NH Line A152 & M127 Structure Replacement Projects

Planning Advisory Committee Meeting

December 20, 2023

Agenda

- Project Background
- Project Location
- Project Drivers
- Project Scope
- Project Summary
- Feedback & Next Steps

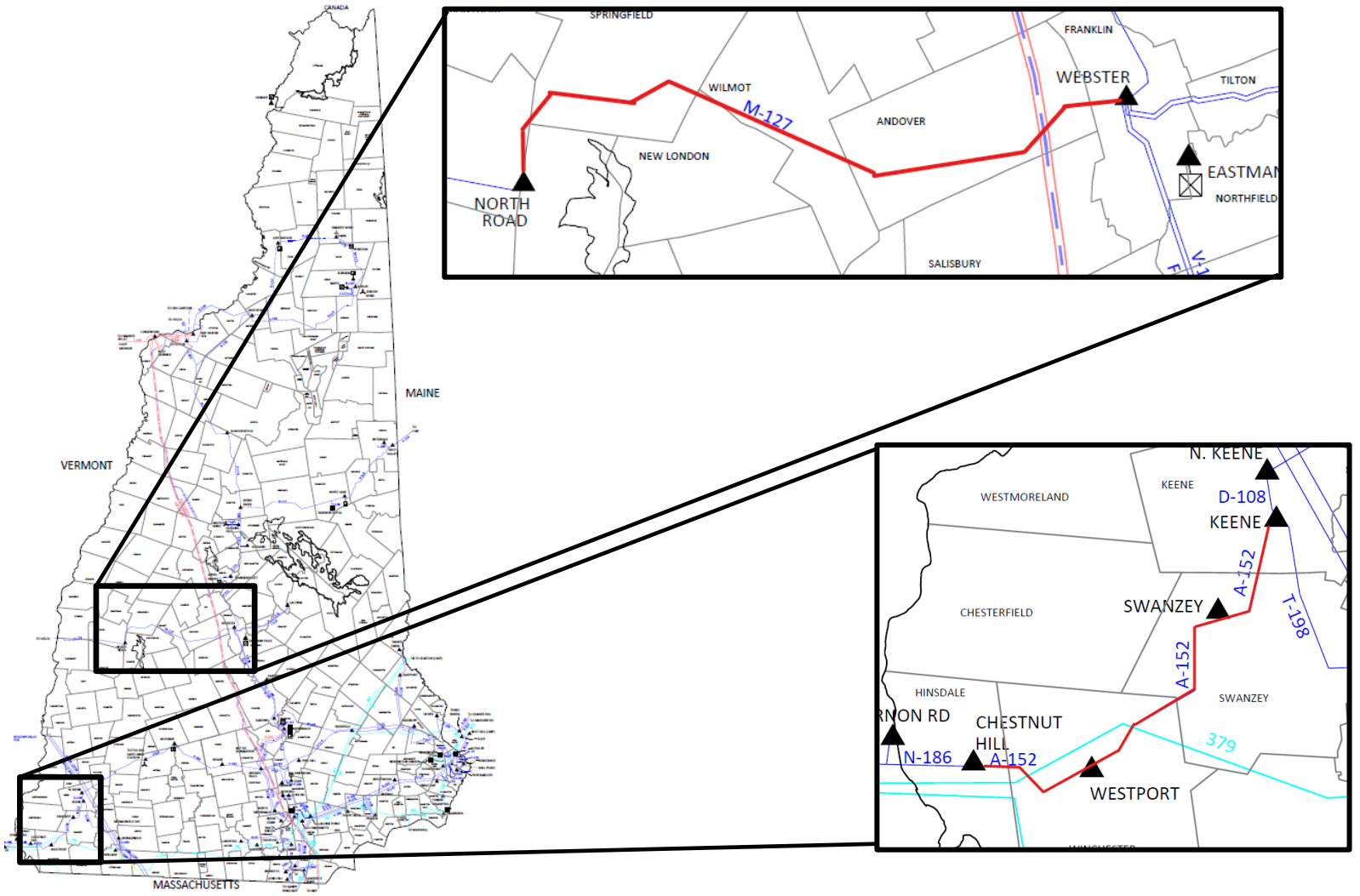
Project Background

- Eversource manages ~4,400 circuit miles of transmission lines and ~58,000 miles of distribution lines in Connecticut, Massachusetts, and New Hampshire
- Eversource takes a proactive approach to maintain long-term structural integrity and continued reliability of its transmission infrastructure through regular inspections (walkdown ground inspections, structure ground line, flyovers, etc.)
- Lines within these project scopes are in New Hampshire

Project Background (Cont'd)

- Line A152 connects Keene Substation in Keene, NH with Chestnut Hill Substation in Hinsdale, NH
  - Originally constructed in 1968 (55 years old)
  - Voltage: 115 kV
  - Length: 16.9 miles
  - Conductor: A mix of sections of 1590 ACSR and 795 ACSR
  - Shield wire: Mix of 7#8 Alumoweld and OPGW
- Line M127 connects Webster Substation in Franklin, NH with North Road Substation in Sunapee, NH
  - Originally constructed in 1967 (56 years old)
  - Voltage: 115 kV
  - Length: 25.8 miles
  - Conductor: 795 ACSR
  - Shield wire: Mix of 7#8 Alumoweld and OPGW
- Structures targeted for replacement on these lines as part of this project are either natural or laminated wood (one structure)
  - Additional structures outside of project scope are a combination of natural wood and steel

Project Locations



Project Drivers

- Recently completed inspections of these lines graded condition of all structures in accordance with Electric Power Research Institute (EPRI) guidelines:
  - *A: Nominal Defect – No Action Required*
  - *B: Minimal Defect – Monitor Degradation*
  - *C: Moderate Defect – Repair or Replace under next maintenance*
  - *D: Severe Defect – Repair, Reinforce, or Replace immediately*
- Grade C round wood structures showed one or more of the following age-related degradations, leading to decreased load carrying capability
  - Top rot, cracking, splitting, woodpecker damage
  - Damaged insulators and deteriorated steel hardware
- Additional B grade structures were identified and prioritized for replacement based on Engineering requirements to meet current uplift standards as well as efficiencies in required permitting approvals for replacing Grade C structures, and minimizing environmental impacts
  - If not addressed, these issues jeopardize the long-term integrity of the transmission system and its continued reliability
- Laminated wood structures are susceptible to internal damage and the integrity of structures cannot be measured by conventional visual inspections
  - See recent Phase III presentation on replacement of laminated wood structures for additional details

Project Drivers (Cont'd)

Line A152 has a total of 238 structures. The table below outlines the total targeted for replacement.

Priority A	0
Priority B	18
Priority C	3
Priority D	0
Removals	0
Total	21

Line M127 has a total of 339 structures. The table below outlines the total targeted for replacement.

Priority A	0
Priority B	14
Priority C	11
Priority D	0
Removals	1
Total	26

Project Drivers (Cont'd) – Line A152 Photos

Structure 119 – Top rot, rust

Structure 190 – Pole splits

Project Drivers (Cont'd) – Line M127 Photos

Structure 21 – Top rot, hollow at pole top, rust, splits

Structure 155 – Top rot, splits, rust

Structure 286 – Top rot, hollow at pole top

Project Scope

- Line A152
  - Replace 21 wood structures with 20 steel H-frame structures and one three-pole steel structure
  - Solution Alternatives:
    - Based on targeted project scope and drivers, no alternatives were considered
- Line M127
  - Replace 22 wood structures with steel H-frame structures
  - Replace three wood structures with light duty steel running angle and dead-end structures
  - Remove one wood structure
  - Solution Alternatives:
    - Based on targeted project scope and drivers, no alternatives were considered

Summary

- Inspections have indicated moderate degradation of several wood structures along the lines identified in this presentation
- New structures will provide a greater life expectancy and a higher storm resiliency than wood
  - Supports long-term integrity and reliability of the Eversource transmission system
- Replacement structures will be designed to meet current design criteria
- Line A152
  - Total estimated PTF cost: **$5.909M** (-25/ +50%)
  - In-service date: **Q2 2024**
- Line M127
  - Total estimated PTF cost: **$9.834M** (-25/ +50%)
  - In-service date: **Q3 2024**

Feedback and Next Steps

- Please submit any written comments on these projects to:
  - robin.lafayette@eversource.com
  - pacmatters@iso-ne.com

Presentation	Date	Description
Initial Presentation	December 20th, 2023	Presentation on replacement of degrading structures on Lines M127 and A152
Questions/Feedback	January 11th, 2024	Comment deadline

Questions