

STATE OF NEW HAMPSHIRE**Inter-Department Communication****DATE:** February 19, 2020**AT (OFFICE):** NHPUC

FROM: Joseph M. Vercellotti, P.E. *JV*
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SUBJECT: Docket DW 19-198
Pennichuck East Utility Petition for a License to Construct a Water Main under Locke Lake, Barnstead, NH
Staff Recommendation

TO: Debra Howland, Executive Director
Steve Frink, Director, Gas & Water Division
Randy Knepper, Director, Safety Division
Christopher Tuomala, Staff Attorney
Lynn Fabrizio, Staff Attorney

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

- Petition contents and history;
- Applicable State statutes;
- 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; and
- Conclusions and Recommendations.

1. Petition contents and history.

- On December 13, 2019, Pennichuck East Utility, Inc. (PEU) filed a petition for a license to construct and maintain a new water main under Locke Lake in Barnstead, New Hampshire. PEU proposes to install approximately 850 linear feet of 3-inch diameter DR17 high density polyethylene (HDPE) water main through an 8-inch diameter DR9 HDPE sleeve installed at an approximate 6 foot depth under the bottom of Locke Lake using horizontal directional drilling (HDD) techniques. The proposed water main will extend from Georgetown Drive to Varney Road to provide an interconnection from the Airstrip Well to the Peacham Road Treatment Facility. The crossing petition included testimony and October 2, 2019 project drawings prepared by PEU.

- The petition indicated the project is necessary to address water quality issues associated with the Locke Lake water system. The New Hampshire Department of Environmental Services (NHDES) has lowered the arsenic drinking water standard from 10 parts per billion (ppb) to 5 ppb, effective on June 30, 2020. The petition stated that disposable adsorptive media is currently used to remove arsenic at the Airstrip Well, and that compliance with the new water quality standard will increase treatment cost. The Peacham Road treatment plant uses a more efficient co-precipitation and filtration system to remove arsenic that, according to PEU, is a reliable process to remove arsenic to comply with the new drinking water standard. The HDD project will allow PEU to divert raw water from the Airstrip Well to the Peacham Road treatment facility. By diverting the Airstrip Well water to Peacham Road, PEU will no longer need to maintain a separate treatment/storage and pumping station for the Airstrip Well, which will reduce operations and maintenance costs over the long term. The petition concludes that the project is required to provide reliable water service to the customers in the Locke Lake Colony.
- PEU submitted January 29, 2020 correspondence to the Commission which included a property easement from the Locke Lake Colony Association (LLCA) indicating PEU has the necessary right of way from LLCA to construct the pipeline.

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 permissions previously granted by the PUC for the Locke Lake Crossing in Barnstead NH

The Commission has previously reviewed the project in Docket DW 18-132 and in Order No. 26,189 issued on November 9, 2019, the Commission approved project financing from the N.H. Drinking Water State Revolving Loan Fund ("SRF). This is a new crossing and an existing license does not require updating.

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

According to the Town of Barnstead tax maps, the proposed pipeline crossing will extend from the north side of Varney Road, across shoreline property designated as Town of Barnstead Tax Map 41, Lot 2 owned by Locke Lake Colony Association (LLCA), then under the bottom of Locke Lake to the LLCA parcel designated as Town of Barnstead Tax Map 44, Lot 3 and to the south side of Georgetown Drive.

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 aboveground 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 (AWWA). This in turn references AWWA Standard C906 1999 Polyethylene (PE) Pressure Pipe and Fittings for Water Distribution.

The water crossing is part of a project that will tie into existing water mains on Varney Road and Georgetown Drive in Barnstead. The approximately 850 foot crossing of Locke Lake is to be constructed using HDD techniques. The entire crossing segment will consist of a 3-inch nominal diameter HDPE pipeline constructed inside an 8-inch HDPE sleeve.

This crossing does not meet the applicable activities that trigger an individual permit nor a water quality certificate (section 401) review. LLCA submitted a January 23, 2020 Shoreland Permit by Notification (PBN) to the NHDES which was accepted on January 26, 2020 (NHDES File Number 2020-00120). The NHDES noted that only those impacts shown on the accepted plans submitted to NHDES with the PBN have been authorized under RSA 483-B. PEU indicated that, aside from RSA Chapter 371, no other local, state, or federal permits are necessary.

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

6. Review of public need and public impact.

PEU states the crossing is an interconnection with the Air Strip Well and the Peacham Road treatment facility. The HDD project will allow PEU to divert raw water from the Airstrip Well to the Peacham Road treatment facility to take advantage of the more efficient arsenic removal technology and to reduce operations and maintenance requirements. The petition concludes that the project is required to provide reliable water service to the customers in the Locke Lake Colony with minimal public impact.

7. Recommendations and Conclusions.

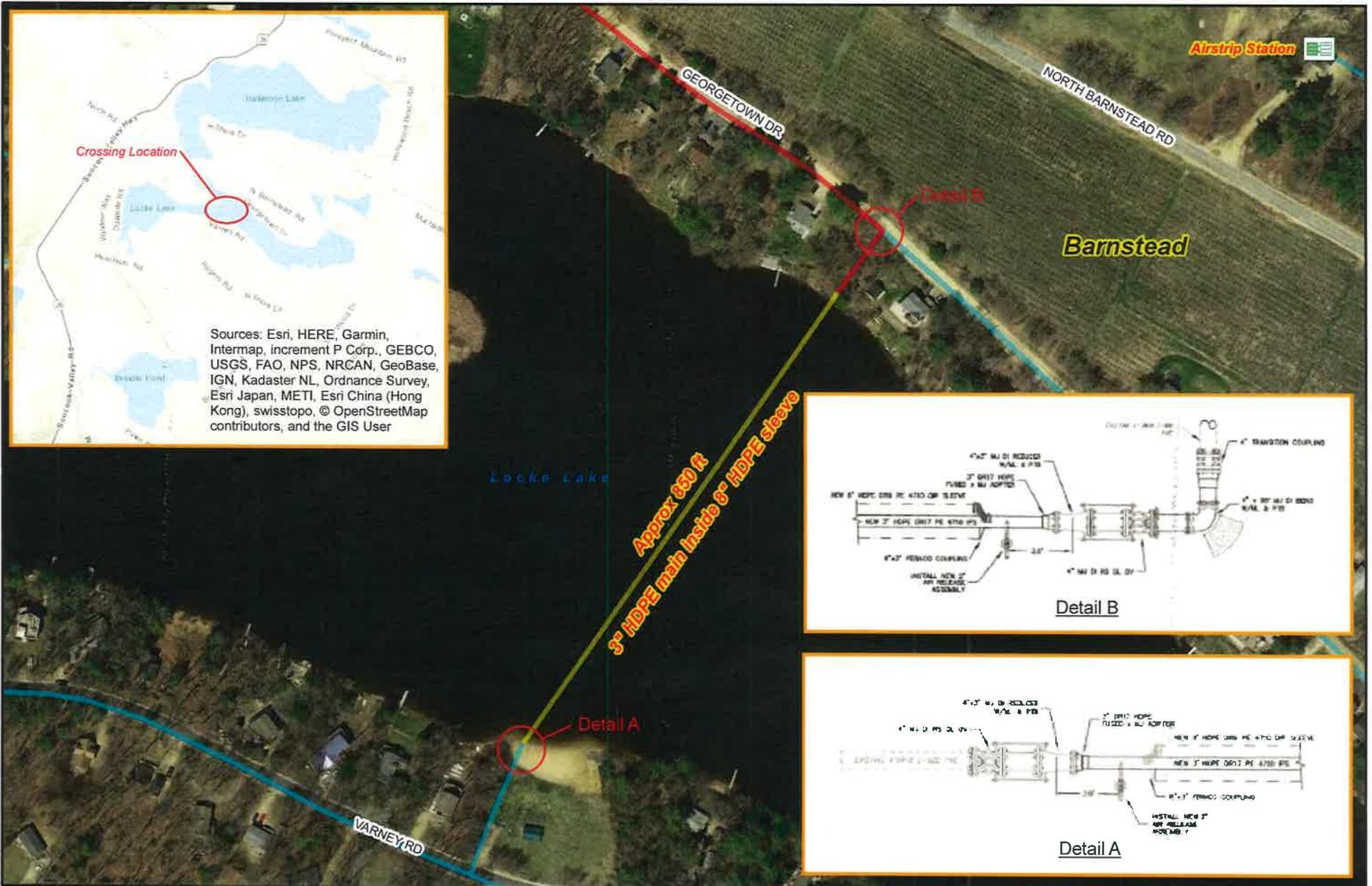
The Safety Division recommends approval of PEU's petition to the Commission with the following conditions:

- a. The review and recommendation is based on installation and construction according to the "Locke Lake Water Source Improvements, Air Strip Well Interconnection Fall/Winter, 2019/2020 Contract 2019-081" plans dated October 2, 2019, prepared by Pennichuck Water and filed on December 13, 2019.
- b. The Commission should require that all future alterations to the crossing that may impact the public conform to the requirements of both the Puc 606.01 rules and the indirectly referenced AWWA C906 standards for polyethylene pipe.
- c. Future system alterations that impact the water crossing should be resubmitted to the Commission a minimum 60 days prior to any alteration.
- d. Connection methods of the 3-inch diameter HDPE water main should be limited to hot fusion methods rather than mechanical joining techniques.
- e. The pipeline installation shall be locatable for identification for future excavations by methods such as tracer wire installation or other alternative methods.

Appendix A

Site Plan and Location Map

Locke Lake - DW 19-198 Pennichuck East Crossing



Crossing Location

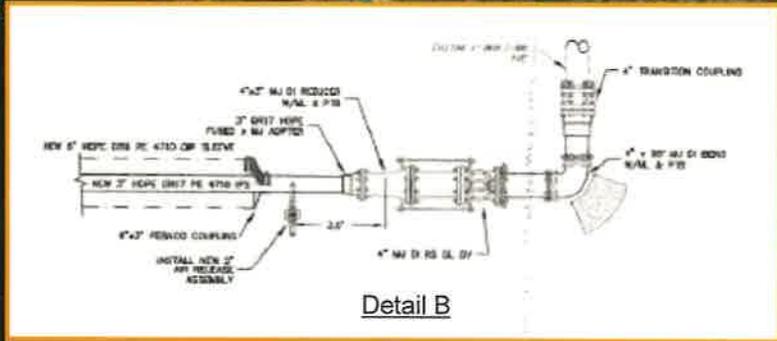
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User

Airstrip Station

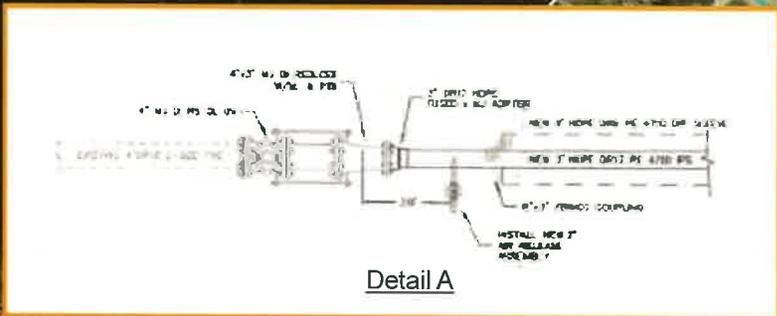
Barnstead

Locke Lake

Approx 850 R
3" HDPE main inside 6" HDPE sleeve



Detail B



Detail A

- Airstrip System
- Airstrip System - Crossing
- Airstrip System - Raw Water

Station



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