STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: August 27, 2020
AT (OFFICE): NHPUC

FROM: Paul Kasper *PGK*
Assistant Director – Safety Division

SUBJECT: Docket No. DE 20-001 Public Service New Hampshire d/b/a Eversource Energy
Petition for a License to Construct and Maintain Electric Lines and Telecommunication Cable over and across the Pequawket Pond and Saco River in Conway and Across Land Owned by the State of New Hampshire in Tamworth, Madison, and Conway
Staff Recommendation for Seven Licenses

TO: Debra Howland, Executive Director
Thomas Frantz, Director, Electric Division
Richard Chagnon, Assistant Director, Electric Division
Lynn Fabrizio, Senior Staff Attorney

CC: Randall Knepper, Director, Safety Division

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

- Petition contents and history;
- Applicable State Statute;
- Review of the existing crossing(s) not 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 March 04, 2020, Public Service New Hampshire d/b/a Eversource Energy (ES), filed a petition pursuant to RSA 371:17 for (7) license to re-construct, maintain and operate the Eversource Y138 Line, which is a 115 kV transmission line. This is a project to modify or rebuild (9) nine structures on its existing Y138 transmission line. No conductors will be replaced but one of the (2) shield wires will be replaced with optical ground wire in this project. All wires shall be transferred from existing structures to new structures replaced at the same locations. The existing Saco River

and the Pequawket Pond crossings in the Town of Conway had been previously licensed by the Commission under PUC Order 18,703 dated July 10, 1987.

The Y138 Line crossings of the State's land parcels in the Towns of Tamworth, Madison, and Conway New Hampshire had not been previously licensed. These crossings had not been licensed due to either oversight, or because the lands involved were in private ownership at the time of the original construction of the existing Y138 Line and no crossing license was required, but will be fully licensed pursuant to this petition. This structure replacement and repair project is part of a capital reliability project - necessary for the Y138 Line to continue to meet current as well as future projected electricity demands. See a detailed NHPUC Safety Division map/schematic in the Staff Attachments 1, 2, 3, 4, 5, 6, and 7 of this recommendation.

In their petition Eversource states that in 1998, Eversource completed (2) two structure replacements, (Str. 98 & 129), and between 2017 and 2018 replaced (Str. 99 & 128) and in December of 2019 replaced (Str.115) along the existing Y138 Transmission Line impacting the Saco River, Pequawket Pond, and state land crossings in the Towns of Tamworth, Madison, and Conway, New Hampshire and that a petition was not submitted prior to this work being completed, and as such, will be licensed under this petition.

1. Public Lands Parcel (see Staff Attachment 1)

License 1.

In ES Exhibit #2 Structure # 6 is constructed with 1-85 ft. (OAL) Type WT1 CLASS H6 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 26/7 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The conductor clearance requirements were met using the NESC conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductors to the land surface will be maintained at (30.8 feet) over the surface of the state owned rail trail land in the Town of Tamworth, New Hampshire. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 28.1 ft. is required by the NESC Table 232-1.

Structure # 7 will be constructed with 1-95 ft. (OAL) Type AD CLASS H5 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The span between STR# 6 and STR# 7 will be 455 ft. of which 99 ft. will span public land.

2. Public Lands Parcel (see Staff Attachment 2)

License 2.

In ES Exhibit #3 Structure #15 will be constructed with 1-80 ft. (OAL) Type WDE1 Class H2 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The conductor clearance requirements were met using the NESC conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductors to the land surface will be maintained at (30.8 feet) over the surface of the state owned rail trail land in the Town of Madison, New Hampshire.. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 28.1 ft. is required by the NESC Table 232-1.

Structure # 16 will be constructed with 1-90 ft. (OAL) Type SDE Class H5 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The span between STR# 15 and STR# 16 will be 494.5 ft. of which 138 ft. will span public land.

3. Public Lands Parcel (see Staff Attachment 3)

License 3.

In ES Exhibit #4 Structure # 42 is constructed with 1-85 ft. (OAL) Type WDE2 Class H4 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The conductor clearance requirements were met using the NESC conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductors to the land surface will be maintained at (30.1 feet) over the surface of the state owned rail trail land in the Town of Madison, New Hampshire.. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 28.1 ft. is required by the NESC Table 232-1.

Structure # 43 is constructed with 1-90 ft. (OAL) Type WDE2 Class H5 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The span between STR# 42 and STR# 43 will be 453 ft. of which 109 ft. will span public land.

4. Public Lands Parcel (see Staff Attachment 4)

License 4.

In ES Exhibit #5 Structure # 89 is constructed with 1-85 ft. (OAL) Type WT1 Class H4 (storm guys) steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The conductor clearance requirements were met using the NESC conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductors to the land surface will be maintained at (26.4 feet) over the surface of the state owned land in the Towns of Madison and Conway, New Hampshire.. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 16.1 ft. is required by the NESC Table 232-1.

Structure # 90 is constructed with 1-90 ft. (OAL) Type WT1 Class H2 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The span between STR# 89 and STR# 90 will be 800.5 ft. of which 370 ft. will span public land.

5. Public Lands Parcel (see Staff Attachment 5)

License 5.

In ES Exhibit #6 Structure # 126 is constructed with 3-85 ft. (OAL) Type DA Class H3 steel poles. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The conductor clearance requirements were met using the NESC conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductors to the land surface will be maintained at (67.7 feet) over the surface of the state owned land in the Town of Conway, New Hampshire. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 16.1 ft. is required by the NESC Table 232-1.

Structure # 127 is constructed with 3-100 ft. (OAL) Type SDA-1 Class H9 steel poles. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The conductor clearance requirements were met using the NESC conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductors to the land surface will be maintained at (66.7 feet) over the surface of the state owned land in the Town of Conway, New

Hampshire. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 16.1 ft. is required by the NESC Table 232

Structure # 128 is constructed with 1-95 ft. (OAL) Type ST1 Class H9 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The conductor clearance requirements were met using the NESC conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductors to the land surface will be maintained at (48.7 feet) over the surface of the state owned rail trail land in the Town of Conway, New Hampshire.. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 28.1 ft. is required by the NESC Table 232-1.

Structure # 129 is constructed with 1-75 ft. (OAL) Type SDE steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The span between STR# 126 and STR# 129 will be 2499.5 ft. of which 261 ft. will span public lands.

6. <u>Public Water Crossing (see Staff Attachment 6)</u>

License 6.

In ES Exhibit #6 Structure # 98 is constructed with 1-75 ft. (OAL) Type DCSDE-1 (Thomas and Betts Custom Structure) steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 26/7 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The conductor clearance requirements were met using the NESC conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductors to the water surface will be maintained at (42.1 feet) over the surface of the Pequawket Pond in the Town of Conway, New Hampshire. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 22.1 ft. is required by the NESC Table 232-1.

Structure # 99 is constructed with 1-100 ft. (OAL) Type DCST-2 CL H9 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The span between STR# 98 and STR# 99 will be 505 ft. of which 172 ft. will span public water.

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 12 to Table 232-i).

ES uses floodwater elevations for the Pequawket Pond in the Town of Conway, which are identified on FEMA flood map #33003C0335D. The 100-year flood elevation for the river in this location is approximately 452.5 feet, and is based on the North American Vertical Datum of 1988 (NAVD88). The Safety Division verified the 452.3-foot flood level from the FEMA flood map.

7. Public Water Crossing (see Staff Attachment 7)

License 7.

In ES Exhibit #7 Structure # 114 is constructed with 3-60 ft. (OAL) Type ADL-1 CLASS H1 steel poles The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The conductor clearance requirements were met using the NESC conditions at 285 deg F. This scenario was the governing condition, which yielded the greatest sag and lowest clearance. In its petition, ES provides sufficient detail to show how the required clearance from the conductors to the water surface will be maintained at (47.1 feet) over the surface of the water of the Saco River in the Town of Conway, New Hampshire. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition. Only 30.1 ft. is required by the NESC Table 232-1.

Structure # 115 will be constructed with 1-75 ft. (OAL) Type AD CLASS H1 steel pole. The structure will have conductors for the 115 kV Y138 transmission line consisting of (3) 795 kcmil ACSR 36/1 cables, (1) 7#16 EHS steel static wire and (1) .457 OPGW 48 fiber wire. The span between STR# 114 and STR# 115 is 699.6 ft. of which 172 ft. will span public water.

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 12 to Table 232-i). ES uses floodwater elevations for the Saco River in the Town of Conway that are identified on FEMA flood map #33003C0335D. The 100-year flood elevation for the river in this location is approximately 442.4 feet, and is based on the North American Vertical Datum of 1988 (NAVD88). The Safety Division verified the 442.4 ft. flood level from the FEMA flood map.

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 this location of the Saco River

This public water crossing license application for the Saco River is part of the reliability replacement project on the Y138 (115 kV) Transmission Line for ES had been previously licensed by the Commission under PUC Order 18,703 dated July 10, 1987.

The Saco River, From the base of Saco Lake Dam in Crawford Notch State Park to the New Hampshire/ Maine state line is listed under the category “Public Rivers And Streams” in the Official List of Public Waters (OLPW). under the category “List of freshwater Public Rivers and Streams.

The entire list of public waters can be accessed through the following web link:

http://des.nh.gov/organization/commissioner/pip/publications/wd/documents/olpw.pd

A New Hampshire Department of Environmental Services (NHDES) Shoreland Permit by Notification application is required for construction activities in the vicinity of the Saco River and Pequawket Pond. ES asserts the permits by notification were approved by NHDES (NHDES File # 2020-01608 for the Saco River), (NHDES File # 2020-01611 for the Pequawket Pond), (NHDES File # 2020-01608 for Madison), and (NHDES File # 2020-0056 for Conway). A SPN is not required for the state land crossings in Tamworth.

The U.S. Army Corps of Engineers (ACOE) does not regulate the subject portion of the Saco River as navigable waters and does not require a crossing permit from ACOE.

ES asserts in the petition that the existing crossing will be exercised without substantially affecting the rights of the public in the public waters of the Saco River and Pequawket Pond. Minimum safe line clearances above the river and pond water surfaces and affected shorelines will be maintained at all times. The use and enjoyment of the river and brook by the public will not be diminished in any material respect as a result of the overhead line crossings.

Review of land ownership of proposed pole structures

In its petition, ES specifies that the re-construction of these land crossings are on the State of New Hampshire owned land in the Towns of Tamworth, Madison, and Conway, New Hampshire

Review of NESC code requirements as described in Puc 300

N.H. Code of Administrative Rules Puc 306 requires:

each utility shall 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 this 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 2012 National Electrical Safety Code C2-2017.

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

Review of public need and public impact

In order to meet the reasonable requirements of electric service to the public, ES proposes to re-construct and maintain a three-phase 115 kV transmission line, designated as the Y138 Line over and across the Saco River, Pequawket Pond and over Land owned by the State in the Towns of Tamworth, Madison, and Conway, 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 proposed licenses for these crossings may be exercised without substantially affecting the rights of the public in the State land in the Towns of Tamworth, Madison, and Conway and without substantially affecting the rights of the public in the public waters of the Saco River and Pequawket Pond. Minimum safe

line clearances above the river and pond surfaces and affected shorelines will be maintained at all times. The use and of which is the subject of this petition. Minimum safe line clearances above the land surfaces will be maintained at all times. The use and enjoyment by the public of these lands will not be diminished in any material respect as a result of the modification and replacement of the existing overhead line crossings.

This project does not require use and occupancy agreements be in place prior to construction of this crossing from the New Hampshire Department of Transportation.

Safety Division Staff concludes the impact to the public will be de minimis and not measurable. The crossing does not appear to affect the rights of the public on the State land because minimum safe line clearances above the land surface 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 licenses ES requests in this docket may be exercised without substantially affecting the public rights in State lands which are the subject of the petition;

2) Grant ES five licenses to construct, operate and maintain electric lines, including neutral wire and telecommunication wire over and across the State land in the Towns of Tamworth, Madison and Conway, New Hampshire, as specified in the petition; and

3) Find that the license ES requests in this docket may be exercised without substantially affecting the public rights in the public waters which are the subject of the petition;

4) Grant ES two licenses to construct, operate and maintain electric lines, including neutral wire and telecommunication wire over and across the public waters of the Pequawket Pond and the Saco River in the Town of Conway, New Hampshire, as specified in the petition;

5) Issue an Order Nisi and orders for its publication.

Staff Attachments

Staff Attachment 1

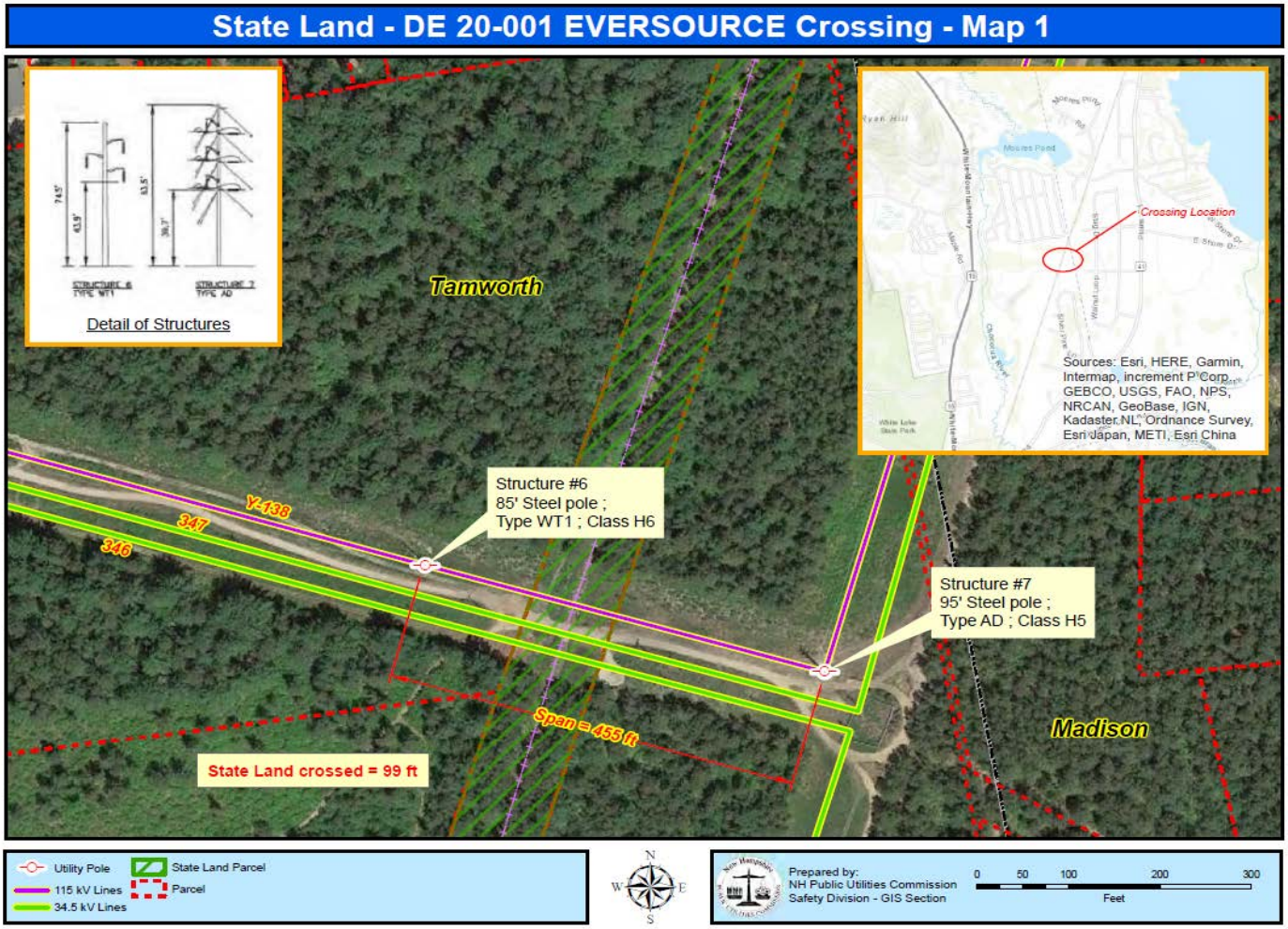

Figure 1: 115kV line, designated as the Y138 Transmission Line, is a span of approximately 455 feet between Structure #6 and Structure # 7, with a span of approximately 99 ft. crossing State Land in the Town of Tamworth, NH. State owned land is shown above as green hash marks

Staff Attachment 2

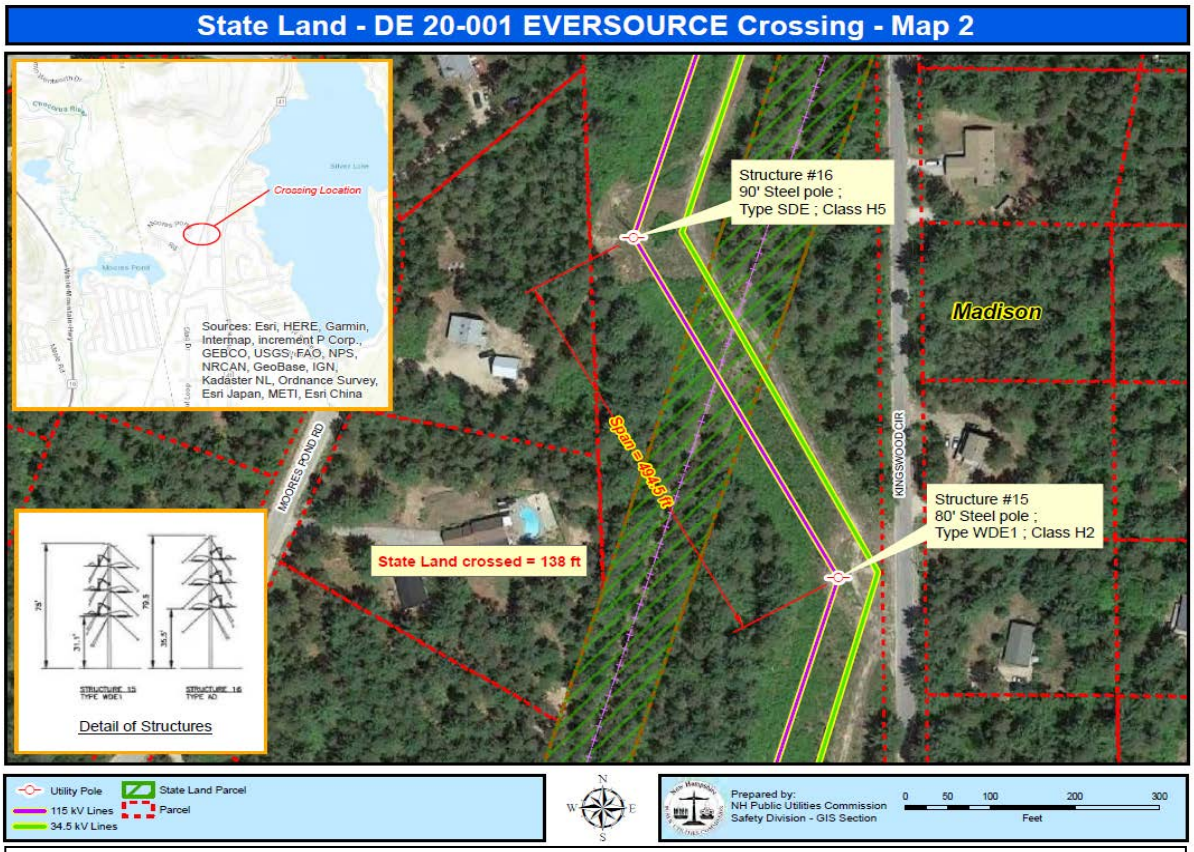

Figure 2: 115kV line, designated as the Y138 Transmission Line, is a span of approximately 494.5 feet between structures # 15 and # 16, with a span of approximately 138 ft. crossing State Land in the Town of Madison, NH. State owned land is shown above as green hash marks

Staff Attachment 3

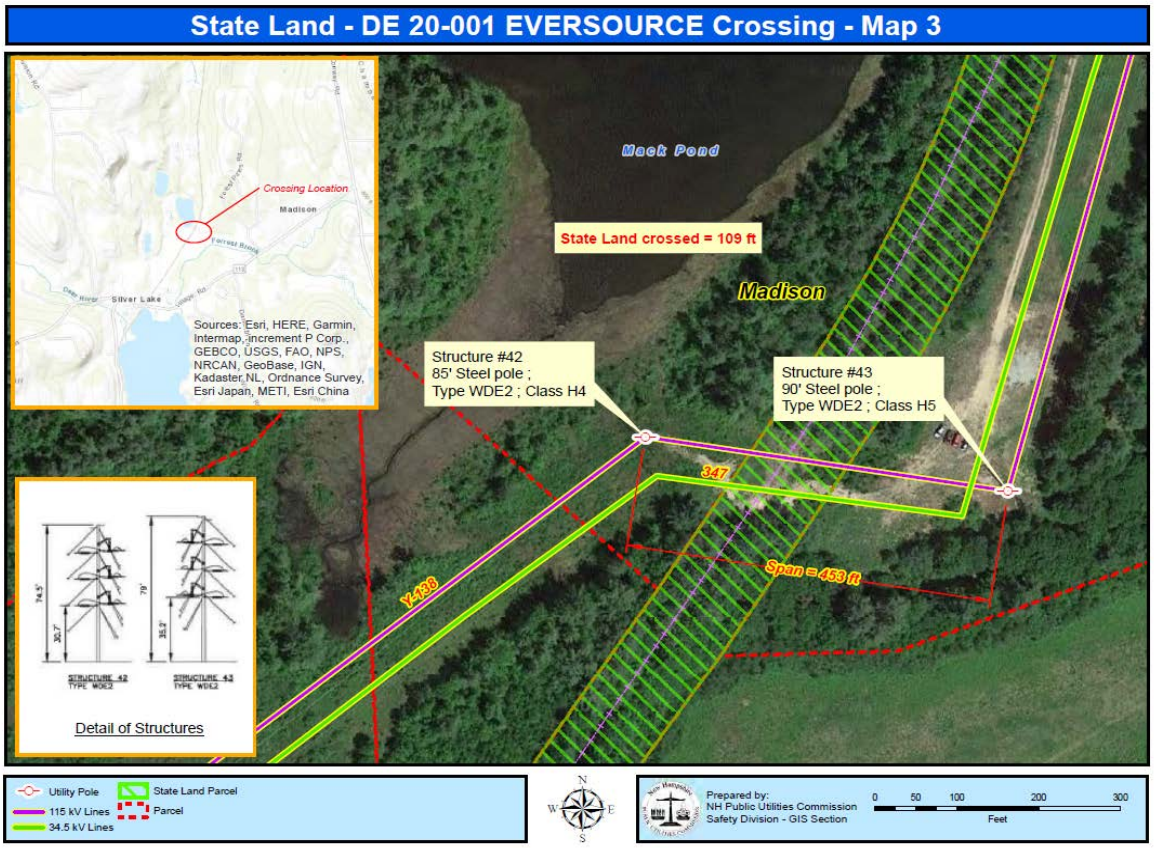

Figure 3: 115kV line, designated as the Y138 Transmission Line, is a span of approximately 453 feet between structures # 42 and # 43, with a span of approximately 109 ft. crossing State Land in the Town of Madison, NH. State owned land is shown above as green hash marks

Staff Attachment 4

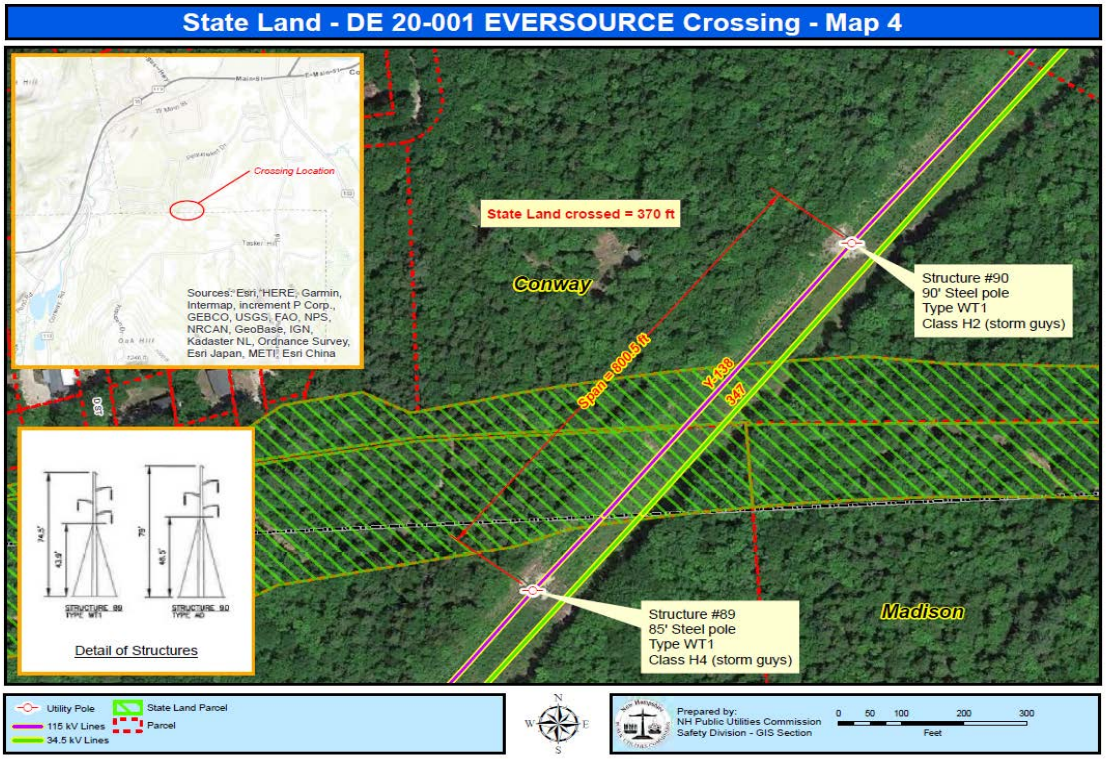

Figure 4: 115kV line, designated as the Y138 Transmission Line, is a span of approximately 800.5 feet between structures # 89 and # 90, with a span of approximately 370 ft. crossing State Land in the Town of Conway, NH. State owned land is shown above as green hash marks

Staff Attachment 5

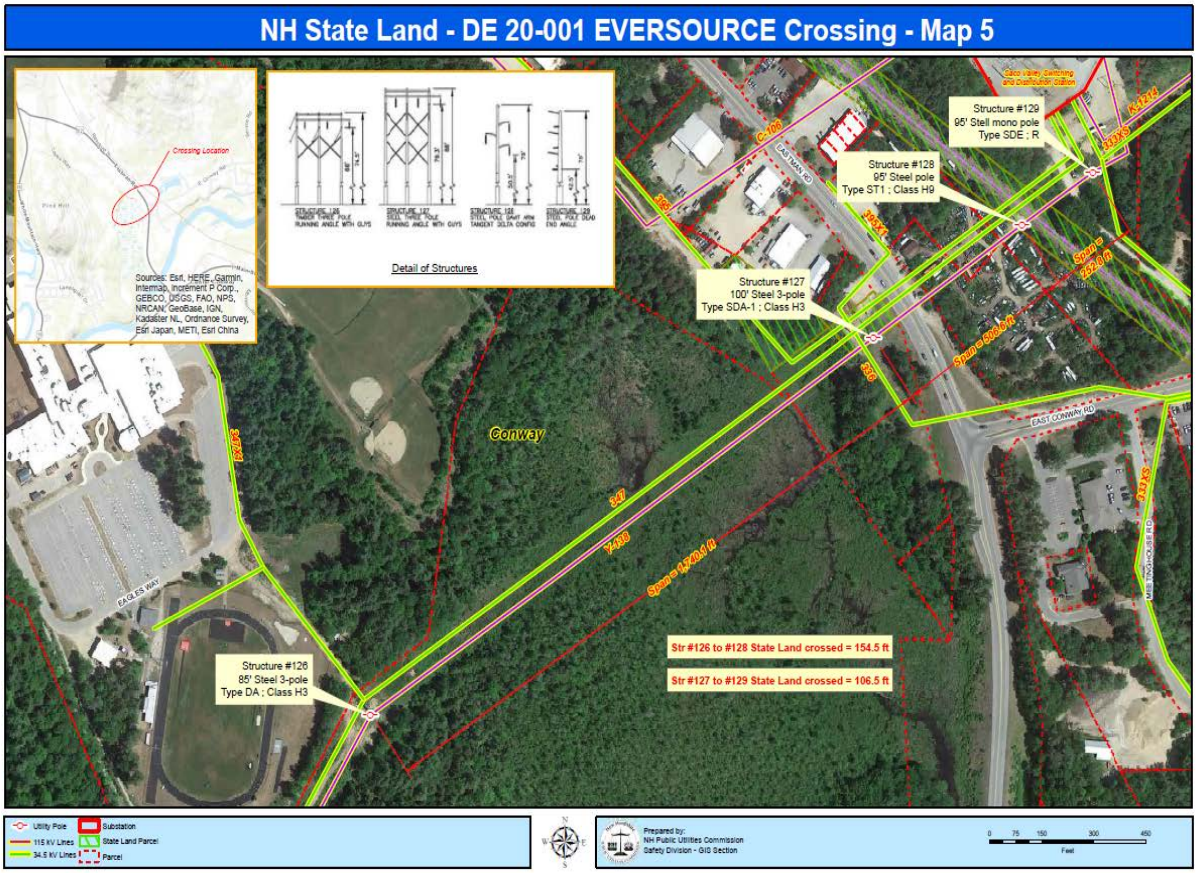

Figure 4: 115kV line, designated as the Y138 Transmission Line, is a span of approximately 2499.5 feet between structures # 126 and # 129, with a span of approximately 261 ft. crossing State Land in the Town of Conway, NH. State owned land is shown above as green hash marks

Staff Attachment 6

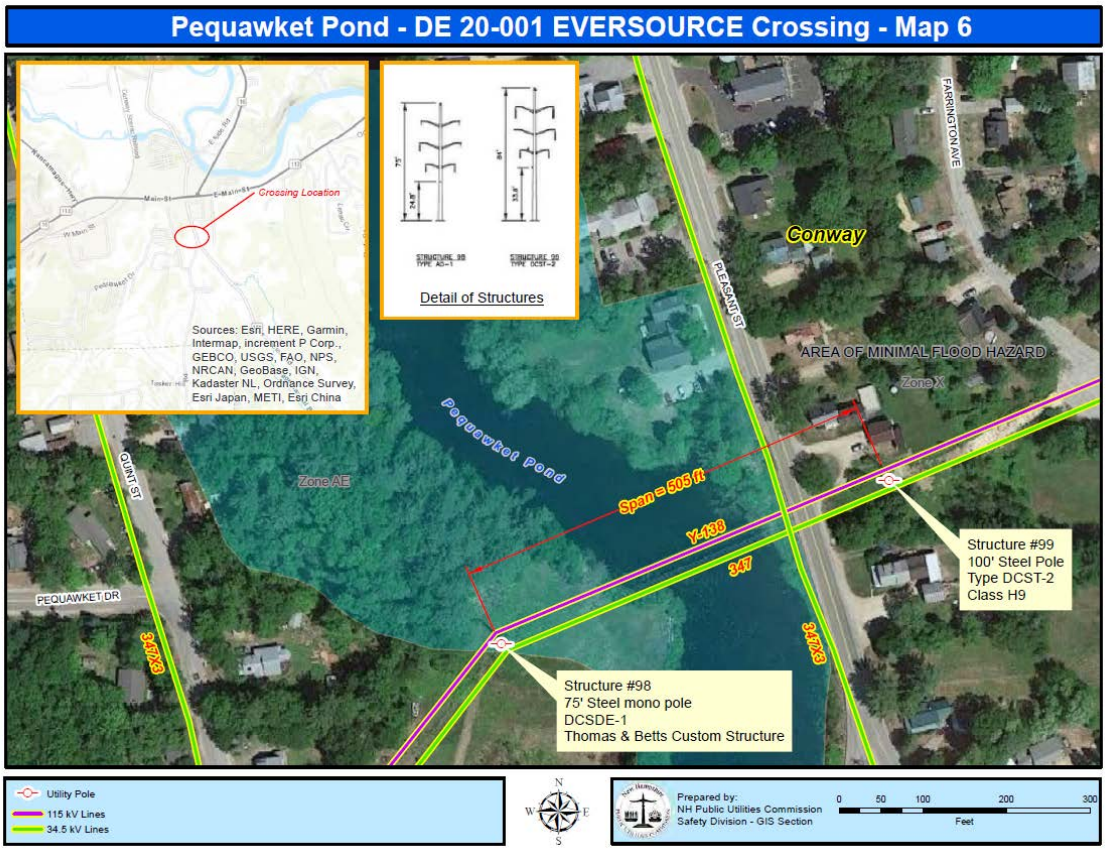

Figure 4: 115kV line, designated as the Y138 Transmission Line, is a span of approximately 505 feet between structures # 98 and # 99, with a span of approximately 172 ft. crossing the Pequawket Pond in the Town of Conway, NH. State owned land is shown above as green hash marks

Staff Attachment 7

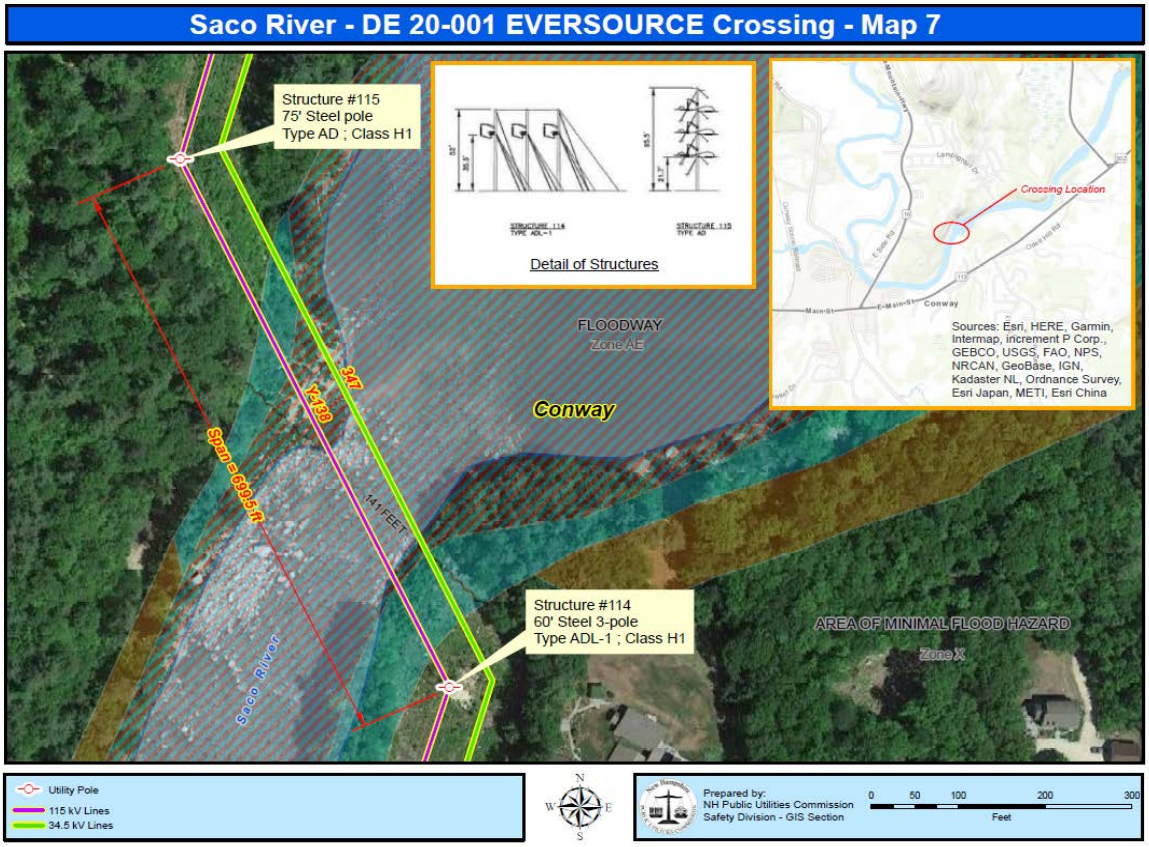

Figure 4: 115kV line, designated as the Y138 Transmission Line, is a span of approximately 699.6 feet between structures # 98 and # 99, with a span of approximately 202 ft. crossing the Saco River in the Town of Conway, NH. State owned land is shown above as green hash marks

Executive.Director@puc.nh.gov

amanda.noonan@puc.nh.gov

catherine.marsellos@puc.nh.gov

Erik.newman@eversource.com

lynn.fabrizio@puc.nh.gov

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