

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: February 19, 2021

AT (OFFICE): NHPUC

FROM: Kenneth Walsh *KGW*
Utility Analyst IV – Safety Division

SUBJECT: Docket No. DE 20-211 Public Service New Hampshire d/b/a
Eversource Energy
Petition for License and License Amendment to Construct and Maintain
Electric Lines Over and Across State Owned Land in Stoddard and
Public Waters in Stoddard, Sullivan, and Keene, New Hampshire
Staff Recommendation

TO: Debra Howland, Executive Director
Thomas Frantz, Director, Electric Division
Richard Chagnon, Assistant Director, Electric Division
Lynn Fabrizio, Staff Attorney
Randall Knepper, Director, Safety Division
Paul Kasper, Assistant Director, Safety Division

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

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

1. Petition contents and history

On December 30, 2020, Public Service New Hampshire d/b/a Eversource Energy (ES), filed a petition for a license and license amendment pursuant to RSA 371:17 to construct, maintain and operate the Eversource L163 line, which is a three phase 115kV transmission line, over State owned land in Stoddard and a number of public waters in Stoddard, Sullivan, and Keene.

On February 3, 2021, ES filed a replacement petition resulting from errors identified by Safety Staff in the Company's December 30, 2020 original petition.

On February 10, 2021, ES filed a second replacement petition resulting from incomplete information identified by Safety Staff in the Company's February 3rd replacement petition.

There are four public water crossing spans, which include one crossing of the North Branch River in Stoddard, one crossing of an Unnamed Outflow of Island Pond in Stoddard, one crossing of Otter Brook in Sullivan, and one crossing of the Ashuelot River in Keene. There is one State owned land crossing span, which is in Stoddard.

Prior licensing by the PUC in Docket 19-172 pursuant to Order 26,356, include the four identified public water crossings (structures #30, #31, #48, #49, #132, #133, #207, #208). The State owned land in Stoddard was not licensed (structures #26 to #33) reportedly due to an oversight. Although wood structure #49 was incorrectly noted in Docket 19-172 to be replaced with steel, it was replaced with wood consistent with the exhibit submitted at the time. This structure will be replaced with steel as part of this petition. Structure #26 was also replaced in 2019 without ES obtaining a license at the time; however, this will be licensed under this petition as well.

This is a project to replace six (6) wood structures (structures #27, #28, #29, #32, #33, #49) with steel structures as ES asserts these 1954 wood structures require replacement in order to maintain system reliability. The three (3) existing conductors will be transferred to the new steel structures. This project also includes replacement of the two existing static wires with communications fiber optical ground wire (OPGW) with both being vertically attached above the conductors. Throughout the petition spans, the existing underbuilt communication fiber optical cable (OPGW) will be removed.

Common to all these noted structures, all three (3) existing ACSR 336.4 kcmil conductors will be transferred to the new steel structures. Two existing static wires will be replaced with communications one (1) 48 fiber optical ground wire (OPGW) and one (1) 144 fiber (OPGW) with both being vertically attached above the conductors. The conductor cable clearance requirements were met using the National Electrical Safety Code (NESC) conditions at 285 deg F. for all crossings within this petition. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. Only 18.6 feet clearance is required by the NESC Table 232-1 for water areas not suitable for sail boating. Only 20.1 feet clearance is required by the NESC Table 232-1 for other areas traversed by vehicles, such as cultivated, grazing, forest, and orchard lands, industrial sites, commercial sites, etc. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition.

Analysis of this final revised replacement petition will divide the L163 line into four segments for review: (S1) State owned Land in Stoddard (ES Exhibits 2 -5) and the North Branch River in Stoddard (ES Exhibit 4), (S2) Unnamed Outflow of Island Pond (ES Exhibit 6), (S3) Otter Brook in Sullivan (ES Exhibit 7), and (S4) the Ashuelot River in Keene (ES Exhibit 8). See detailed NHPUC Safety Division maps/schematics in the Attachment of this recommendation.

The table provided after the segment information provides the summary of this petition with all crossings to include structure numbers and types, spans, ES design criteria, and NESC compliance.

Segment 1 State owned Land, Stoddard Crossings, ES Exhibits 2 – 5, Structures #26 to #33 and the North Branch River, Stoddard Crossing, ES Exhibit 4 – Structures #30 to #31:

The scope of this project begins in Antrim at Structure #26, which is approximately 2212 feet west from where the L163 line crosses Salmon Brook Road then traversing west across State owned land in Stoddard, then crossing the North Branch River then crossing State Route 9 to Structure #33.

This crossing spans 3142 feet between Structures #26 and #33 with 2577.6 feet spanning State owned land.

This crossing spans 353 feet between Structures #30 and #31 with 56.4 feet spanning public waters. See PUC Safety Map #1.

Segment 2 Unnamed Outflow of Island Pond, Stoddard Crossing, ES Exhibit 6 – Structures #48 to #49:

The scope of this project in Stoddard begins at Structure #48 approximately 443 feet north of where the L163 line crosses over State Route 123 near the intersection of State Route 9 then heading southwest crossing the Unnamed Outflow of Island Pond ending at Structure #49.

This crossing spans 608 feet between Structures #48 and #49 with 70.2 feet spanning public waters. See PUC Safety Map #2.

Segment 3 Otter Brook, Sullivan Crossing, ES Exhibit 7 – Structures #132 to #133:

The scope of this project in Sullivan begins at Structure #132 approximately 545 feet northeast from where the L163 line crosses Valley Road then heading southwest crossing Otter Brook ending at Structure #133.

This crossing spans 621 feet between Structures #132 and #133 with 45.9 feet spanning public waters. See PUC Safety Map #3.

Segment 4 Ashuelot River, Keene Crossing, ES Exhibit 8 – Structures #207 to #208:

The scope of this project in Keene begins at Structure #207 approximately 1185 feet west and south from where the L163 line crosses over Court Street then heading southeast crossing the Ashuelot River ending at Structure #208.

This crossing spans 446 feet between Structures #207 and #208 with 45.9 feet spanning public waters. See PUC Safety Map #4.

PUC Safety Division Summary Table

Structure	Type	Span (Pole to Pole)	Distance (feet)	Minimum NESC Table 232-1 Clearance (ft.)	ES Vertical Design Clearance (ft.)	Complies with NESC Table 232-1 (Y/N)
26	52.0' steel 2 pole, T, CLH1	26-27	385	20.1	36.5	Y
27	52.0' steel 2 pole, T, CLH1					
28	52.0' steel 2 pole, T, CLH1	27-28	595	20.1	30.4	Y
29	56.5' steel 2 pole, T, CLH1	28-29	250	20.1	30.0	Y
30	61.0' steel 3 pole, BP, CLH1	29-30	350	20.1	28.9	Y
31	61.0' steel 2 pole, T, CLH1	30-31	353	20.1/18.6	35.2/53.3	Y
32	52.0' steel 2 pole, T, CLH1	31-32	788	20.1	31.0	Y
33	61.0' steel 2 pole, T, CLH1	32-33	421	20.1	31.9	Y
48	56.5' steel 2 pole, T, CLH1	48-49	608	18.6	65.4	Y
49	61.0' steel 3 pole, ADS-2, CLH1					
132	52.0' steel 3 pole, SDA-1, CLH1	132-133	621	18.6	30.2	Y
133	52.0' steel 3 pole, BA, CLH1					
207	61.0' steel 2 pole, T, CLH1	207-208	446	18.6	33.0	Y
208	56.5' steel 2 pole, T, CLH1					

The water clearances to the projected 100-year flood elevations were confirmed by Safety Division staff. The water clearances are taken from the projected 100 year flood levels. This is more conservative than the 10 year flood levels allowed by the NESC (note 18 to Table 232-1).

2. New Hampshire statute referenced in petition

371:17 Licenses for New Poles. – 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. 2013, 82:1, eff. June 19, 2013.

3. Review of existing license(s) and permissions previously granted by the PUC for these locations of the State owned land in Stoddard and the public waters of the North Branch River in Stoddard, an Unnamed Outflow Stream of Island Pond, Otter Brook in Sullivan, and the Ashuelot River in Keene.

The State owned land crossing spans in Stoddard were not previously licensed.

The subject public water crossings were licensed in DE19-172 pursuant to Order 26,356.

In Stoddard, the North Branch River, from the outflow of Robb Reservoir in Stoddard is listed under the category "Public Rivers and Streams" in the Official List of Public Waters (OLPW).

In Stoddard, the Unnamed Outflow Stream of Island Pond is listed under the category "Public Rivers and Streams" in the Official List of Public Waters (OLPW).

In Sullivan, Otter Brook from the outflow of Chandler Meadow in Stoddard is listed under the category "Public Rivers and Streams" in the Official List of Public Waters (OLPW).

In Keene, the Ashuelot River from the outflow of Butterfield Pond in Washington is listed under the category "Public Rivers and Streams" in the Official List of Public Waters (OLPW). The entire list of public waters can be accessed through the following web link:

<https://www.des.nh.gov/sites/g/files/ehbemt341/files/documents/olpw.pdf>

ES asserts environmental impacts from this project will require permits from the NH Department of Environmental Services and that ES will obtain these before commencing work.

The U.S. Army Corps of Engineers (USACOE) does not regulate the subject portions of the North Branch River in Stoddard, the Unnamed Outflow of Island Pond in

Stoddard, Otter Brook in Sullivan, and the Ashuelot River in Keene as federal-designated navigable waters. Therefore, no crossing permit is required from USACOE.

4. Review of land ownership of proposed pole structures

In its petition, ES specifies that the replacement of the structures and static wires with OPGW is over state owned land in the Town of Stoddard and over public waters in Stoddard, Sullivan, and Keene, New Hampshire.

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

Under N.H. Code Admin. Rules Puc 306, each utility is required to construct, install, operate and maintain its plant, structures and equipment and lines, as follows:

In accordance with good utility practice;

After weighing all factors, including potential delay, cost and safety issues, in such a manner to best accommodate the public; and

To prevent interference with other underground and above ground facilities, including facilities furnishing communications, gas, water, sewer or steam service.

For purposes of that section, “good utility practice” means in accordance with the standards established by the “National Electrical Safety Code C2-2012.”

ES states that the current crossings have been designed and will be re-constructed, maintained, and operated in accordance with the NESC C2-2012.

Safety Division Staff reviewed the specifications related to the design and re-construction of this crossing project as described in the petition, the attachments, and all supplemental support documents, and found them to be in conformance with the applicable sections of NESC C2-2012 and Puc 300.

6. Review of public need and public impact

In order to meet the reasonable requirements of electric service to the public, ES proposes to replace existing wood structures with steel structures, transfer existing conductors, replace two static wires with fiber optic communication cables, remove the fiber optic cable underbuilt, and maintain a three-phase 115 kV transmission line designated as the L163 line over and across state owned land in Stoddard and public waters in Stoddard, Sullivan, and Keene, New Hampshire. This transmission line is an integral part of ES’s electric transmission system in this area.

ES asserts in the petition that the existing crossings will be exercised without substantially affecting the rights of the public in the State owned land in Stoddard and in the subject public waters in Stoddard, Sullivan, and Keene. Minimum safe line

clearances above the land, stream, and river surfaces and affected shorelines will be maintained at all times. The use and enjoyment of the rivers and the state owned land by the public will not be diminished in any material respect as a result of the overhead line crossings.

Safety Division Staff concludes the impact to the public will be de minimis and not measurable. The crossings do not appear to affect the rights of the public in the public waters and state owned land because minimum safe line clearances above the water and land surfaces will be maintained at all times.

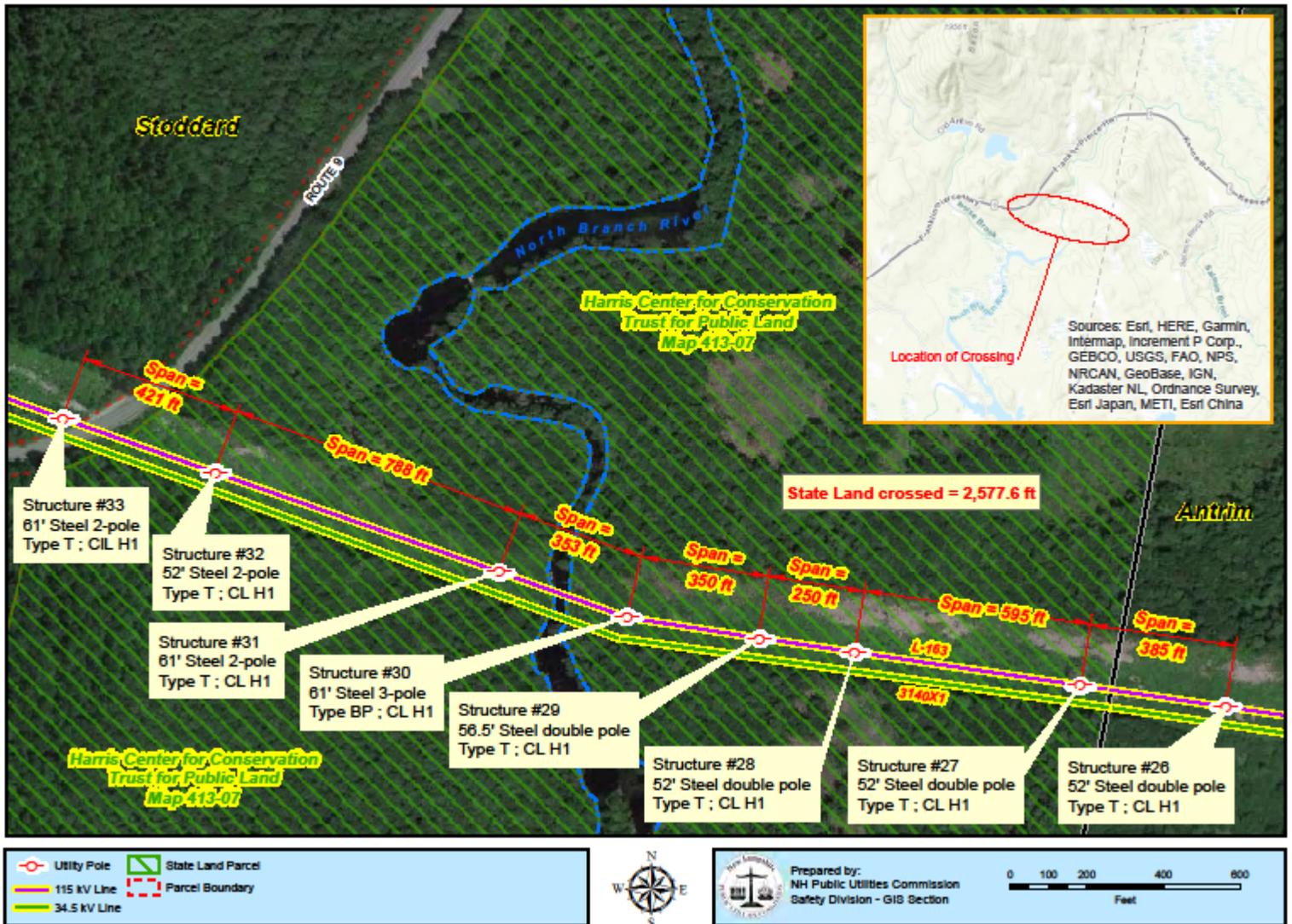
Staff Recommendation:

Based on the results of its review of the petition, its attachments, and all other supporting documents filed to this docket, the Safety Division Staff recommends that the Commission:

- 1) Find that the license ES requests in this docket may be exercised without substantially affecting the public rights in State owned land and the public waters, which are the subject of the petition;
- 2) Grant ES a license and license amendment to construct, operate and maintain electric lines and telecommunication cables over and across the State owned land in Stoddard and the public waters of the North Branch River in the Town of Stoddard, over and across the public waters of an Unnamed Outflow Stream of Island Pond in Stoddard, over and across the public waters of Otter Brook in Sullivan, and over and across the public waters of the Ashuelot River in the City of Keene, New Hampshire, as specified in the petition;
- 3) Issue an Order Nisi and orders for its publication.

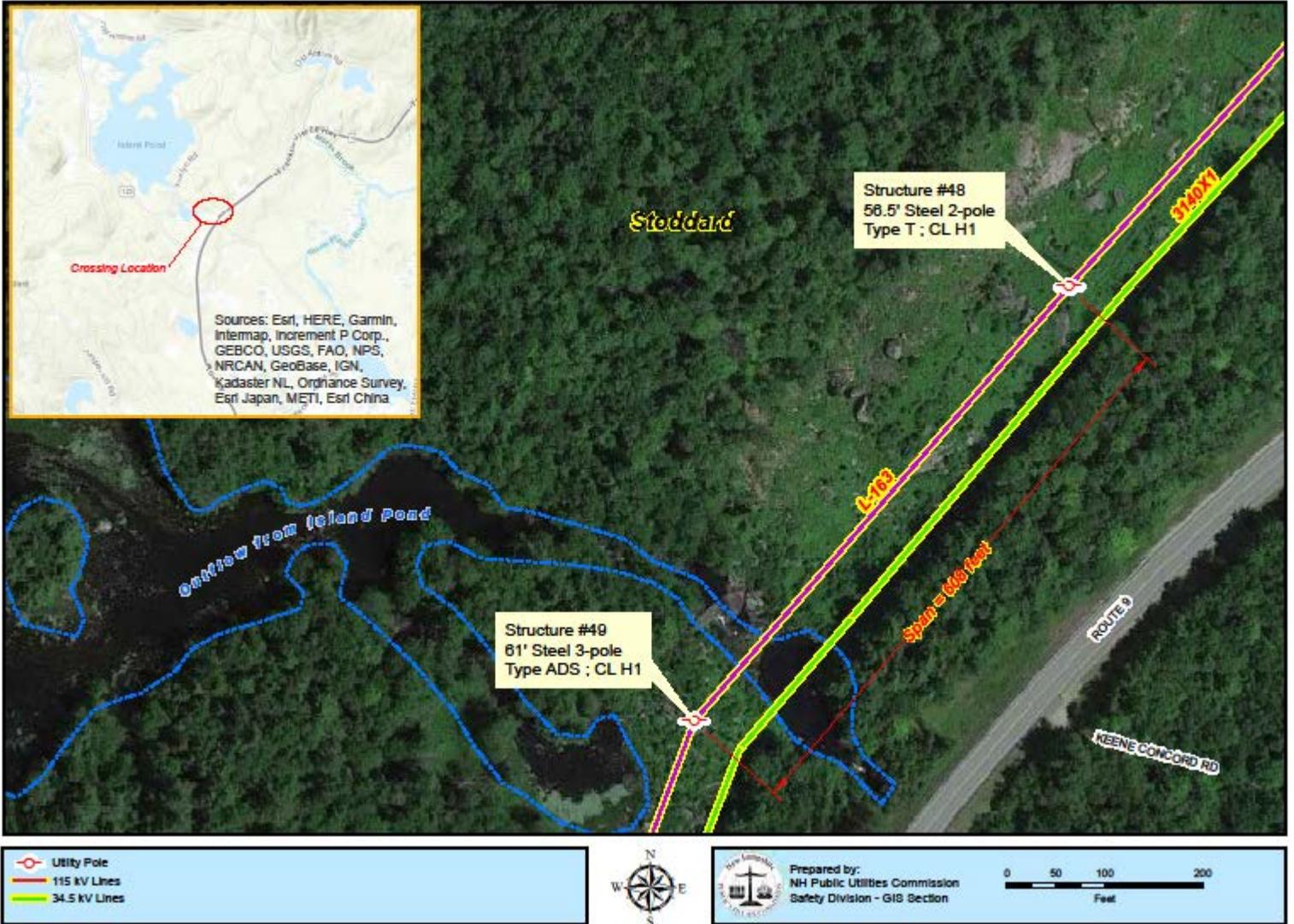
Attachment

North Branch River/State Land (Map 1) - DE 20-211 EVERSOURCE Crossing



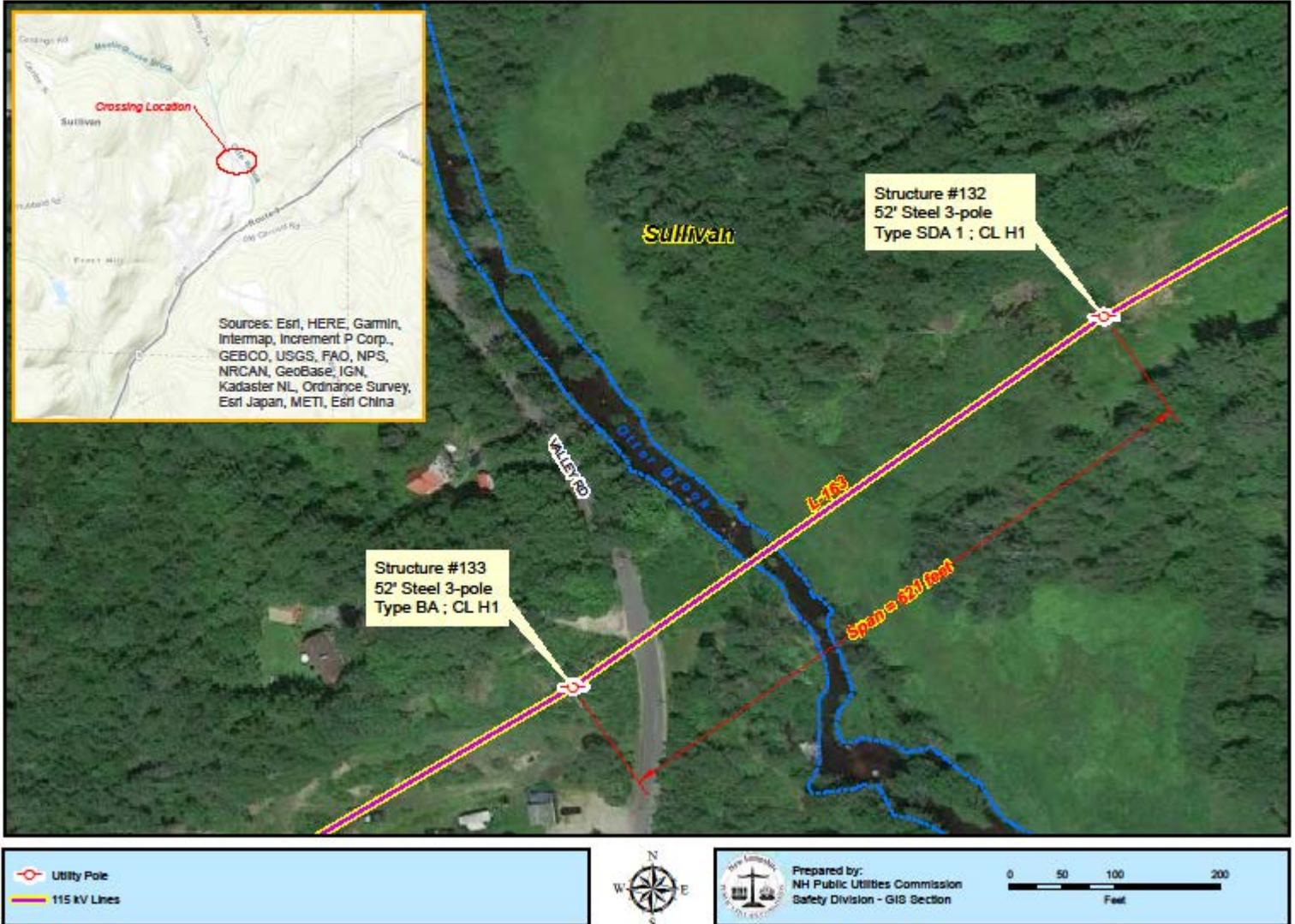
Public Water and State owned Land as shown above identified in the petition and engineering drawings as State of New Hampshire and located in the Town of Stoddard. The project will require the Commission to grant a land license and amended water crossing license related to this project. The license will be for the 115 kV L163 transmission line from Structure #26 westerly to Structure #33. These crossings span approximately 3,142 feet with 2577.6 feet crossing state land and 56.4 feet crossing public waters over the North Branch River.

Outflow from Island Pond (Map 2) - DE 20-211 EVERSOURCE Crossing



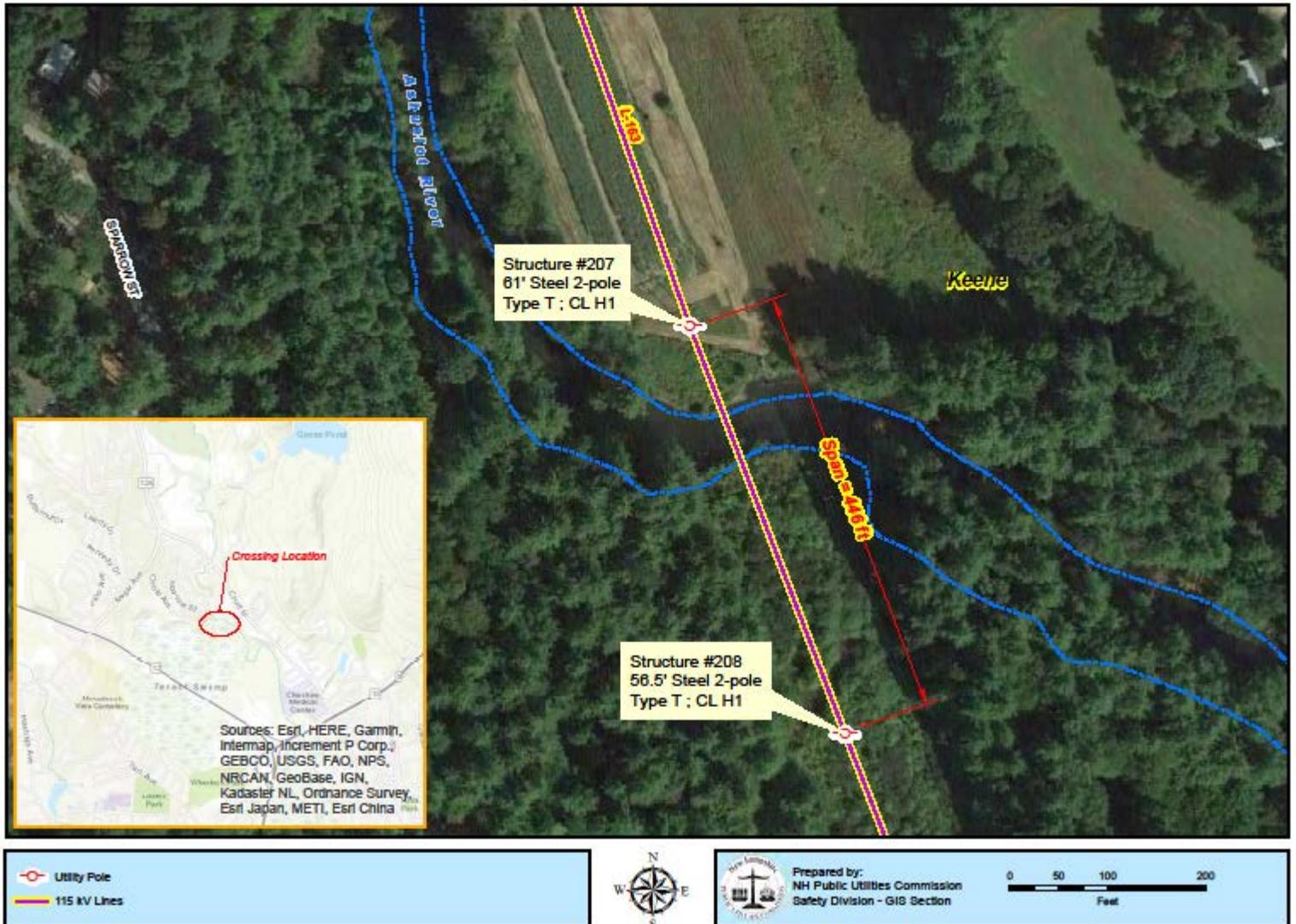
Public Water as shown above identified in the petition and engineering drawings as State of New Hampshire and located in the Town of Stoddard. The project will require the Commission to grant an amended water crossing license related to this project. The license will be for the 115 kV L163 transmission line from Structure #48 southwest to Structure #49. This crossing spans approximately 608 feet with 70.2 feet crossing public waters over an Unnamed Outflow Stream of Island Pond.

Otter Brook (Map 3) - DE 20-211 EVERSOURCE Crossing



Public Water as shown above identified in the petition and engineering drawings as State of New Hampshire and located in the Town of Sullivan. The project will require the Commission to grant an amended water crossing license related to this project. The license will be for the 115 kV L163 transmission line from Structure #132 southwest to Structure #133. This crossing spans approximately 621 feet with 45.9 feet crossing public waters on Otter Brook.

Ashuelot River (Map 4) - DE 20-211 EVERSOURCE Crossing



Public Water as shown above identified in the petition and engineering drawings as State of New Hampshire and located in the City of Keene. The project will require the Commission to grant an amended license related to this project. The license will be for the 115 kV L163 transmission line from Structure #207 southeast to Structure #208. This crossing spans approximately 446 feet with 45.9 feet crossing the Ashuelot River.

Executive.Director@puc.nh.gov
amanda.noonan@puc.nh.gov
catherine.marsellos@puc.nh.gov
Erik.newman@eversource.com
lynn.fabrizio@puc.nh.gov
matthew.cardin@eversource.com
melissa.price@eversource.com
ocalitigation@oca.nh.gov
Paul.Kasper@puc.nh.gov
randy.knepper@puc.nh.gov
richard.chagnon@puc.nh.gov
susan.gagne@puc.nh.gov
tom.frantz@puc.nh.gov