

Sub-Regional RTEP Committee – Mid-Atlantic PPL Supplemental Projects

October 19,2023

Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0013

Meeting Date: 10/19/2023

Process Stage: Need

Supplemental Project Driver: Equipment Material Condition, Performance, and Risk.

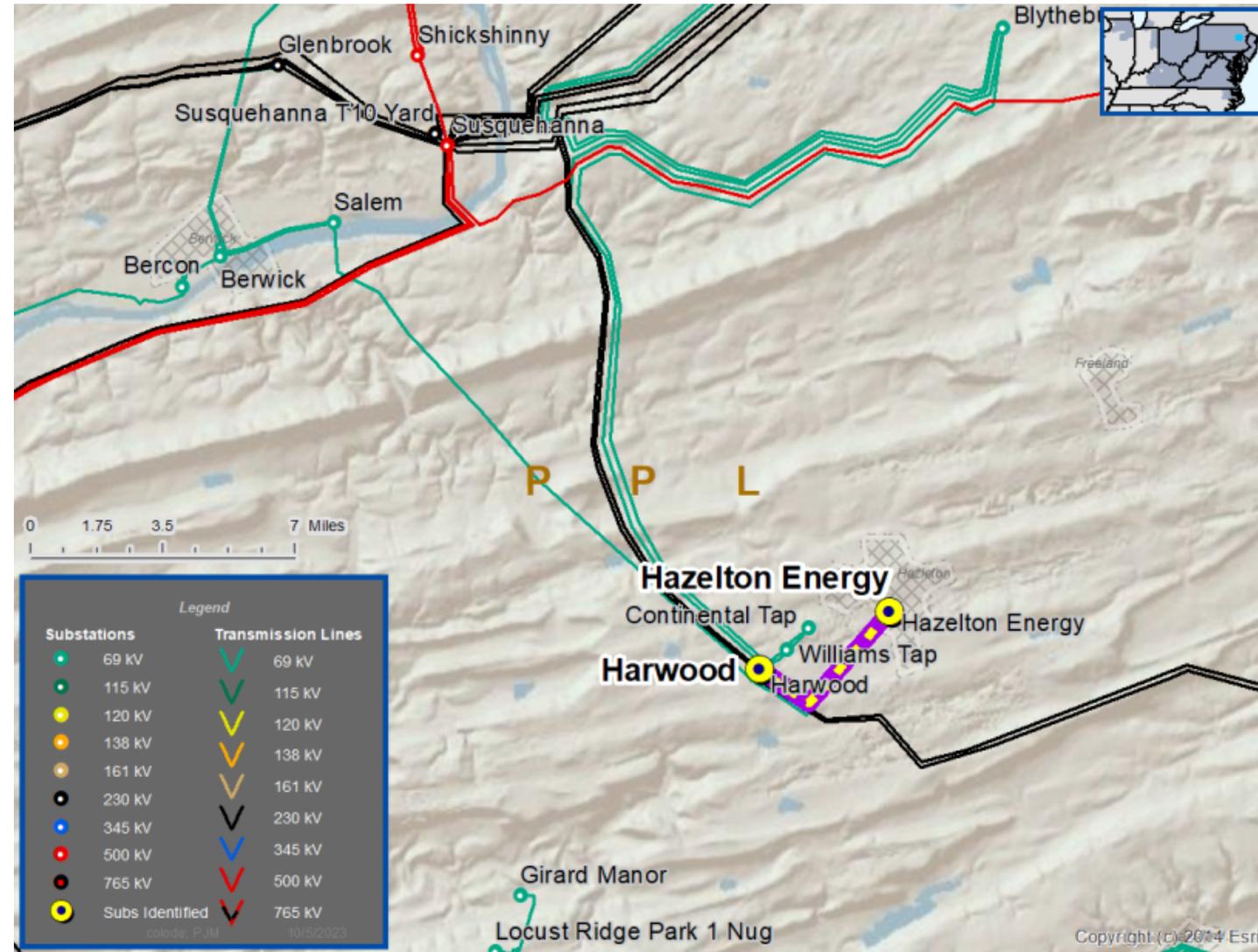
Operation Flexibility

Problem Statement:

- In a 2.6 mile stretch of the Harwood – East Hazleton 69 kV line, 20 of the 32 structures are weathering steel Corten lattice towers that were installed in 1970.
- A third-party inspection and analysis was conducted on a statistically significant sample of 192 out of the 1284 Corten structures on the PPL system. All the towers inspected exhibited section loss on numerous members and over 90% of the joints had visible pack-out.
- The report rated all the Corten towers inspected in poor or worse condition and concluded that the towers require near-term mitigation.
- Due to load growth in the area this section of line becomes the limiting factor for making transfers.

Specific Assumption References:

[PPL 2023 Annual Assumptions](#)



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0014

Meeting Date: 10/19/2023

Process Stage: Need

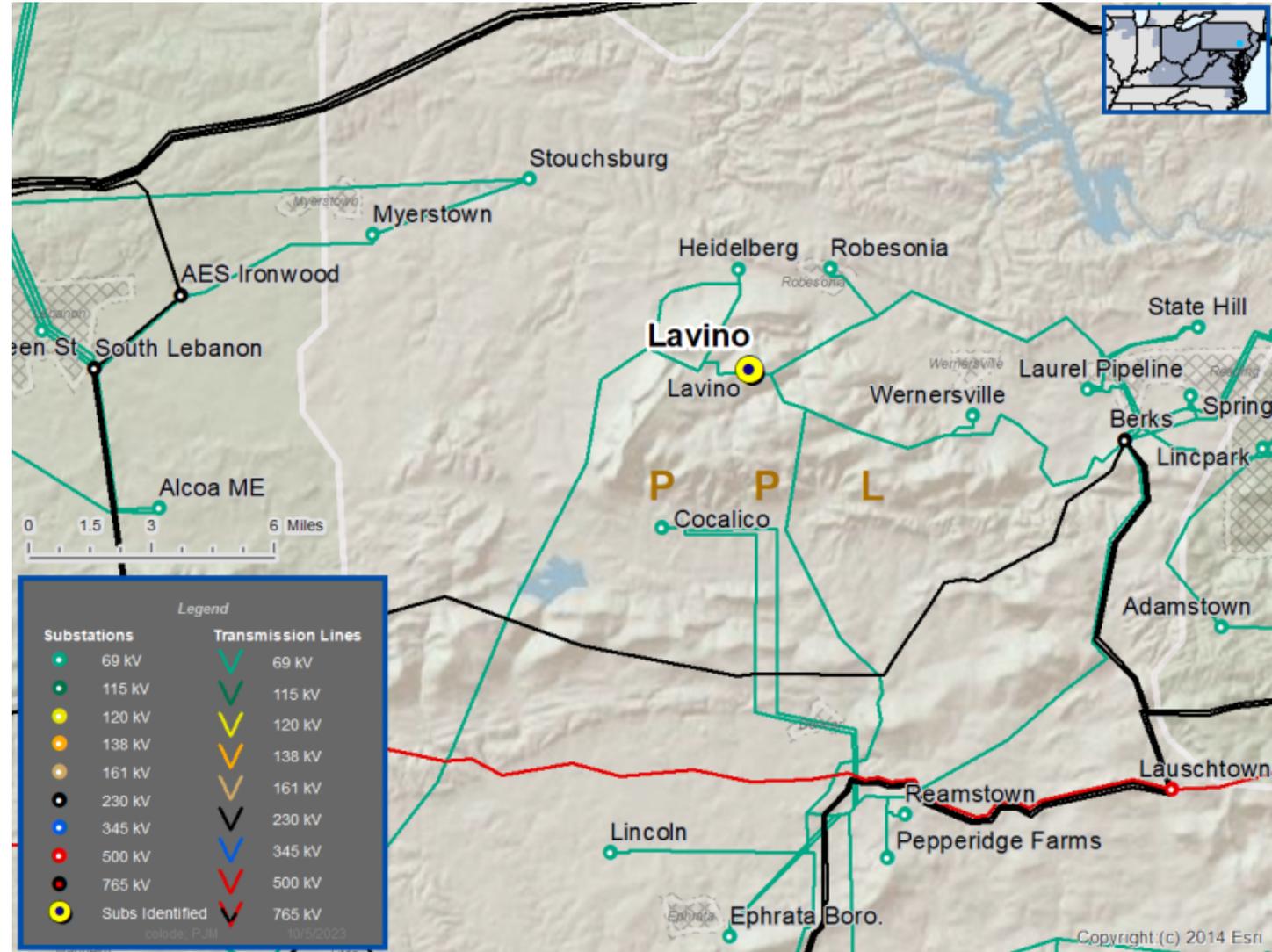
Supplemental Project Driver: Customer Service

Problem Statement:

PPL Distribution has submitted a request for a second 69kV feed at Lavino Substation to support replacement of existing transformers and rebuilding of the substation.

Specific Assumption References:

[PPL 2023 Annual Assumptions](#)



Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

PPL Transmission Zone: Supplemental

Need Number: PPL-2019-0007

Meeting Date: 10/19/2023

Process Stage: Solution

Need Presented: 09/14/2023

Supplemental Project Driver: Equipment Material Condition, Performance and Risk;

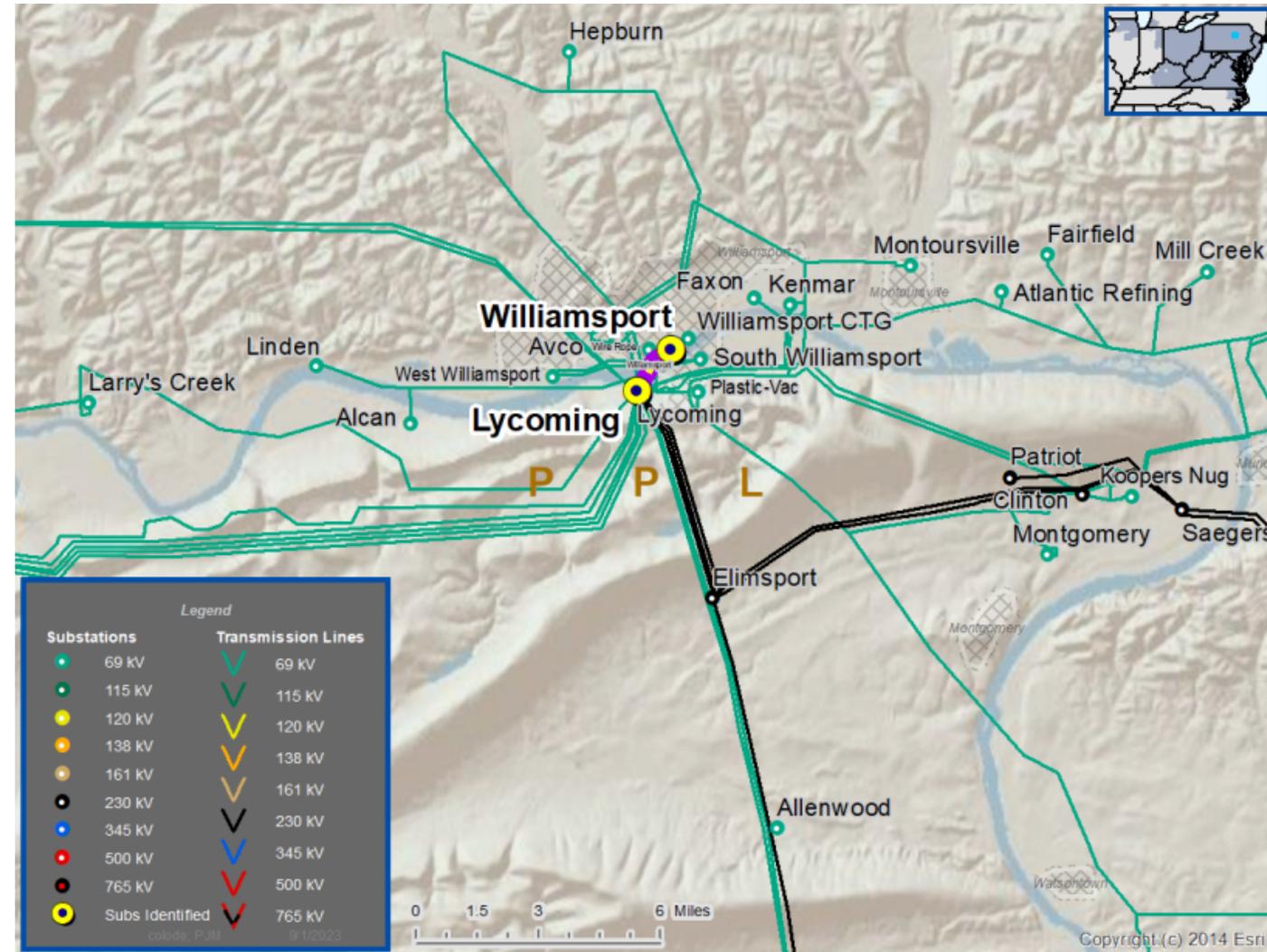
Problem Statement:

The Lycoming – Williamsport #1 & #2 69kV lines are a reliability risk due to poor asset health. The lines are in poor condition with the original assets being installed in 1930. These are two single circuit lines at 1.75 and 2.1 miles, respectively. The lines have the original 2/0 and 4/0 Cu conductor and are primarily wood poles with steel poles interspersed. On the lines, 62 of the 88 poles are wood with the remainder steel. There have 3 outages on this line since 2015:

Cause	Momentary	Permanent	Total
Foreign Interference (Other utility)	1	0	1
Lightning	2	0	2
Grand Total	3	0	3

Specific Assumption References:

[PPL 2023 Annual Assumptions](#)



PPL Transmission Zone: Supplemental

Need Number: PPL-2019-0007

Proposed Solution:

Rebuild the Lycoming – Williamsport #2 69kV line (2.1 miles) to double circuit 69kV operation with 556 ACSR conductor. Remove 1.2 miles of the Lycoming – Williamsport #1 69kV line.

Alternatives Considered:

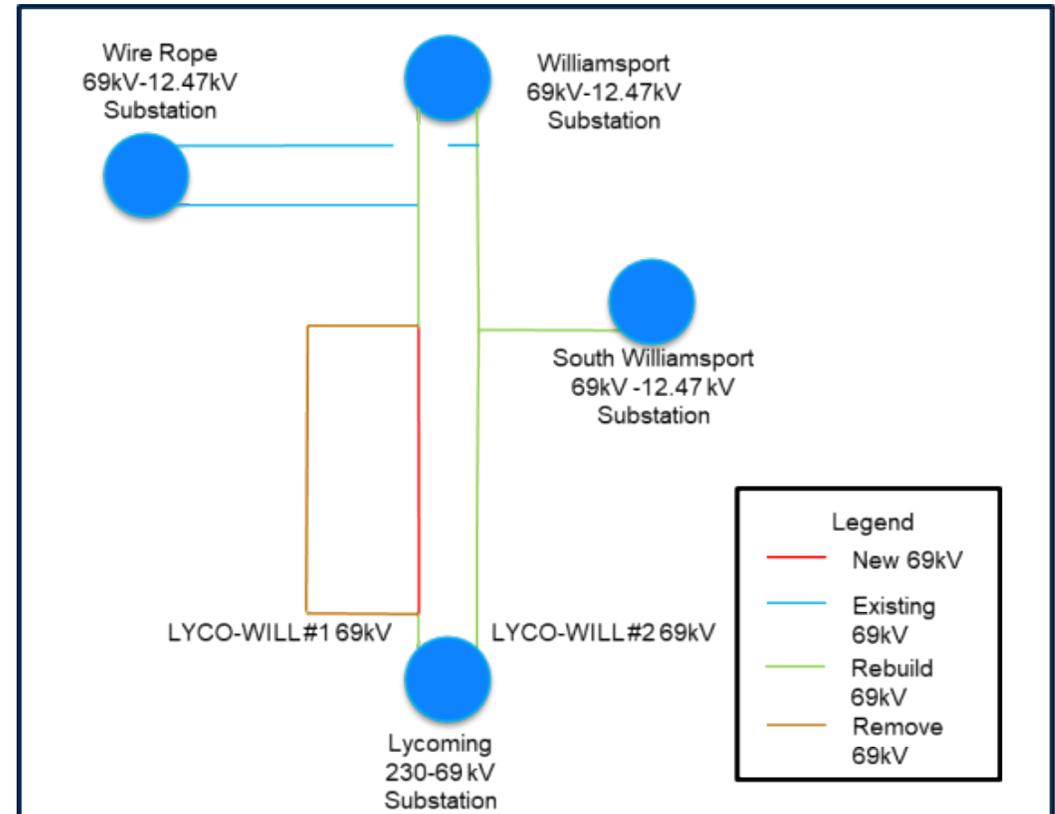
1. Removing the lines was not feasible due to distribution substations being served from the lines.
2. Keeping the lines as two single circuits was determined to be less cost effective. This arrangement was estimated at \$7.5M

Estimated Project Cost: \$6M

Projected In-Service: 12/30/2027

Project Status: Conceptual

Model: 2027



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0007

Meeting Date: 10/19/2023

Process Stage: Solution

Need Slide Presented: 09/14/2023

Supplemental Project Driver: Equipment Material Condition, Performance, and Risk.

Operational Flexibility and Efficiency.

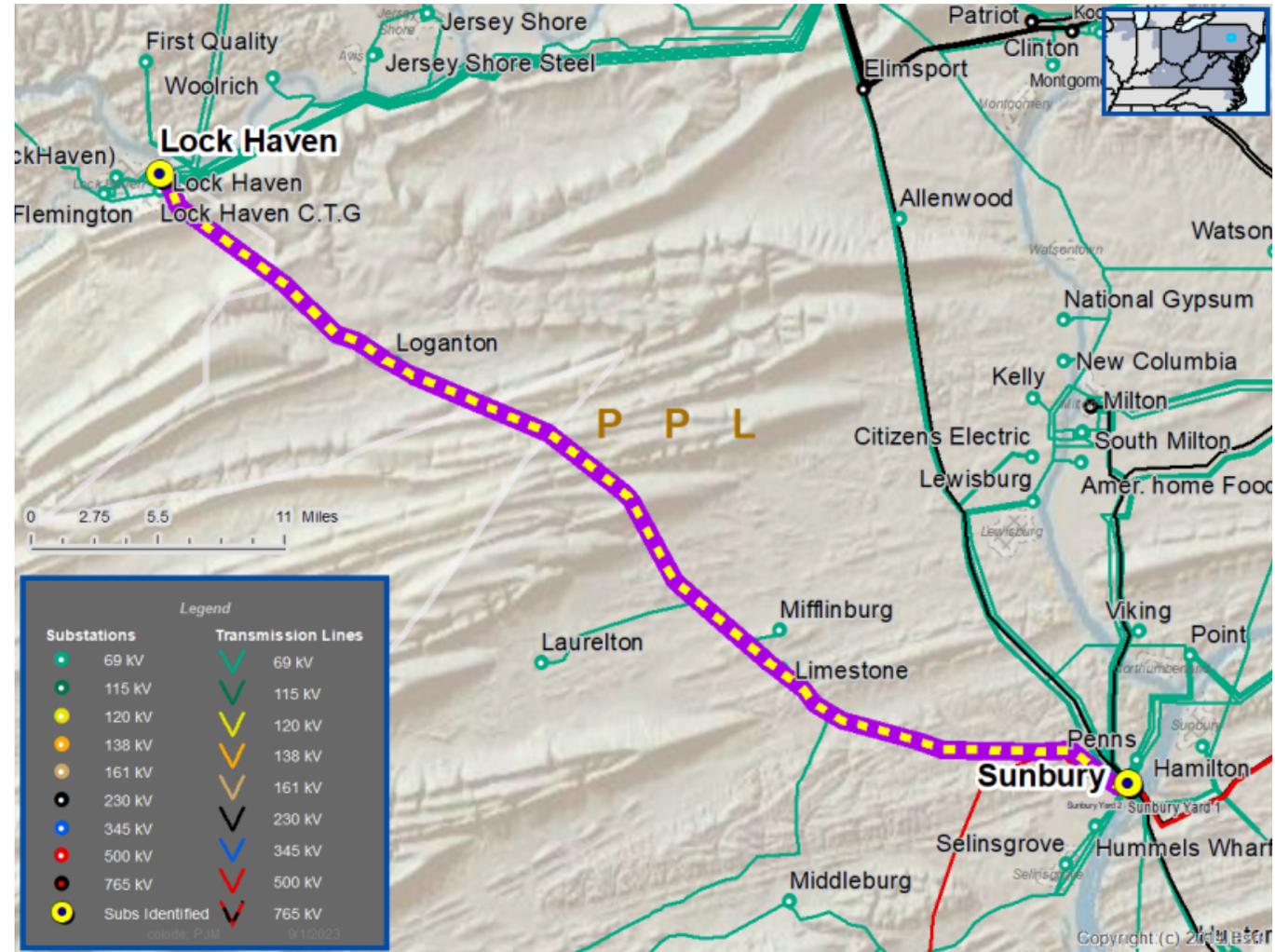
Problem Statement:

The Sunbury-Lock Haven 69kV line is a reliability risk due to poor asset health. The line is in poor condition with the original assets installed in 1949. The line consists of 420 wood poles, 10 towers, and 349 steel poles. The 556 ACSR conductor was installed in 1971. The line has experienced 11 operations since 2017. Transfer capability is limited in the Lock Haven area due to the long line lengths (~40 miles) and the network operation. There is customer outage exposure when taking line sections out for maintenance.

Cause	Momentary	Permanent	Total
Foreign Interference (Animal)	2	0	2
Lightning	4	0	4
Vegetation	1	2	3
Failed AC Substation Equipment	1	0	1
Foreign Interference – Machinery	1	0	1
Grand Total	9	2	11

Specific Assumption References:

[PPL 2023 Annual Assumptions](#)



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0007

Proposed Solution:

Rebuild the Sunbury – Lock Haven 69kV line (~39 miles) to double circuit 69kV operation with 795 ACSR conductor. Install new line terminals at Sunbury and Lock Haven substations to accommodate the new circuit.

Alternatives Considered:

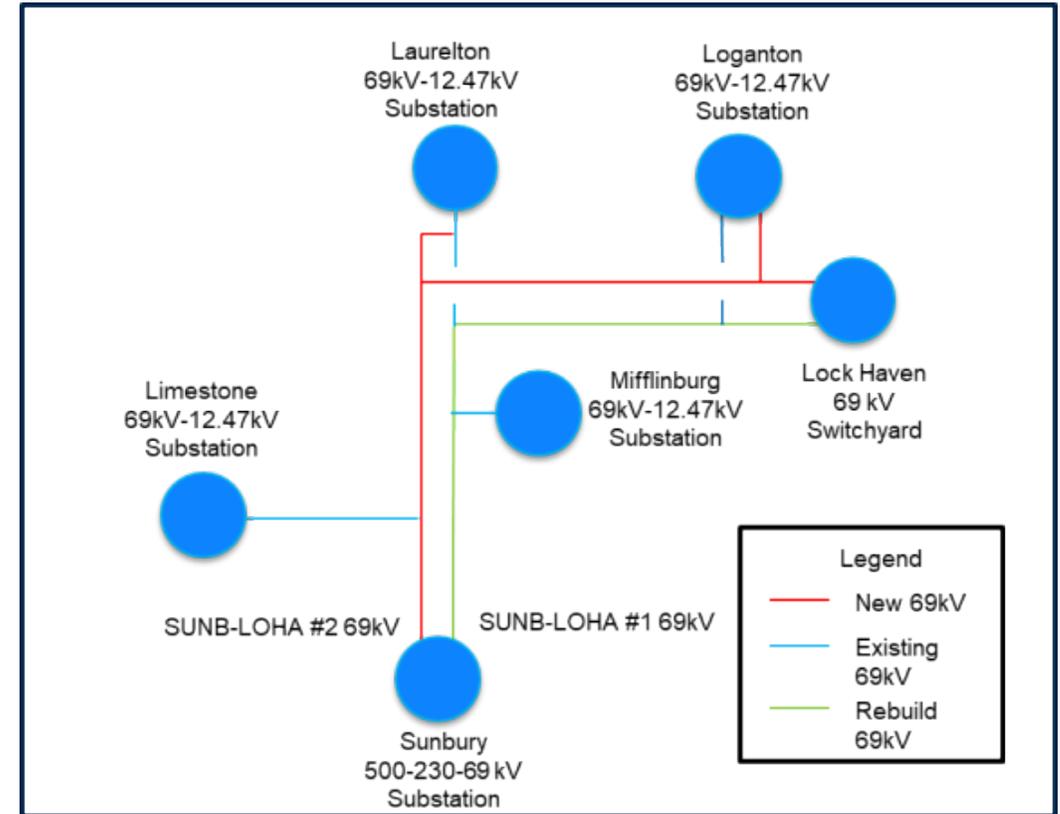
1. Single Circuit initial, future double circuit 69kV design. This was estimated at \$88 M and \$26.75 M to add the second circuit in the future.

Estimated Project Cost: \$103M

Projected In-Service: 12/30/2028

Project Status: Conceptual

Model: 2028



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0009

Meeting Date: 10/19/2023

Process Stage: Solution

Need Presented: 09/14/2023

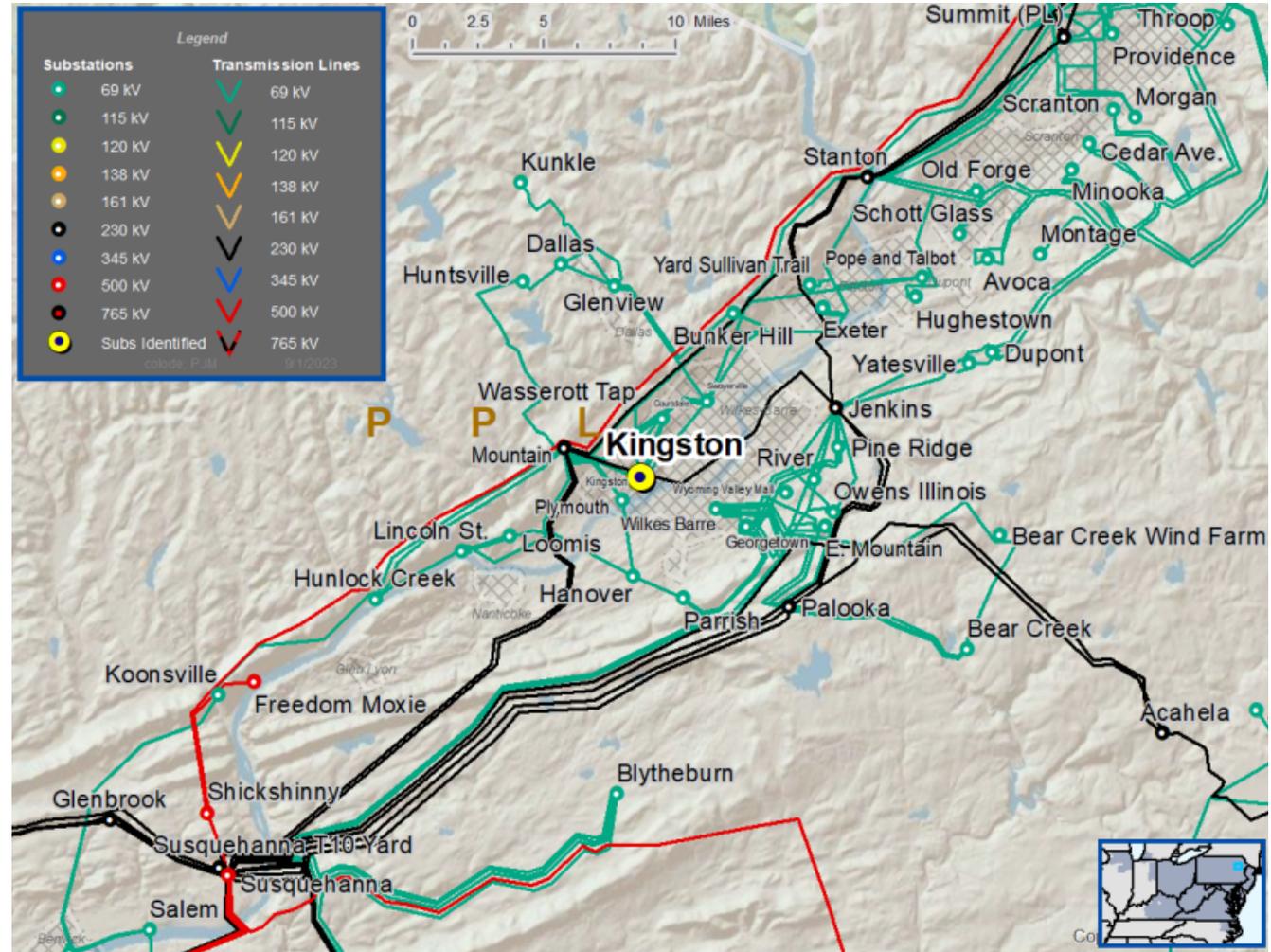
Supplemental Project Driver: Customer Service

Problem Statement:

PPL Distribution has submitted a request for a second 69kV feed at New Kingston Substation to feed a second 69-12kV transformer. There are several customers adding a combined load of 6.5 MW to New Kingston substation.

Specific Assumption References:

[PPL 2023 Annual Assumptions](#)



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0009

Proposed Solution:

Extend a second circuit to New Kingston substation from the Cumberland – Carlisle #2 69kV line (0.06 Miles)

Alternatives Considered:

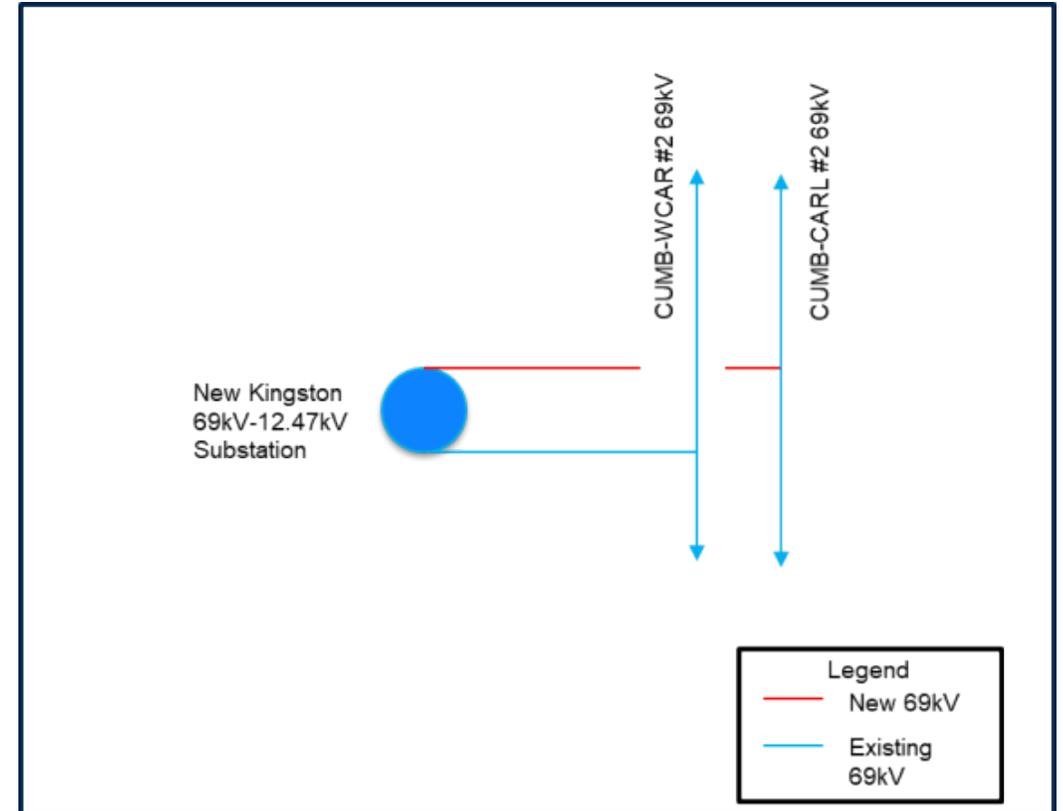
1. Tapping the Cumberland – W. Carlisle #1 69kV line was considered but the CUMB-CARL #2 was closer to the substation.

Estimated Project Cost: \$0.9M

Projected In-Service: 11/30/2025

Project Status: Conceptual

Model: 2026



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0010

Meeting Date: 10/19/2023

Process Stage: Solution

Need Presented: 09/14/2023

Supplemental Project Driver: Equipment Material Condition, Performance and Risk;

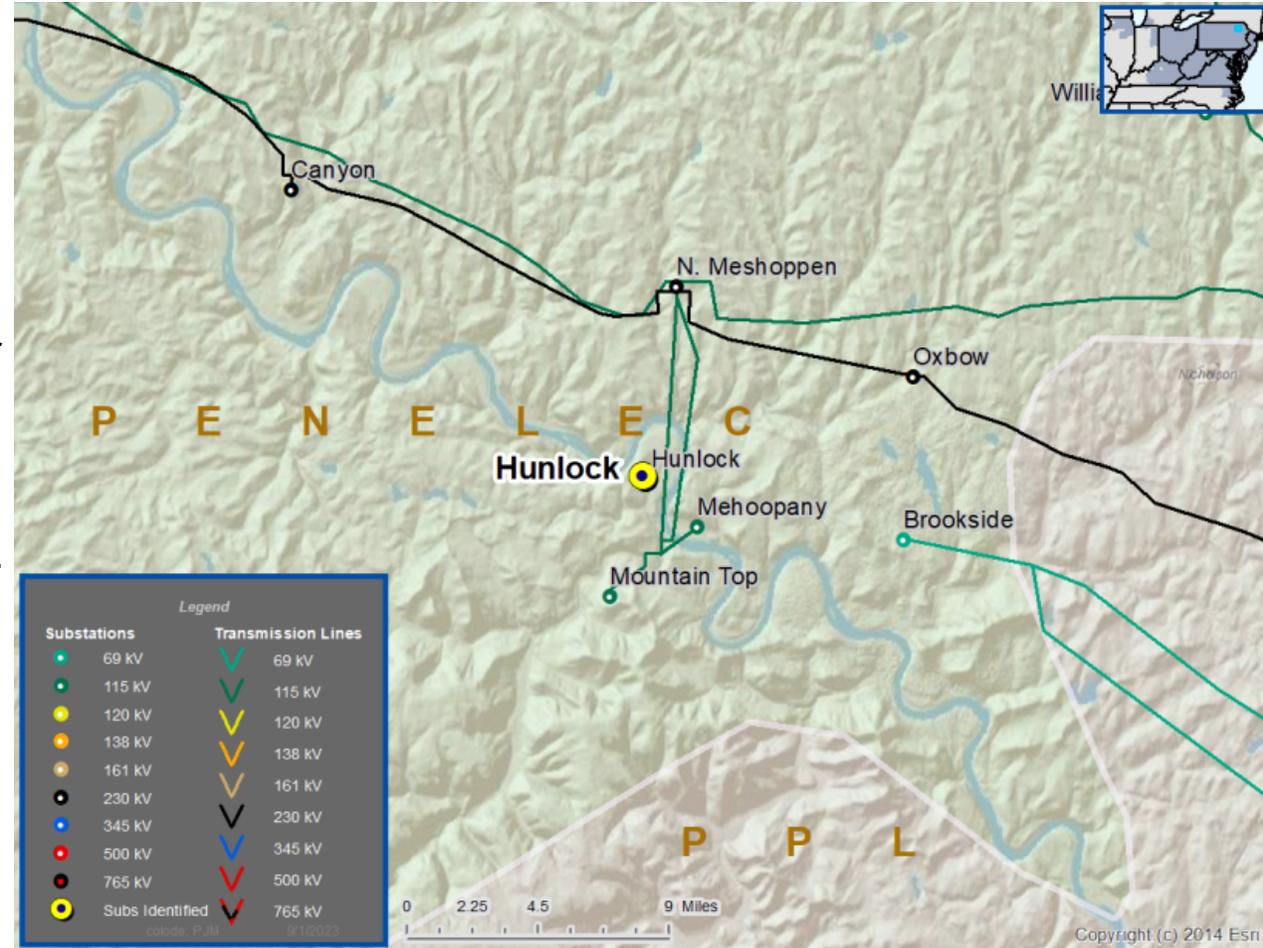
Problem Statement:

The Hunlock-Glen Brook 69kV Line is a reliability risk due to poor asset health. The line is in poor condition with the original assets installed in 1929. The PPL section of this line is 4 miles long. The section to be rebuilt (3.5 miles) is the original 3/0 copper conductor and primarily wood poles with steel poles interspersed. In the section to be rebuilt, 90 of the 107 poles are wood with the remainder steel. There have been two outages on this section since 2015.

Cause	Momentary	Permanent	Total
Unknown	1	0	1
Vegetation	1	0	1
Grand Total	2	0	2

Specific Assumption References:

[PPL 2023 Annual Assumptions](#)



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0010

Proposed Solution:

Rebuild the PPL section of the Hunlock-Glen Brook 69kV line (3.5 miles) to single circuit 69kV operation with 556 ACSR conductor. **Alternatives Considered:**

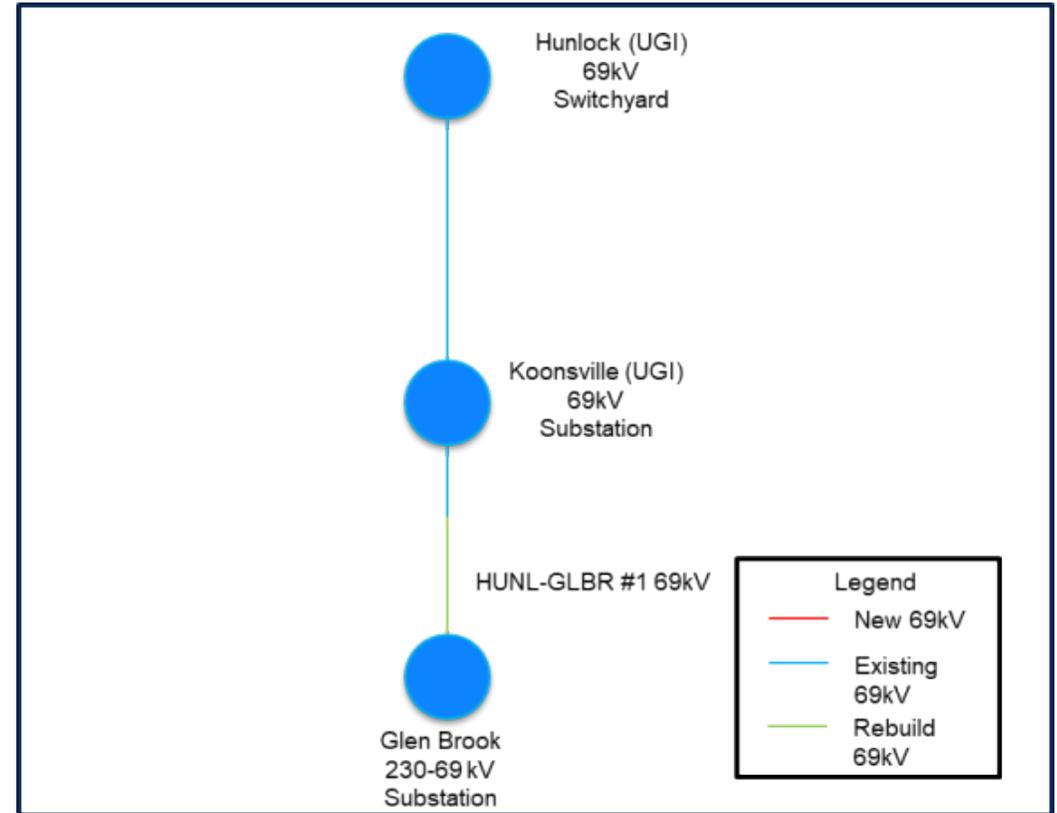
1. Removing the line was not feasible due to loss of operational flexibility for serving a UGI distribution substation

Estimated Project Cost: \$7M

Projected In-Service: 12/30/2028

Project Status: Conceptual

Model: 2028



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0011

Meeting Date: 10/19/2023

Process Stage: Solution

Need Presented: 09/14/2023

Supplemental Project Driver: Equipment Material Condition, Performance and Risk;

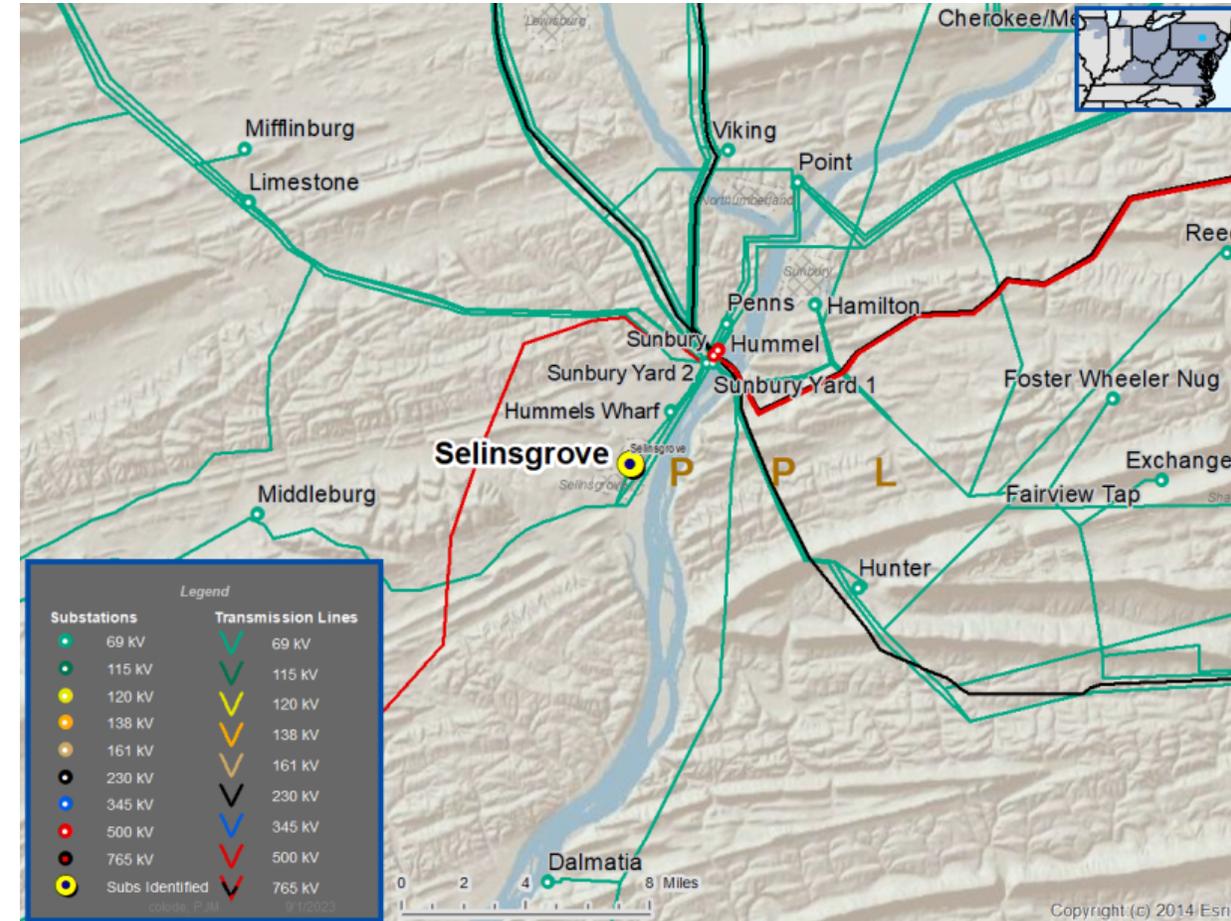
Problem Statement:

The Selinsgrove 69kV tap is a reliability risk due to poor asset health. The line is in poor condition with the original assets installed in 1968. This is a 1.45 mile tap with the original 556 ACSR conductor and primarily wood poles with steel poles interspersed. On the tap, 30 of the 46 poles are wood with the remainder steel. There has been one outage on this section since 2015.

Cause	Momentary	Permanent	Total
Vegetation	0	1	1
Grand Total	0	1	1

Specific Assumption References:

[PPL 2023 Annual Assumptions](#)



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0011

Proposed Solution:

Rebuild the Selinsgrove 69kV taps (1.45 miles) to double circuit 69kV operation with 556 ACSR conductor.

Alternatives Considered:

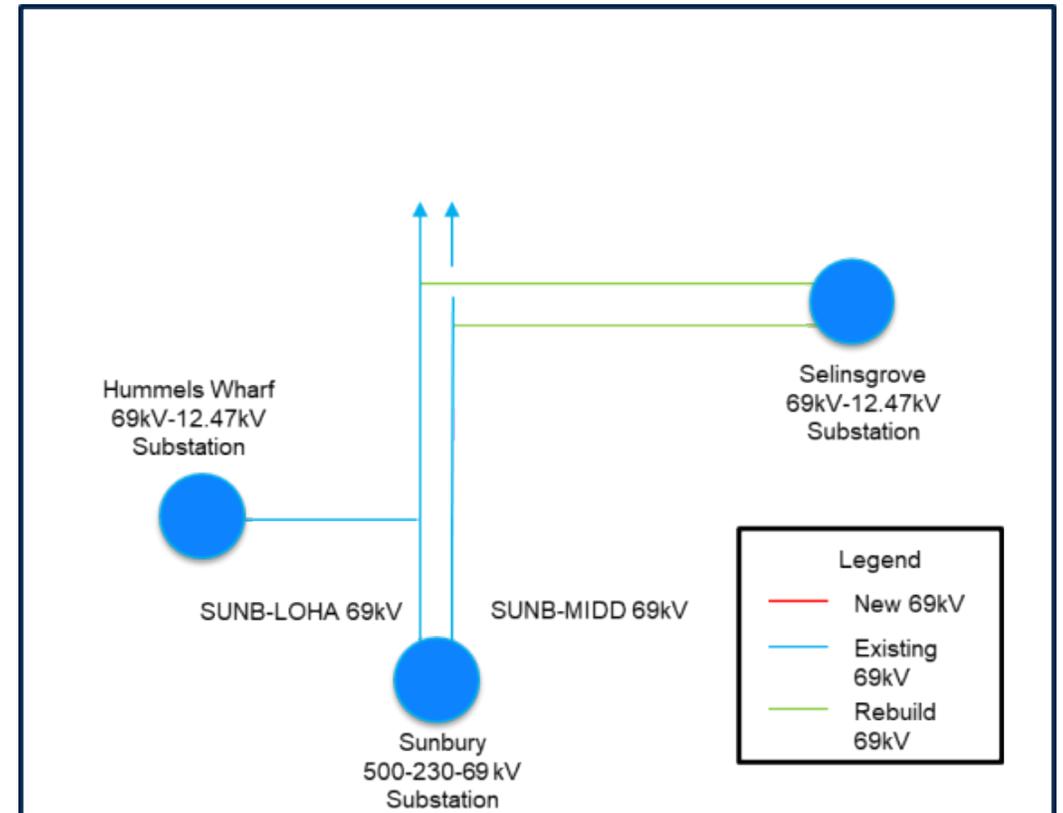
1. Removing the taps was not feasible due to a distribution substation being served by the lines.
2. Replacing the wood poles with steel poles was considered but clearance issues were discovered during project development.

Estimated Project Cost: \$3M

Projected In-Service: 12/30/2026

Project Status: Conceptual

Model: 2027



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0012

Meeting Date: 10/19/2023

Process Stage: Solution

Need Presented: 09/14/2023

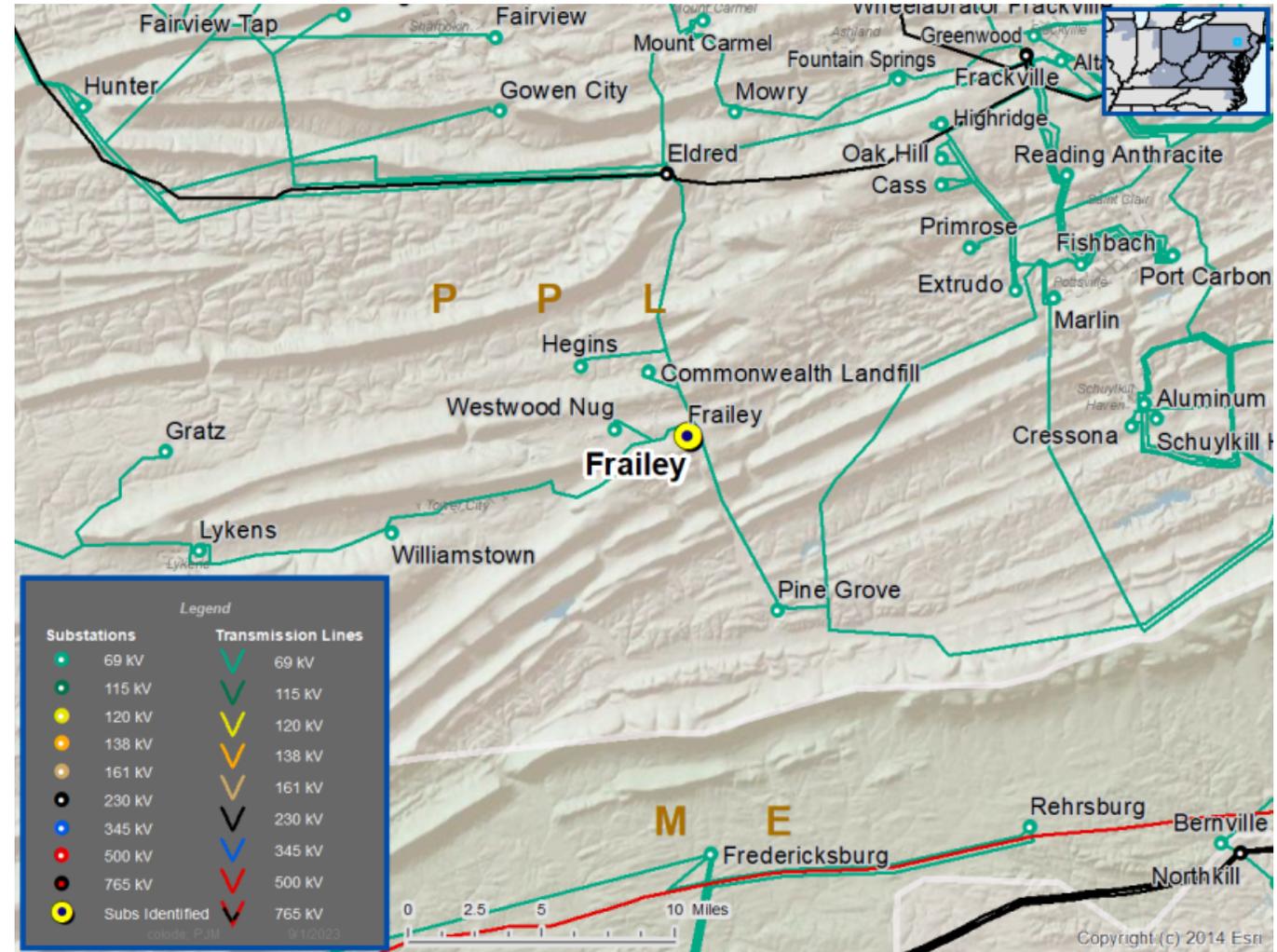
Supplemental Project Driver: Customer Service

Problem Statement:

- A customer has submitted a request to have their facility served from a 69kV transmission line in Frailey, PA. The load is approximately 10 MVA.

Specific Assumption References:

[PPL 2023 Annual Assumptions](#)



PPL Transmission Zone: Supplemental

Need Number: PPL-2023-0012

Proposed Solution:

Extend a single circuit 69kV tap to the new customer substation from the Eldred – Pine Grove 69kV line (0.15 Miles)

Alternatives Considered:

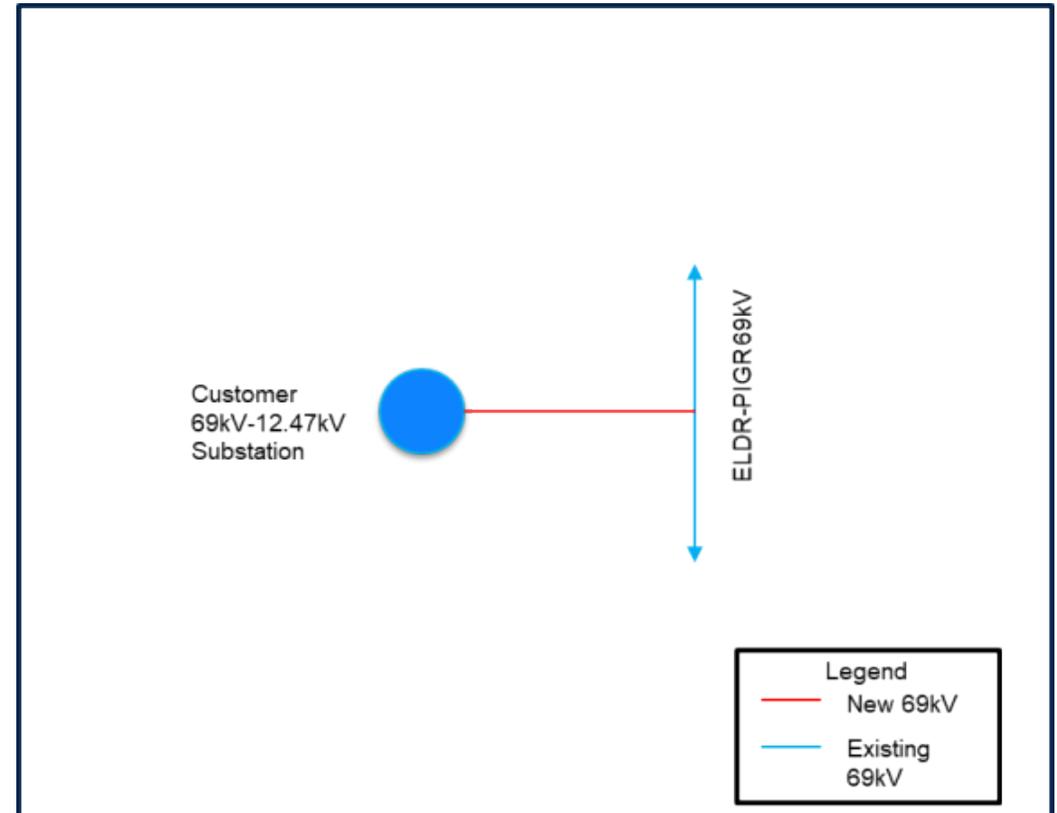
1. No alternatives were considered as the Eldred – Pine Grove 69kV line is the only transmission line in the vicinity.

Estimated Project Cost: \$1.0M

Projected In-Service: 11/30/2025

Project Status: Conceptual

Model: 2026





Appendix

High level M-3 Meeting Schedule

Assumptions	Activity	Timing
	Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
	Stakeholder comments	10 days after Assumptions Meeting
Needs	Activity	Timing
	TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
	Stakeholder comments	10 days after Needs Meeting
Solutions	Activity	Timing
	TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
	Stakeholder comments	10 days after Solutions Meeting
Submission of Supplemental Projects & Local Plan	Activity	Timing
	Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
	Post selected solution(s)	Following completion of DNH analysis
	Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
	Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

10/9/2023 – V1 – Original version posted to pjm.com