

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

6 A. The purpose of my testimony is to provide my opinion that the Ashuelot River  
7 crossing at Winchester Street is unnecessary.

8 **Q. Please explain the basis for this opinion.**

9 A. My opinion is based on my review of the petition Liberty Utilities (“Liberty”) filed in  
10 this matter and other filings in the proceeding, my review of Liberty data request  
11 responses, my attendance at the September 5, 2018 prehearing conference and technical  
12 session in this matter, and my attendance at the November 8, 2018 technical session. As  
13 is discussed in paragraph 3 of the petition it filed to initiate this proceeding, Liberty  
14 Utilities (“Liberty”) seeks permission to install a pipeline across the Ashuelot River at  
15 Winchester Street in Keene by a 700 foot horizontal direct drill (“HDD”) underneath the  
16 river. As is discussed in paragraph 9 of its petition and in Liberty’s response to data  
17 request Clark 2-1 (Exhibit 6), Liberty claims the crossing is necessary to allow Liberty to  
18 repair or replace its pipeline crossing at the West Street bridge, and provide redundancy

1 that increases overall reliability to its customers. However, Liberty obviously does not  
2 contend that redundancy and reliability are necessary to its meet the reasonable  
3 requirements of service to its customers, as it does not maintain a two-pipe source of  
4 service for all of its customers. Moreover, the proposed crossing is also plainly not  
5 necessary to allow Liberty to repair or replace its West Street bridge pipeline crossing as  
6 Liberty's petition does not identify any proposed repairs to the crossing and, at the  
7 November 8, 2018 technical session, Liberty acknowledged that the West Street bridge  
8 pipeline is not even leaking—and that an alternative to the proposed crossing does exist.  
9 This alternative is discussed in Liberty's response to data request Clark 2-1, marked as  
10 Exhibit "6" for the hearing in this matter, and the public comment dated November 11,  
11 2018 that I filed in this case, which has been marked as Exhibit "7" for the hearing.

12 **Q. Please discuss the alternative to the proposed crossing.**

13 A. The alternative is for Liberty to use the insertion method discussed in its response to  
14 Clark 2-1 (Exhibit 6), coupled with weatherization and energy efficiency methods. In  
15 Clark 2-1 (Exhibit 6), Liberty states:

16 "The Company also considered the insertion of new plastic pipe into the existing  
17 steel pipe hanging on the West Street bridge. This option was not acceptable  
18 because a smaller pipe would have to be used and, due to flow conditions, a  
19 smaller pipe would not be sufficient to handle peak flow in the winter."

20 At the November 8, 2018 technical session, I understood Liberty to explain that it  
21 rejected the insertion process because the current West Street bridge pipe is an 8" pipe,  
22 requiring a smaller, 6" plastic insertion, which would reduce the capacity available to the

1 107 customers currently being served by West Street bridge crossing. This is discussed  
2 in Exhibit 7. However, as I also understood Liberty to explain at the technical session,  
3 the 8" West Street bridge pipe serving the 107 customers is fed by a 6" main and empties  
4 into a 6" main. This is also discussed in Exhibit 7. Therefore, despite the 8" diameter,  
5 the West Bridge street pipe cannot deliver more than the maximum capacity of the 6"  
6 connected mains.

7 As is discussed in Exhibit 7, the reduction in flow between a 6" main and a 6"  
8 PVC pipe at the same pressure is approximately 10%. This roughly 10% reduction in  
9 capacity could be met by an equal reduction in demand by the 107 customers using the  
10 West Street bridge crossing. As weatherization/energy efficiency programs typically  
11 have a goal of reducing energy consumption by as much as 20% or more, only about half  
12 of the 107 affected customers—roughly 54 customers, depending upon usage—would  
13 have to participate in the program for the savings in energy consumption to likely offset  
14 the reduction in flow capacity. A 10% reduction in demand through weatherization and  
15 energy efficiency should be the preferred approach over the proposed crossing, as it  
16 would not only avoid any environmental impacts of a crossing, but would provide other  
17 benefits, as well:

- 18 1) The utility and shareholders receive at least a 5% return on the cost of  
19 weatherization/energy efficiency project investments.
- 20 2) The affected ratepayers receive a direct benefit from reduced energy costs.
- 21 3) The public receives a direct benefit from the reduced greenhouse gases  
22 due to reduced consumption of fossil fuels.

1 **Q. How do you propose to achieve the 10% reduction in customer demand through**  
2 **weatherization and energy efficiency?**

3 A. Liberty could make its NHSAVES weatherization programs, currently only available  
4 to new customers, available to the 107 customers.

5 **Q. Why should Liberty agree to do this?**

6 A. It seems a matter of social justice that existing customers should be the first  
7 beneficiaries of such services. Moreover, besides the other benefits already discussed,  
8 Liberty would receive a tremendous marketing benefit by opting for weatherization and  
9 energy efficiency over a second pipe and the imbedding of more fossil fuel infrastructure  
10 in the Ashuelot River: a methodology which obviates the need for an additional river  
11 crossing while also providing immediate relief to the customers fed by the West Street  
12 crossing would be more in harmony with the desire of the citizens of Keene, as  
13 supporters of the goals of the Paris climate agreement and green energy initiatives, to  
14 reduce greenhouse gases and increase emission mitigation efforts.

15 **Q. Are any other options available for potential weatherization and energy**  
16 **efficiency efforts?**

17 A. Without detailed data on the 107 customers, the following list describes a menu of  
18 different options for financing the weatherization/energy efficiency projects, which  
19 Liberty could and should direct its customers to, in addition to funding under its  
20 NHSAVES programs:

19 1) If there are customers who qualify for the Home Energy Assistance

1 Program (“HEAP”) among the 107 customers, those customers could be  
2 “bumped up” in priority and all costs for these customers could be covered  
3 by the Home Energy Assistance Program. (“Bumping up” those on the  
4 wait list for HEAP has happened in conjunction with emergency/unsafe  
5 conditions.)

6 2) Customers who qualify for the Home Performance with Energy Star  
7 program would be eligible for matching grants up to \$4000 of the cost.  
8 Since a potential balance of \$4000 would be owed by customers, Liberty  
9 could offer:

10 A. On bill financing of a loan to cover the additional cost (like  
11 the “Smart Start” program offered by the utilities to the  
12 municipalities), wherein the customer allocates a portion of  
13 the monthly savings to pay back the loan.

14 B. Extra incentives (perhaps \$1000 per customer?) funded by  
15 the avoided costs of constructing the Winchester Street  
16 crossing. Such incentives could be offered to the first 50  
17 customers who qualify for the Home Performance with  
18 Energy Star program.

19 C. Liberty could target the highest volume customers with  
20 weatherization/energy efficiency programs for residential  
21 and commercial customers and fund those projects with the  
22 avoided costs of constructing the Winchester Street  
23 crossing plus all available rebates and incentives.

1       **Q. Could the insertion/weatherization/energy efficiency approach be used on the**  
2       **West Street bridge crossing without interrupting service to the 107 customers?**

3       A. Again, there seems no need for service interruption at all, as it does not appear from  
4       Liberty's petition and discovery responses that any repair or replacement of the West  
5       Street bridge crossing is actually needed. There is no evidence of any intent to repair the  
6       pipe from Liberty's submissions and, if the intent is replacement based purely on the age  
7       of the pipe, Liberty has not explained why such replacement is any more "needed" for the  
8       crossing pipe than for any of the other miles and miles of pipe it operates in Keene and  
9       New Hampshire of likely the same or even greater age—and a pipe insertion would  
10      amount to pipe replacement, anyway. Moreover, with whatever work it does on the West  
11      Street bridge crossing, Liberty could all but eliminate the impact on the 107 customers by  
12      only undertaking the work after a sufficient number of customers (probably about half,  
13      *i.e.*, 54 or so) have undertaken weatherization and energy efficiency measures to offset  
14      the reduction in capacity caused by the smaller pipe insertion, and by doing the work  
15      during the summer when none of the 107 customers would be using gas for heat (should  
16      there be any shortage in supply at all). There is no repair/replacement emergency from  
17      Liberty's filings, and therefore no reason why weatherization and energy efficiency  
18      measures cannot be undertaken first, and no reason why the insertion method should  
19      cause any more than a minimal, reasonable interruption in service, if undertaken. Also,  
20      in its response to data request Clark 1-5, Liberty acknowledges that it could avoid an  
21      extended shut down by installing an above surface temporary bypass as was done in  
22      2003:

1           **REQUEST:**

2           Please identify all repairs undertaken on the West Street Pipeline within the past  
3           20 years, including stating the date(s) of the repairs, a description thereof, and the  
4           time necessary to accomplish the same.

5           **RESPONSE:**

6           The only repairs to the West Street bridge crossing were made in June 2003 and  
7           took approximately two weeks to complete. A cast iron valve on the east side of  
8           the bridge was replaced with a new polyethylene valve, and the pipe through the  
9           abutments on the east and west sides of the bridge were replaced. A repair band  
10          clamp was installed on the steel main (the original pipe) hanging on the bridge to  
11          repair a leak discovered during the project. During the 2003 repairs, a bypass line  
12          was required to continue service to customers on the west side of the bridge,  
13          required the continuous closure of one traffic lane, and required 24/7 security  
14          until the completion of the project.

15        **Q. How would the insertion and weatherization/energy efficiency approach address**  
16        **future capacity need for customers receiving gas from the West Street bridge**  
17        **crossing?**

18        A. Again, in line with Keene's climate action goals and commitments, there should be  
19        less need for capacity on the West Street bridge crossing going forward, as Keene  
20        residents opt for renewable forms of energy over gas. Also, the Keene system, as it  
21        exists, cannot expand service to significantly more customers without replacing all of the  
22        cast iron pipes and increasing operating pressures throughout the system.

1 **Q. How does the cost of your approach compare to the costs associated with**  
2 **Liberty's approach?**

3 A. Again, the cost of the proposed weatherization and energy efficiency associated with  
4 my proposal will come from available funding. According to Liberty, as shown by  
5 Exhibit 6, the cost of the pipeline insertion, which I would think would include the cost  
6 of a temporary bypass, would only be approximately \$30,000.00. While I do not have  
7 access to the information identifying the total cost of adopting Liberty's approach, it  
8 appears from page 58 of the Adequacy Assessment of the Proposed Compressed Natural  
9 Gas Installation by Liberty Utilities - Keene, NH Division October 3, 2018 filed in  
10 Docket DG 17-068 that pipelines cost roughly \$1.75 million a mile. Dividing the \$1.75  
11 million/mile into the per foot costs results in roughly \$331 per foot for replacement. If  
12 the West Street bridge pipe is roughly 100 feet long, as seems to be the case, \$30,000 is a  
13 reasonable cost for the plastic insertion option and, it seems likely, includes the cost of a  
14 temporary bypass. However, at \$331 per foot, the 700-foot crossing on Winchester Street  
15 translates into a cost of approximately \$230,000.

16 **Q. But, shouldn't the new crossing be added as Liberty claims that the West Street**  
17 **bridge itself needs repair or replacement, which would result in an interruption of**  
18 **service without a second alternative connection?**

19 There is no evidence that the West Street bridge will be repaired or replaced anytime  
20 soon. The bridge is still listed as in good condition, as shown at

21 <https://data.commercialappeal.com/bridge/new-hampshire/cheshire/west-street-ashuelot-river/33-013601230007500/>.

1       Moreover, Mr. Clark, a Keene City Councilor, advises the City of Keene's capital  
2       improvement plans for 2019-2026 do not include repair or replacement of the bridge.  
3       By 2026, if Liberty has achieved complete replacement of the cast iron mains and has a  
4       single pressure throughout the Keene system, there should be other, shorter, better  
5       options for addressing any concerns.

6       **Q. Is there anything you would like to add?**

7       A. Yes. Algonquin, Liberty's parent company, has made news with their commitment to  
8       renewable energy and reduced emissions. Addressing a shortfall in capacity of 10% or  
9       less with an investment in energy efficiency/weatherization would set a new standard for  
10      social and environmental responsibility by a utility. Again and importantly: it is also in  
11      harmony with the goals of the people of Keene who have expressed support for clean  
12      energy and a healthy environment.