

STATE OF NEW HAMPSHIRE

Intra-Department Communication

DATE: November 10, 2022

AT (OFFICE): NH Dept. of Energy

FROM: Gary Raymond GMR
Utility Analyst IV – Division of Enforcement

SUBJECT: CRE 2022-023 Eversource Energy
Application for License to Construct and Maintain Electric Lines Over and Across Public Waters and State-Owned Lands in Sandwich and Tamworth, New Hampshire
Staff Recommendation

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

CC: Thomas Frantz, Director of Regulatory Support Division
Paul Kasper, Director, Enforcement Division
Elizabeth Nixon, Director-Electric Regulatory Support Division
Andrew Harmon, Hearings Examiner, Enforcement Division

Review by the Division of Enforcement (DOE) of the above application consisted of the following elements:

- Application contents, replacement application contents, and history;
- Applicable State statutes;
- 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. Application contents and history.

On October 24, 2022, Public Service New Hampshire d/b/a Eversource Energy (Eversource, ES or the Company) filed an application for a license pursuant to RSA 371:17 to construct and maintain the Eversource B112 Line, an existing 115kV transmission line, over and across public waters and state-owned lands in Sandwich and Tamworth, New Hampshire.

The proposed project for the B112 encompasses a structure replacement and reconductoring project. All existing structures at the public waters and state-owned land crossing spans will be

replaced with weathering steel equivalents having the design and specification depicted and noted in the Structure Details of Exhibits 2 through 9, except for existing structure 212, which will be removed and permanently eliminated. The replacement structures will be renumbered as detailed under the Structure Table enclosed herewith as Exhibit 10. The proposed project also encompasses reconductoring the three existing phase conductors with three new conductors having the specifications detailed under the Cable Schedule in Exhibits 2 through 9. Additionally, the single pole top mounted shield wire will be replaced with an OPGW communication cable and a second pole top OPGW will also be added having the specifications noted in the said Cable Schedules.

The conductor cable clearance requirements pursuant to the National Electrical Safety Code (NESC) based on the design conditions at 392 deg F. have been met. This scenario was the governing condition that yielded the greatest sag and lowest clearance. Pursuant to NESC Table 232-1, the minimum clearances for a 115kV line are 18.6 feet over water areas not suitable for sail boating or where sail boating is prohibited and 20.1 feet for other areas traversed by vehicles, such as cultivated, grazing, forest, and orchard land, industrial sites, commercial sites, etc. with respect to the state-owned lands. The actual minimum heights over the public waters and state-owned lands are depicted in Exhibits 2 through 9 submitted by ES and exceed the respective minimum requirements. Staff verified the computed sags with SAG 10 commercial software using inputs as stated in the application.

Wire specifications and loading conditions to establish maximum sag for the crossing spans that are the subject of this application are as indicated on the Profile View and Cable Schedule of Exhibits 2 through 9 submitted by ES. 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). The 100-year flood elevations for the subject portions of the Cold River and Swift River were derived from FEMA's National Flood Hazard Layer Firmette, 03/19/2013.

The locations of the public waters and state-owned land crossings that are the subject of this application are depicted on the Overview Map in Exhibit 1 submitted by ES and the DOE Map attached to this recommendation.

The B112 Line crosses the public water of the Cold River in the town of Sandwich between existing structures 182 and 183 (new structure numbers 181 and 182), which span commences approximately 250 feet east from where the B112 Line crosses Cold River Road in Sandwich, which is approximately 475 feet west to the intersection of Cold River Road and Foss Flats Road. The public water crossing extends east approximately 58 feet to the east side of the Cold River, which abuts a large sand and gravel processing area.

The location of Structures 181 to 182 creates a total span of 532.6 feet, with a span of 58.3 feet over and across the Cold River.

The B112 Line crosses state-owned land in the town of Tamworth between existing structures 207 through 215 (new structure numbers 206 through 214), which span commences approximately 3,100 feet southeast from where the B112 Line crosses Bunker Hill Road, which

is approximately 700 feet southwest from the intersection of Bunker Hill Road and Durell Road in Tamworth. The state land crossing extends southeast approximately 1,000 feet, where it changes direction and extends an additional 1,150 feet east to the property boundary with Map 419, Lot 7, which is approximately 6,500 feet west from where the B112 Line crosses Durell Road, which is approximately 825 feet northwest from the intersection of Acorn Lane and Durell Road in Tamworth.

The location of Structures 206 to 214 creates a total span of 3,619.3 feet, with a span of 3,505.4 feet over and across state-owned land.

The B112 Line crosses the public water of the Swift River in the town of Tamworth between existing structures 239.5 and 240 (new structure numbers 237 and 238), which span commences approximately 1,250 feet east from where the B112 Line crosses Tamworth Road (aka NH Route 113) in Tamworth, which is approximately 450 feet south from the intersection of Hollow Hill Road and Tamworth Road (aka NH Route 113). The public water crossing extends east approximately 16 feet and 44 feet, respectively, to the east side of two channels of the Swift River, and terminates at the east side of the Swift River, which coincides with the property boundary between Map 415, Lot 78 and Map 415, Lot 69 in Tamworth, and is located approximately 1,700 feet west from where the B112 Line crosses Depot Road, which is approximately 3,000 feet southeast from the intersection of Depot Road and Tamworth Road (aka NH Route 113).

The location of Structures 237 to 238 creates a total span of 739.2 feet, with a span of 61.3 feet over and across the Swift River (two channels combined).

The B112 Line crossings state-owned land in the town of Tamworth between existing structures 261 through 266 (new structure numbers 258 through 263), which span commences approximately 7,500 feet east from where the B112 Line crosses Tamworth Road (aka NH Route 113), which is approximately 450 feet south from the intersection of Hollow Hill Road and Tamworth Road (aka NH Route 113). The state land crossing extends east approximately 1,850 feet to the property boundary with Map 214, Lot 214, which is approximately 440 feet west from where the B112 Line crosses Power Line Road, which is approximately 2,400 feet west from the intersection of Power Line Road and Maple Road in Tamworth.

The location of Structures 258 to 263 creates a total span of 2,077.6 feet, with a span of 1,850 feet over and across state-owned land.

The following table provides the summary of this crossing application, setting forth the structure numbers, types, spans, ES design criteria, and NESc compliance confirmation.

Department of Energy Enforcement Division Summary Table

Eversource B112 Line Rebuild - DOE State Land and Waterbody Crossing Details								
Existing Structure #	New Structure #	Structure Type	Height Change (feet)	Span (Pole to Pole)	Span Distance (feet)	Minimum NESc Table 232-1 Clearance (ft.)	ES Vertical Design Clearance (ft.)	Complies with NESc Table 232-1 (Y/N)
182	181	65.5' steel 2 pole, T, CLH1	27	180-181	532.6	18.6	44.2	Y
183	182	70.0' steel 2 pole, T, CLH1	20					
207	206	56.5' steel 2 pole, T, CLH1	13.5	206-207	540.8	20.1	26.9	Y
208	207	61.0' steel 2 pole, T, CLH1	18					
209	208	56.5' steel 2 pole, T, CLH1	13.5	207-208	502.4	20.1	33.4	Y
210	209	52.0' steel 2 pole, T, CLH4	9	208-209	645.5	20.1	27.8	Y
211	210	56.5' steel 2 pole, P, CLH3	13.5	209-210	149.9	20.1	28.4	Y
211.5	211	65.5' steel 2 pole, P, CLH3	22.5	210-211	471.5	20.1	36.0	Y
212	Permanent Removal							
213	212	56.5' steel 2 pole, T, CLH1	13.5	211-212	487.6	20.1	27.8	Y
214	213	52.0' steel 2 pole, T, CLH1	9	212-213	416	20.1	29.9	Y
215	214	65.5' steel 2 pole, P, CLH1	17.5	213-214	405.6	20.1	32.2	y
239.5	237	79.0' Steel 2 pole, T, CLH1	31.5	237-238	739.2	18.6	55.6/35.9	Y
240	238	79.0' Steel 2 pole, T, CLH1	18					
261	258	56.5' steel 2 pole, T, CLH1	13.5	258-259	449.2	20.1	28.6	Y
262	259	61.0' steel 2 pole, T, CLH1	18					
263	260	56.5' steel 2 pole, T, CLH1	9	259-260	464.3	20.1	27.9	Y
264	261	56.5' steel 2 pole, T, CLH1	9	260-261	369.9	20.1	29.4	Y
265	262	61.0' steel 2 pole, T, CLH1	13.5	261-262	337.1	20.1	29.4	y
266	263	52.0' steel 2 pole, T, CLH1	9	262-263	457.1	20.1	27.8	Y

2. New Hampshire statute referenced in application (as modified by N.H. House Bill 1258 on August 22, 2022).

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, modify a previously licensed installation, or license a previously constructed installation, it shall apply to the department of energy 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 department of energy may prescribe. Every corporation and individual desiring to cross any public water or land for any purpose herein defined shall apply to the department of energy for a license in the same manner prescribed for a public utility. The department of energy may condition any license issued under this paragraph in any manner necessary to assure that the license may be exercised without substantially affecting the public rights in public waters or state-owned lands. Using a non-adjudicative process, the department of energy may reject incomplete or improperly filed applications, and shall, also using non-adjudicative process, issue or deny the license within 90

days of receiving a complete application and all information subsequently requested of an applicant.

371:17 Licenses for New Poles (eff. Aug. 20, 2022)

3. Review of existing license(s) and permissions previously granted by the PUC for these locations over public waters and state-owned lands in Sandwich and Tamworth, New Hampshire.

The state-owned land through White Lake State Park was previously licensed under D-E3451 (Order No. 6683). The public waters and second state-owned land that is the subject of this application have not been previously licensed, but the B112 Line will be licensed in its entirety as a result of this application.

The Cold River from the juncture of Pond Brook in Sandwich, New Hampshire and the Swift River from the juncture of Paugus Brook and Wonalancet River in Tamworth are 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>

Eversource asserts that a New Hampshire Department of Environmental Services (NHDES) Statutory Permit Notification (SPN), and Shoreland Permit Notification (PBN) will be required for temporary impacts associated with the structure replacements described in this application and will be obtained prior to commencement of construction.

The U.S. Army Corps of Engineers (ACOE) does not regulate the subject portion of the Cold River and Swift River as navigable waters. As a result, a crossing permit from ACOE is not required.

4. Review of land ownership of proposed pole structures.

In its application, Eversource specifies that the structure replacements, conductor replacements and OPGW installation work will be accomplished within existing right-of-way easements, thereby mitigating impacts and concerns of property owners affected by the project scope.

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

The Enforcement Division staff reviewed the specifications related to the structure replacements, conductor replacements and OPGW installation work of this crossing project as described in the application, attachments, and all supplemental support documents 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 B112 Line is an integral part of Eversource's existing electric transmission system in New Hampshire. The crossing location identified in the application is located in the towns of Sandwich and Tamworth, New Hampshire. The Company asserts in its application that the existing crossings will be exercised without substantially affecting public rights in the identified public waters and state-owned lands in New Hampshire.

The Enforcement Division staff verified that minimum safe line clearances above the public waters will be maintained at all times and determined that the license of the proposed structure replacements, conductor replacements and OPGW installation work may be exercised without substantially affecting the public rights in public waters or state-owned lands.

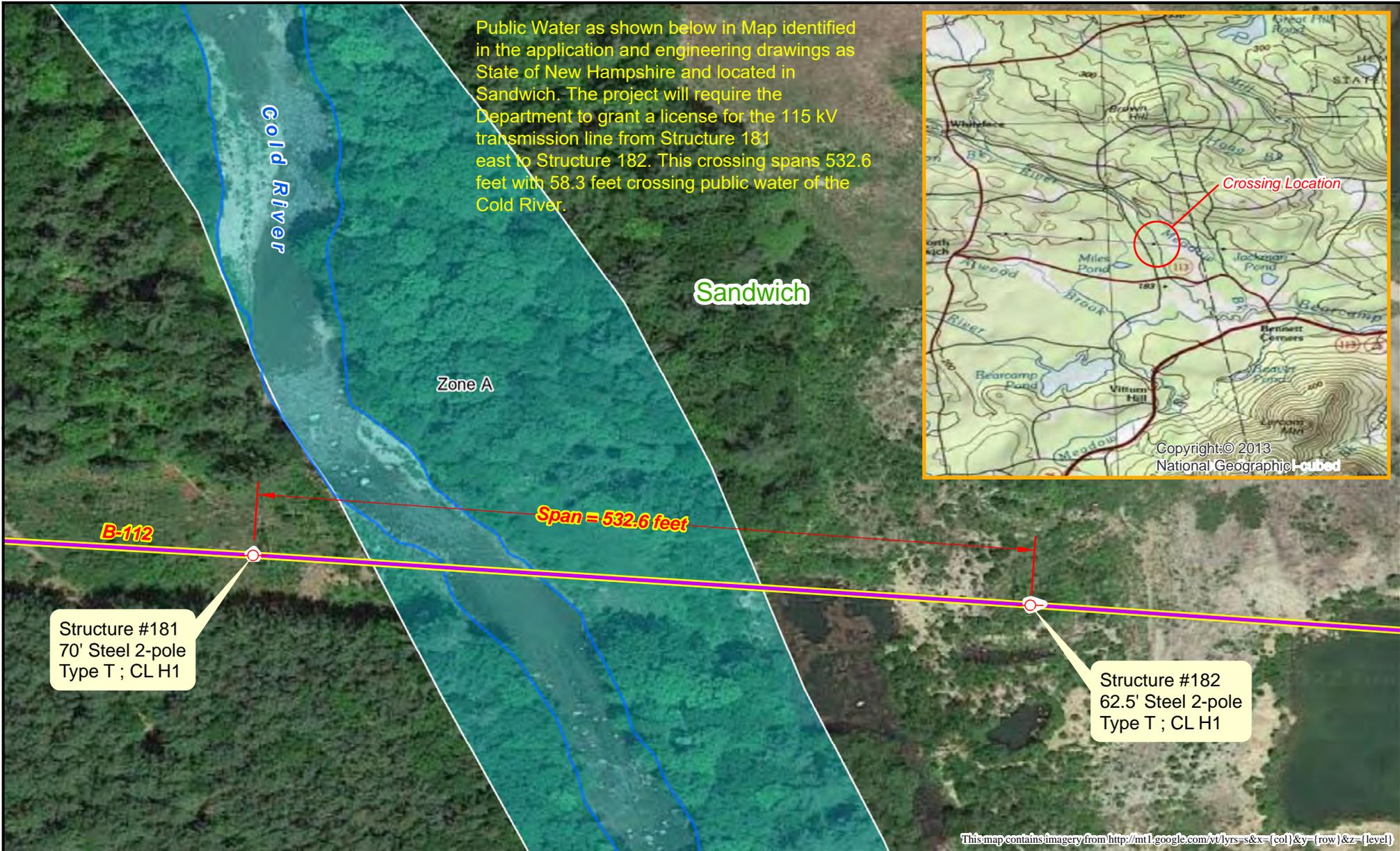
7. Enforcement Division Recommendation:

Based on the results of its review of the application, attachments, and all other supporting documents, the Enforcement Division recommends that the Department.

- 1) Find that the license Eversource requests in this application may be exercised without substantially affecting the public rights in public waters or state-owned lands; and
- 2) Grant Eversource a license to construct and maintain electric lines pursuant to RSA 371:17 and Puc 306.01, over and across public waters and state-owned lands in the towns of Sandwich and Tamworth, New Hampshire as specified in the application.

Attachments:

Cold River - CRE 2022-023 Eversource Crossing - Map 1



	Utility Structure	Flood Hazard Zones
	115 kV Line	Regulatory Floodway
		1% Annual Chance Flood Hazard
		0.2% Annual Chance Flood Hazard



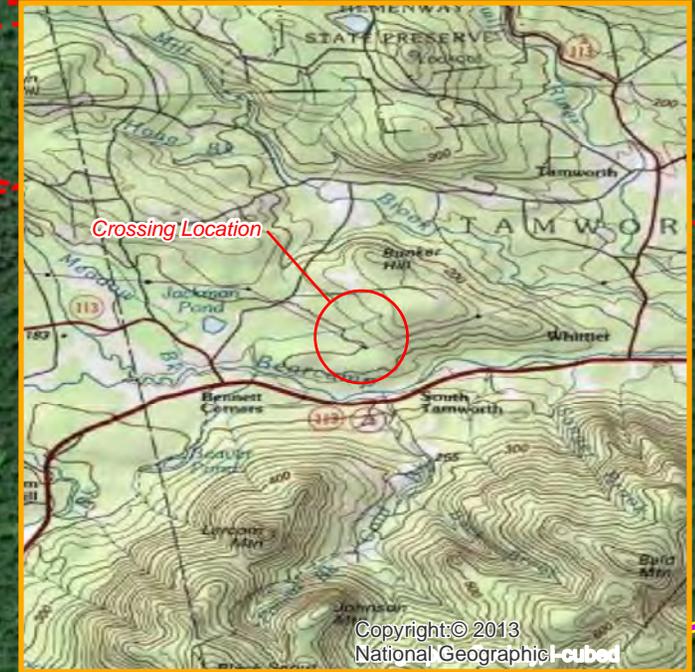
Prepared by:
NH Department of Energy
Enforcement Division
Safety Bureau

0 50 100 200 300
Feet

State Land (NH Fish & Game) - CRE 2022-023 Eversource Crossing - Map 2

State-Owned Land as shown below in Map identified in the application and engineering drawings as State of New Hampshire and located in Tamworth. The project will require the Department to grant a license for the 115 kV transmission line from Structure 206 southeast to Structure 211 then heads east to Structure 214. This crossing spans 3,619.3 feet with 3,505.4 feet crossing state-owned land.

Structure to Structure	Length (ft)
Structure #206 to Structure #207	540.8
Structure #207 to Structure #208	502.4
Structure #208 to Structure #209	645.5
Structure #209 to Structure #210	149.9
Structure #210 to Structure #211	471.5
Structure #211 to Structure #212	487.6
Structure #212 to Structure #213	416
Structure #213 to Structure #214	405.6
Total Span (structure to structure)	3,619.3



Structure #206
56.5' Steel 2-pole
Type T ; CL H1

State Land Crossed = 3,505.4 ft

Tamworth

State of New Hampshire - Dept of Fish and Game
Map 419 - Lot 3

Structure #207
61' Steel 2-pole
Type T ; CL H1

Structure #208
56.5' Steel 2-pole
Type T ; CL H1

Structure #209
52' Steel 2-pole
Type T ; CL H4

Structure #210
56.5' Steel 3-pole
Type P ; CL H3

Structure #211
65.5' Steel 3-pole
Type P ; CL H3

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Structure #213
52' Steel 2-pole
Type T ; CL H1

Structure #214
68' Steel 2-pole
Type T ; CL H1

Structure #212
56.5' Steel 3-pole
Type P ; CL H3

This map contains imagery from <http://mt1.google.com/vt/lyrs=s&x={col}&y={row}&z={level}>

-  Utility Structure
-  State Land Parcel
-  115 kV Line
-  Town Parcel



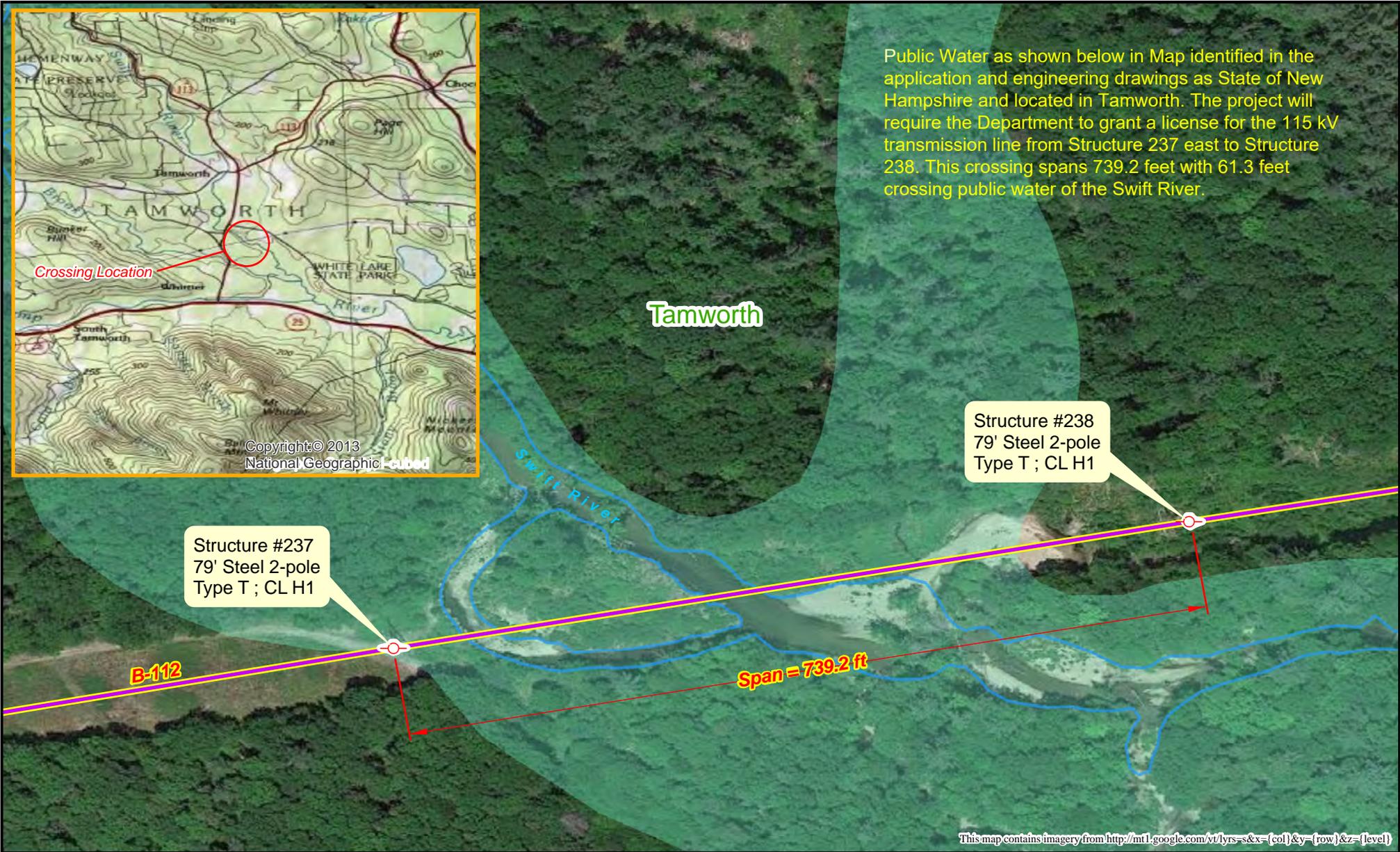
Prepared by:
NH Department of Energy
Enforcement Division
Safety Bureau



Swift River - CRE 2022-023 Eversource Crossing - Map 3



Public Water as shown below in Map identified in the application and engineering drawings as State of New Hampshire and located in Tamworth. The project will require the Department to grant a license for the 115 kV transmission line from Structure 237 east to Structure 238. This crossing spans 739.2 feet with 61.3 feet crossing public water of the Swift River.



Structure #237
79' Steel 2-pole
Type T ; CL H1

Structure #238
79' Steel 2-pole
Type T ; CL H1

Span = 739.2 ft

B-112

This map contains imagery from <http://mt1.google.com/vt/lyrs=s&x={col}&y={row}&z={level}>

	Utility Structure	Flood Hazard Zones	
	115 kV Line		Regulatory Floodway
			1% Annual Chance Flood Hazard
			0.2% Annual Chance Flood Hazard



	Prepared by: NH Department of Energy Enforcement Division Safety Bureau	

State Land (DNCR) - CRE 2022-023 Eversource Crossing - Map 4



Structure to Structure	Length (ft)
Structure #258 to Structure #259	449.2
Structure #259 to Structure #260	464.3
Structure #260 to Structure #261	369.9
Structure #261 to Structure #262	337.1
Structure #262 to Structure #263	457.1
Total Span (structure to structure)	2,077.6

State-Owned Land as shown below in Map identified in the application and engineering drawings as State of New Hampshire and located in Tamworth. The project will require the Department to grant a license for the 115 kV transmission line from Structure 258 east to Structure 263. This crossing spans 2,077.6 feet with 1,850 feet crossing state-owned land.

State Land Crossed = 1,850 ft

State of New Hampshire - Dept of Natural & Cultural Resources
Map 211 - Lot 57

Tamworth

Structure #258
56.5' Steel 2-pole
Type T ; CL H1

Structure #260
56.5' Steel 2-pole
Type T ; CL H1

Structure #262
61' Steel 2-pole
Type T ; CL H1

Structure #259
61' Steel 2-pole
Type T ; CL H1

Structure #261
56.5' Steel 2-pole
Type T ; CL H1

Structure #263
52' Steel 2-pole
Type T ; CL H1

B-112

This map contains imagery from <http://mtl.google.com/vt/lyrs=s&x={col}&y={row}&z={level}>

Utility Structure
 State Land Parcel
 115 kV Line
 Town Parcel



Prepared by:
NH Department of Energy
Enforcement Division
Safety Bureau

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