

STATE OF NEW HAMPSHIRE

Intra-Department Communication

DATE: December 2, 2021

AT (OFFICE): NH Dept. of Energy

FROM: Paul Kasper
Division of Enforcement

SUBJECT: CR2021-019 Eversource Energy
Petition for License and License Amendments to Construct and Maintain
Electric Lines Over and Across State Owned Land in Keene, Swanzey, and
Winchester, and Public Waters in Keene and Swanzey, New Hampshire
Division of Enforcement,

Safety Bureau Recommendation

TO: Jared Chicoine, Interim Commissioner, Department of Energy
Christopher Ellms, Jr., Deputy Commissioner, Department of Energy

CC: Thomas Frantz, Director of Regulatory Division
Richard Chagnon, Regulatory Division
Lynn Fabrizio, Division of Enforcement

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

- Petition contents, replacement petition contents, and history.
- Applicable State statute.
- Review of the existing crossing(s) previously licensed by the PUC, if any;
- 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 November 5, 2021, Public Service New Hampshire d/b/a Eversource Energy (Eversource, or the Company) filed a petition for a license pursuant to RSA 371:17 to construct and maintain the Eversource A152 Line, which is an existing 115kV transmission line that crosses State land in Keene, Swanzey and Winchester, and public waters in Keene and Swanzey.

On November 15, 2021 and December 1, 2021, Eversource filed replacement petitions as requested by Safety Bureau to account for clarification on prior licenses, amendments, and facility changes.

Segments of the A152 Line have been previously licensed to meet the requirements for reasonable service to the public, Eversource has previously constructed and currently operates and maintains an overhead 115kV electrical transmission line, designated as the Eversource A152 Line, over and across certain parcels of land owned by the State of New Hampshire and public waters, as shown in Exhibits 1 through 17. The A152 was originally constructed in 1968 and has undergone two previous structure replacement projects. First, in 2008, original wood structures 1 through 72 were replaced with laminated wood equivalents for which a crossing license was obtained for the waterbody crossings between Structures 2 to 3, 22 to 23, and 54 to 55, in DE 08-102, but not for any State-owned lands. Said license did not cover the waterbody crossing between Structures 47 to 48 likely due to the A152 line not being located over the Ashuelot River in 2008. However, as a result of erosion to the western bank, the line is now located over the Ashuelot River between Structures 47 and 48. A second structure replacement project in 2019 licensed in DE 19-157 replaced eleven wood 2 structures with steel at State owned land and public waters spans, including structure 75, which is part of a State-owned land span that is also the subject of this petition. Accordingly, this petition seeks both new and amended licenses for structure replacement maintenance work over both unlicensed and previously licensed locations

This proposed project is to replace wood structures 1 through 72 that were installed in 2008 with steel structures having the configuration detailed under Exhibits 2 through 15 and therefore will be fully licensed pursuant to this petition. Additionally, this petition seeks to license the addition of a new stub pole structure 72A to add support to existing ADSS wire between Structures 72 and 73, having the specifications depicted and stated on Exhibit 14. Additionally, this petition seeks to license planned replacement of original wood structures 204, 205, 206, 207, 208 and 209 over State Owned land as depicted on Exhibits 16 and 17, Additionally, this petition seeks to license after-the-fact the 2014 replacement of original wood Structure 73 with a wood equivalent as depicted on Exhibits 14 and 15, which existing wood structure will not otherwise be replaced or changed in the course of the current project. The adjacent Structure 74 is the original wood structure whose condition does not require replacement at this time.

Common to structures #2 thru #76, existing conductors consist of (3) ACSR 1590 kcmil 45/7 conductors. One existing 64 Fiber OPGW communications cable (Structures #1 through #67) and one existing shield wire 7#8 Alumoweld (Structures #2 through #11, and #27 through #48). Common to structures #204 thru #209, existing conductors consist of (3) ACSR 795 kcmil 36/1 conductors with (1) ADSS cable and (2) 7#8 Alumoweld shield wires.

The conductor cable clearance requirements were met using the National Electrical Safety Code (NESC) based on the design 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 16.1 feet clearance is required by the NESC Table 232-1 for spaces and ways subject to pedestrians or restricted traffic only. Only 20.1 feet is required by the NESC Table 232-1 for areas traversed by vehicles such as cultivated, grazing, forest and orchard lands, industrial sites, commercial sites. Only 20.1 feet is required for roads, streets and other areas subject to truck traffic. Only 30.1 feet is required for water areas suitable for sailboating with surface area over 20 to 200 acres. Only 18.6 feet clearance is required for water areas not suitable for sail boating.

Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the petition.

The scope of this project begins at Structure #2 in Keene south of the ES Emerald Sub-Station then proceeds south crossing Winchester Street. The A152 line then continues south traversing over the Rail Trail from Keene through Swanzey to the ES Westport Sub-station in Swanzey on Old Westport Road. The A152 Line then goes west and crosses over the southern portion of the Pisgah State Park in Winchester. The A152 crosses the Ashuelot River in Keene and Swanzey, and State-owned land in Keene, Swanzey and Winchester with this project ending at Structure #208.

The water crossing over the Ashuelot River in Keene spans 408.6 feet between Structures #2 and #3 with 119.8 feet spanning public waters. See Safety Map #1.

The land crossing in Keene spans 5,092.4 feet between Structures #7 and #21 with 4,771.2 feet spanning State owned land. See Safety Map #2.

The water crossing over the Ashuelot River in Swanzey spans 527.7 feet between Structures #22 and #23 with 297.9 feet spanning public waters. See Safety Map #2.

The land crossing in Swanzey spans 996.1 feet between Structures #27 and #73 with 225.3 feet spanning State owned land. See Safety Map #3.

The water crossing over the Ashuelot River in Swanzey spans 454.4 feet between Structures #47 and #48 with 99.4 feet spanning public waters. See Safety Map #4.

The water crossing over the Ashuelot River in Swanzey spans 396.9 feet between Structures #54 and #55 with 249.6 feet spanning public waters. See Safety Map #5.

The land crossing in Swanzey spans 260.5 feet between Structures #66 and #67 with 99.1 feet spanning State owned land. See Safety Map #6.

The land crossing in Swanzey spans 1,005.7 feet between Structures #71 and #76 with 691.5 feet spanning State owned land and 180.5 feet spanning ADSS State Owned Land See Safety Map #7.

The land crossing in Swanzey spans 1879.2 feet between Structures #204 and #208 with 1325.1 feet spanning State owned land. See Safety Map #8.

The following table provides the summary of this petition with all crossings to include structure numbers, types, spans, ES design criteria, and NESC compliance:

Dept. of Energy Safety Bureau Summary Table

Eversource A152 - DOE State Land and Waterbody Crossing Details						
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)
2	65.5' steel 2-pole, Type T, CLH1	2-3	408.6	18.6	46.4	Y
3	79.0' steel 2-pole, Type T, CLH1					
7	65.5' steel 2-pole, Type T, CLH1	7-8	177.9	28.1	38.8	Y
8	56.5' steel 3 pole, ADL-1, CLH1					
9	74.5' steel 2-pole, Type T, CLH1	8-9	375.9	28.1	41.3	Y
10	74.5' steel 2-pole, Type T, CLH1	9-10	306.7	28.1	58.3	Y
11	75.0' steel single pole, ST-1, CLH9	10-11	430.4	28.1	44.3	Y
12	70.0' steel single pole, ST-1, CLH9	11-12	362.5	28.1	34.5	Y
13	70.0' steel single pole, ST-1, CLH9	12-13	379.9	28.1	31.5	Y
14	70.0' steel single pole, ST-1, CLH9	13-14	382.2	28.1	36.5	Y
15	70.0' steel single pole, ST-1, CLH9	14-15	362.6	28.1	37.9	Y
16	70.0' steel single pole, ST-1, CLH9	15-16	429	28.1	34.4	Y
17	70.0' steel single pole, ST-1, CLH9	16-17	304.2	28.1	41	Y
18	70.0' steel single pole, ST-1, CLH9	17-18	390.5	28.1	36.7	Y
19	70.0' steel single pole, ST-1, CLH9	18-19	391.6	28.1	36.7	Y
20	70.0' steel single pole, ST-1, CLH9	19-20	432.4	28.1	34.4	Y
21	75.0' steel single pole, ST-1, CLH9	20-21	366.6	28.1	42.3	Y
22	75.0' steel single pole, ST-1, CLH9	22-23	527.7	18.6	24	Y
23	70.0' steel single pole, ST-2, CLH9					
27	75.0' steel single pole, ST-1, CLH9	27-29	586.9	28.1	31.8	Y
28	PERMANENTLY REMOVED					
29	65.5' steel 3 pole, ADL-1, CLH1	29-30	409.2	28.1	41.6	Y
30	70.0' steel 2-pole, Type T, CLH1					
47	65.5' steel 3 pole, ADS-2, CLH1	47-48	454.4	18.6	34	Y

48	66.0' steel single pole, ST-1, CLH9					
54	69.0' steel single pole, ST-1, CLH9	54-55	396.9	18.6	29.9	Y
55	69.0' steel single pole, ST-1, CLH9					
66	56.5' steel 3 pole, ADL-1, CLH1	66-67	260.5	28.1	29.4	Y
67	52.0' steel 3 pole, ADL-1, CLH1					
71	47.0' steel 2-pole, Type T, CLH1	71-72	161.3	28.1	54.2	Y
72	80.0' steel 2-pole, Type T, CLH1					
72A	25.0' wood ADSS Stub - Single Pole	72A-73	166.8	15.5	26.4	Y
73	56.5' steel 3-pole, Type DA, CL1					
74	47.5' wood 2-pole, Type A, CL3	73-74	181	15.5	30.5	Y
73	56.5' steel 3-pole, Type DA, CL1	72-73	221.7	28.1	44.9	Y
74	47.5' wood 2-pole, Type A, CL3	73-74	181	28.1	37.6	Y
75	56.5' steel 2-pole, Type TA, CLH3	74-75	262	28.1	31.6	Y
76	56.5' steel 2-pole, Type SRAX, CLH1	75-76	179.7	28.1	40.7	Y
204	68.7' steel 2-pole, Type T, CLH1	204-205	596.3	15.5	26.6	Y
205	65.0' steel 2-pole, Type T, CLH1					
206	56.5' steel 2-pole, Type T, CLH1	205-206	251.9	15.5	23.3	Y
207	55.8' steel 2-pole, Type T, CLH1	206-207	238.8	15.5	20.8	Y
208	77.2' steel 2-pole, Type T, CLH1	207-208	286.4	15.5	28.9	Y
209	56.0' steel 2-pole, Type T, CLH1	208-209	505.8	15.5	41.8	Y

2. New Hampshire statute referenced in petition (as modified by N.H. House Bill 2 on June 3, 2021)

371:17 Licenses for New Poles (2021, 91:260, eff. July 1, 2021)

3. Review of existing license(s) and permissions previously granted by the PUC for these locations of the State-owned land in Keene, Swanzey and Winchester, and public waters in Keene and Swanzey.

Segments of the A152 Line have been previously licensed as noted with several after-the-fact licenses

In Keene and Swanzey, the Ashuelot River, from the dam at Butterfield Pond in Washington to the confluence with the Connecticut River in Hinsdale “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>

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

The U.S. Army Corps of Engineers (ACOE) does not regulate the subject portions of the Ashuelot River as navigable waters, but the Ashuelot River is regulated by ACOE. ES asserts the scope of work is covered by the ACOE Self-Verification process.

4. Review of land ownership of proposed pole structures

In its petition, Eversource specifies that the previously replaced and unlicensed structures to be replaced pursuant to this petition cross State-owned land in Keene, Swanzey, and Winchester and public waters in Keene and Swanzey, New Hampshire.

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

The Safety Bureau reviewed the specifications related to the design and re-construction of this crossing project as described in the petition, attachments, and all supplemental support documents and corrections filed by the Company and found them to be in conformance with N.H. Admin. Rule Puc 306 and applicable sections of NESC C2-2012.

6. Review of public need and public impact

The A152 transmission line is an integral part of Eversource's existing electric transmission system in New Hampshire. The crossing locations identified in the petition are in Keene, Swanzey, and Winchester. The Company asserts in its petition that the existing crossings will be exercised without substantially affecting public rights in the identified State land located in Keene, Swanzey, and Winchester and public waters in Keene, and Swanzey.

The Safety Bureau verified that minimum safe line clearances above the land and public waters will be maintained at all times and determined that public use and enjoyment of the State-owned land and public waters will not be diminished in any material respect as a result of the proposed overhead line crossings.

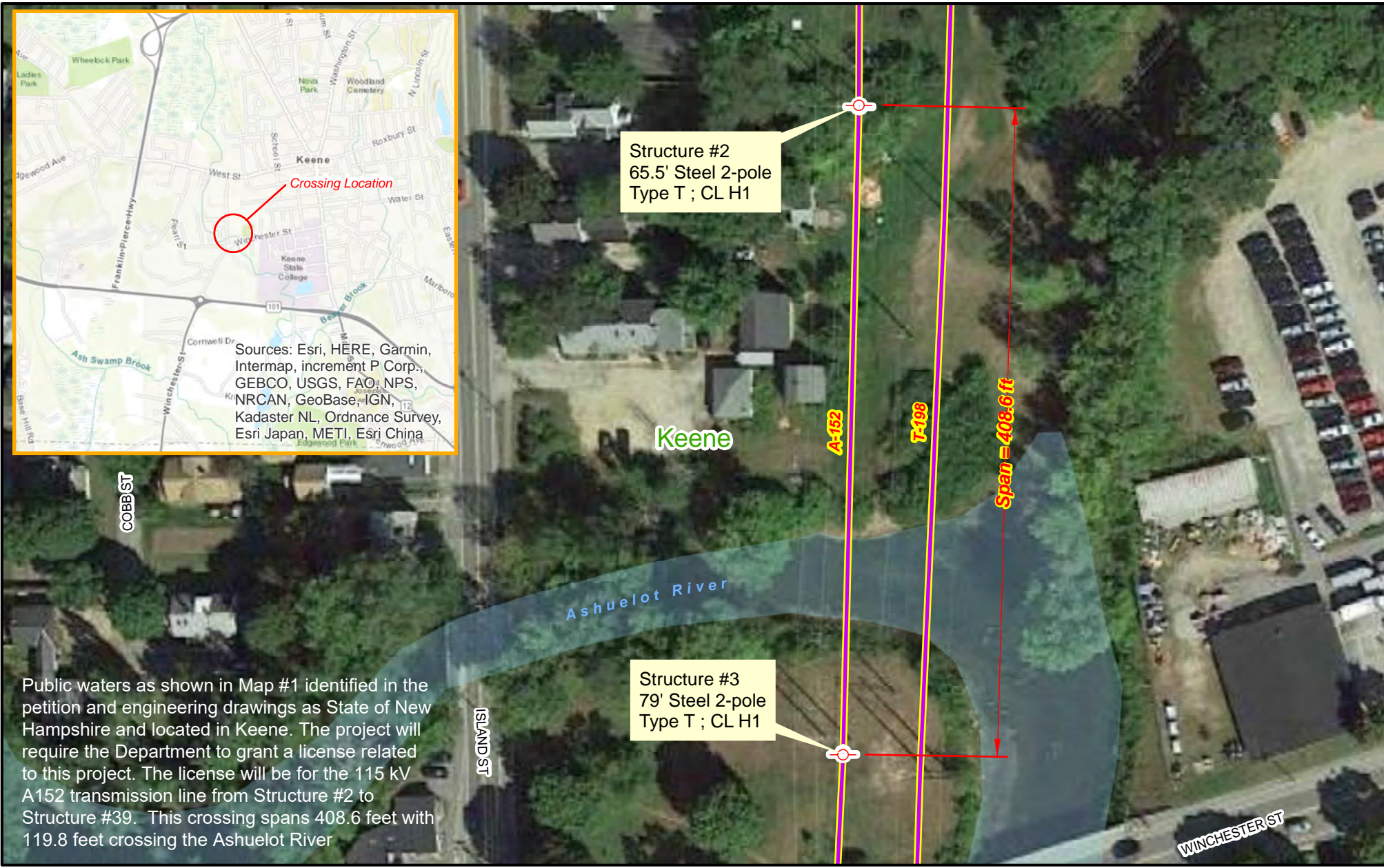
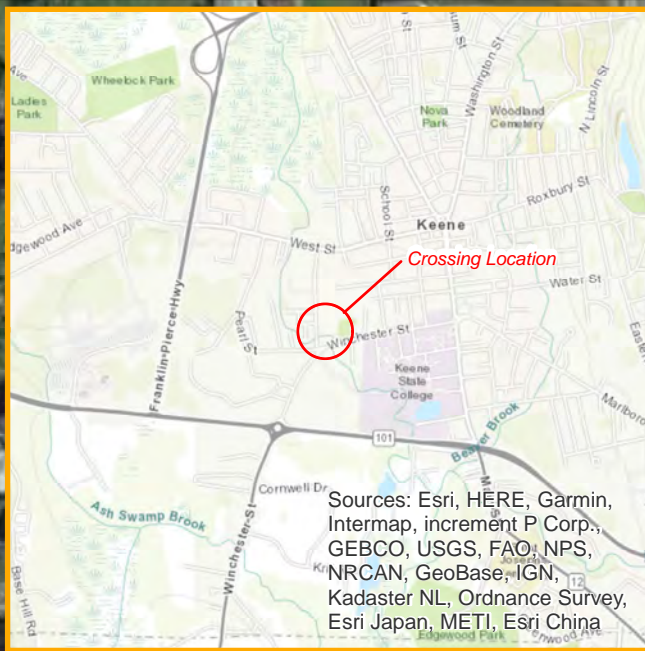
Safety Bureau Recommendation:

Based on the results of its review of the petition, attachments, and all other supporting documents, the Safety Bureau recommends that the Department:



- 1) Find that the license Eversource requests in this docket may be exercised without substantially affecting the public rights in State owned land and public waters; and
- 2) Grant Eversource a license to construct, install, operate, and maintain electric lines and communication cables pursuant to RSA 371:17 and Puc 306.01, over and across State owned land Keene, Swanzey, and Winchester and public waters in Keene, and Swanzey, New Hampshire as specified in the petition.

Attachments

Ashuelot River - CR 2021-019 Eversource Crossing - Map 1



Public waters as shown in Map #1 identified in the petition and engineering drawings as State of New Hampshire and located in Keene. The project will require the Department to grant a license related to this project. The license will be for the 115 kV A152 transmission line from Structure #2 to Structure #39. This crossing spans 408.6 feet with 119.8 feet crossing the Ashuelot River

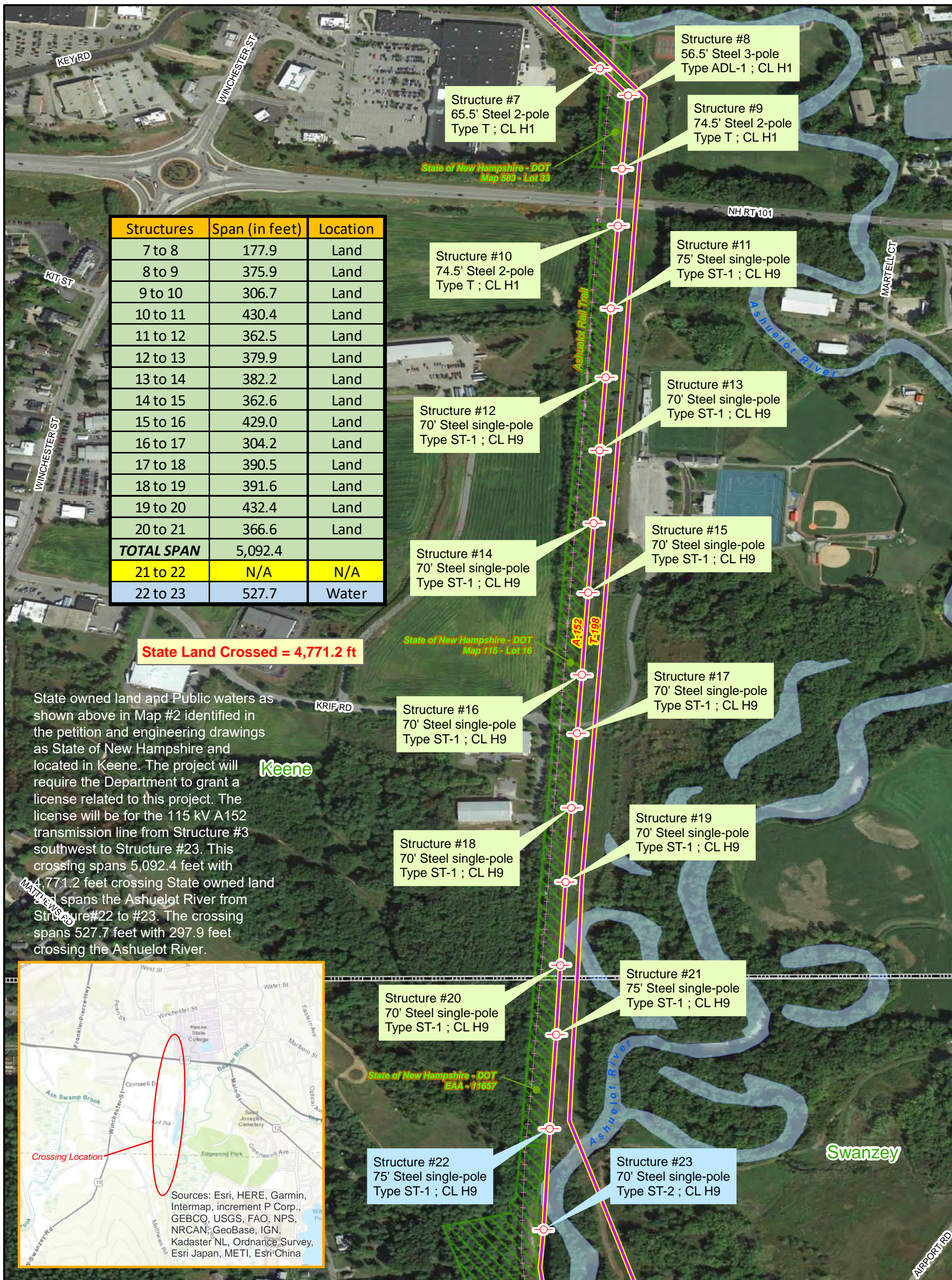
-  Utility Structure
-  115 kV Lines



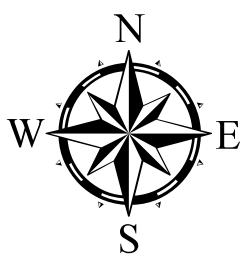
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Ashuelot River & NH State Land (NHDOT) CR 2021-019 Eversource Crossing - Map 2



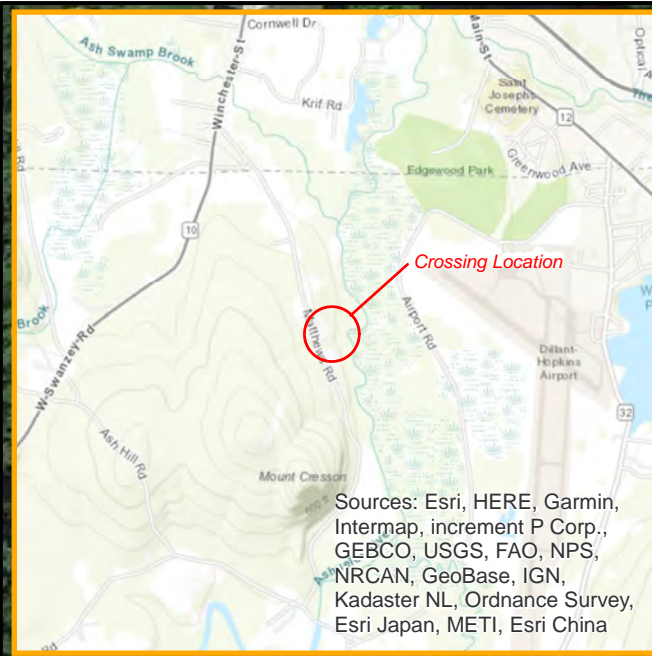
- Utility Structure
- 115 kV Lines
- State Land Parcel



0 250 500 1,000 1,500
Feet

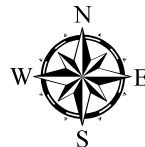
Prepared by:
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Safety Bureau

State Land (NHDOT) - CR 2021-019 Eversource Crossing - Map 3

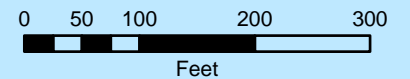


State owned land as shown above in Map #3 identified in the petition and engineering drawings as State of New Hampshire and located in Swanzey. The project will require the Department to grant a license related to this project. The license will be for the 115 kV A152 transmission line from Structure #27 to Structure #30. This crossing spans 996.1 feet with 475.9 feet crossing State owned land.

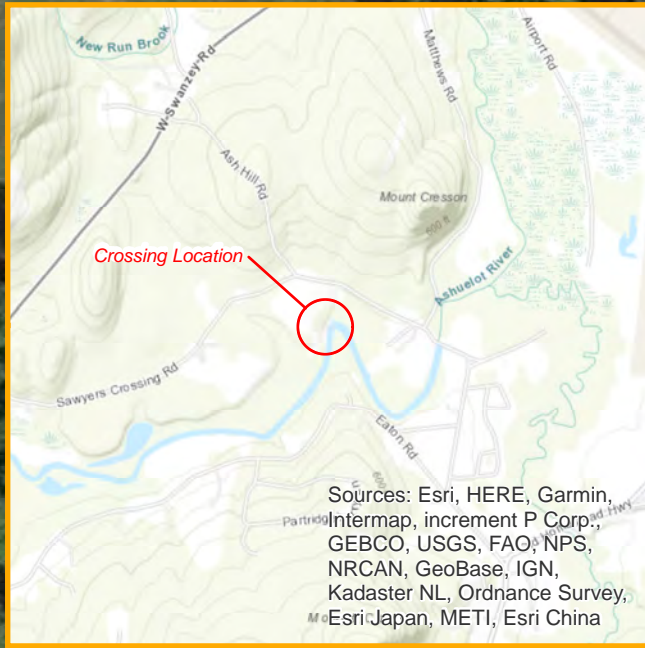
- Utility Structure
- 115 kV Lines
- State Land Parcel



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Ashuelot River - CR 2021-019 Eversource Crossing - Map 4



Swanzey

Public waters as shown above in Map #4 identified in the petition and engineering drawings as State of New Hampshire and located in Swanzey. The project will require the Department to grant a license related to this project. The license will be for the 115 kV A152 transmission line from Structure #47 to Structure #48. This crossing spans 454.4 feet with 99.4 feet crossing the Ashuelot River.

Structure #48
66' Steel single-pole
Type ST-1 ; CL H9

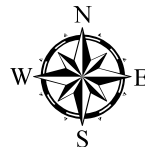
Structure #47
65.5' Steel 3-pole
Type ADS-2 ; CL H3

A-152

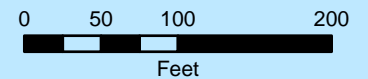
Span = 454.4 ft

Ashuelot River

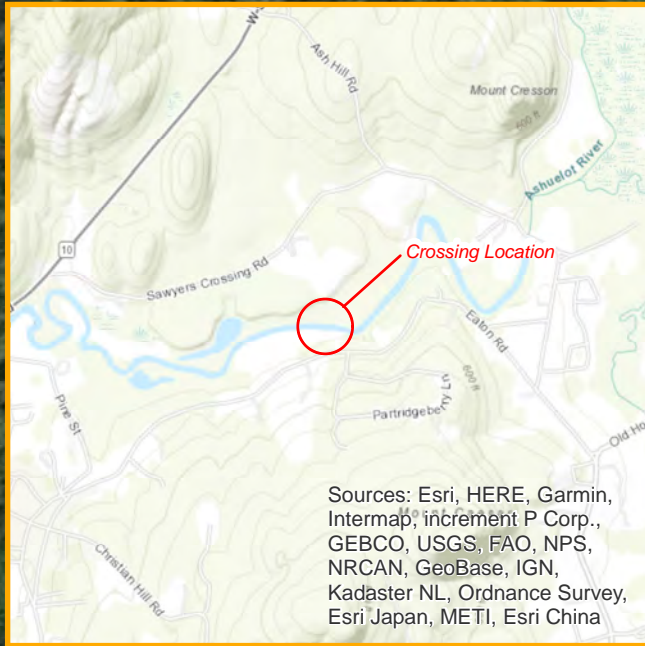
Utility Structure
 115 kV Lines



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Ashuelot River - CR 2021-019 Eversource Crossing - Map 5



Swanзей

Public waters as shown above in Map #5 identified in the petition and engineering drawings as State of New Hampshire and located in Swanзей. The project will require the Department to grant a license related to this project. The license will be for the 115 kV A152 transmission line from Structure #54 to Structure #55. This crossing spans 396.9 feet with 249.6 feet crossing the Ashuelot River

Structure #54
69' Steel single-pole
Type ST-1 ; CL H9

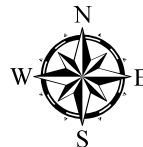
Structure #55
69' Steel single-pole
Type ST-1 ; CL H9

A-152

Span = 396.9 ft

Ashuelot River

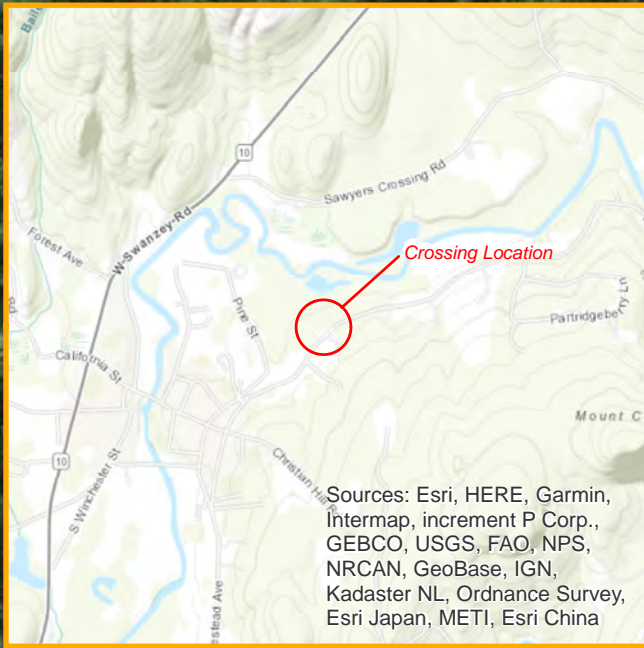
Utility Structure
115 kV Lines



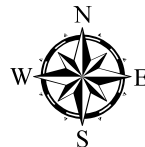
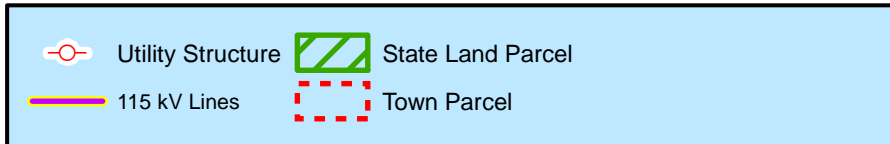
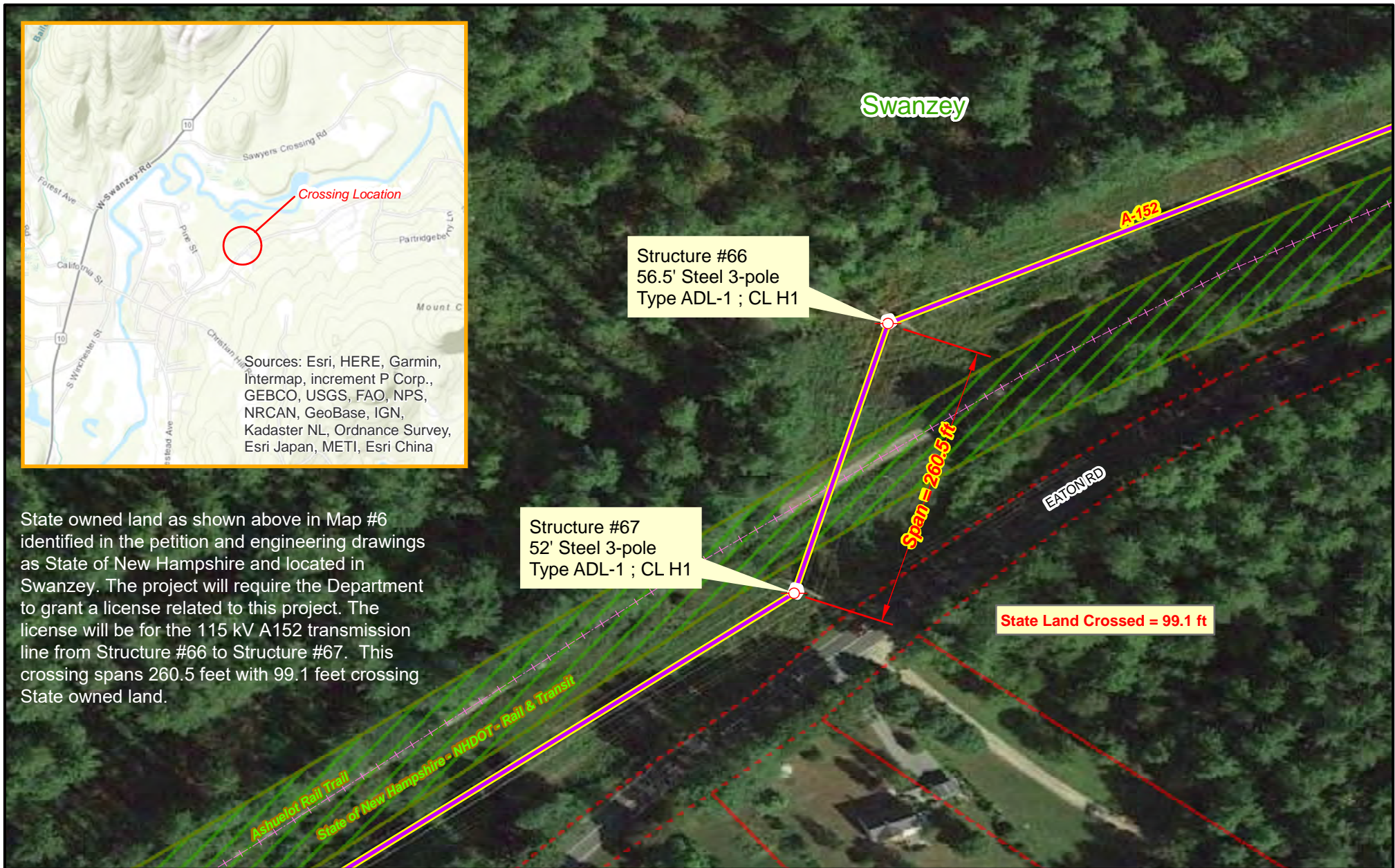
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Feet

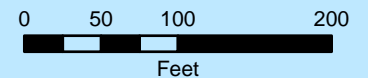
State Land (NHDOT) - CR 2021-019 Eversource Crossing - Map 6



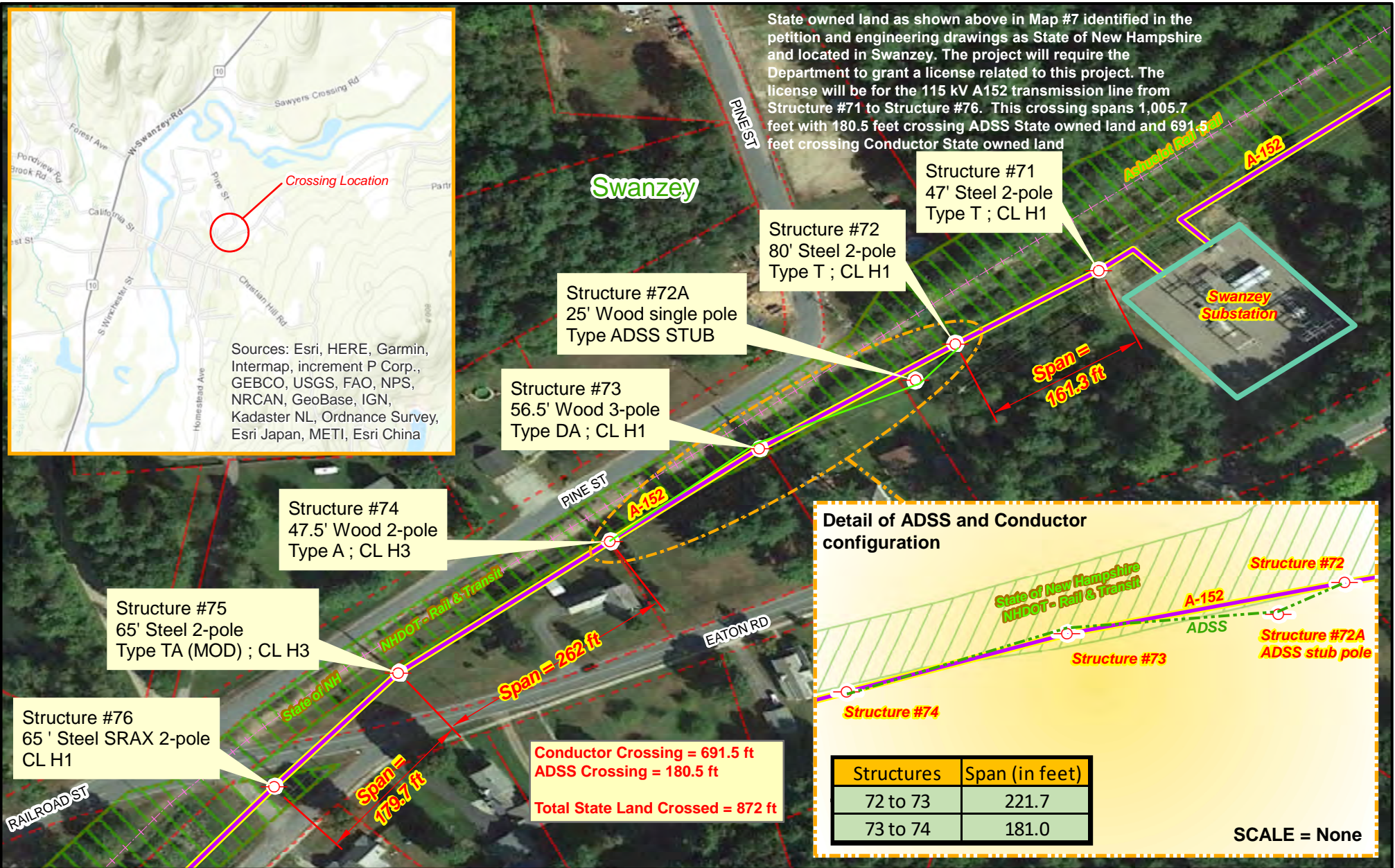
State owned land as shown above in Map #6 identified in the petition and engineering drawings as State of New Hampshire and located in Swanzey. The project will require the Department to grant a license related to this project. The license will be for the 115 kV A152 transmission line from Structure #66 to Structure #67. This crossing spans 260.5 feet with 99.1 feet crossing State owned land.



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State Land (NHDOT) - CR 2021-019 Eversource Crossing - Map 7



Utility Structure
 State Land Parcel
 115 kV Lines
 Town Parcel



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 Safety Bureau

0 50 100 200 300
 Feet

