

# STATE OF NEW HAMPSHIRE

## Inter-Department Communication

DATE: May 24, 2017  
AT (OFFICE): NHPUC

**FROM:** Randy Knepper *Randall S. Knepper*  
Director of Safety

**SUBJECT:** Review of Pennichuck East Utility Petition for New Construction  
Crossing of the Merrimack River, Merrimack and Litchfield, NH  
Docket No. DW 17-036

**TO:** Debra Howland, Executive Director  
Mark Naylor, Director, Gas & Water Division  
John Clifford, Staff Attorney

The Safety Division review of the above petition consisted of the following elements:

- Petition contents and history
- Applicable State statutes
- Review of existing crossing(s) already licensed by the PUC
- Review of land ownership of water facilities and appurtenances.
- Review of Env Dw 407.01 requirements as described in Puc 600 rules
- Review of public need and public impact, including applicability of other State regulations
- Conclusions and Recommendations

### **1. Petition contents and history.**

- On March 2, 2017, Pennichuck East Utility, Inc. (PEU) filed a petition to construct a new crossing of the Merrimack River in Merrimack and Litchfield by installing an 18 inch nominal diameter water pipeline under a portion of the Merrimack River and placing the 18 inch diameter water pipeline on the river bottom for the remaining portions of the Merrimack River. The new crossing is expected to tie into existing Pennichuck Water Works, Inc. (PWW) facilities on west side of the Merrimack River in Merrimack and existing PEU facilities on the east side in Litchfield.

The petition states the new pipeline will serve as a secondary source of supply for the Town of Hudson and primary source of supply for Litchfield and certain portions of PEU's systems in Pelham, Windham, and Londonderry. The new pipeline is designed to increase the capacity of the existing supplies that do not meet the maximum daily demands during certain portions of the

year. The new pipeline will also allow for increased growth on the systems of PEU, place less stress on existing supply wells, assist drought impacts, and provide options to residents that have contaminated individual wells associated with MtBE or perflourooctanoic acid (PFOA). The petition included testimony and drawings that were 60% completed at the time of submittal.

- On May 9, 2017, PEU submitted a follow up letter to the Commission asking for prompt review and expedited approval so that a June 1, 2017 bid can be awarded. Construction is set to begin July 1, 2017 and be completed prior to December 31, 2017. PEU also emphasized the water pipeline is part of a mitigation scheme for lessening the perflourooctanoic acid (PFOA) contamination problem that has been plaguing individual wells in Litchfield.
- On May 18, 2017, PEU submitted two responses to follow up questions from the Safety Division. The emailed responses included drawings that were updated and finalized and used in submissions to the New Hampshire Department of Environmental Services (NH DES).

## **2. New Hampshire statute referenced in petition.**

### **TITLE XXXIV PUBLIC UTILITIES**

#### **CHAPTER 371 PROCEEDINGS TO ACQUIRE PROPERTY OR RIGHTS**

##### **Rights in Public Waters and Lands**

**371:17 Petition.** – Whenever it is necessary, in order to meet the reasonable requirements of service to the public, that any public utility should construct a pipeline, cable, or conduit, or a line of poles or towers and wires and fixtures thereon, over, under or across any of the public waters of this state, or over, under or across any of the land owned by this state, it shall petition the commission for a license to construct and maintain the same. For the purposes of this section, "public waters" are defined to be all ponds of more than 10 acres, tidewater bodies, and such streams or portions thereof as the commission may prescribe. Every corporation and individual desiring to cross any public water or land for any purpose herein defined shall petition the commission for a license in the same manner prescribed for a public utility.

**Source.** 1921, 82:1. PL 244:8. RL 294:16. 1951, 203:48 par. 17. 1953, 52:1, eff. March 30, 1953.

## **3. Review of existing license(s) and permissions previously granted by the PUC for Merrimack River Crossing in Merrimack, Litchfield NH**

This is a new crossing so there is not an existing license that required updating.

## **4. Review of land ownership of water tie in structures.**

According to the Town of Merrimack's GIS database of parcels owned within the town and as referenced in the petition, the western exodus of the river crossing is in Tax Map 2e Lot 32-1. This parcel is owned by PWW, an affiliate of PEU.

According to the Town of Litchfield and the petition, the eastern exodus of the Merrimack River is on Tax Map 3 Lot 31 owned by the federal government (US Fish and Wildlife Service). Attachment 1 of the petition lists a smolt release facility within this parcel.

## **5. Review of requirements as described in Puc 600.**

N.H. Code of Administrative Rules Puc 606 EQUIPMENT AND FACILITIES Puc 606.01 Standard Practice is the applicable standard used for reviewing the petition. It states:

- (a) Each utility shall construct, install, operate and maintain its plant, structures, equipment and mains:
  - (1) In accordance with applicable American Water Works Association Standards copyrighted by the American Water Works Association, pursuant to the applicable standards described in N.H Code Admin. Rule Env-Ws 307.01, Standards of the American Water Works Association; and
  - (2) In such manner, insofar as practical:
    - a. To best accommodate the public; and
    - b. To prevent interference with service furnished by other underground facilities, including gas, electric, telephone, steam, sewer and other underground and above ground facilities.

This rule was last readopted September 10, 2013 but subsequently the DES updated the rules on June 1, 2014. The applicable rule is now Part 407 Env-Dw 407.01 Standards of the American Water Works Association. This in turn references AWWA Standard C906 1999 Polyethylene (PE) Pressure Pipe and Fittings, 4 in. through 63 in., for Water Distribution.

The water crossing is part of a larger installation that will consist of 12 inch diameter and 18 inch diameter water pipeline approximating 5,600 feet in length. The vast majority of the pipeline will be ductile iron material. The project objective is to tie into an existing water main on Mast Road in Merrimack and an existing water main on Charles Bancroft Highway in Litchfield.

The approximate 375 foot crossing of the Merrimack River is to be constructed by three different methods. The entire segment will consist of an 18 inch nominal diameter high density polyethylene pipeline with an SDR 11 (1.6 inch wall thickness).

- i. The westernmost portion will be approximately 150 feet in length with a radius of 800 feet and installed using a directional drill. This will

have a minimum clearance of approximately 8 feet from the low point of the riverbed and have clearances of approximately 8 feet below the west of the bank at the pipe exit point. The invert of the pipe exit point is approximately 135 feet west of the river bank. The directionally drilled segment will have submer mats placed on the river bottom as form of enhanced protection. A 42 inch diameter casing will be temporarily installed for purposes of pulling the 18 inch diameter pipeline back during the installation of the 335 feet directional drill encompassing the bank and western portion of the Merrimack River.

- ii. The middle segment will be placed on the river bottom and will be approximately 185 feet in length and will also be covered with submer mats.
- iii. The easternmost segment will be constructed using a cofferdam and open cutting the eastern bank of the river. This will consist of approximately 40 feet within the Merrimack River. It too will have submer mats placed for pipeline protection.

This crossing does not meet the applicable activities that trigger an individual permit nor a water quality certificate (section 401) review. A New Hampshire DES shoreland impact permit is required and was issued March 10, 2017 (Number 2017-00449).

Two portions of the project do not require licenses. The first is the installation of 42 inch diameter water intake that extracts water from the Merrimack River to the pumphouse on the western side in Merrimack. The other is a separate 42 inch nominal diameter conductor casing that is used temporarily during the construction phase to facilitate the directional drilling construction installation method. This is from the eastern bank of the river to approximately the middle of the river.

PEU provided sufficient detail to verify that no potential safety hazards will result from the river crossing.

## **6. Review of public need and public impact.**

PEU states the crossing is an interconnection with the PWW system and is necessary to increase the capacity of supplies to the Hudson systems and PEU systems. PEU further opines the increased capacity of the crossing and the beneficial location of the interconnection are improvements. In addition, the ability of minimizing reliance on wells that are affecting the associated aquifers' recharge rates is another justification for public need. According to PEU, environmental permits are required of the crossing pursuant to RSA 483-B, which establishes permitting requirements under the Comprehensive

Shoreland Protection Act. No Alteration of Terrain Permit is required and NH DES considers this project under the minimal impact classification within the Programmatic General Permit. As such PEU had not sought an individual review with the Army Corp of Engineers. PEU states “the completed project is not planned to substantially impede the public’s use and enjoyment of the river and lands in any manner”.

## **7. Recommendations and Conclusions.**

The Safety Division recommends approval of PEU’s petition to the Commission with the following conditions:

- a. The review and recommendation is based on installation and construction according to the “draft final” plans dated April 27, 2017 prepared by Tighe and Bond submitted to the Safety Division on May 18, 2017. The petition originally referenced 60% design plans.
- b. The immediate parcel owner namely the US Fish and Wildlife Services on the east bank of the river (Litchfield) needs to issue an easement to PEU prior to construction. A copy of this easement, once obtained, should be filed with the Commission.
- c. The Commission should require that all future alterations to the crossing that may impact the public conform to the requirements of both Puc 606.01 rules and the indirectly referenced AWWA C906 standards for polyethylene pipe.
- d. Future alternations that impact the water crossing should be resubmitted to the Commission a minimum 60 days prior to the alteration.
- e. Connection methods of the 18 inch diameter polyethylene water main should be limited to hot fusion methods rather than mechanical joining techniques.
- f. The pipeline installation shall be locatable for identification for future excavations by methods such as tracer wire installation or other alternative methods.

## Appendix A

Merrimack Tax Map parcel  
2-E-1 owned by PWW

Existing:

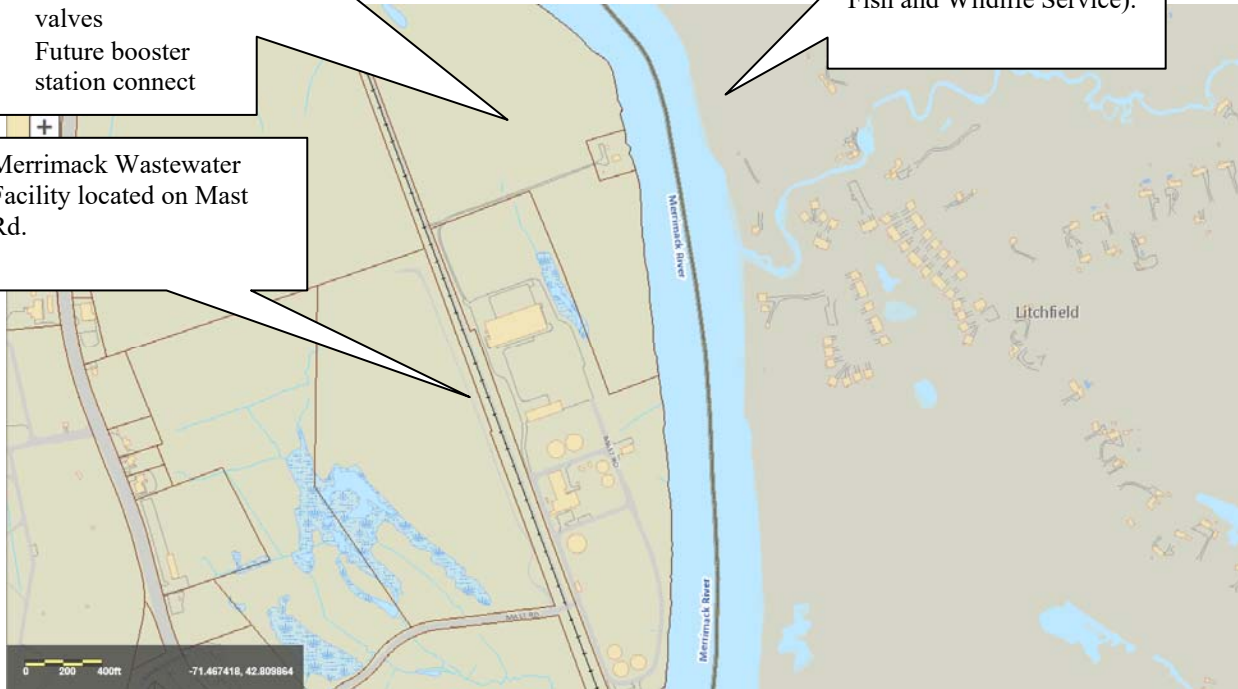
- HypoChlorite Building
- Pump House
- Water Intake

Proposed:

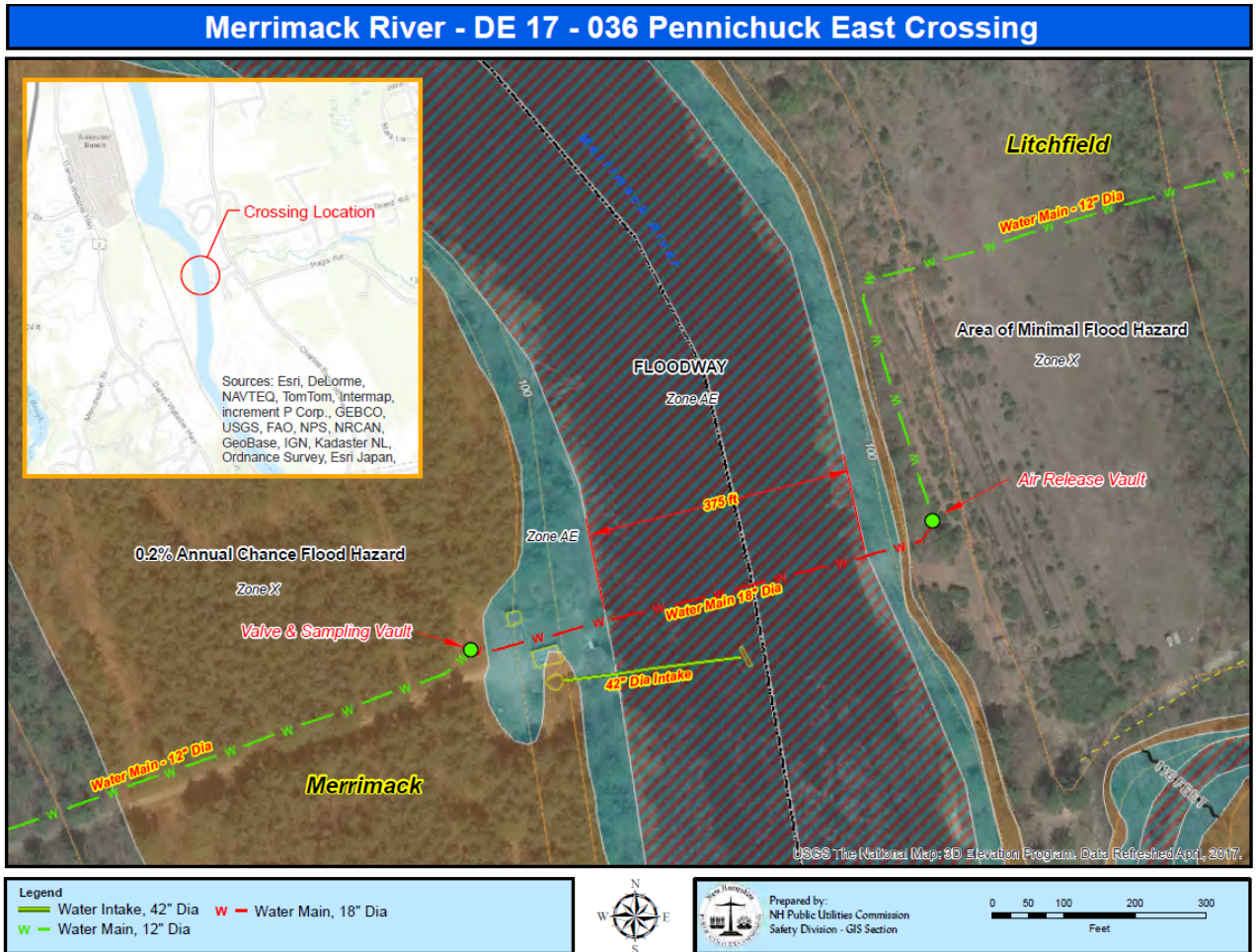
- Receiving pit for DD
- Gate and release valves
- Future booster station connect

Merrimack Wastewater  
Facility located on Mast  
Rd.

Litchfield land parcel Tax  
Map 3 Lot 31 owned by  
Federal Government (US  
Fish and Wildlife Service).



**Figure 1.** View of Merrimack River Crossing: west side Merrimack, NH and east side, Litchfield, NH. Note Hypochlorite building of PWW is shown adjacent (northerly) to existing raw water pumping station both located on West Side within Parcel 2-E-1 .



**Figure 2.** View of Merrimack River Crossing, Merrimack and Litchfield , NH. Note water crossing is approximately 375 feet. The proposed crossing is south of Anheuser Bush plant and north of Mast Rd in Merrimack. The red portion shows the proposed high density polyethelene water main and the green portion shows the proposed 12 inch diameter water main (ductile iron)

**SERVICE LIST - EMAIL ADDRESSES - DOCKET RELATED**

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**Pursuant to N.H. Admin Rule Puc 203.11 (a) (1): Serve an electronic copy on each person identified on the service list.**

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**FILING INSTRUCTIONS:**

- a) Pursuant to N.H. Admin Rule Puc 203.02 (a), with the exception of Discovery, file 7 copies, as well as an electronic copy, of all documents including cover letter with:**

DEBRA A HOWLAND  
EXECUTIVE DIRECTOR  
NHPUC  
21 S. FRUIT ST, SUITE 10  
CONCORD NH 03301-2429

- b) Serve an electronic copy with each person identified on the Commission's service list and with the Office of Consumer Advocate.**
- c) Serve a written copy on each person on the service list not able to receive electronic mail.**