Submission of PPL Supplemental Projects for Inclusion in the 2022 Local Plan

PPL Transmission Zone: Supplemental

Need Number: PPL-2021-0001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 9/23/2022

Need Slide Presented: 05/20/2021

Solution Slide Presented: 8/13/2021

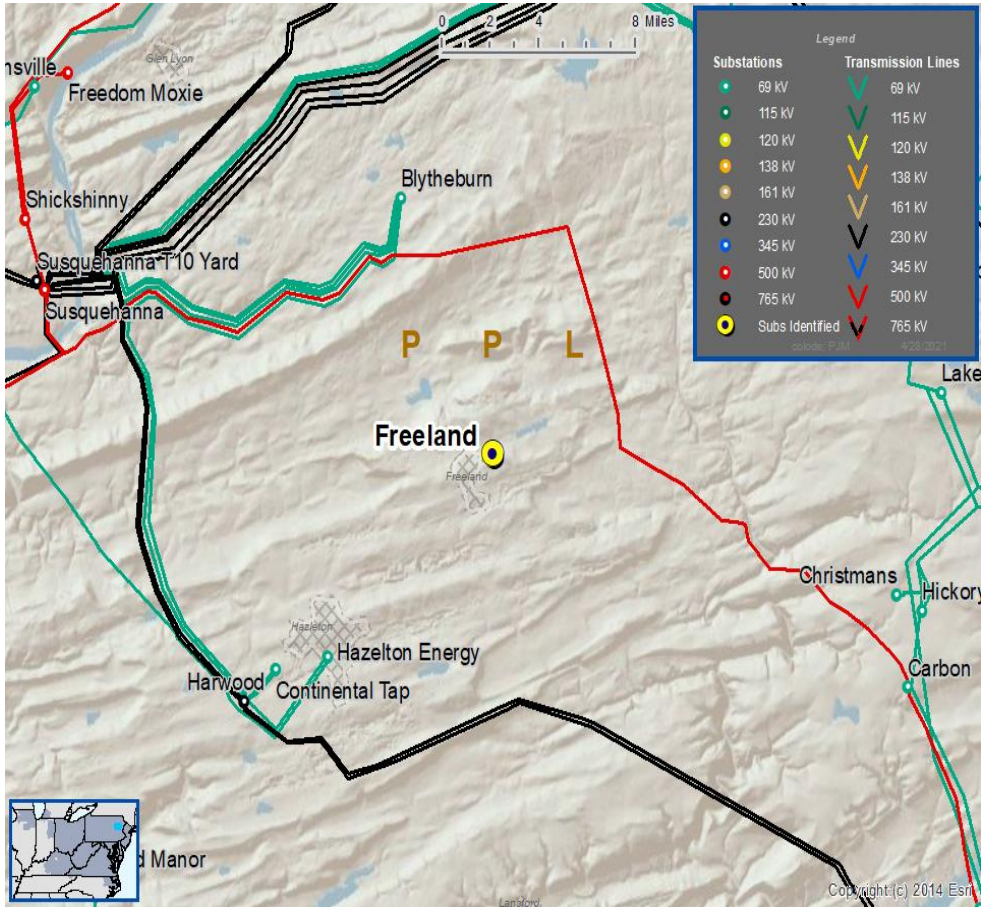
Supplemental Project Driver: Customer Service

Problem Statement:

PPL Distribution has submitted a request for a second 69kV source to the Freeland 69/12kV substation due to load growth in the area.

Specific Assumption References:

[PPL 2021 Annual Assumptions]



Need Number: PPL-2021-0001

Proposed Solution:

Extend a second circuit to Freeland substation from the HARW-EHAZ #1 69kV line (0.75 Miles)

Alternatives Considered:

1. No feasible alternatives

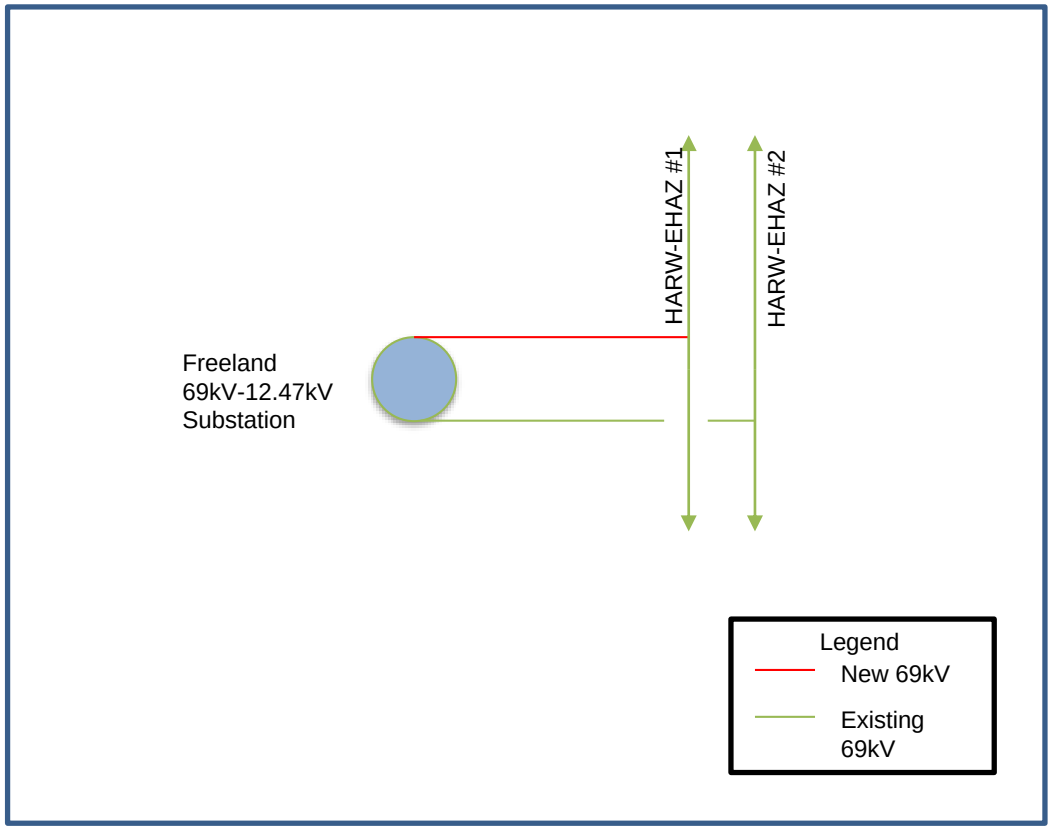
Estimated Project Cost: $0.6M

Projected In-Service: 10/30/2024

Supplemental Project ID: s2591

Project Status: Conceptual

Model: 2024



PPL Transmission Zone: Supplemental

Need Number: PPL-2021-0002

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 9/23/2022

Need Slide Presented: 05/20/2021

Solution Slide Presented: 8/13/2021

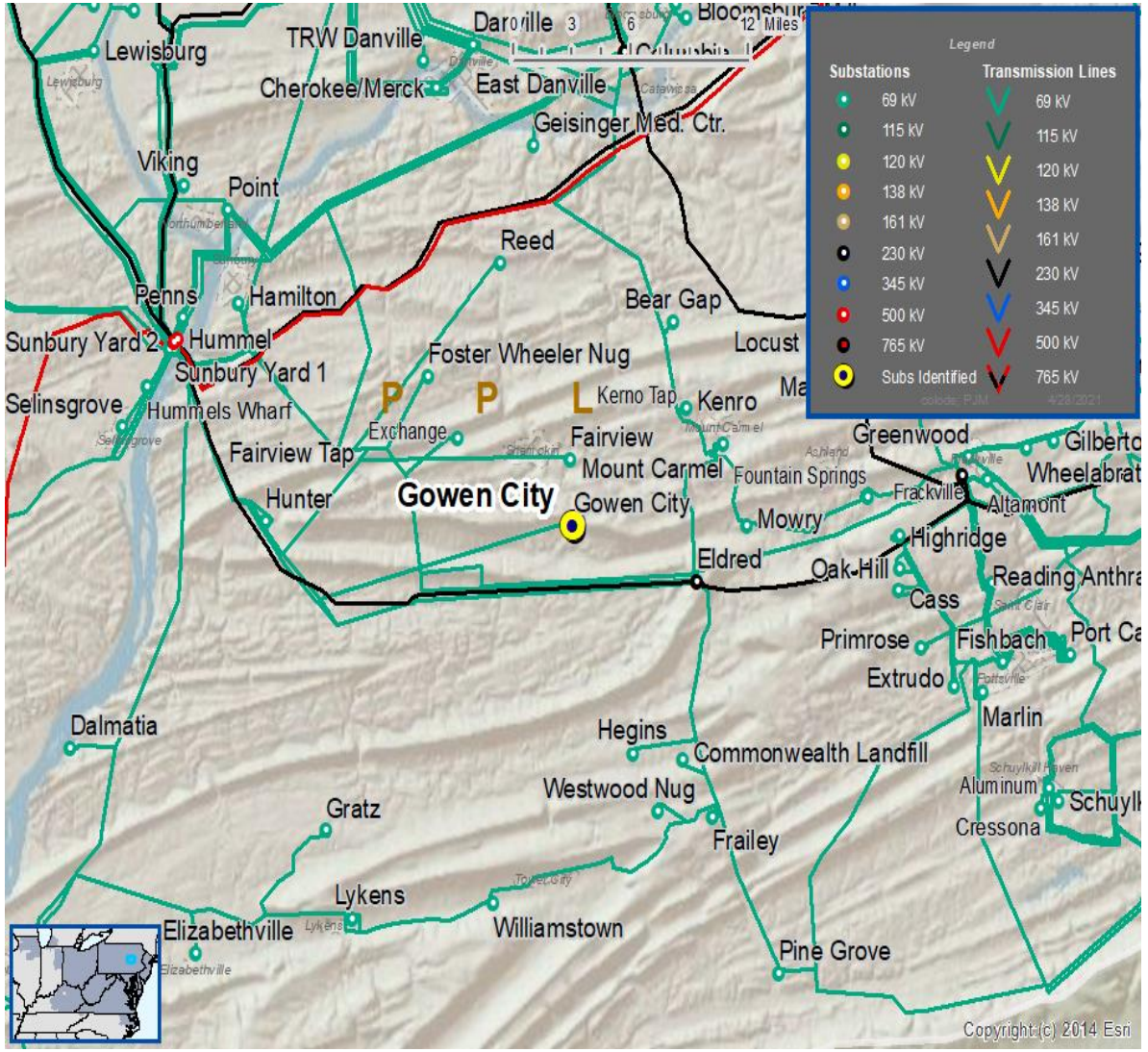
Supplemental Project Driver: Customer Service

Problem Statement:

PPL Distribution has submitted a request for a second 69kV source to the Gowen City 69/12kV substation due to load growth in the area.

Specific Assumption References:

[PPL 2021 Annual Assumptions]



Need Number: PPL-2021-0002

Proposed Solution:

Extend a second circuit to Gowen City substation from the SUNB-ELDR #2 69kV line (0.05 Miles)

Alternatives Considered:

1. No feasible alternatives

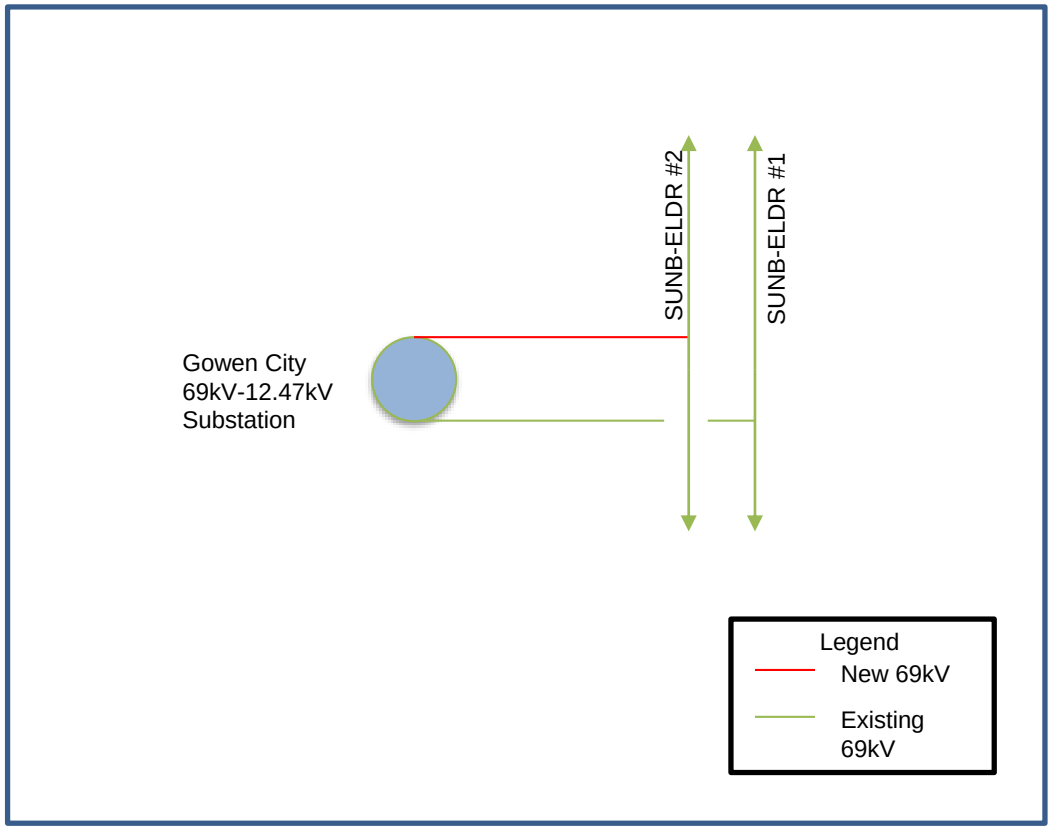
Estimated Project Cost: $0.5M

Projected In-Service: 10/30/2024

Supplemental Project ID: s2592

Project Status: Conceptual

Model: 2024



PPL Transmission Zone: Supplemental

Need Number: PPL-2021-0004

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 9/23/2022

Need Slide Presented: 6/15/2021

Solution Slide Presented: 8/13/2021

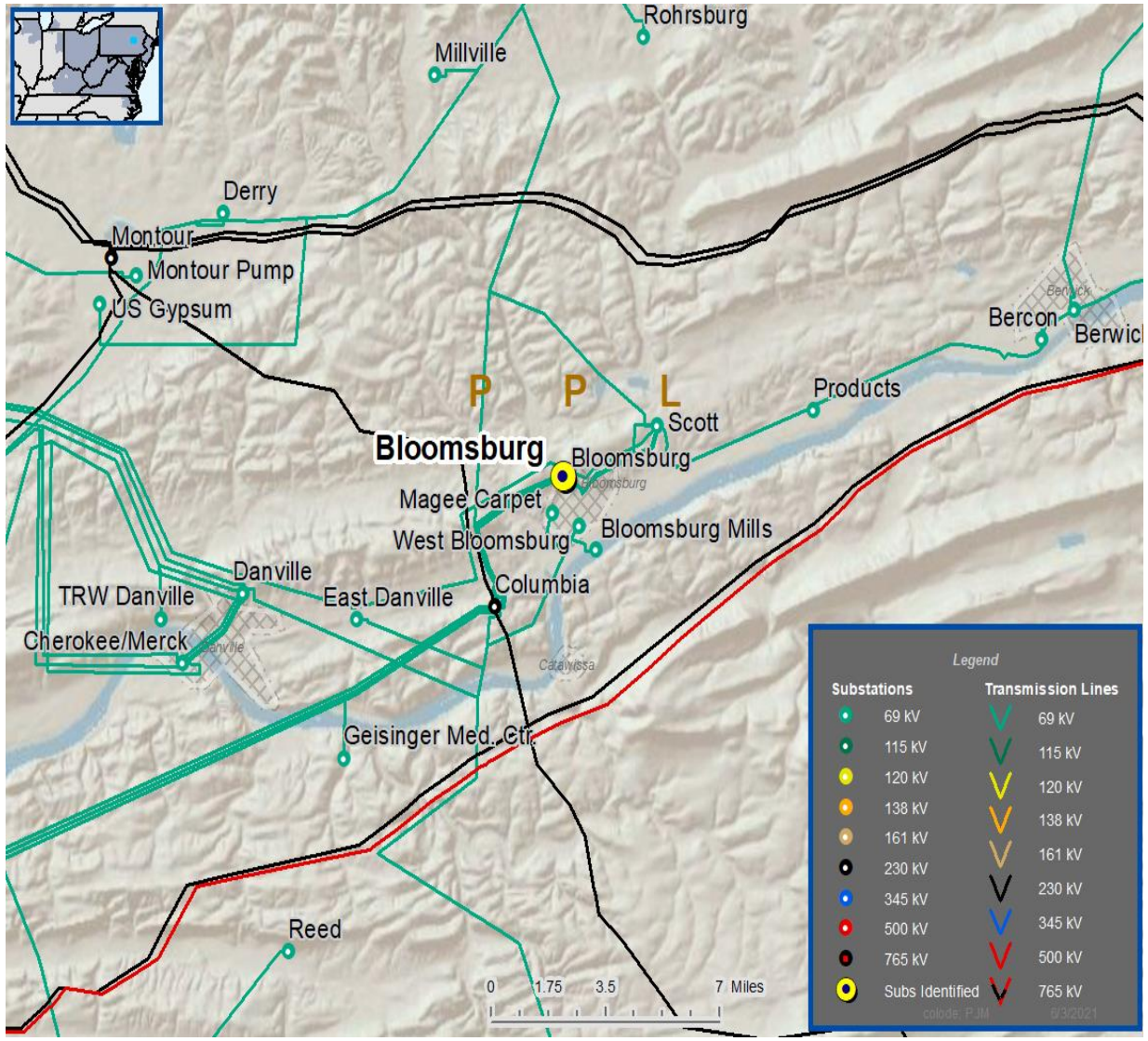
Need Slide Presented: Supplemental Project Driver: Equipment Material Condition, Performance and Risk

Problem Statement:

PPL EU plans to retire the Bloomsburg 69/12kV Substation since the substation is prone to flooding. The Columbia-Scott 69kV CAP Bank is located at the Bloomsburg 69/12kV substation.

Specific Assumption References:

[PPL 2021 Annual Assumptions]



Need Number: PPL-2021-0004

Proposed Solution:

Install one (1) 19.8 MVAR switched cap bank on the Columbia-Scott 69 kV line near the Scott 69/12kV substation

Alternatives Considered:

1. Retire existing cap bank and do not replace. The cap bank is required for voltage support in restoration for a double circuit failure of the COLU-BERW and COLU-SCOT 69kV lines. Voltages of less than 0.893 per unit may result.

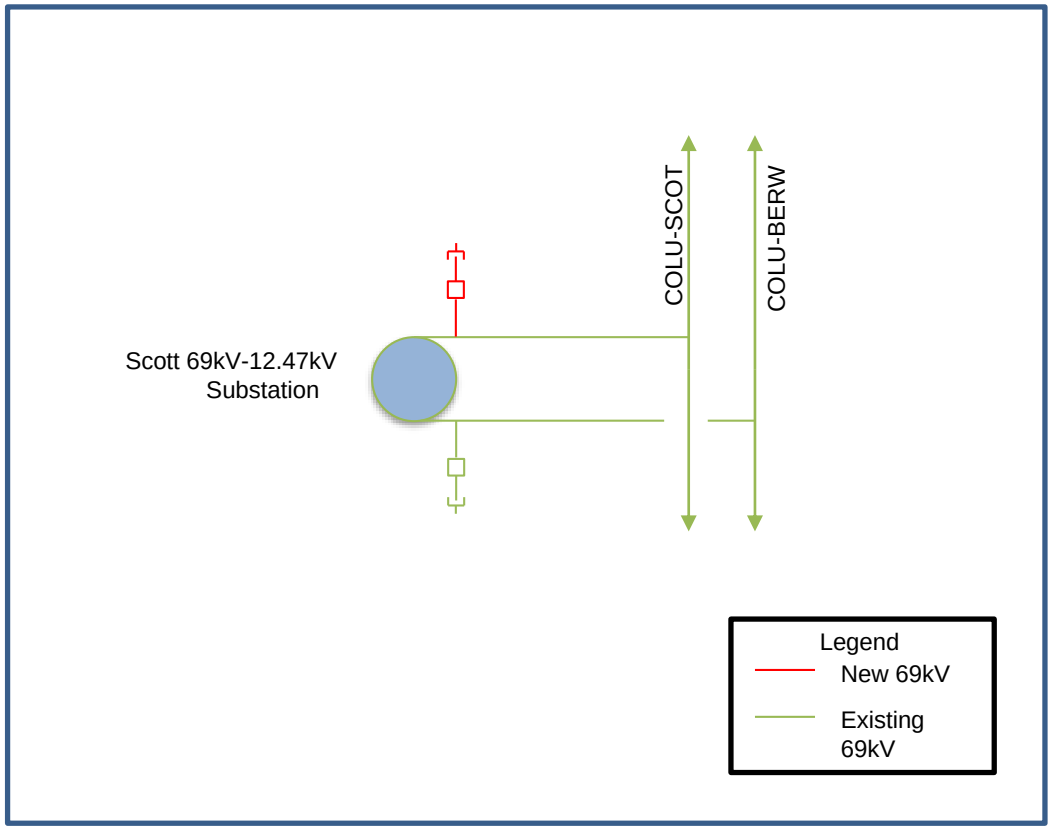
Estimated Project Cost: $1.3M

Projected In-Service: 11/30/2022

Supplemental Project ID: s2593

Project Status: Conceptual

Model: 2023



PPL Transmission Zone: Supplemental

Need Number: PPL-2021-0005

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 9/23/2022

Need Slide Presented: 7/12/2021

Solution Slide Presented: 8/13/2021

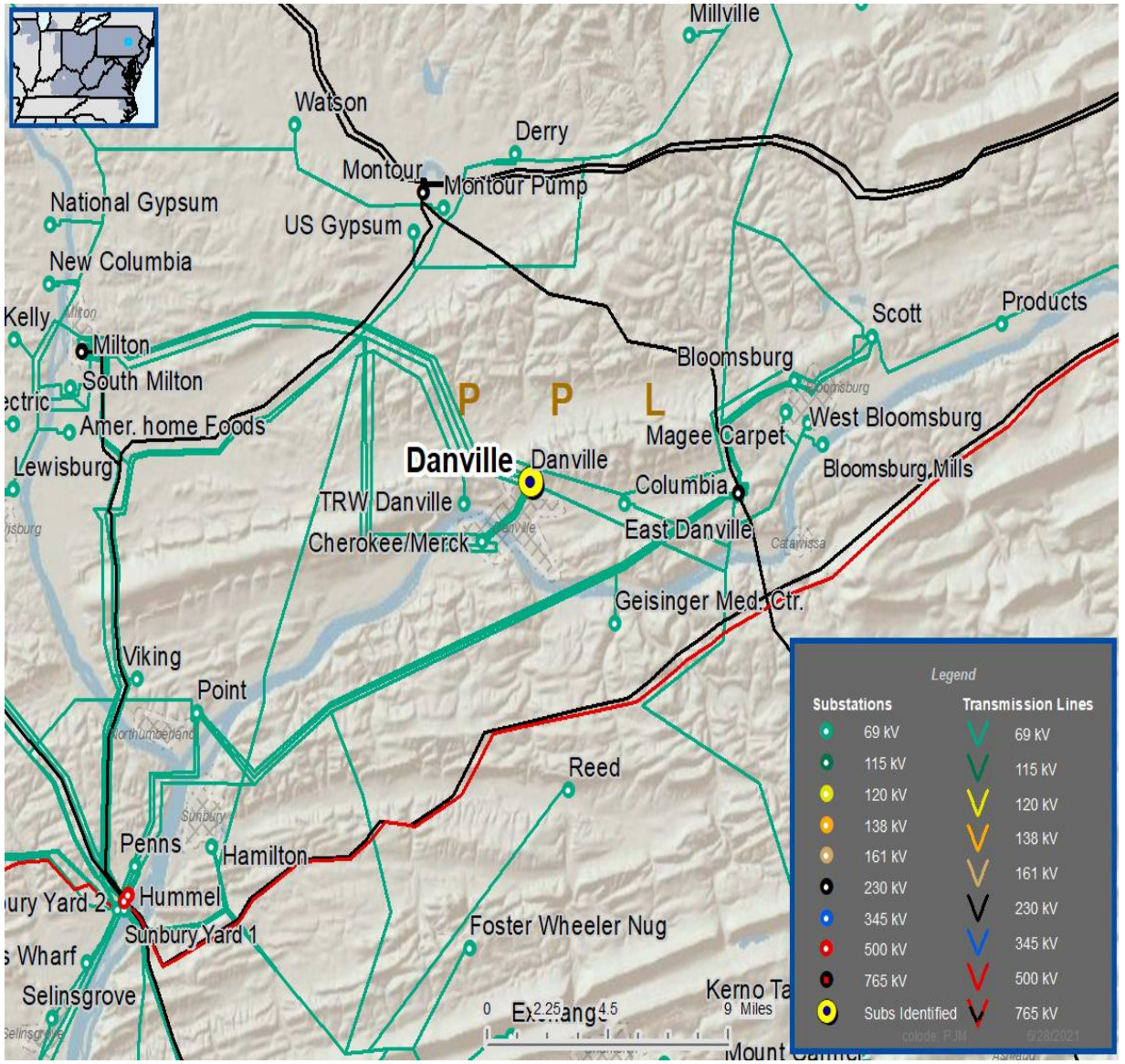
Need Slide Presented: Supplemental Project Driver: Customer Service

Problem Statement:

- A new customer has submitted a request to have their facility served from a 69kV transmission line in Danville, PA. The load is approximately 9 MVA.

Specific Assumption References:

PPL 2021 Annual Assumptions



Need Number: PPL-2021-0005

Proposed Solution:

Extend a new double circuit 69kV tap from the existing Danville – Milton and Columbia – Danville #1 69kV lines to interconnect a new customer 69-12.47kV substation. Build 0.2 miles of new 69kV double circuit line using 556 ACSR conductor.

Alternatives Considered:

1. No feasible alternatives

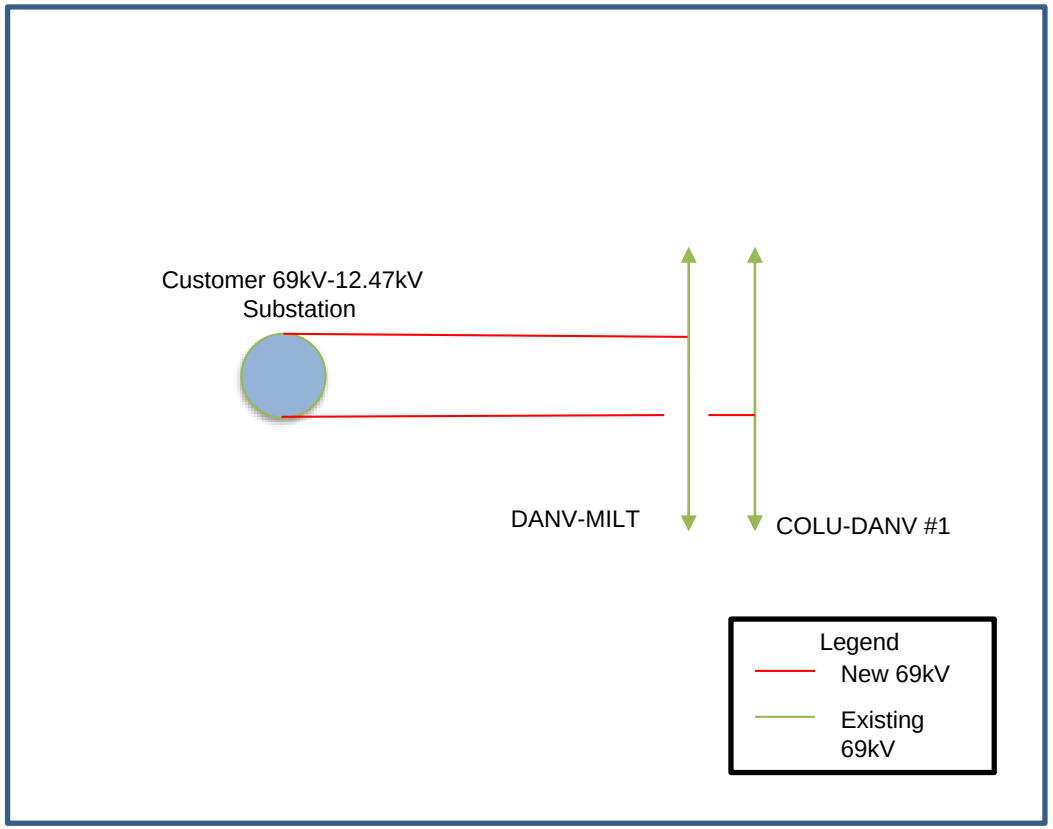
Estimated Project Cost: $1.3M

Projected In-Service: 9/1/2021

Supplemental Project ID: s2594

Project Status: Conceptual

Model: 2021



PPL Transmission Zone: Supplemental

Need Number: PPL-2022-0003

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 9/30/2022

Need Slide Presented: 03/17/2022

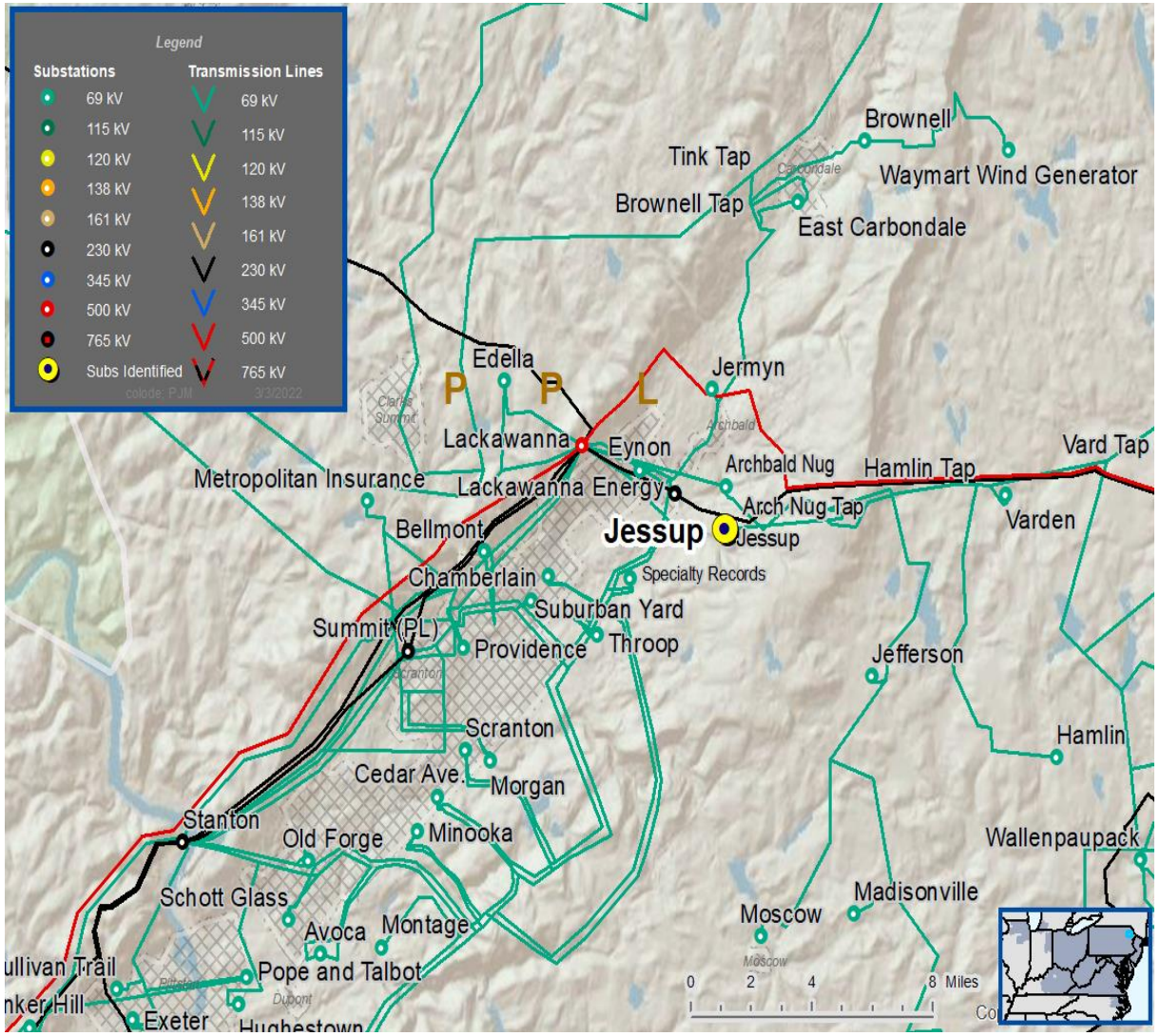
Solution Slide Presented: 05/16/2022

Supplemental Project Driver: Customer Service

Problem Statement:

PPL Distribution has submitted a request for a 69kV tap at Jessup Substation to feed a second 69-12kV transformer. There are several customers adding a combined load of 6 MW to Jessup substation.

Specific Assumption References:
[PPL 2022 Annual Assumptions]



Need Number: PPL-2022-0003

Proposed Solution:

Extend a second circuit to Jessup substation from the LACK-POCO 69kV line (0.05 Miles)

Alternatives Considered:

1. No feasible alternatives

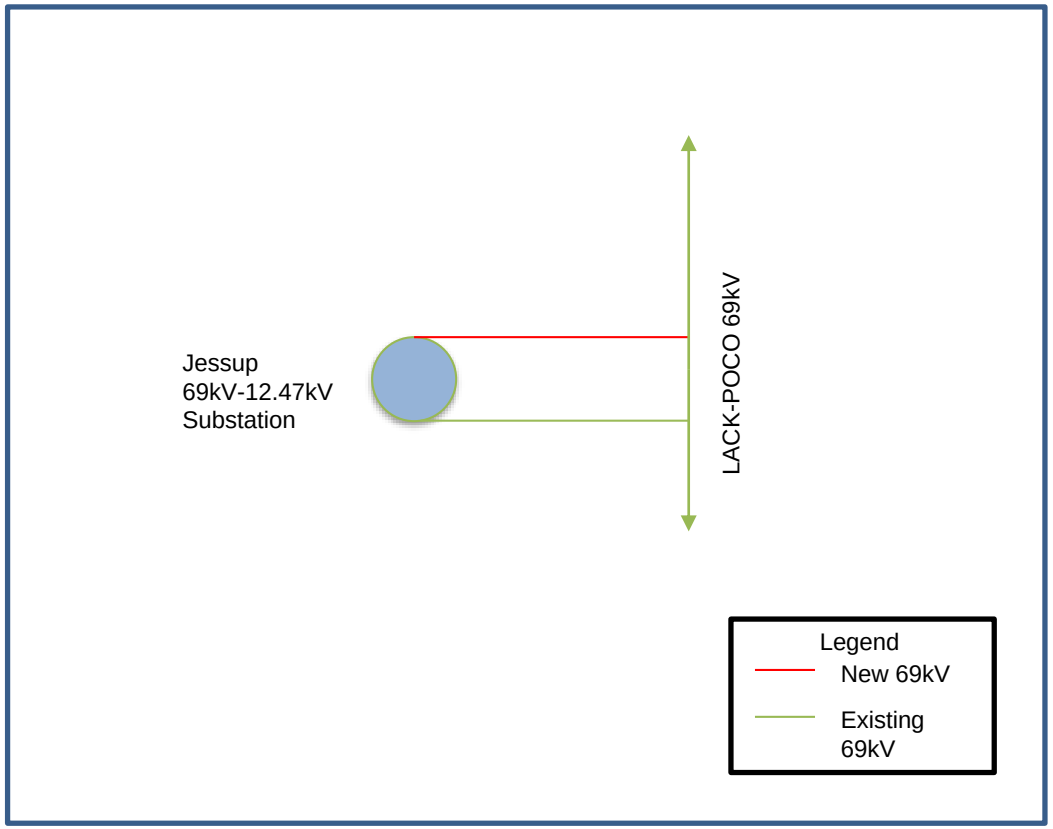
Estimated Project Cost: $0.25M

Projected In-Service: 10/30/2023

Supplemental Project ID: S2762

Project Status: Conceptual

Model: 2025



PPL Transmission Zone: Supplemental

Need Number: PPL-2021-0006

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2022

Need Slide Presented: 12/20/2021

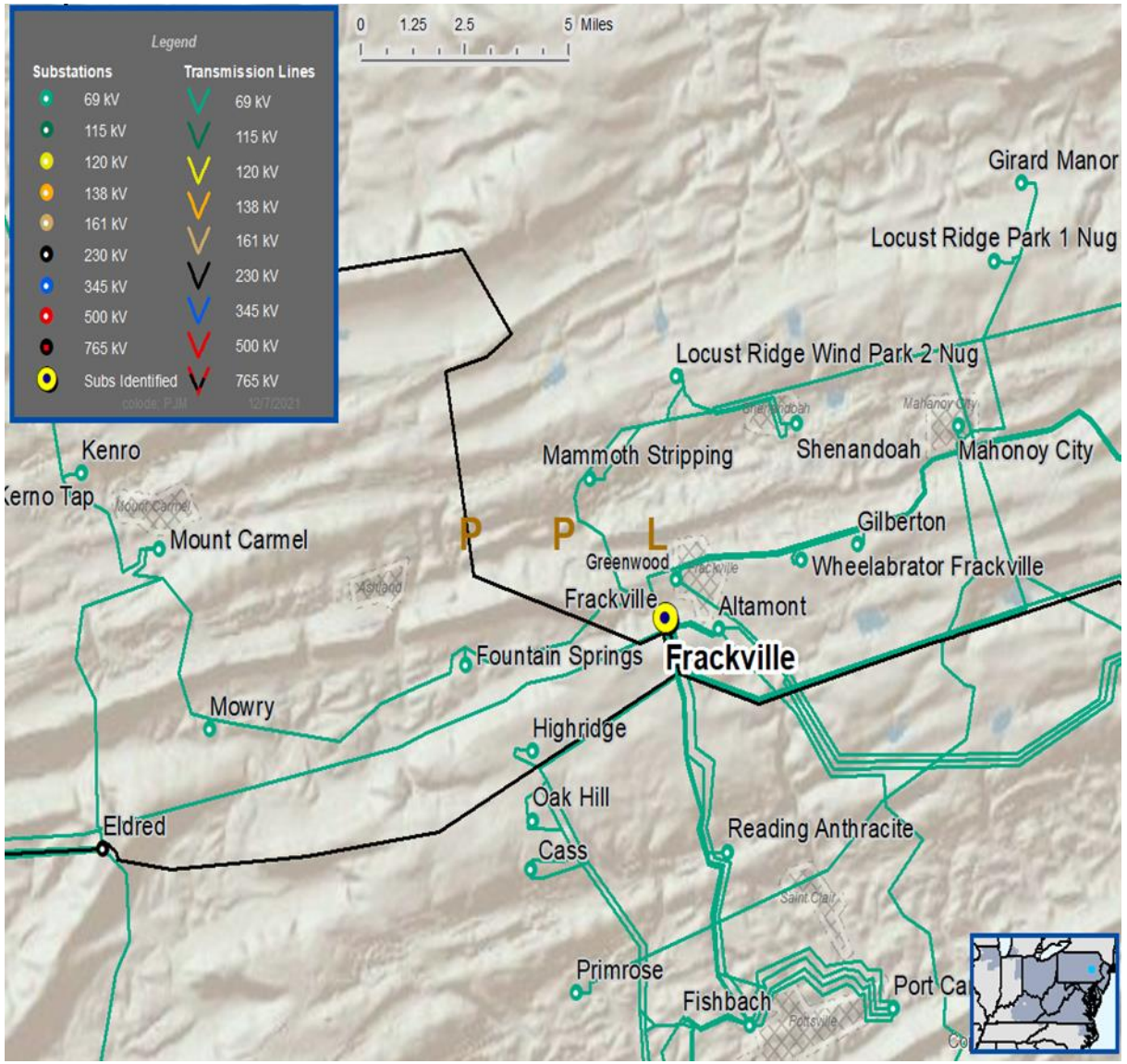
Solution Slide Presented: 5/10/2022

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

Problem Statement:

The equipment at Frackville 230/69kV Substation is reaching end of life. The current configuration of the Frackville Substation limits the ability to maintain, operate, and replace equipment. Following are the risks under certain operating conditions:

- Approximately 500 MW load/110,000 customers are at power outage risk
- 14,000 stranded customers
- Thermal overload (128% of emergency rating) on a 230-69 kV transformer



Specific Assumption References:
PPL 2021 Annual Assumptions

PPL Transmission Zone: Supplemental

Need Number: PPL-2021-0006

Submission of Supplemental Project for inclusion in the Local Plan 11/14/2022

Selected Solution: Build a new breaker and half 230/69kV substation next to the existing Frackville substation to address aging infrastructure and lack of operational flexibility.

Alternatives Considered:

- Replace equipment in place at existing substation: Infeasible due to operational limitations for taking outages at Frackville. This alternative does not address the operational issues due to the non-standard configuration.

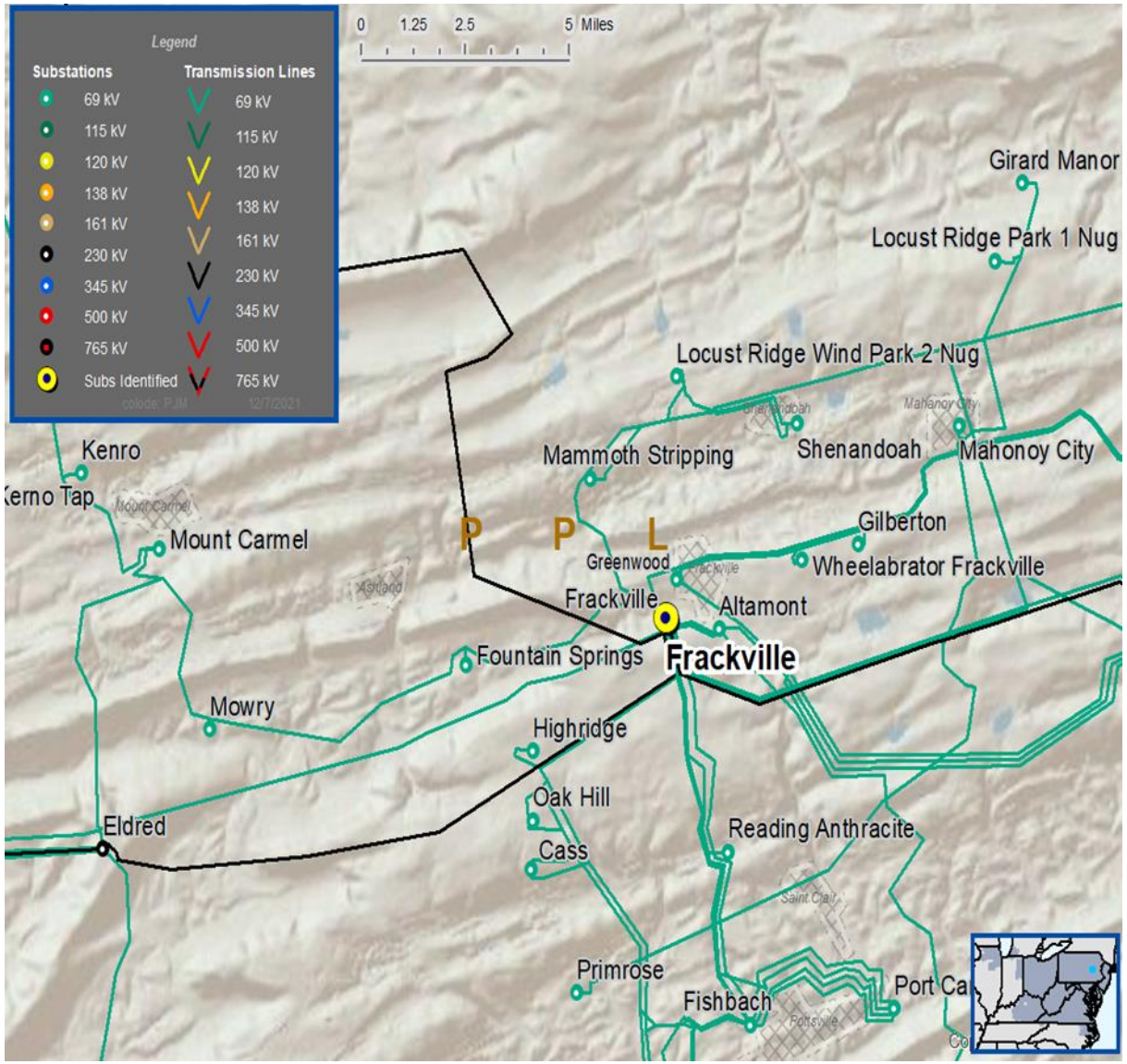
Estimated Project Cost: $60M

Project IS Date: 12/31/2025

Project Status: Conceptual

Supplemental Project ID: S2753

Model: 2026



Revision History

9/23/2022 – V1 – Local Plan for S2591, S2592, S2593 and S2594 posted to pjm.com

9/30/2022 - V2 – Local plan for S2762 added

11/15/2022 – V3 –Local plan for S2753 added