

TOWN OF BETHLEHEM  
Planning Board Public Hearing  
May 22, 2024  
Minutes

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Present: Linda Moore, Alecia Loveless, Veronica Morris, Kevin Roy, Martie Cook, Sean Gawlik, Sally Fitzgerald. Alternates James Gleason

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Linda Moore opens the meeting at 6:00 pm and reads the Public Hearing Notice for Eversource's application for a waiver of the 40-foot height limitation under the Bethlehem Zoning Ordinances.

Linda reviewed the Rules of the Procedure for attendees.

Jennifer Codispoti from Eversource went over the agenda for the presentation which included: An introduction, a project overview, a summary of the structure height increases, case studies, RSA 674:30 criteria review, and a question-and-answer period.

Jennifer explains how the transmission system works and the components of transmission structures before explaining the purpose of this project is to rebuild existing transmission line for improved system reliability.

Jennifer then reviews the scope of the projects, X178 and U199, within Bethlehem.

X178 runs 182 miles from Campton to Whitefield. Segment 3 of the X178 runs 14.1 miles from Sugar Hill to Whitefield with 7.36 of those miles in Bethlehem. The total number of structures to be replaced will be 182, however, only 95 of those are in Bethlehem.

The U199 runs from Sugar Hill to Littleton and runs 9 miles with .45 of a mile in Bethlehem. The total number of structures to being replaced is 104. Only 5 of those are in Bethlehem.

The presentation includes pictures of what the new structures will look like along with photos of current structures and the types of degradation that exists.

Jennifer turned the presentation over to Elise Ward to explain why the structures heights were increasing. Elise explained that structure height can change due to several factors; safety clearance requirements, to meet current industry best practices. Minimize environmental impact, changes in topography, engineering considerations, standardized pole size from the manufacturing company, and the presence of other power lines in the same corridor.

Elise then goes on to review the present-day safety clearance requirements set by the National Electric Safety Code (NESC). The NESC is a minimum set of requirements that utilities are required to follow. NH law requires Eversource to design, operate and maintain line in accordance with "Good Utility Practice" which it defines as meeting the requirements of the NESC.

Elise then reviews the height structures for both the X178 and U199 projects before handing the presentation over to Sam Harris who reviews case studies for a few specific locations.

Eversource's Erik Newman reviews RSA 674:30 which authorizes the Planning Board to *"waive any requirement contained in an ordinance, code, or regulation for an unoccupied structure which is less than 200 square feet in area, which is necessary for the furnishing of utility service for the public health, safety, or general welfare, and for which the utility's siting options are limited by virtue of said structure being a physically integrated component of the utility's transmission or distribution apparatus."*

Erik is requesting the Planning Board grant the request for waiver based on the four criteria within the RSA, which he argues are satisfied; the lines are necessary, current poles have reached the end of their life span, and the project is physically constrained to the linear Right of Way. Erik states the requested waiver is reasonable because the current structures already exceed the 40-foot height restriction and the new structures will ensure the system remains reliable.

Linda opens the meeting to the Planning Board for questions/comments.

Planning Board Member Sally Fitzgerald expresses concerns about the gravel Right of Way. Erik explains the nature of the landscape makes maintenance difficult. The Right of Way can accommodate the equipment needed to maintain the structures and provides a work area for that maintenance to happen.

Planning Board Ex-Officio Veronica Morris questioned if the transmission lines on Wing Rd are on a different path as they don't appear on the map. Sam Harris explains that Eversource does not have an agreement for that stretch of poles but feels it is a potential new Right of Way. Erik believes that NHDOT maintains that land.

Planning Board member Martie Cook asks how much more visible this will be to abutters. Erik explains that because this is required maintenance there is not a lot of flexibility.

Sally Fitzgerald asks what the lifespan of the new structures will be. The Eversource team explains there are a lot of factors, however they believe the life span for the new structures will be 50 years, similar to the existing structures. Sam Harris explains it really is case by case.

Vernica Morris chimes in that the abutters checklist is complete.

Linda opens the floor for public comment.

James Gleason of 5 Shepard's Run questions the type of steel to be used.

Mary Polanski of 719 Whitefield Road questions if this work is beneficial for our area, or just a way to deliver electricity to other areas. She also wants to know if they need a bond for this project in case something goes wrong.

Chris Noyes of 791 Cherry Valley Road is worried about his view. Jen Codispoti states Eversource is happy to work with property owners with specific concerns regarding their properties and leads attendees to a fact sheet located in the rear of the meeting room with contact information.

John Polanski of 719 Whitefield Road thinks this project sounds like Eversource is making way for Northern Pass.

Jennifer Noyes, 791 Cherry Valley Road, wants to know where the Town is in the process. Veronica Morris believes it is the intention of the Planning Board to vote on the waiver application this evening. She adds that the Conservation Commission is still reviewing the application.

Carol Carlson Cunningham of 529 Blaney Road wants to know what kind of base will be used to support the poles.

JC Noyes, 791 Cherry Valley Road, hypothetically what would happen if the Planning Board said no. Veronica replies that Eversource would appeal the decision with the Public Utilities Commission.

Erik Newman comments that he appreciates everyone's concerns, however, these poles need to be replaced and encourages the Planning Board to approve the waiver.

Ken King of 41 Gilmanton Hill Rd, Sugar Hill would like to know if there is a reason why the lines can't be buried. Sam Harris replies that underground is complicated and costly, not to mention the effect it would have on rates. No access to the lines also makes trouble shooting more difficult.

Richard Southwell of 219 Longfellow Drive thinks it's great that we are updating, but also understands people are upset. Can the Planning Board table the request and ask Eversource for a better proposal?

Jennifer Noyes asks if the town can negotiate with Eversource.

Linda Moore responds that the application for waiver get approved or denied this evening.

Cheryl Jensen of 448 Lewis Hill Rd and Conservation Commission Chair questions why the life span of the new steel structures is the same as the current wooden structures.

Allegra Wright of 106 Congress Street would like to know if there is a location where this project has been completed so people can get a sense of what the completed project looks like? Jennifer offers that the completed lines in Franklin can be seen off Interstate 93, just south of Campton.

Planning Board member Martie Cook questions what would happen if a tower fell over. What would it hit? Elise offers that none of the pole heights exceed the width of the Right of Way.

Carol Carlson would like to know when the Select Board will be meeting with the SEC. Veronica states Bethlehem is joining with Sugar Hill to send a letter to the SEC to do an evaluation. She is not sure when that will happen. Carol would also like to know how long the Planning Board has to make a decision. It is noted that the Planning Board has 60 days.

Linda Moore asks if there is a motion from the Planning Board.

Linda Moore motions to deny the request for waiver of the 40-foot height restriction. Sean Gawlik seconded the motion. Sally Fitzgerald, Alecia Loveless, and Martie Cook also voted in favor of the denial. Kevin Roy was opposed to the motion. Motion passes 5-1.

Alecia Loveless motions to adjourn the meeting at 7:45. Veronica Morris seconded with all members voting to adjourn the meeting.

Respectfully submitted by,

Dawn Ferringo, Planning and Zoning Clerk

# Bethlehem Height Waiver Application Request

**May 22, 2024**

## U199 and X178 Transmission Line Rebuild Projects



# Agenda

- Introductions
- Projects Overview
- Structure Height Increase Factors
- Structure Height Increase Summary
- Case Studies
- RSA 674:30 Criteria Review
- Questions

# The Transmission System

## *Getting Electricity to Where It Is Needed*

A strong electrical transmission system is vital to the safety, security, and economic prosperity of the region. The transmission system serves a critical role to ensure that electricity flows with a high degree of reliability from where the power is generated to where it is needed.



# Structure Components

## Optical Ground Wire

- Two wires located at top of poles

## Conductor (powerline)

- Three wires (phases)
- Attaches to bottom of insulators

## Poles

- Typically directly embedded into the ground with steel corrugated “cans” backfilled with gravel



## Crossarm

## Insulators

- Three vertical devices that attach the conductor to the crossarm

## Cross bracing

## What are We Doing and Why?

### *Rebuilding the existing transmission line for improved system reliability*

- Replace the older, degraded wooden pole structures with new weathering steel structures.
  - Recent physical inspections and engineering analysis of this line revealed that many of the existing wooden structures are in poor condition due to their age, woodpecker and insect damage, and pole/crossarm rot.
- Install new transmission wire (conductor) and communication wire (OPGW).
  - Existing communication between substations relies on older technology which results in slower communication.
- The new steel structures will be able to support the weight of the new wires and will better withstand the storms we experience here in New Hampshire.
- The line must be built to present-day electrical safety standards and codes, which require more robust structures.





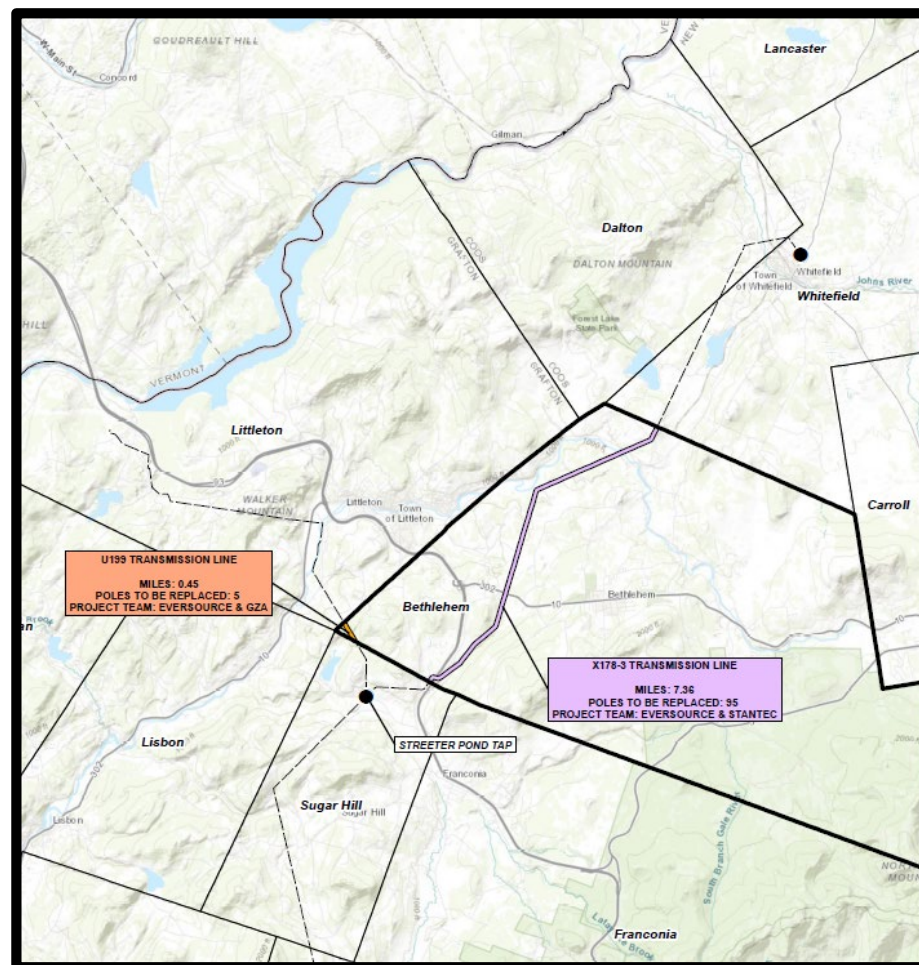
## Bethlehem Project Scope

### X178 Segment 3 Information

- 14.1 miles
- 182 will be replaced, 1 removal
  - 7.36 mi, 95 structures in Bethlehem

### U199 Information

- 9 miles
- 104 Structures will be replaced
  - 0.45 miles, 5 structures in Bethlehem





## What will it look like?

Examples of existing structures to be removed



Example of a typical structure to be installed  
(Note that the existing number of wires on the X178 and U199 Lines will not change)



## Examples of Structure Degradation

### Cracked Cross Arm



### Broken Cross Arm



### Pole Rot

## Why are the Structure Heights Increasing?



While structure height increases are unavoidable, we attempted to minimize them wherever possible. Structure heights changed due to several factors.

- Safety clearance requirements
- Meet current industry best practices
- Minimize environmental impact
- Changes in topography
- Engineering considerations
- Standardized pole sizes from the manufacturing company
- Presence of other power lines in the same corridor

## Meet Present-Day Safety Clearance Requirements

- The National Electric Safety Code (NESC)
- The NESC is a minimum set of requirements that utilities are required to follow.
- New Hampshire law requires Eversource to design, operate and maintain lines in accordance with “Good Utility Practice” which it defines as meeting the requirements of the National Electric Safety Code (NESC).



## Utility Best Practices



- Incorporate utility best practices to ensure reliable service over the design service life
- Design to better protect the system from sustained damage due to lightening strikes
- Adequate clearance to accommodate vegetation growth between mowing cycles

## Topography & Environmental Factors

- Changes in topography
  - Maintaining clearance over hills and steep slopes
- Minimizing environmental impacts.
  - Removing existing structures out of wetlands, vernal pools and flood plains



## Additional Factors



- Pole height increases address uplift conditions arising from minor shifts in structure location.
- Standardized pole sizes from the manufacturing company
  - 5-foot increments pole lengths

- Presence of other powerlines in the same corridor
  - Distribution lines crossing underneath a transmission line at a roadway crossing.







# Structure Height Increase Overview

## X178 Line

|          | Existing to Proposed Height Change |          | Proposed Structures | Percentage |
|----------|------------------------------------|----------|---------------------|------------|
|          | Str <10' Change                    |          | 27                  | 28.7%      |
|          | Str 10'-15' Change                 |          | 36                  | 38.3%      |
|          | Str 15'-20' Change                 |          | 9                   | 9.6%       |
|          | Str >20' Change                    |          | 22                  | 23.4%      |
|          | Structure Total                    |          | 94                  | 100.0%     |
|          | Existing                           | Proposed | Difference          |            |
| Averages | 48.07                              | 62.96    | 14.89               |            |



# Structure Height Increase Overview

## U199 Line

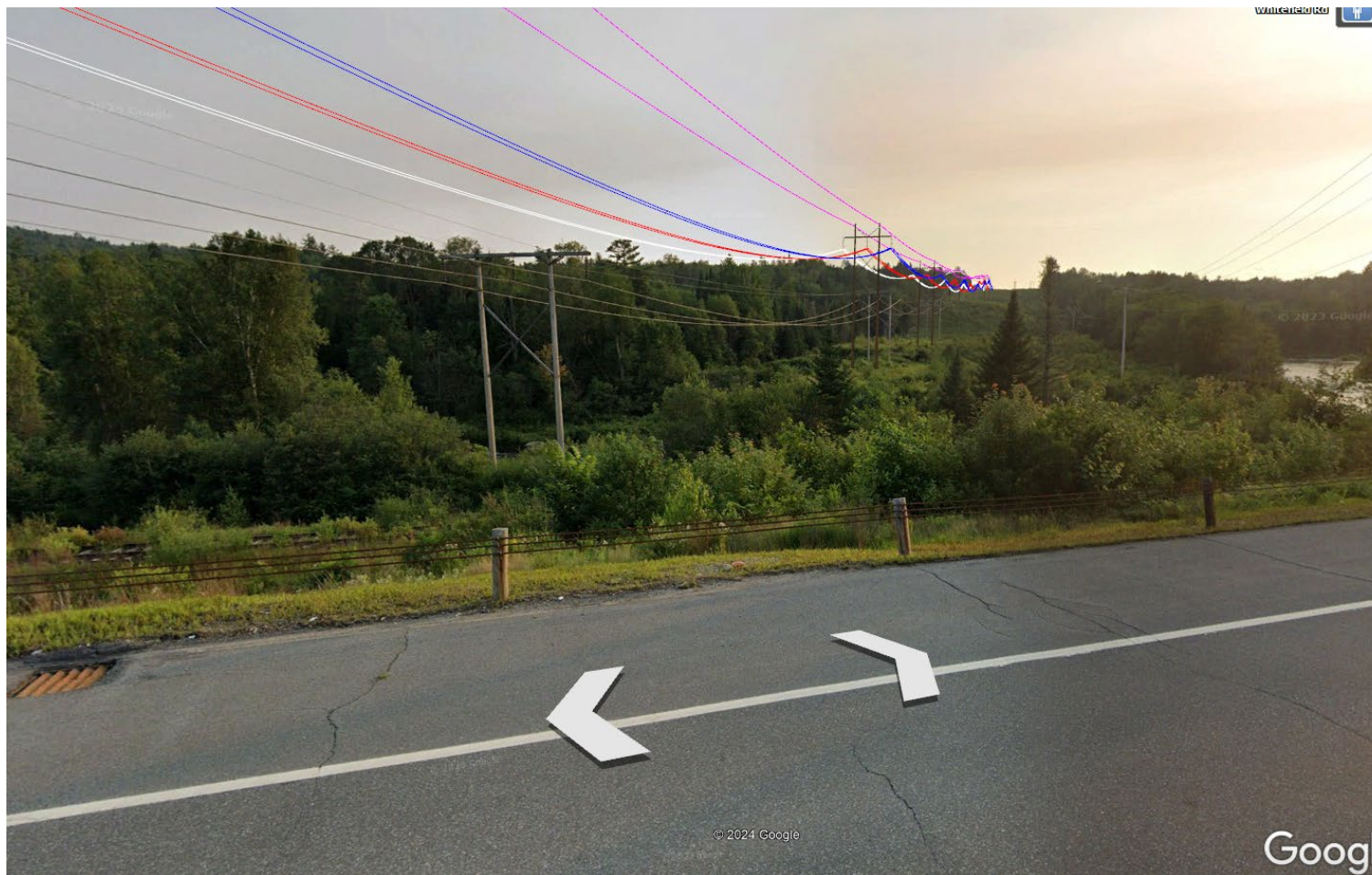
|          | Existing to Proposed Height Change |                         | Proposed Structures | Percentage |
|----------|------------------------------------|-------------------------|---------------------|------------|
|          |                                    | Existing Str. to Remain | 0                   | 0.00%      |
|          |                                    | Str <10' Change         | 0                   | 0.00%      |
|          |                                    | Str 10'-15' Change      | 2                   | 40.00%     |
|          |                                    | Str 15'-20' Change      | 1                   | 20.00%     |
|          |                                    | Str >20' Change         | 2                   | 40.00%     |
|          |                                    | Structure Total         | 5                   | 100.00%    |
|          |                                    |                         |                     |            |
|          | Existing                           | Proposed                | Difference          |            |
| Averages | 45.9                               | 65.9                    | 20.0                |            |

## Case Study – X178 Structures 504-508

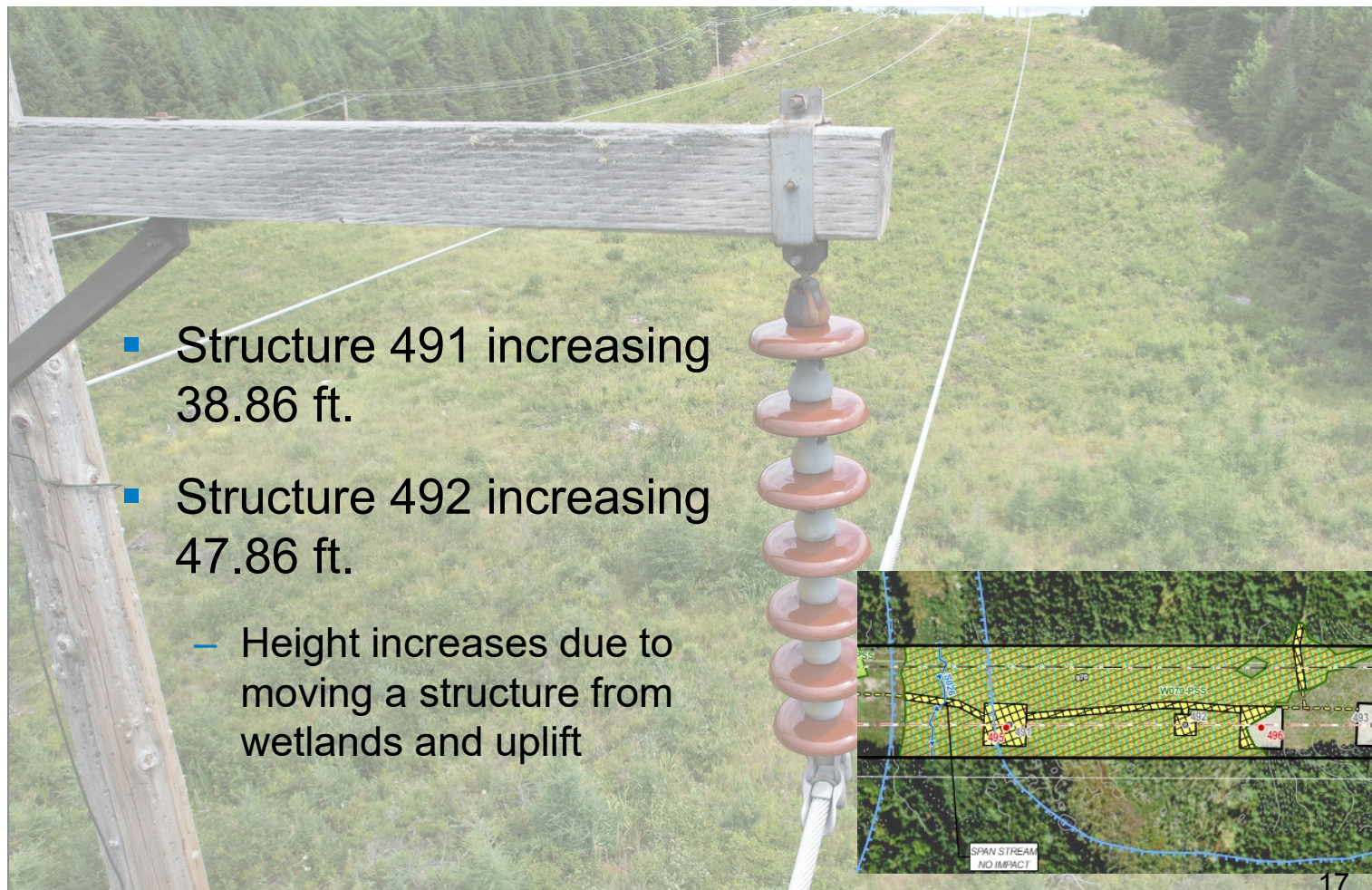
- Structures 504-505 increasing 38.86 ft.
- Structures 507-508 increasing 29.86 ft., and 25.36 ft.
  - Structures increasing in height due to the removal of structure 506 at the of edge of river
  - Structures also raised for improved clearance over roads, rail and waterbodies
  - Cascading height increase from structure 509 and 510 (due to uplift).



## Case Study – X178 Structures 504-508



## Case Study – X178 Structures 491 & 492



## RSA 674:30 Waiver



- RSA 674:30 authorizes a planning board, in pertinent part, to “waive any requirement contained in an ordinance, code, or regulation for any unoccupied structure which is less than 200 square feet in area, which is necessary for the furnishing of utility service for the public health, safety, or general welfare, and for which the utility's siting options are limited by virtue of said structure being a physically integrated component of the utility's transmission or distribution apparatus.”

## RSA 674:30 Standard Satisfied

- These lines are necessary for furnishing of electricity – essential to public health, safety and general welfare
- Physically integrated components – key grid components
- Each Structure’s footprint is less than 200 s.f.
- Physically constrained to a linear transmission ROW, which has existed since ‘69 and ‘71, respectively

## Waiver is Reasonable

- All of the structures to be replaced already exceed the 40' height limitation
- 40' height is the electric industry standard for distribution poles
- Transmission structures must be taller than 40' to satisfy clearance requirements, even under ideal conditions unconstrained by topographic variations and the presence of wetlands and other resources.
- Promotes health, safety and welfare, by ensuring the integrity of the grid, promoting efficient outage restoration and supporting the forecast increase in demands upon the grid from electrification.



## Questions?



**Thank you**

*We look forward to working with you throughout this important maintenance project.*



## Thank you

*Project Representatives are available to answer questions and discuss the project.*

*Please contact our projects hotline at 1-888-926-5334; send an email to [NHProjectsInfo@eversource.com](mailto:NHProjectsInfo@eversource.com), or visit the project website at:*

*[www.eversource.com/X178-Line-Project](http://www.eversource.com/X178-Line-Project)*



# Appendix A

## X178 Bethlehem Structure Height Increase Details

Poles greater than **20 feet** height increase: 22 total

- 7 of the 22 are within 500 ft. of a residence.
  - New structures 426, 429, 458-461, 470

Poles with **10-15 feet** height increase: 36 total

- 6 of the 36 are within 500 feet of a residence.
  - New structures 424, 430, 432, 457, 514

Poles with **15-20 feet** height increase: 9 total

- 2 of the 9 are within 500 feet of a residence.
  - New structures 471, 513

Poles with **less than 10 feet** height increase: 27 total

- 3 of the 27 are within 500 ft. of a residence.
  - New structures 427, 437, 456

## Appendix B Fall Hazard Analysis

X178 ROW Width: Bethlehem is 265 feet wide with a small section that is slightly wider by new structure 430.

- The closest a structure is to the edge of the ROW is 110FT for STR 426-429, 126FT at STR 430, and 75FT for STR 431-519.
- In theory if the pole did break it likely wouldn't break at the ground line as the highest loads on the pole are just below the bottom X-brace.
- These H-frame or guyed structures are very good at handling lateral loads and are more robust than the existing wood H-frame structures.
- The steel structures are more resilient to severe weather events.



## X178 Community Engagement

- Spring 2023: Project Introduction Letter
- August 2023: 2 Public Information Sessions (Sugar Hill and Campton)
- Fall 2023: Project Update Letter
- November 2023: Door to Door outreach project update campaign
- November 2023: NH DES Pre-SDF Application Review at Bethlehem Conservation Commission Public Meeting
- May 2024: Door to Door outreach project update campaign
- Ongoing site visits, emails and phone call engagement with landowners

