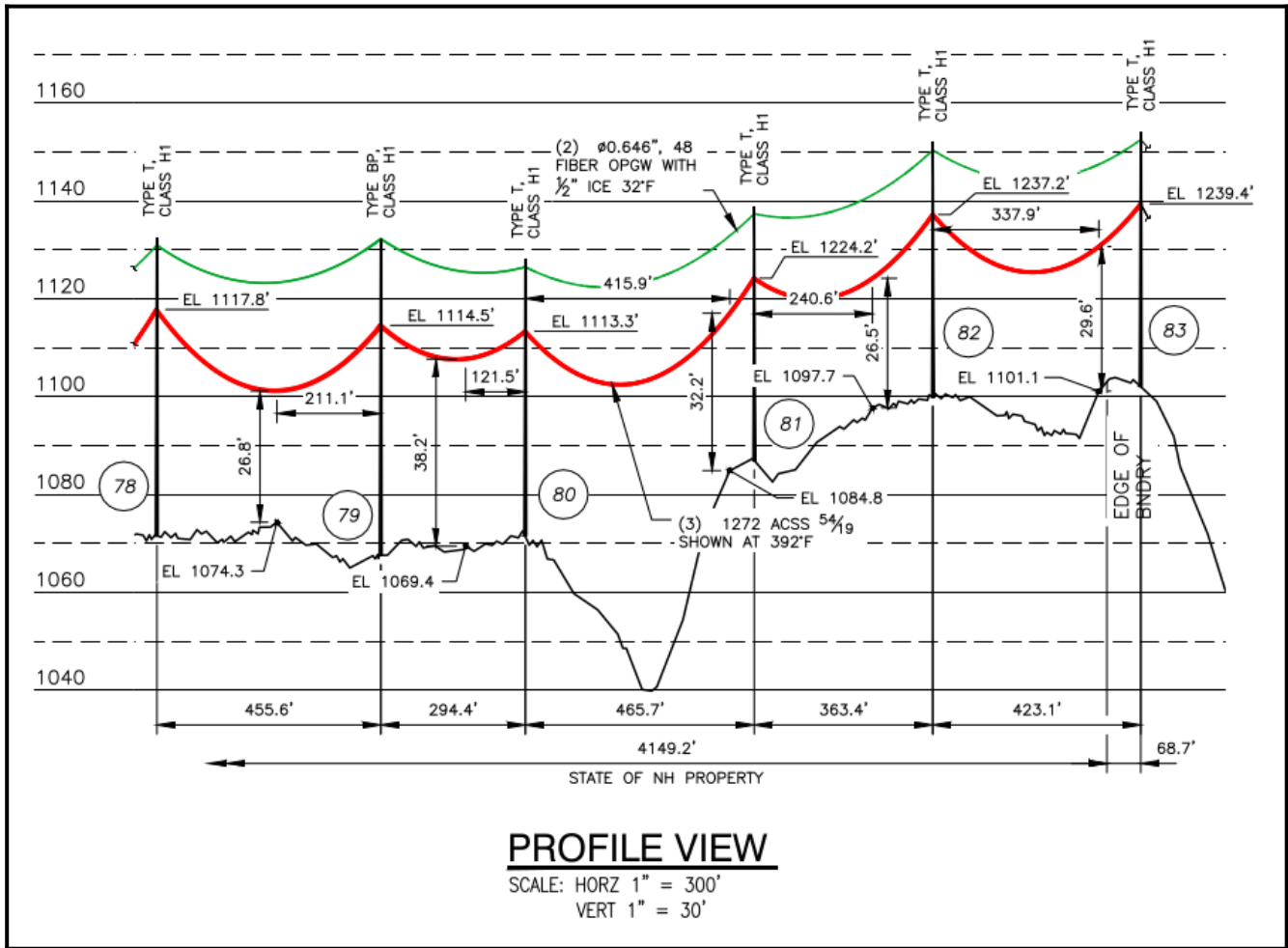


May 12, 2024

To Eversource and the PAC,

in the summer of 2023 I asked Eversource for profile drawings of the proposed X-178 line/structures on my property. Through its project representative, Eversource stated that it did not provide these profiles, though it of course has them for the whole X-178 line. Below is an example from the O-154:



On May 10, 2024 the X-178 project representative sent me an email which stated:

"I hope you are well. As I shared previously, we can't share the [DES] permit documents digitally due to the file size, but multiple copies were sent to the Town which you should be able to review. In addition, we do not provide the inspection data and location of the rated structures. Below are the minimum conductor clearances for the structures on your property (subject to change) - please note the structure numbers have changed slightly; the ones on your property are now 307-312.

Structure from	Structure to	Min clearance
307	308	33.9
308	309	30.34
309	310	37.49
310	311	36.65
311	312	28.19
312	313	25.91

I also wanted to let you know that in the coming weeks we'll have personnel in the right of way conducting drone inspections. I will let you know when they get closer and give you a better idea of when they are anticipated to be crossing your property."

(Eversource can share DES AoT applications digitally. It appears Eversource wants to limit the circulation of these documents. It has not shared them with the PAC or any easement-encumbered landowners.

[https://nhconservation.org/lib/exe/fetch.php?media=a152:a-152\\_aot\\_application.pdf](https://nhconservation.org/lib/exe/fetch.php?media=a152:a-152_aot_application.pdf))

The minimum required clearance to ground for the proposed 1272 ACSS is **20.1'**, according to Eversource's petition for crossings for the O-154:

"Eversource will maintain and operate the clearances of the crossing at a height no less than what is required by the 2012 National Electrical Safety Code (NESC, Table 232-1), which is 18.6' for 115 kV wires over water areas not-suitable for sail boating or where sail boating is prohibited, and 20.1' for 115 kV wires over other areas traversed by vehicles such as cultivated, grazing, forest, and orchard lands, industrial sites, commercial sites, etc."

Eversource has provided no explanation for the unnecessarily high proposed clearances and correspondingly taller structures it plans for the X-178 line rebuild. Eversource has exceeded necessary clearances throughout its asset condition rebuilds, as shown in the river and public land crossing documents, in which the New Hampshire Department of Energy has not asked questions about the clearances or structure heights and failed to consider the visual impacts of taller structures on public lands and waters.

Below left, Eversource's Vertical Design Clearances for the O-154:

[https://nhconservation.org/lib/exe/fetch.php?media=petition-attachments\\_o-154.pdf](https://nhconservation.org/lib/exe/fetch.php?media=petition-attachments_o-154.pdf)

Minimum NESC Table 232-1 Clearance (ft.)	ES Vertical Design Clearance (ft.)
18.6	28.8
20.1	28
20.1	29.4
20.1	32.0
20.1	32.1
20.1	27.4
20.1	28.0
20.1	33.8
20.1	30.1
20.1	29.4
20.1	26.8
20.1	38.2
20.1	32.2
20.1	26.5
20.1	29.6

Eversource refuses to produce the existing and proposed structure heights that were in the back of the project map binders at the 2023 Sugar Hill informational meeting.

Without this information (below) I would have no way of knowing how much lower the proposed structures could be.

NEW STR. #	EXISTING HEIGHT ABOVE GROUND (FT)	PROPOSED HEIGHT ABOVE GROUND (FT)
308	52.00	61.00
309	47.50	56.50
310	49.75	56.50
311	52.00	61.00
312	47.50	56.50
313	52.00	65.50

Since the required clearance for the 1272 ACSS is 20.1', if the structures on my property needed to be replaced (which they don't), the 1272 with the minimum NESC clearance would require structure heights as shown below. These include the increased clearance Eversource claims is required between its proposed OPGW (not permitted in the easements) and its proposed conductors, which exceeds the clearance between the existing ground wire and conductors.

From new # structure: \_\_\_\_\_ to structure \_\_\_\_\_

**307:** existing 52', planned; 61', necessary; 47.2' **308**

**308:** existing 47.5', planned; 56.5', necessary; 46.26' **309**

**309:** existing 50', planned; 56.5', necessary; 39.11' **310**

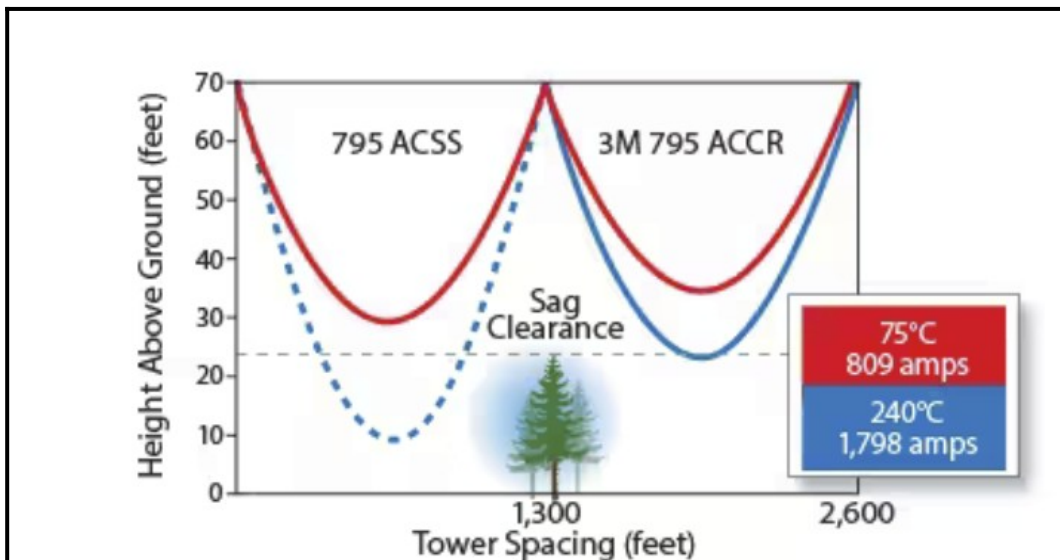
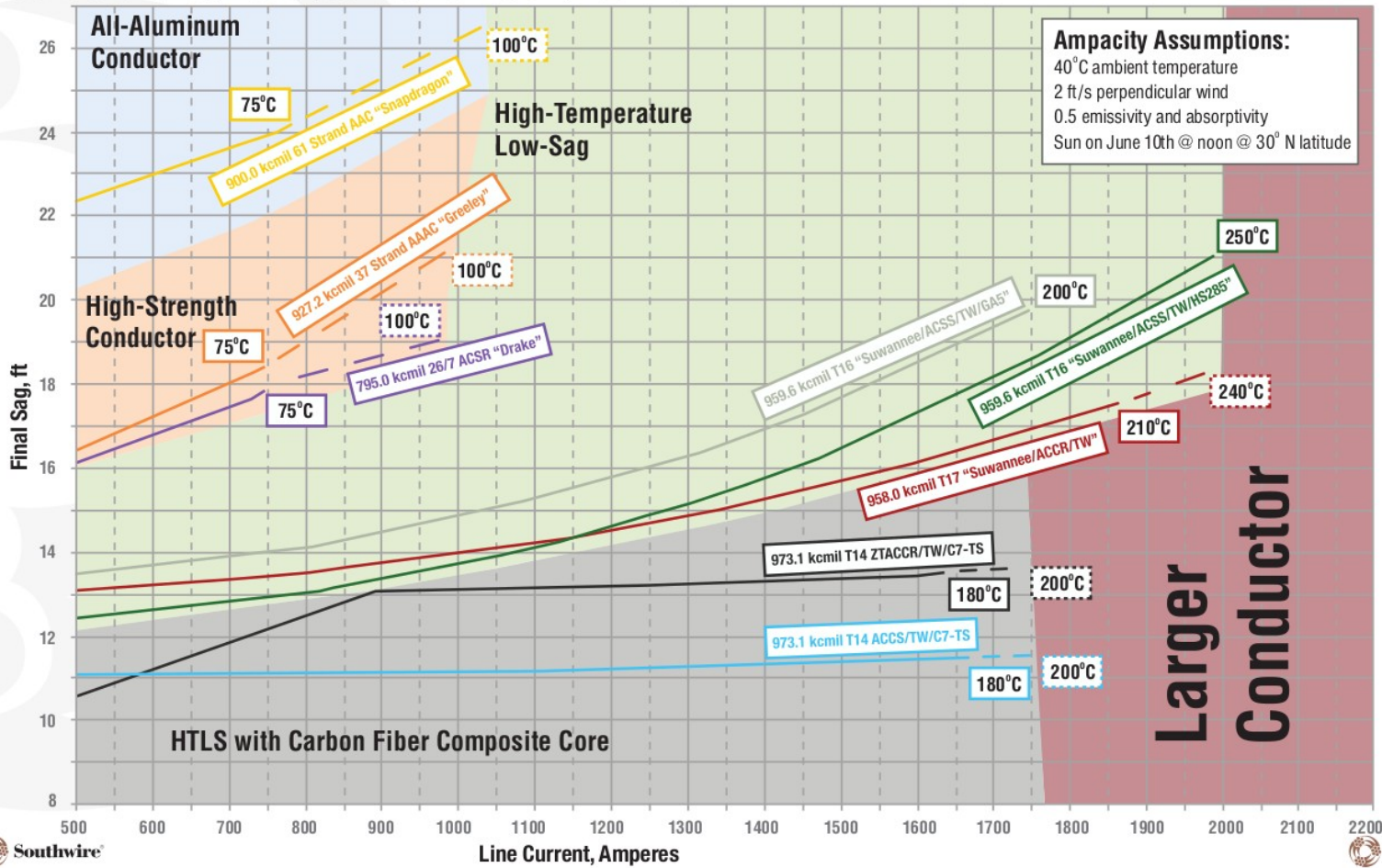
**310:** existing 52', planned; 60', necessary; 43.45' **311**

**311:** existing 47.5', planned; 56.5', necessary; 50.7' **312**

Eversource exceeds the necessary conductor to ground clearance for its high-sag 1272 ACSS by an average of 10.52' in the small sample of the O-154 crossings and those on my property.

If Eversource used 973.1 T14 ACCS/TW/C7-TS conductor, which would carry 1819 amps, structures could be almost 20' lower (12' sag vs. 32' sag for 1272 ACSS), in an 800' span.

Conductor Performance Map, 1.108" OD, 800-ft RS, NESC "Medium", NESC Limits



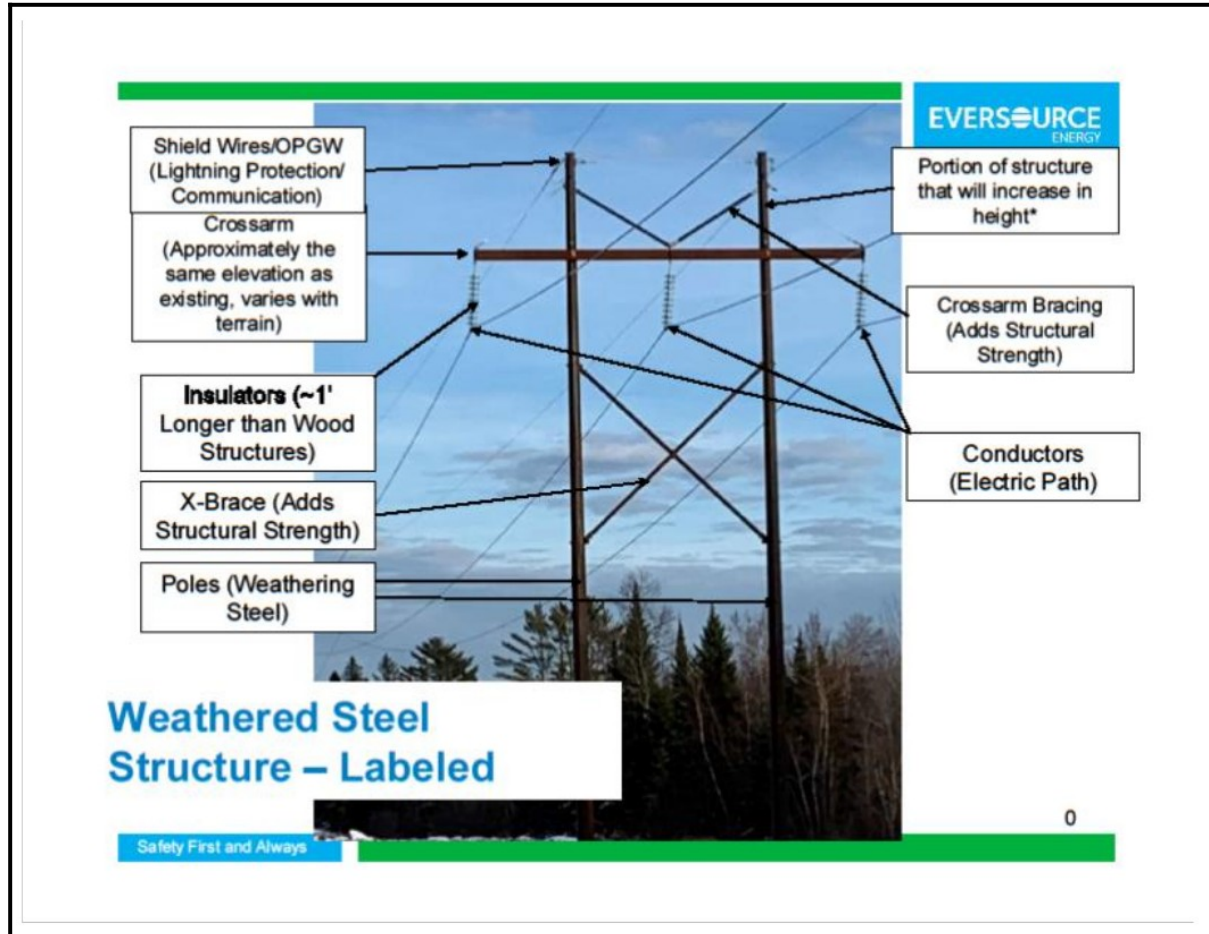
**Lower weight reduces sag**

A lighter weight, high temp low sag conductor (HTLS) with twice the ampacity (or more), 3M ACCR doesn't place extra weight or force on towers while meeting mechanical and clearance requirements. It carries more power in the same size cable and can run at higher temperatures without additional power line sag.



Add to this Eversource's claim that the height increases in it's rebuild are because of a need for increased clearance between the OPGW and the conductor:

Below: "Portion of structure that will increase in height"



Eversource continues to pretend that the the alternatives of replacing only the 41 Category C poles in 5-10 years, and re-conductoring the existing structures with ACCC type conductor, do not need to be addressed.

These proposed structure heights do not appear to indicate that Eversource actually has a new plan for the X-178; one responsive to stakeholders, easement holders, the environment of the easement and rate-payers.

If my calculations are incorrect, Eversource can provide profiles for the existing line, it's proposed rebuild, and the 973.1 T14 ACCS/TW/C7-TS conductor, with regular ground wire and with OPGW, which it should do in any case to support its proposed structure heights and rejection of the ACCC type conductor alternatives.

1272 ACSS approximate sag 30' at 739' span with one structure taller. Note 35.9' clearance to water.

