

# STATE OF NEW HAMPSHIRE

## Intra-Department Communication

**DATE:** December 09, 2021

**AT (OFFICE):** NH Dept. of Energy

**FROM:** Paul Kasper, Division of Enforcement

**SUBJECT:** CR2021-023 Eversource Energy  
Petition for License and License Amendments to Construct and Maintain Electric Lines Over and Across State Owned Land in Troy, Marlborough, and Keene, and Public Waters in Troy, Marlborough, 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 24, 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 T198 Line, which is an existing 115kV transmission line that crosses State land in Troy, Marlborough, and Keene, and public waters in Troy, Marlborough, Keene and Swanzey.

On December 2, 2021, Eversource filed a replacement petition as requested by Safety Bureau to account for clarification on prior licenses, amendments, and facility changes.

Segments of the T198 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 T198 Line, over and across certain parcels of land owned by the State of New Hampshire and public waters, as shown in Exhibits 1 through 10. The T198 was originally constructed in 1962 and was previously licensed for structure replacements at Strs. 130 and 131 in DE 94-272 under Order 21,873. Also, in DE 08-112 under Order 24,904 several State owned land and water crossing spans<sup>1</sup> were licensed after-the-fact, which Order also licensed the installation of an ADSS communications wire underbuild. DE 08-112 omitted from the crossing spans that were licensed after-the-fact, two State owned land spans at Str 17-22 (See, Exhibit 2) and Str 27-29 (See, Exhibit 3) either because the land was not in State ownership at the time or due to oversight, but those spans will be licensed hereby.

The maintenance project which is the subject of this petition will replace original wood structures 17-22, 27-30, 71-72, 97-98, 99-100, 110-111, 130-131, 146-147, 150-151-152 with weathering steel, having the configurations and specifications depicted and noted in the Exhibits. The project will also replace an existing pole top shield wire with OPGW communications cable having the specifications noted on the Exhibits' Cable Schedules. Lastly, a second OPGW communications cable will be added to the structures opposite outer pole top having the same specifications. The structure replacements are being undertaken to address asset condition matters identified through Eversource's ongoing inspection program and to support the additional weight from the addition of a second OPGW communication wire to provide enhanced system reliability and emergency response functionality. The three existing conductors and one existing ADSS wire will be unchanged and transferred to the replacement structures.

Common to structures #17-22, 27-30, 71-72, 97-98, 99-100, 110-111, 130-131, 146-147, 150-151-152, existing conductors consist of (3) ACSR 477 kcmil 18/1 conductors. (2) Two existing 48 Fiber OPGW communications cable, and (1) one existing 24 ADSS cable.

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 and State-owned land spans and public waters crossing spans site location descriptions are as follows:

Exhibit 2 – The T198 Line crosses State owned land in the Town of Troy between structures 17 and 22. The crossing is located approximately 3,400 feet northwest from where the T198 line crosses Bigelow Hill Road, which is approximately 1,700 feet southwest from the intersection of Bigelow Hill Road and Forest Road in Troy. The crossing extends approximately 1,374 feet northwest where it ends approximately at the town line between Troy and Marlboro.

Exhibit 3- The T198 Line crosses State owned lands, including state owned rail trail (aka Cheshire Rail Trail), and the Ashuelot River between structures 27 and 30. The State land crossing is located approximately 850 feet west from where the T198 line crosses Troy Road in the Town of Marlborough, which is approximately 0.85 miles north from the intersection of Old Keene Road and Marlborough Road. The State land extends approximately 358 feet west where it ends at the 3-property boundary with Map 20, Lot 13. The line crosses a second State owned land tract approximately 1,200 feet west from where the T198 line crosses Troy Road. The crossing extends approximately 310 feet west and ends at the eastern edge of NH State Route 12 where the line crosses NH State Route 12, which is approximately 1,040 feet north from the intersection of Old Keene Road and NH State Route 12. The T198 line crosses the Ashuelot River between the two State owned lands described above and starts approximately 1,120 feet west of where the line crosses Troy Road. The public waterbody crossing extends approximately 50' west, where it ends approximately 950 feet east of where the line crosses NH State Route 12.

Exhibit 4 – The T198 line crosses the South Branch Ashuelot River between Structures 71 and 72 in the Town of Swanzey. The public water body crossing starts approximately 250 feet east of where the line crosses Flat Roof Mill Rd in Swanzey, which is approximately 680 feet southwest from the intersection of Flat Roof Mill Road and Woodland Heights. The crossing extends approximately 61 feet west, where it ends approximately 175 feet east from where the line crosses Flat Roof Mill Road.

Exhibit 5 – The T198 line crosses the South Branch Ashuelot River between Structures 97 and 98, and Structures 99 and 100 in the Town of Swanzey. The public waterbody crossing between Structure 97 and 98 starts approximately 350 feet east of where the line crosses Old Homestead Highway (aka NH State Route 32) in Swanzey, which is approximately 1,350 feet west from the intersection of Old Homestead Highway and Sawyers Crossing Road. The crossing extends approximately 343 feet west, where it ends at approximately where the line crosses Old Homestead Highway. The public waterbody crossing between structures 99 and 100 starts approximately 315 feet north of where the line crossings Old Homestead Highway. The crossing extends approximately 61' where it ends approximately 366 feet north of where the line crossings Old Homestead Highway.

Exhibit 6 - The T198 line crosses the South Branch Ashuelot River between Structures 103 and 104, and Structures 105 and 106 in the Town of Swanzey. The public waterbody crossing between Structure 103 and 104 starts approximately 2,150 feet north of where the line crosses Old Homestead Highway (aka NH State Route 32) in Swanzey, which is approximately 1,350 feet west from the intersection of Old Homestead Highway and Sawyers Crossing Road. The crossing extends approximately 33 feet north to the opposite side. The public waterbody crossing between structures 104 and 105 starts approximately 2,800 feet north of where the line crossings Old Homestead Highway. The crossing extends approximately 185 feet north.

Exhibit 7 – The T198 line crosses the South Branch Ashuelot River between Structures 110 and 111 in the Town of Swanzey. The public waterbody crossing starts approximately 2,400 feet south of where the line crosses the end of Krif Road and the entrance to Keene State Owl Athletic 4 Complex in Swanzey, which is approximately 980 feet west from the intersection of Krif Road and Corwell Drive. The crossing extends approximately 66 feet north.

Exhibit 8 – The T198 line crosses the South Branch Ashuelot River between Structures 130 and 131 in the Town of Swanzey. The public waterbody crossing starts approximately 400 feet north of where the line crosses the end of Causeway Road in Swanzey, which is approximately 2,200 feet southwest from the intersection of Causeway Road and Sawyers Crossing Road. The crossing extends approximately 89 feet north.

Exhibit 9 – The T198 Line crosses the State-owned land (encompassing the Ashuelot Rail Trail) between structures 146 and 147. The crossing is located approximately 300 feet southeast from the southeast end of the designated Ashuelot Rail Trail Parking Lot, which is the parking area just north of the Walmart located off Winchester Street in Keene.

Exhibit 10 – The T198 line crosses the Ashuelot River between Structures 150 and 151 and again between 151 and 152 in the City of Keene. The public waterbody crossing between Structure 150 and 151 is located immediately south of where the line crosses Winchester Street, which is located approximately 150 feet west from the intersection of Pearl Street and Winchester Street. The line crosses over the western edge of the river at this location. The T198 crosses the Ashuelot River again between Structure 151 and 152 is located approximately 175 feet immediately north of where the line crosses Winchester Street. That crossing extends approximately 94 feet north.

The land crossing in Troy spans 2,032.02 feet between Structures #17 and #22 with 1,379.1 feet spanning State owned land. See Safety Map #1.

The land crossing in Marlborough spans 1,943.1 feet between Structures #27 and #30 with 692.9 feet spanning the South Branch Ashuelot River in Marlborough. See Safety Map #1.

The water crossing over the South Branch Ashuelot River in Marlborough spans 949.9 feet between Structures #29 and #30 with 50 feet spanning public waters. See Safety Map #1.

The water crossing over the South Branch Ashuelot River in Swanzey spans 429.4 feet between Structures #71 and #72 with 61.3 feet spanning public waters. See Safety Map #2.

The water crossing over the South Branch Ashuelot River in Swanzey spans 572.3 feet between Structures #97 and #98 with 343.2 feet spanning public waters. See Safety Map #3.

The water crossing over the South Branch Ashuelot River in Swanzey spans 389 feet between Structures #99 and #100 with 61.5 feet spanning public waters. See Safety Map #3.

The water crossing over the South Branch Ashuelot River in Swanzey spans 357.5 feet between Structures #103 and #104 with 33.5 feet spanning public waters. See Safety Map #4.

The water crossing over the South Branch Ashuelot River in Swanzey spans 407.2 feet between Structures #105 and #106 with 130.5 feet spanning public waters. See Safety Map #4.

The water crossing over the South Branch Ashuelot River in Swanzey spans 466.6 feet between Structures #110 and #111 with 66.9 feet spanning public waters. See Safety Map #4.

The water crossing over the South Branch Ashuelot River in Swanzey spans 466.6 feet between Structures #130 and #131 with 89.1 feet spanning public waters. See Safety Map #5.

The land crossing in Keene spans 329.03 feet between Structures #146 and #147 with 150.3 feet spanning State owned land. See Safety Map #6.

The water crossing over the South Branch Ashuelot River in Keene spans 400.6 feet between Structures #150 and #151 with 82.5 feet spanning public waters. See Safety Map #7.

The water crossing over the South Branch Ashuelot River in Swanzey spans 340.4 feet between Structures #151 and #152 with 94.3 feet spanning public waters. See Safety Map #7.

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 T198 - 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)
17	61.0' steel 2-pole, Type T, CLH1	17-18	332.34	15.5	20.3	Y
18	52.0' steel 2-pole, Type T, CLH1					
19	52.0' steel 2-pole, Type T, CLH1	18-19	499.12	15.5	23.2	Y
20	56.5' steel 2-pole, Type T, CLH1	19-20	357.63	15.5	23.2	Y
21	56.5' steel 2-pole, Type T, CLH1	20-21	326.65	15.5	24.7	Y
22	61.0' steel 2-pole, Type T, CLH1	21-22	516.28	15.5	35.9	Y
27	56.5' steel 2-pole, Type T, CLH1	27-28	448	15.5	37.1	Y
28	70.0' steel 2-pole, Type T, CLH1					
29	56.5' steel 3-pole, ADS-1, CLH1	28-29	521.6	20.1	37.5	Y
30	56.5' steel 3-pole, ADS-1, CLH1	29-30	949.9	28.1	73.7	Y
				18.6	89.8	Y
71	74.5' steel 2-pole, Type T, CLH1	71-72	429.4	14	49.1	Y
72	65.5' steel 2-pole, Type T, CLH1					
97	65.5' steel 2-pole, Type T, CLH1	97-98	572.3	18.6	23.9	Y
98	74.5' steel 2-pole, Type T, CLH1					
99	70.0' steel 3-pole, ADL-1, CLH1	99-100	389	14	26.5	Y
100	61.0' steel 2-pole, Type T, CLH1					
103	43.6' wood 2-pole, Type A, CL3	103-104	357.5	14	36.3	Y
104	53.1' wood 2-pole, Type A, CL3					
105	47.3' wood 2-pole, Type A, CL3	105-106	407.2	18.6	19.8	Y
106	43.2' wood 2-pole, Type A, CL3					
110	65.5' steel 3-pole, Type P, CLH1	110-111	466.6	18.6	19.4	Y
111	61.0' steel 2-pole, Type T, CLH1					
130	56.5' steel 2-pole, Type T, CLH1	130-131	368.7	18.6	22.3	Y
131	56.5' steel 3-pole, Type BP, CLH1					
146	61.0' steel 3-pole, ADL-1, CLH1	146-147	329	23.5	29.6	Y
147	65.5' steel 2-pole, Type T, CLH1					
150	70.0' steel 3-pole, Type P, CLH1	150-151	400.4	18.6	39.6	Y
151	74.5' steel 2-pole, Type T, CLH1					
152	65.4' steel 2-pole, Type T, CLH1	151-152	340.4	18.6	40.4	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 Troy, Marlborough, Keene and Swanzey, and public waters in Troy, Marlborough, Keene and Swanzey.**

Segments of the T198 Line have been previously licensed as noted with several after-the-fact licenses

In Troy, Marlborough, Swanzey, and Keene, the South Branch Ashuelot River, Juncture of Quarry Brook in Troy, 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 South Branch 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 Troy, Marlborough, and Keene, and public waters in Troy, Marlborough, and Keene, 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 T198 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 Troy, Marlborough, Keene, and Swanzey. 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 Troy, Marlborough, and Keene, and public waters in Troy, Marlborough, 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 Troy, Marlborough, and Keene, and public waters in Troy, Marlborough, Keene, and Swanzey, New Hampshire as specified in the petition.

Attachments

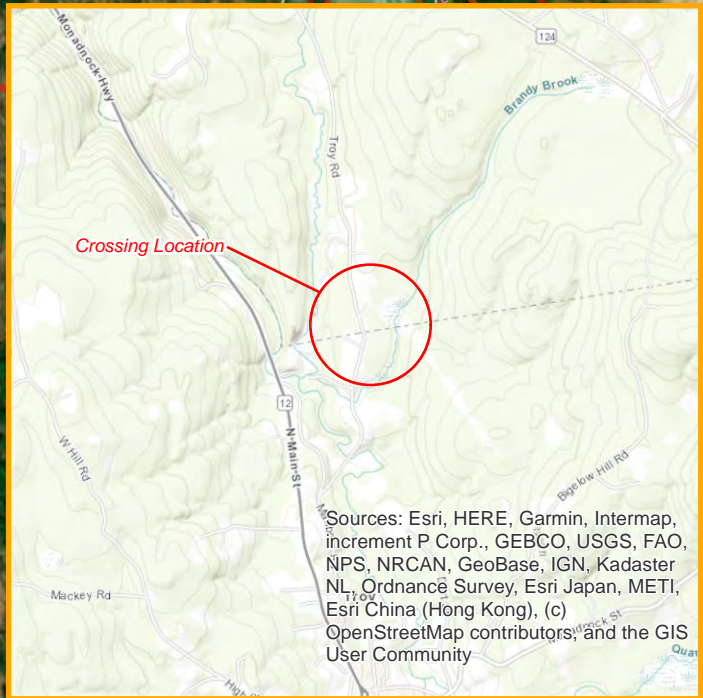


# State Land (NHDOT) & South Branch Ashuelot River - CR 2021-23 Eversource Crossing - Map 1

This map contains information about the flood hazards within the flood risk project area. These zones are used by FEMA to designate the SFHA and for insurance rating purposes. These data sets are the regulatory flood zones designated by FEMA.



State owned land and Public waters as shown above in Map #1 identified in the petition and engineering drawings as State of New Hampshire land located in Troy and Marlborough. The project will require the Department to grant a license related to this project. The license will be for the 115 kV T198 transmission line from Structure #17 to Structure #22. This crossing spans 2,032.02 feet with 1,379.1 feet crossing state owned land, another license will be for the 115 kV T198 transmission line from Structure #27 to Structure #30 this crossing spans 1,943.1 feet with 692.9 spanning state owned land and 50 feet spanning the South Branch Ashuelot River in Marlborough

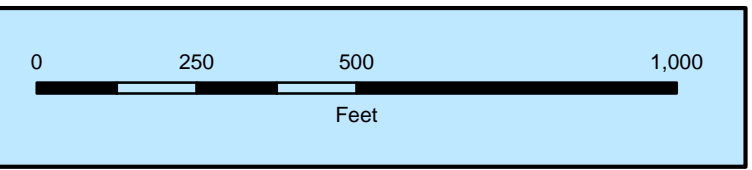


Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Utility Pole/Structure	Town Parcels	100-year Flood Zone
115 kV Line	State Land Parcel	

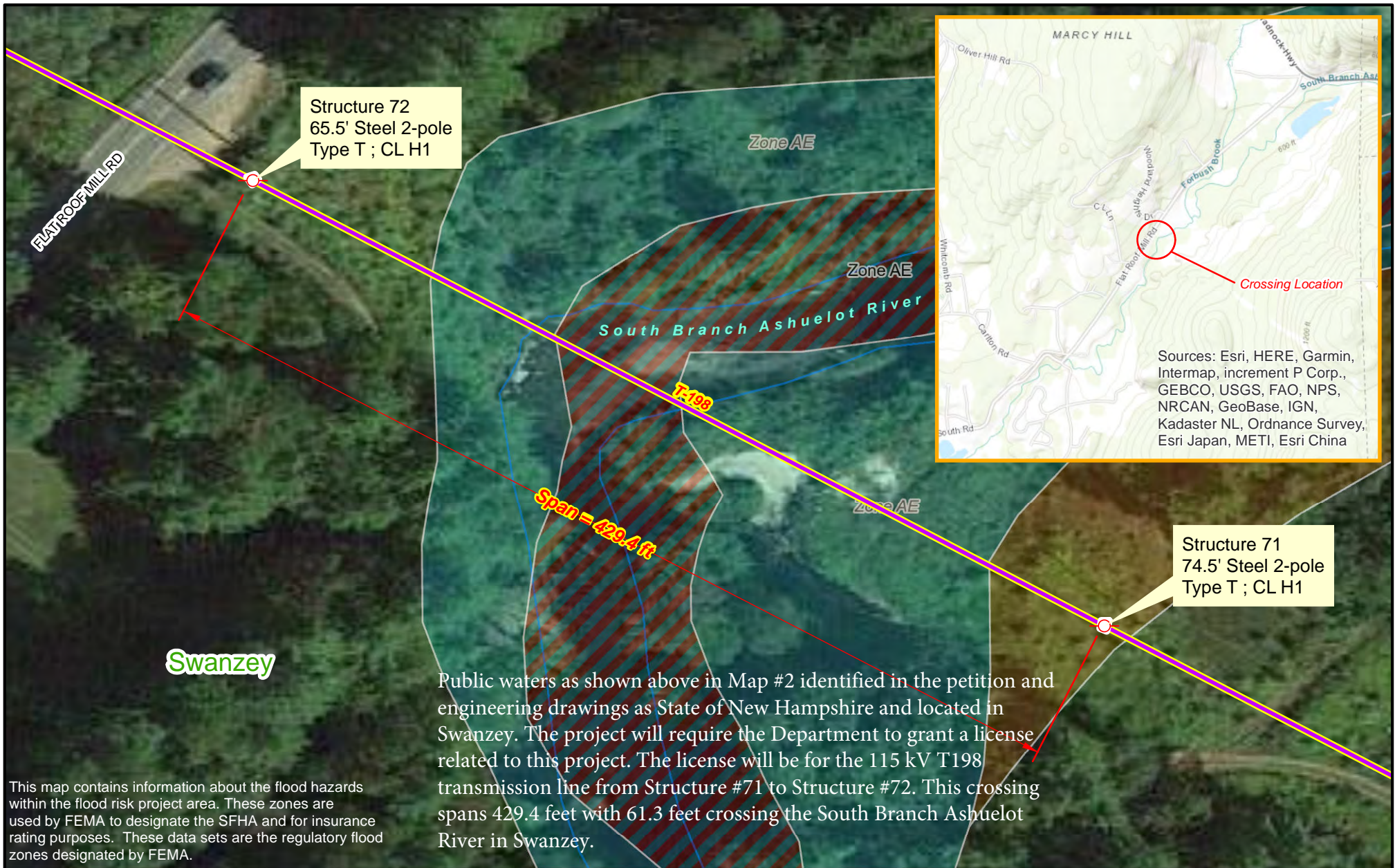


Prepared by:  
 NH Department of Energy  
 Enforcement Division - Safety Bureau





# South Branch Ashuelot River - CR 2021-023 Eversource Crossing - Map 2



This map contains information about the flood hazards within the flood risk project area. These zones are used by FEMA to designate the SFHA and for insurance rating purposes. These data sets are the regulatory flood zones designated by FEMA.

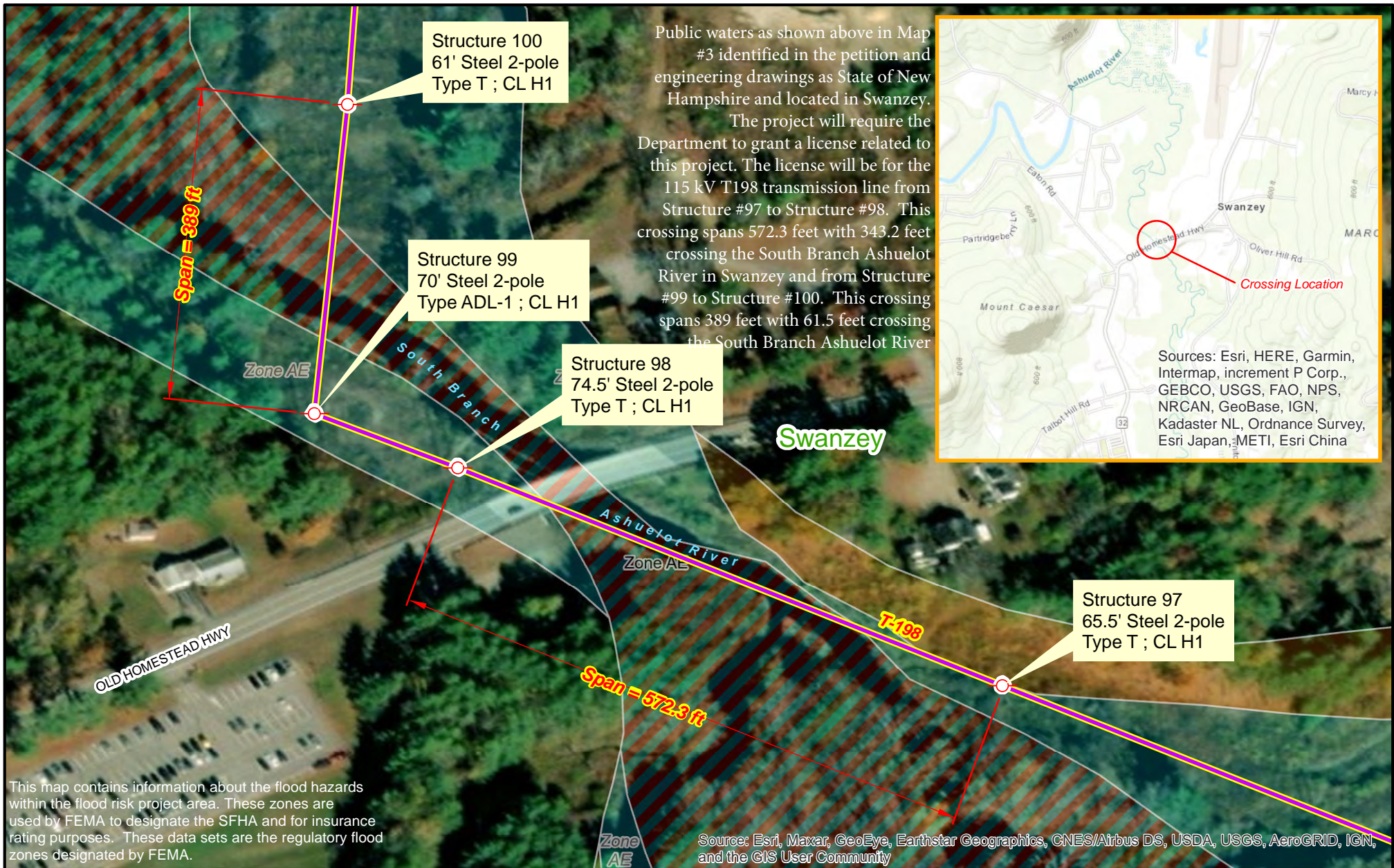
	Utility Structure		100-year Flood Zone
	115 kV Line		Floodway



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# South Branch Ashuelot River - CR 2021-023 Eversource Crossing - Map 3



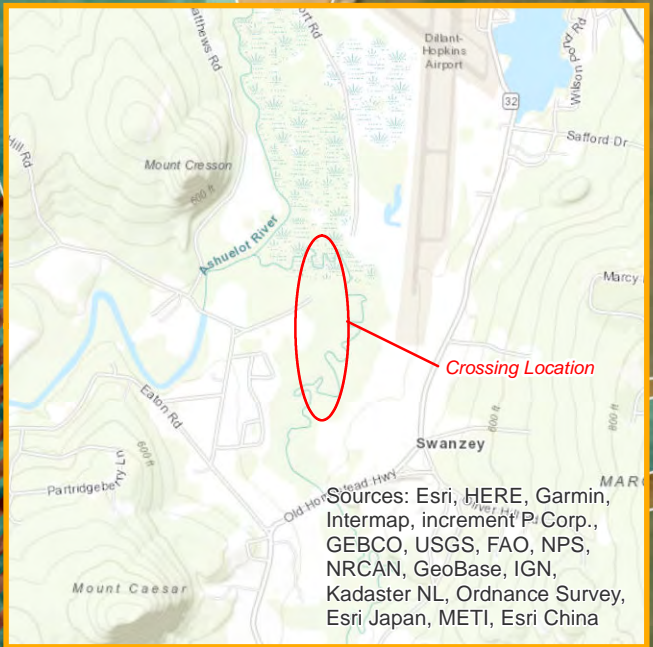
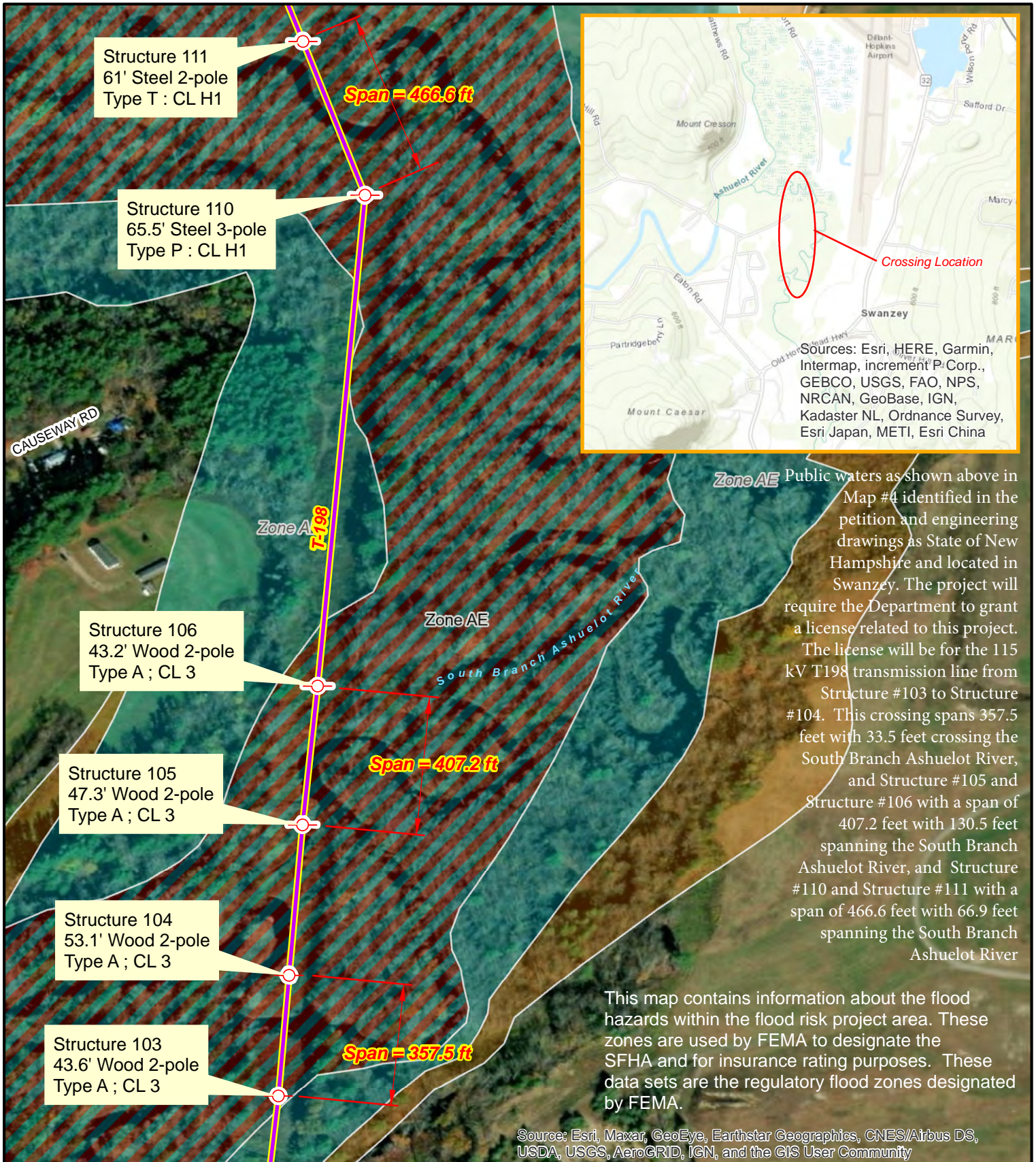
	Utility Structure		100-year Flood Zone
	115 kV Line		Floodway



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# South Branch Ashuelot River - CR 2021-023 Eversource Crossing - Map 4



- Utility Structure
- 100-year Flood Zone
- 115 kV Line
- Floodway

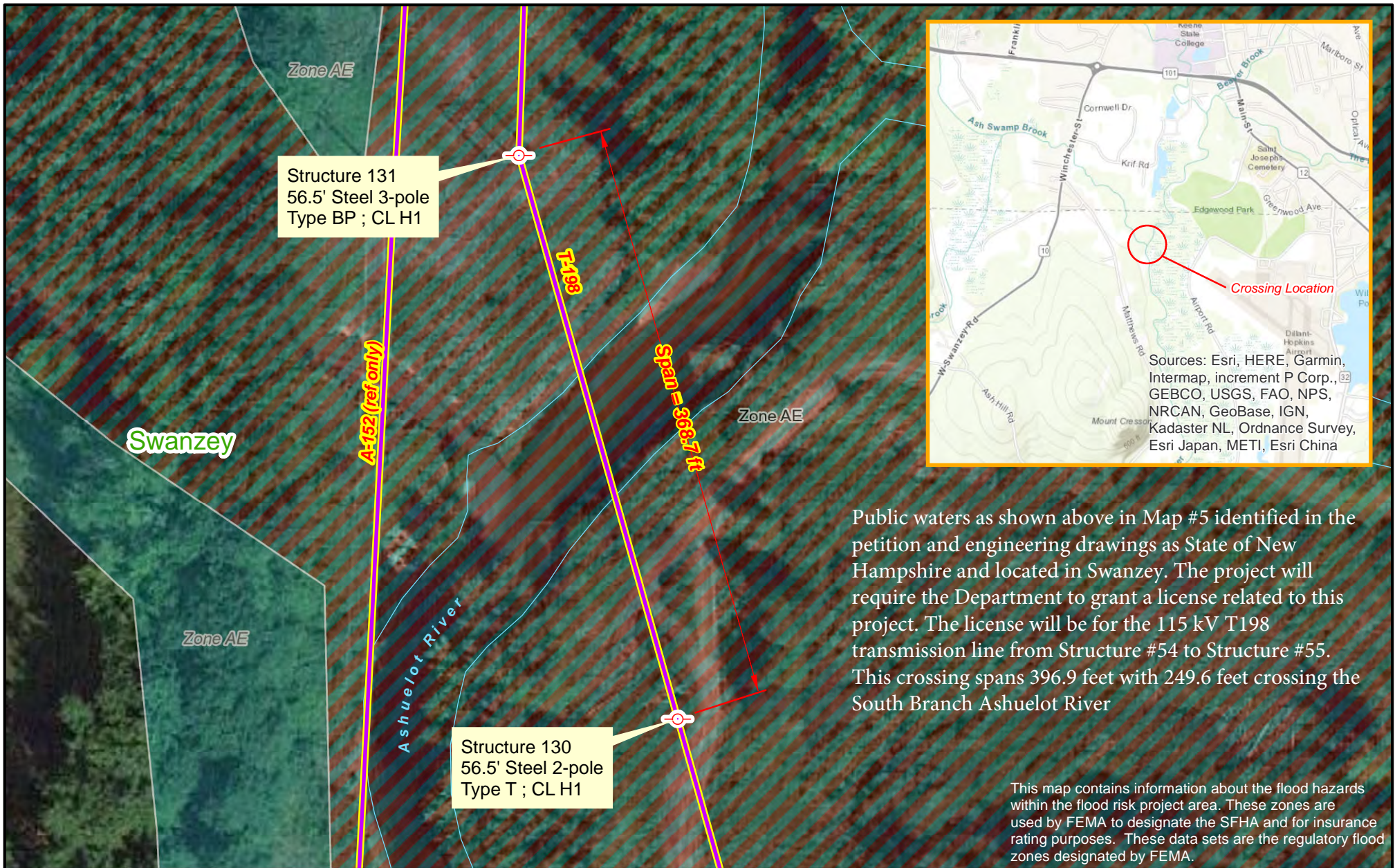


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0 100 200 400 600 800  
Feet



# Ashuelot River - CR 2021-023 Eversource Crossing - Map 5



Structure 131  
56.5' Steel 3-pole  
Type BP ; CL H1

Structure 130  
56.5' Steel 2-pole  
Type T ; CL H1

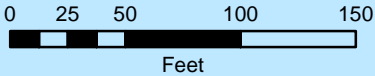
Public waters as shown above in Map #5 identified in the petition and engineering drawings as State of New Hampshire and located in Swanzey. The project will require the Department to grant a license related to this project. The license will be for the 115 kV T198 transmission line from Structure #54 to Structure #55. This crossing spans 396.9 feet with 249.6 feet crossing the South Branch Ashuelot River

This map contains information about the flood hazards within the flood risk project area. These zones are used by FEMA to designate the SFHA and for insurance rating purposes. These data sets are the regulatory flood zones designated by FEMA.

 Utility Structure	 100-year Flood Zone
 115 kV Lines	 Floodway

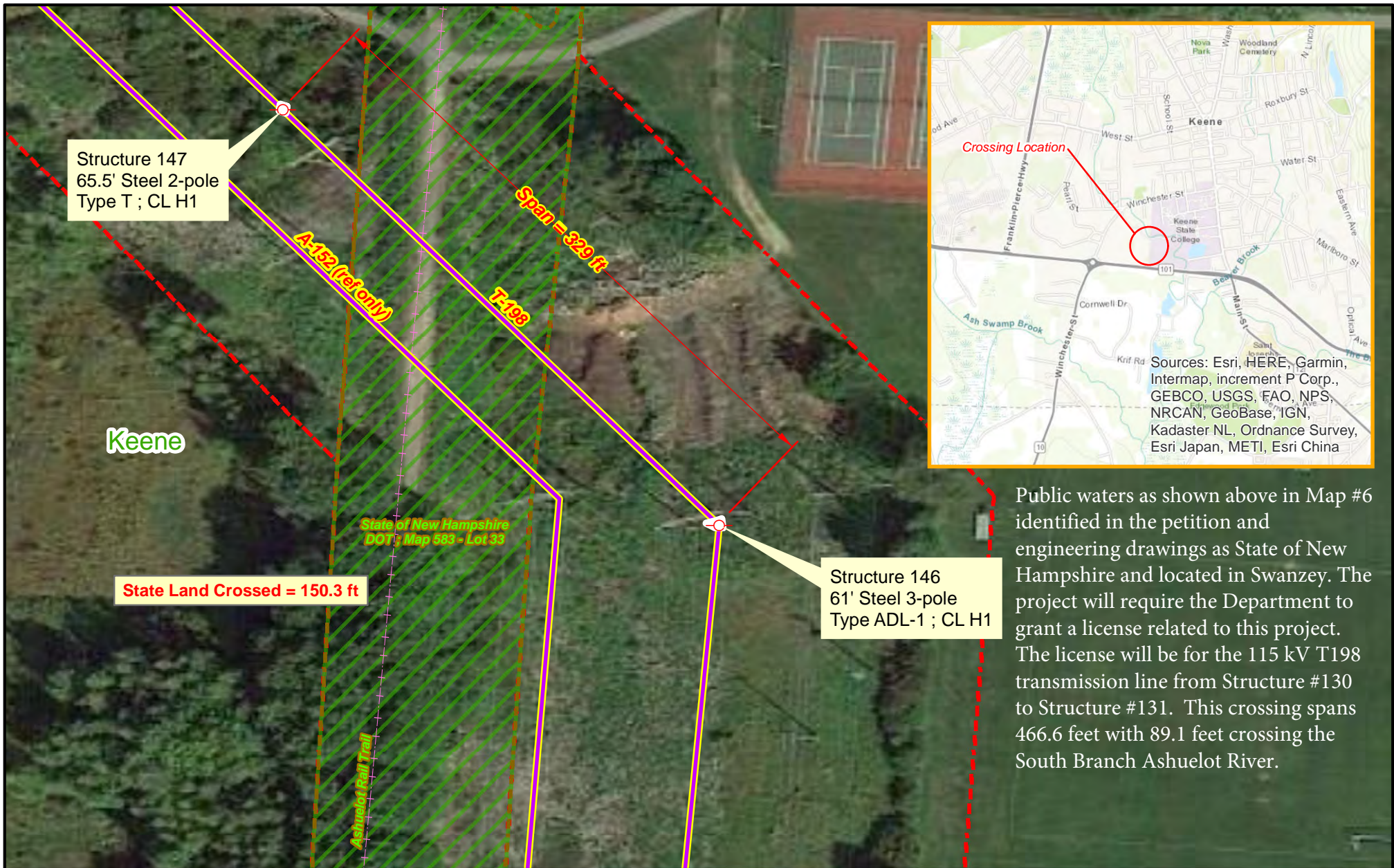


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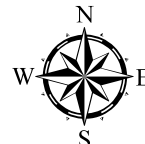


# NH State Land (NHDOT) - CR 2021-023 Eversource Crossing - Map 6

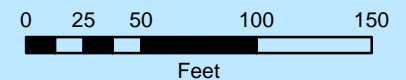


Public waters as shown above in Map #6 identified in the petition and engineering drawings as State of New Hampshire and located in Swanzey. The project will require the Department to grant a license related to this project. The license will be for the 115 kV T198 transmission line from Structure #130 to Structure #131. This crossing spans 466.6 feet with 89.1 feet crossing the South Branch Ashuelot River.

	Utility Structure		State Land Parcel
	115 kV Lines		Town Parcel

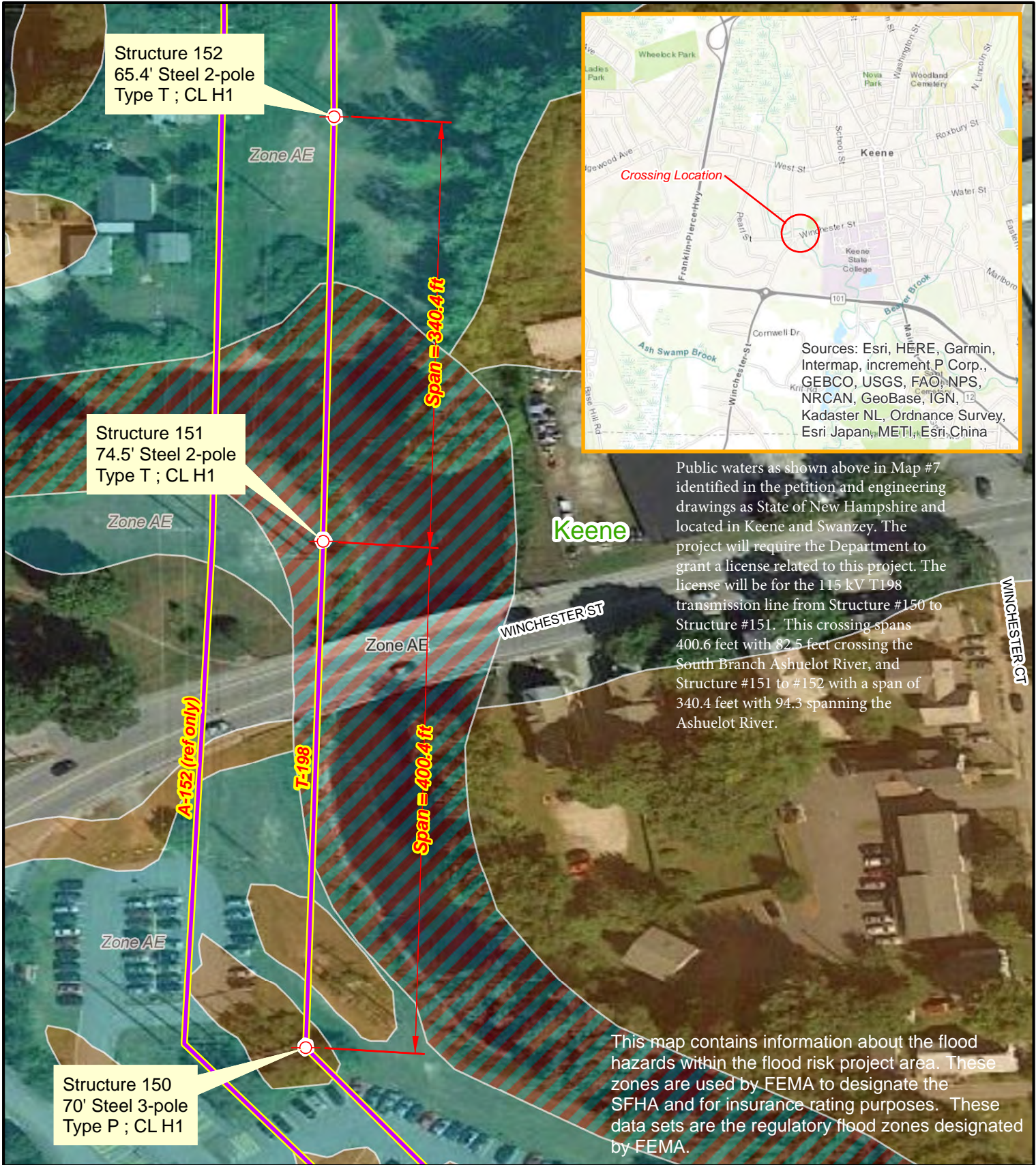


Prepared by:  
NH Department of Energy  
Enforcement Division  
Safety Bureau





# Ashuelot River - CR 2021-023 Eversource Crossing - Map 7



	Utility Structure		100-year Flood Zone
	115 kV Line		Floodway



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