

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: January 17, 2014

AT (OFFICE): NHPUC

FROM: Randy Knepper
Director of Safety

RSK

NHPUC 17JAN14PM3:10

SUBJECT: Review of PSNH Petition for an Existing Circuits 3891 and 18H1
Crossings of the Nashua River, Nashua at a single location
Docket No. DE 13-250, including proposed alteration of previous crossings

TO: Debra Howland, Executive Director
Tom Frantz, Director, Electric Division
Steve Mullen, Assistant Director, Electric Division
David Wiesner, Staff Attorney

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

- Petition contents and history
- Applicable State Statute
- Review of existing crossing(s) already licensed by the PUC
- Review of land ownership of existing pole structures.
- Review of NESC code requirements as described in Puc 300 rules
- Review of public need and public impact, including applicability of other State regulations
- Conclusions and Recommendations

1. Petition contents and history.

- On August 30, 2013, Public Service Company of New Hampshire (PSNH) filed a petition to alter two existing water crossings associated with the 34.5 kv circuit designated 3891 and the 4.16 kv circuit designated 18H1. The water crossings are existing crossings of the Nashua River on the east side of the oxbow of the Nashua River in downtown Nashua.
- The new water crossing will consist of the alteration and relocation of three existing water crossings over the Nashua River. The relocation is necessary to make way for the newly proposed Broad Street Parkway extension project that is finally being realized after having been in the planning stages for years.
- Span 1 consists of a single 7 strand Number 6 neutral (co-functioning as a messenger wire) and three electrical conductors (447 kcmil ACSR 18/1) which make up the 34.5 kv circuit designated as 3891. The material, height, location of both support structures adjacent as well as conductor size and material to the water crossing are being relocated and significantly altered from a configuration that currently exists. Span 1 is approximately 325 feet and starts at single class H3, 60' foot tall western red cedar wooden pole

(Structure 43) on the western bank of the Nashua River and terminates at the 55 foot tall western red cedar wooden pole double arm tangential structure labeled as Structure 44 on the eastern bank of the Nashua River. The span of the Nashua River itself will be 161 feet with setbacks of Structure 43 from the western edge of the river of approximately 27 feet and setbacks of Structure 44 from the eastern edge of the river of approximately 137 feet.

- Span 2 of the same water crossing consists of a double circuit Hendrix wire configuration of three electrical conductors (447 kcmil ACSR) which make up the 4.16 kv circuits designated as 18H1. The 18H1 circuits will be physically located directly below the 34.5 kv 3891 and will be bracketed on both sides of the wooden pole structures. The messenger wire of the 3891 will serve as the neutral for the 18H1 circuit as well. This is significantly altered from a configuration that previously existed. Span 2 is identical to Span 1 in all regards except for clearances above water because of the lower position on the supporting structures. Span 2 is also approximately 325 feet and starts at single class H3, 60' foot tall western red cedar wooden pole (Structure 43) on the western bank of the Nashua River and terminates at the 55 foot tall western red cedar wooden pole double arm tangential structure labeled as Structure 44 on the eastern bank of the Nashua River. The span of the Nashua River itself will be 161 feet with setbacks of Structure 43 from the western edge of the river of approximately 27 feet and setbacks of Structure 44 from the eastern edge of the river of approximately 137 feet.
- The water clearances are taken from the 10 year flood level of 122 feet that was derived by PSNH based on NAVD 88 datum and FEMA flood map and # 161P for the Nashua River in Nashua (volume 3), is considered non-sailable, and PSNH also used information from panel 513 of 701 of map Number3301C0513D dated 9/25/2009 of FEMA flood maps.
- PSNH requested a completed new licensure for these crossings because of the pending planned reconstruction of the Broad Street Parkway. The Staff confirmed with both PSNH and NH DOT that this project has been funded and project start date will be in the early Spring of 2014.

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 this location of the Nashua River in Nashua and ownership of lands.

Previous licenses were granted for Nashua River crossings of both circuit 18H1 and 3891 in 1976 by Commission Order No. 12,219, in Docket DE 76-22. Specifically, these crossings were previously identified on:

- PSNH filed Appendices 37B2 for 18H1 which was a crossing for a double circuit at 4.15kv including the neutral referenced in that Order.
- PSNH filed Appendices 37B3 for Circuit 3891, which is a single circuit 34.5 kv without a neutral referenced in that Order. and
- PSNH filed Appendices 37B4 for the neutral used for Circuit 3891 referenced in that Order.

This portion of the Nashua River in Nashua is considered a public river and listed on the DES official list of public rivers and streams. See

<http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/olpw.pdf>

These portions of the Nashua River are not considered navigable per the US Army Corp of Engineers. All vertical clearances easily exceed the minimum requirement for non-sailing of the Nashua River only.

4. Review of land ownership of existing pole structures.

Both crossings of the Nashua River are located outside of the State proposed right of way but within limits of PSNH-easements located on both sides of the river. The orientation, structures and distances from the easement edges are significantly altered from the previous crossings.

5. Review of NESC code requirements as described in Puc 300.

N.H. Code of Administrative Rules PART Puc 306 requires each utility shall construct, install, operate and maintain its plant, structures and equipment and lines, as follows:

- (1) In accordance with good utility practice;
- (2) After weighing all factors, including potential delay, cost and safety issues, in such a manner to best accommodate the public; and
- (3) To prevent interference with other underground and above ground facilities, including facilities furnishing communications, gas, water, sewer or steam service.

“Good utility practice” means in accordance with the standards established by:

- (1) The National Electrical Safety Code C2-2002...

PSNH in its petition states that the 2007 National Electrical Safety Code C2-2007 was used for compliance and that it conforms to the NESC 2012 latest update. The Safety Division reviewed the differences between the C2-2007 and C2-2002 edition for section 23 Clearances and found the differences were mainly additional clarity in the later edition, but no clearance values were adjusted that would have an impact on this crossing. Staff notes that a docket is currently open DE 13-090 for electric rulemaking that is proposed to update the administrative rules to reflect the NESC 2012 edition and again found no material differences in vertical clearance requirements.

A New Hampshire DES permit is also not required per Administrative Rule Wq 1406.04 (d) (7). There will not be any alteration of terrain, thus no permit is required.

The Safety Division reviewed 13 supporting statements contained in the petition, the attached Exhibits 1, 2, 3, and 4, and found them to be in conformance with the applicable sections of the NESC code C2-2002.

Review of public need and public impact.

PSNH states the distribution line crossings of 3891 and 18H1 are an integral part of the PSNH distribution system and feed power in the Millyard area of Nashua. The relocation will reduce the locations across this section of the Nashua River from three to one. It has also been designed to allow a future attaching entity sufficient space on the pole to add a wire crossing and maintain sufficient vertical clearance from the water and highway. If multiple future attaching entities require use the proposed structures then the poles may need to be raised.

In addition to the water crossing, staff reviewed the span of the poles for clearance over the adjacent railroad, the proposed highway crossing and the river to verify clearances that meet the NESC. All three checks confirmed that PSNH facilities including a potential attaching entity will be able to meet the requirements.

PSNH states the proposed crossings “may be exercised herein without substantially affect the rights of the public in the public water of the Nashua River. Minimum safe line clearances above the water surface and affected shorelines will be maintained at all times. The use and enjoyment by the public of the Nashua River will not be diminished in any material respect as a result of the overhead line and cable crossings.”

The Safety Division concludes the impact to the public will be *de minimus* and not measurable.

6. Recommendations and Conclusions.

The Safety Division recommends full approval of PSNH’s petition to the Commission without any conditions.

Appendix A

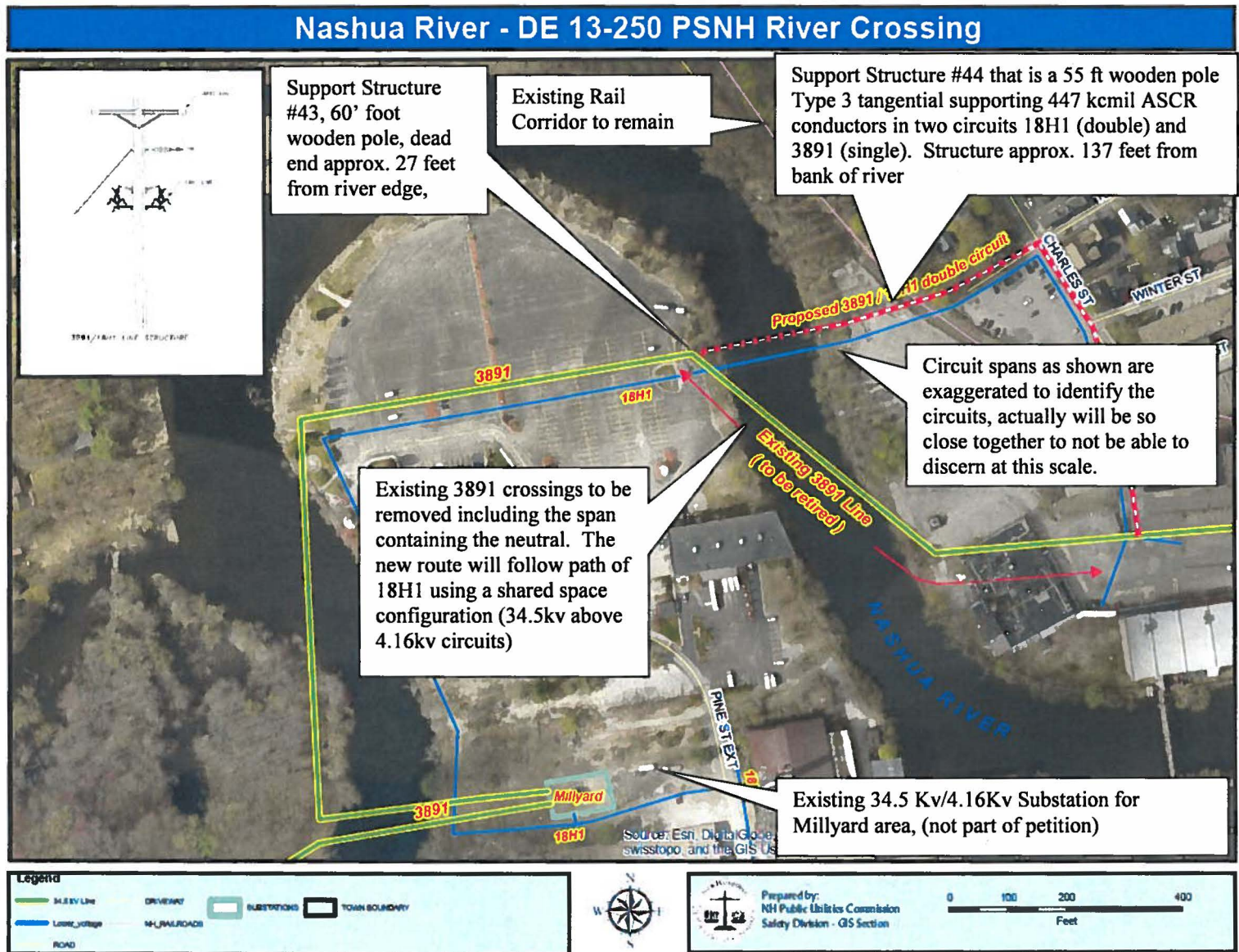


Figure 1: Nashua River in the millyard area of Nashua looking north with all the structures and spans shown. There are no other attaching entities to these poles as proposed. Broad Street Parkway is being proposed along the east side of the Nashua River but to the west of the existing