



Avangrid
December 14, 2022

Milvon to West River Railroad Corridor Transmission 115 kV Rebuild Project

TCA Presentation

Presentation to:
NEPOOL Reliability Committee

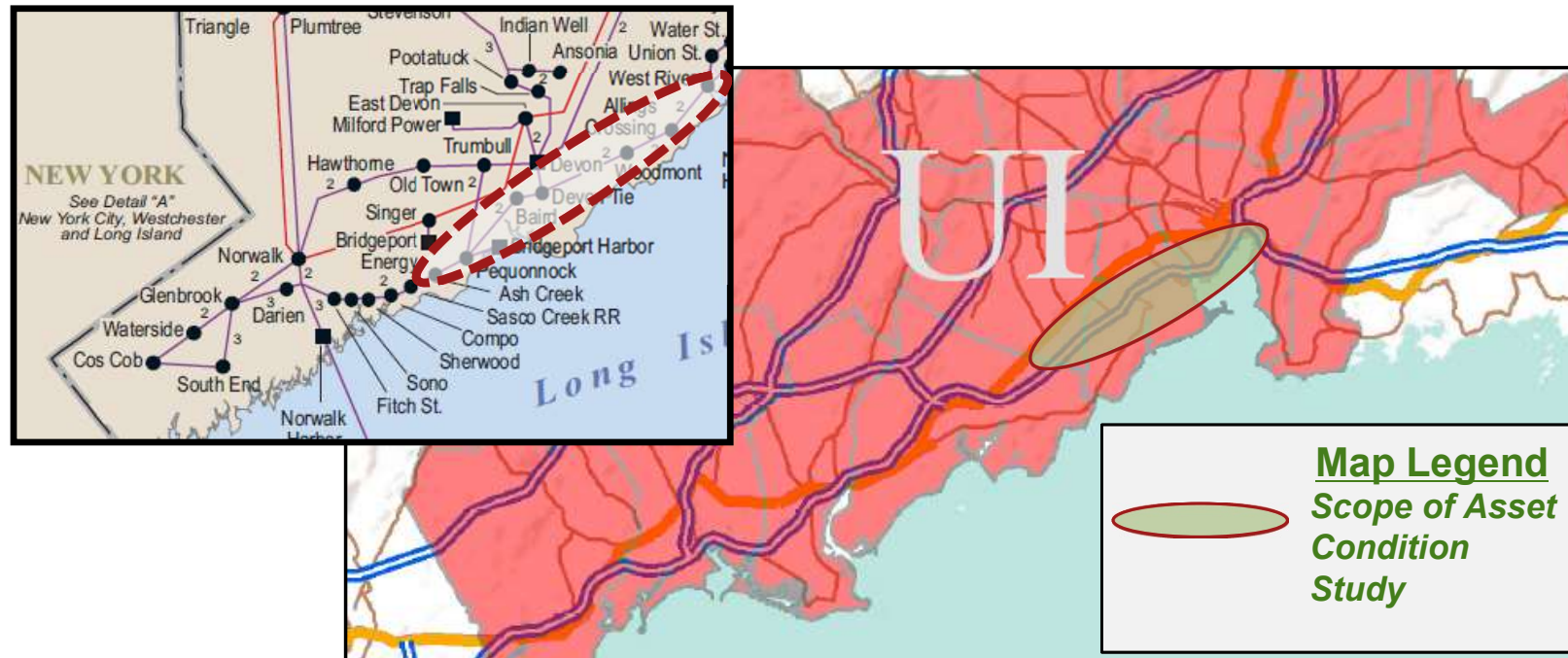
Zach Logan
Manager Project Development (NE)

Project Timeline

- ISO-NE PAC Presentation₁ ➤ June 13, 2018
- PPA Presentation (RC Approval)₂ ➤ January 17, 2019
- PAC Update₃ ➤ November 15, 2022
- Construction Start ➤ August 2023
- Planned In Service Date ➤ Staged from January 31, 2024 to May 31, 2028

1. [PAC Presentation](#)
2. [PPA Presentation](#)
3. [PAC Update](#)

Background – Geographic



| Line Segment | Circuit ID's | Circuit Mileage |
|---------------------|-----------------------------|-----------------|
| Milvon – West River | 88005A/B, 8804A/B, 88003A/B | 19.0 |

Previous ISO Presentation (presented June 13, 2018):

https://smd.iso-ne.com/operations-services/ceii/pac/2018/06/a4_railroad_corridor_transmission_line_asset_condition.pdf

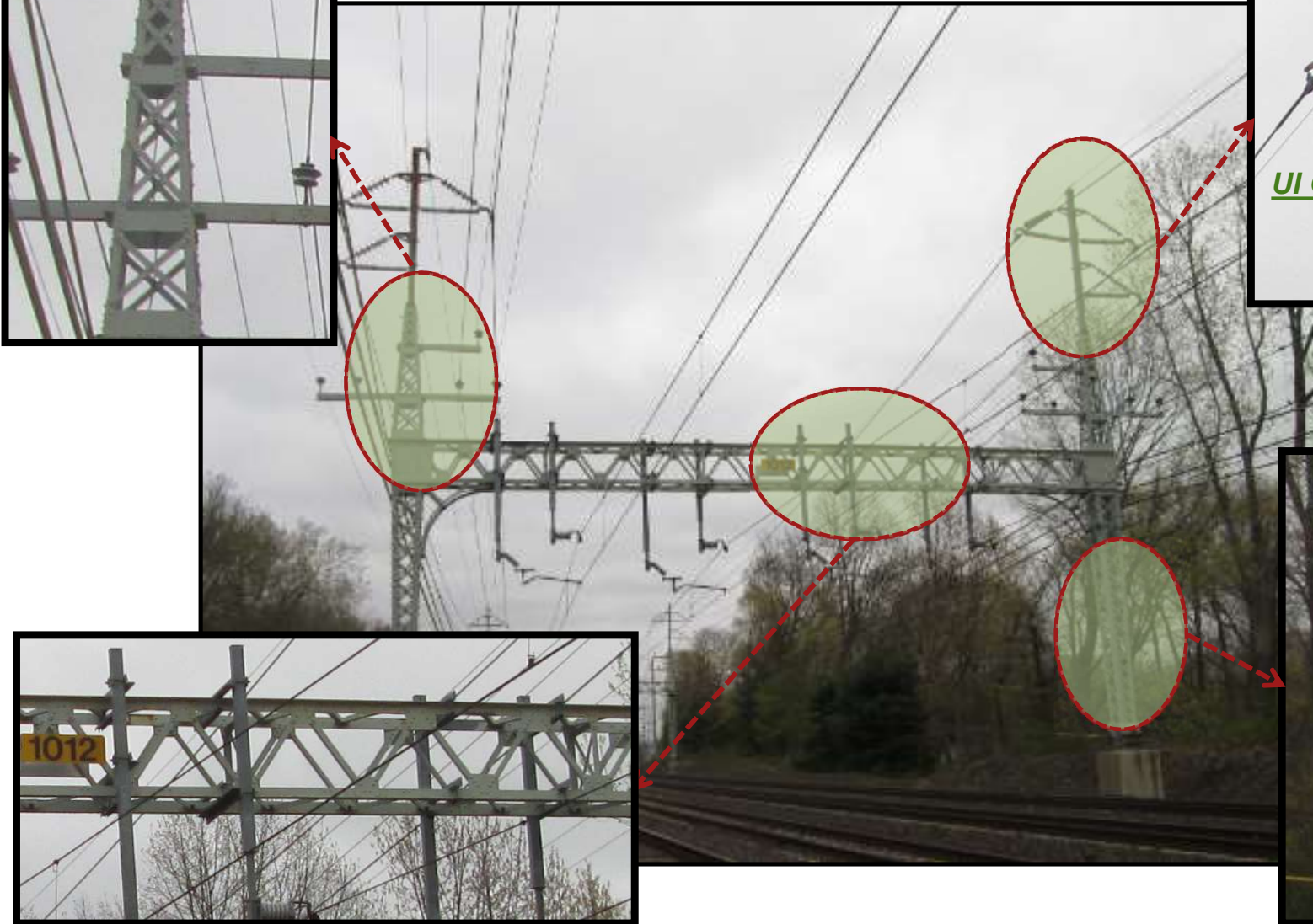
This asset condition assessment identified significant 115 kV transmission asset condition concerns along the RR corridor. These concerns include corrosion loss, corrosion expansion, missing members, and additional loads being applied to structures. This assessment determined that rebuilding these transmission lines onto new double-circuit monopoles adjacent to the existing railroad corridor rights-of-way was the preferred alternative.

Background – Catenary Structure

(4) Support Component



(1) Vee Component and Bonnet Extension



(3) Truss Component



(2) Post Component



Asset Condition Assessment

Corrosion:



Structures:

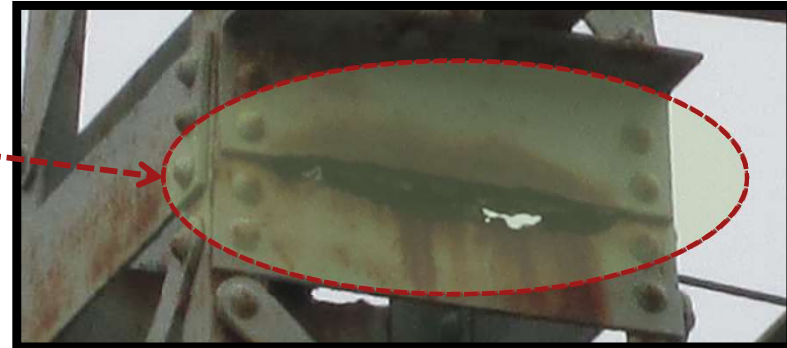


Asset Condition Assessment

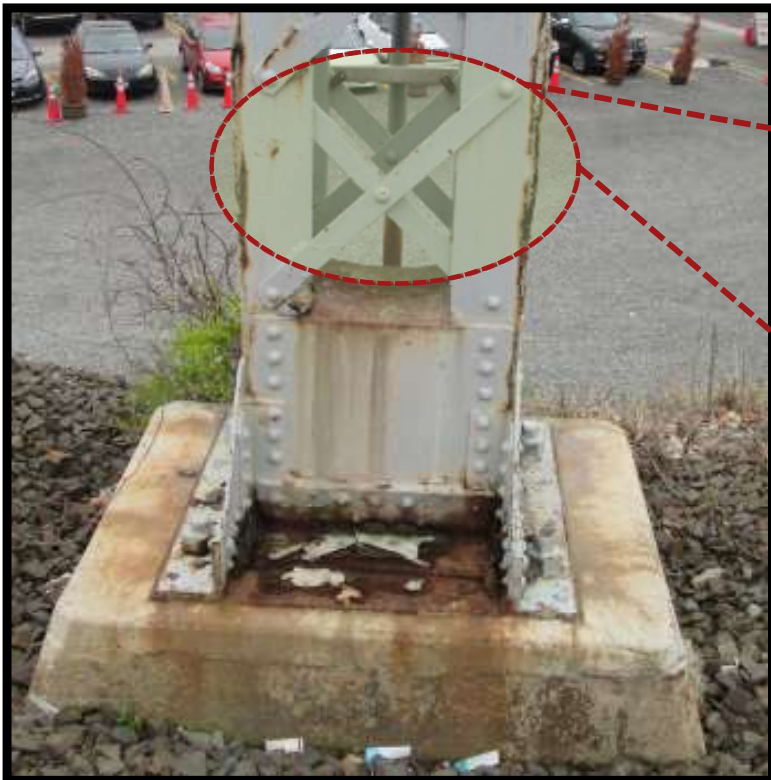
Side Angle Loss



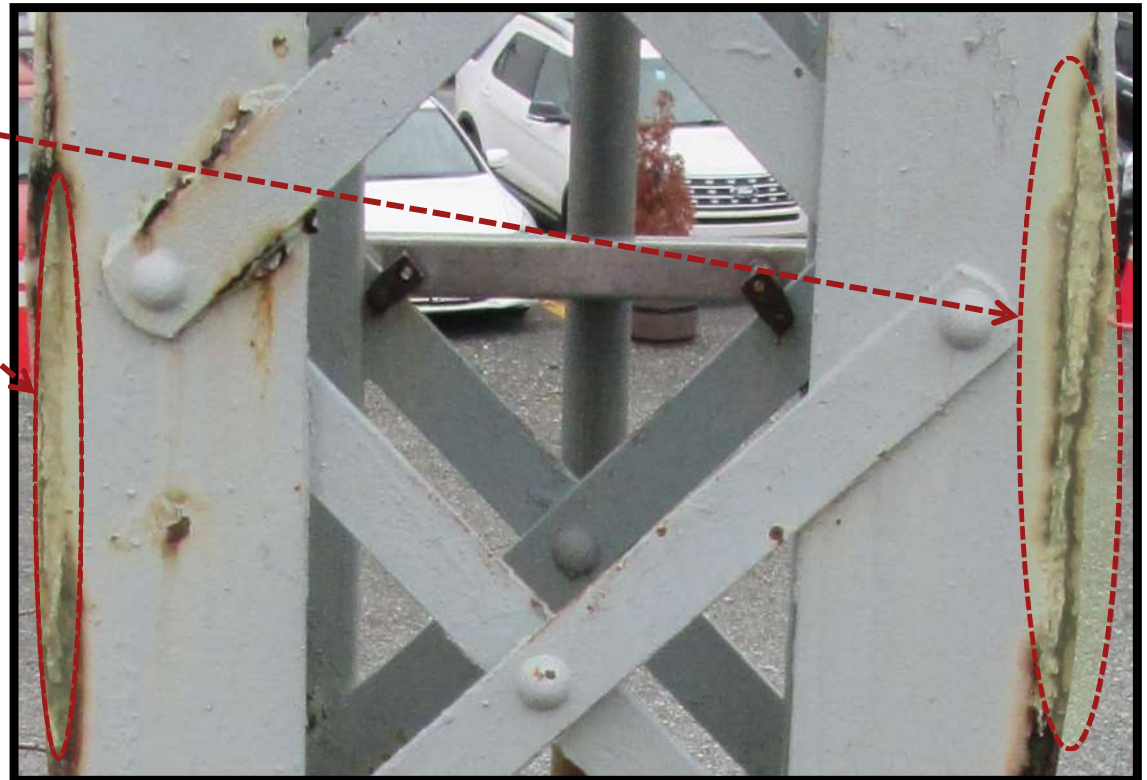
Side Angle Loss



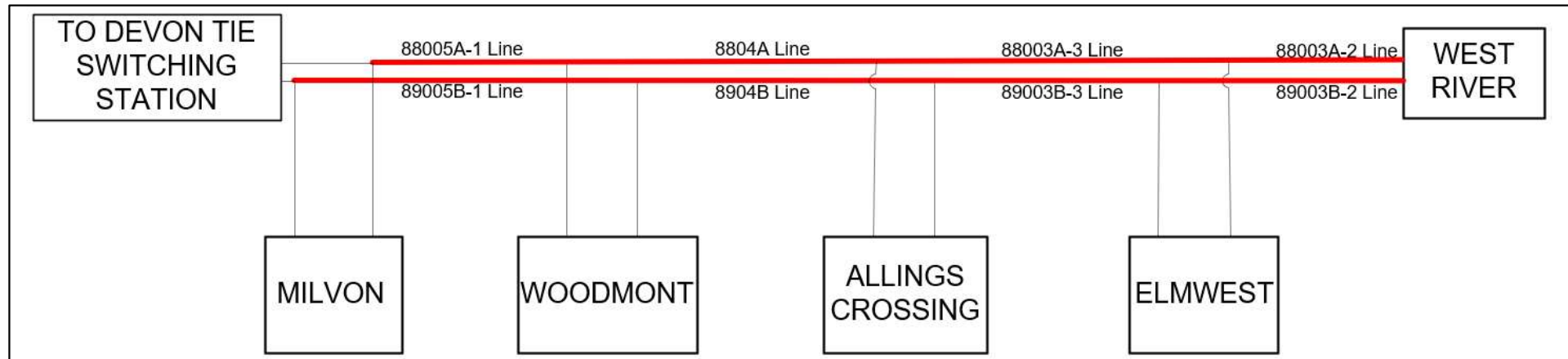
Lattice Corrosion Expansion



Lattice Corrosion Expansion



Project Cost & Summary



| Milvon – West River Solution Alternatives (+/-10% Level) | | |
|---|-----------|-----------|
| Solution Alternative | 2018 Cost | 2022 Cost |
| Double Circuit Tower (Preferred Alternative) | \$196.6M | \$345.4M |
| Monopole (-25/+50% cost) | \$245.6M | \$399M |

Cost Breakdown

| | 2018 Estimate, \$M | | | | 2022 Estimate, \$M | | | | Net \$M Variance* | Comments |
|---|--------------------|------------|--------------|-------------|--------------------|------------|--------------|-------------|----------------------|---|
| | PTF | Non-PTF | Total | % | PTF | Non-PTF | Total | % | | |
| Material | 15.2 | 0.0 | 15.2 | 8% | 14.9 | 0.0 | 14.9 | 4% | -0.2 | Continue to update based on either updated contracts or market price (i.e., metals) |
| Labor & Equipment | 54.5 | 0.0 | 54.5 | 28% | 100.8 | 0.0 | 100.8 | 29% | 46.3 | Increase in cost is primarily due to the price escalation and inflation along with shift of contingency dollars due to design status. Additionally, construction scope is more complex than was assumed in 2018 along with understanding of Project has grown from conceptual stage in 2018 to 90% design in 2022. Value does not include final Construction estimate (this is anticipated in end of Q3/beginning of Q4 2022) |
| Right of Way | 5.9 | 0.0 | 5.9 | 3% | 16.8 | 0.0 | 16.8 | 5% | 10.9 | Significant increase needed from 2018 to 2022 on easements (permanent 2.7 to 17 acres and temporary .3 to 19 acres) |
| Engineering/Permitting/ Indirect | 65.0 | 0.0 | 65.0 | 33% | 125.4 | 0.0 | 125.4 | 37% | 60.4 | Increase is from more clear understanding of environmental conditions (wetland impact - temp vs permanent, species, stormwater inspections relative to timing to indirect, cultural resources). |
| Escalation | 13.0 | 0.0 | 13.0 | 7% | 3.8 | 0.0 | 3.8 | 1% | -9.2 | |
| AFUDC | 28.9 | 0.0 | 28.9 | 15% | 59.5 | 0.0 | 59.5 | 17% | 30.6 | Increase due to current AFUDC rates versus 2018 |
| Contingency | 14.2 | 0.0 | 14.2 | 7% | 24.2 | 0.0 | 24.2 | 7% | 10.0 | |
| Total | 196.6 | 0.0 | 196.6 | 100% | 345.4 | 0.0 | 345.4 | 100% | 148.8 | |

*may not exactly sum due to rounding

Questions

