

Submission of PPL Supplemental Projects for Inclusion in the Local Plan

PPL Transmission Zone M-3 Process

Long Pond 69/12kV Substation

Need Number: PPL-2019-0008

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Previously Presented:

Needs Meeting 2/22/2019

Solution Meeting 4/26/2019

Project Driver:

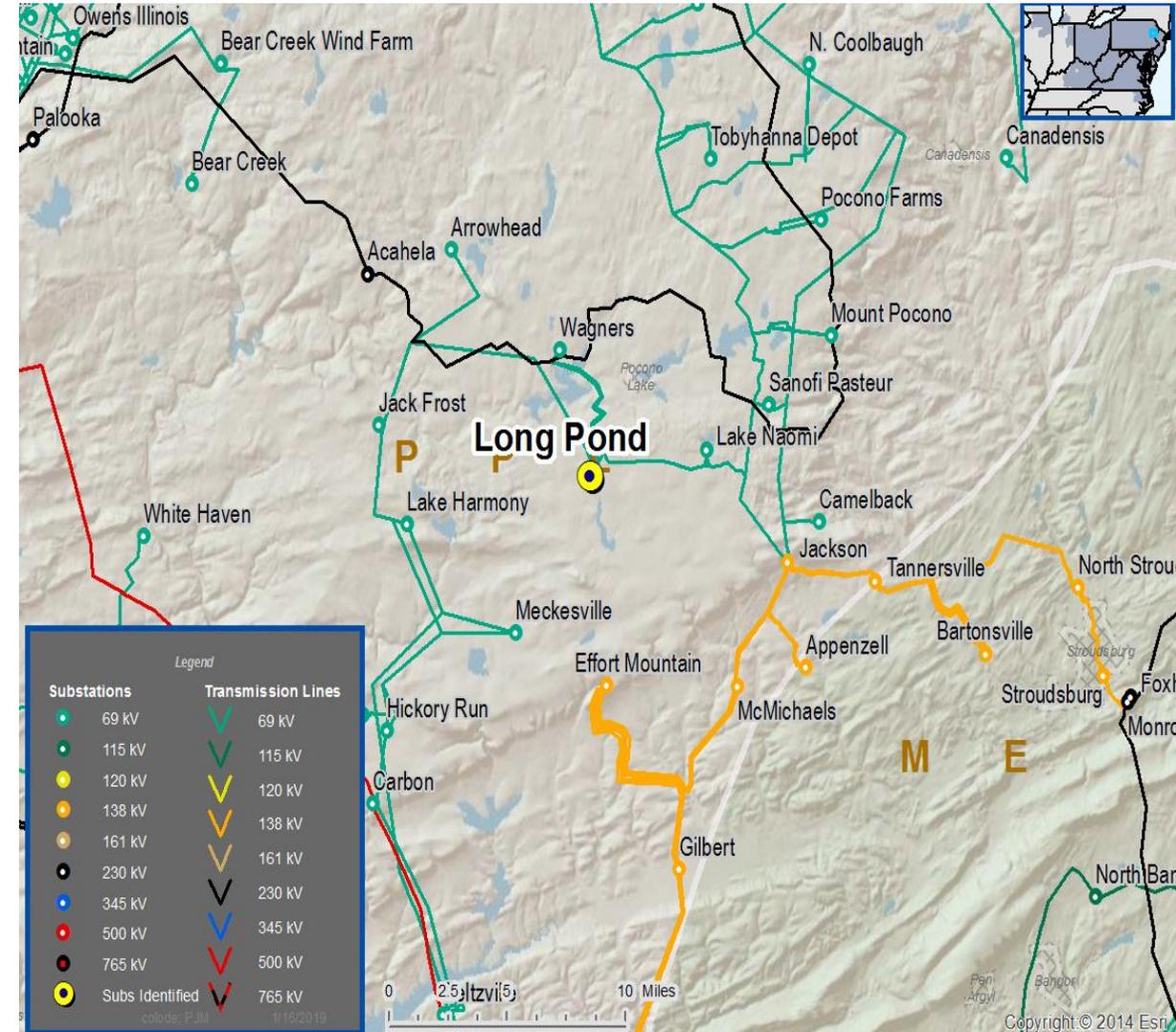
Customer Service

Specific Assumption References:

[PPL 2019 Annual Assumptions](#)

Problem Statement:

PPL Distribution has submitted a request for a second 69kV transmission source to their Long Pond 69/12kV substation due to a customer load increase request for a customer fed from their Long Pond 69/12kV substation. Currently there is only one transmission source. The substation serves 12.5 MVA with an expected load addition of 13 MVA in 2020. This load increase will result in dropping customer load to perform maintenance outages.



PPL Transmission Zone M-3 Process Long Pond 69/12kV Substation

Need Number: PPL-2019-0008

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Selected Solution:

Expand and reconfigure the existing Long Pond substation to a higher capacity design requiring a second 69kV transmission source. Interconnect the distribution substation with a second line from the existing Acahela-Jackson #2 69kV line.

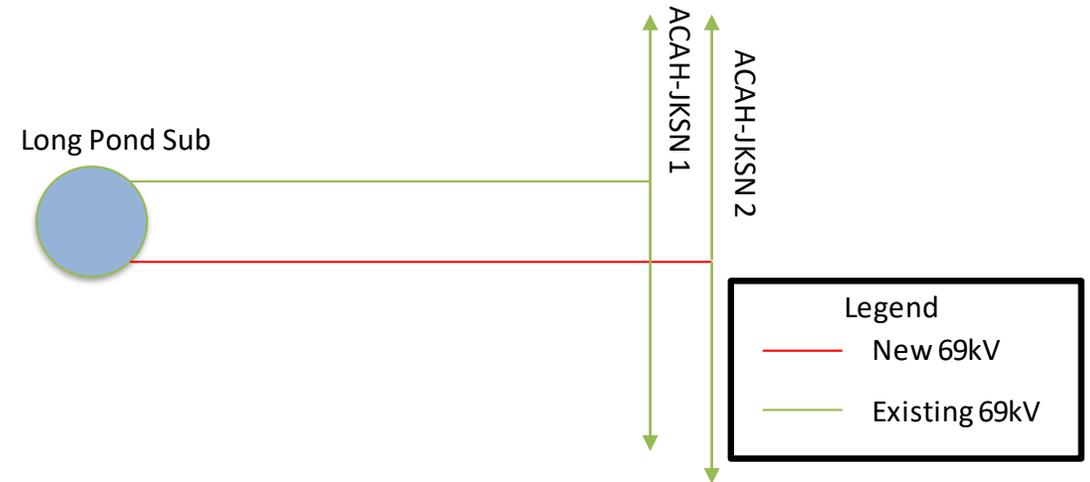
Estimated Cost: \$0.75M

Projected In-Service: 11/30/2020

Supplemental Project ID: S2028

Project Status: Engineering and Planning

Model: 2020



PPL Transmission Zone M-3 Process

Blooming Glen 69/12kV Substation

Need Number: PPL-2019-0010

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Previously Presented:

Needs Meeting 2/22/2019

Solution Meeting 4/26/2019

Project Driver:

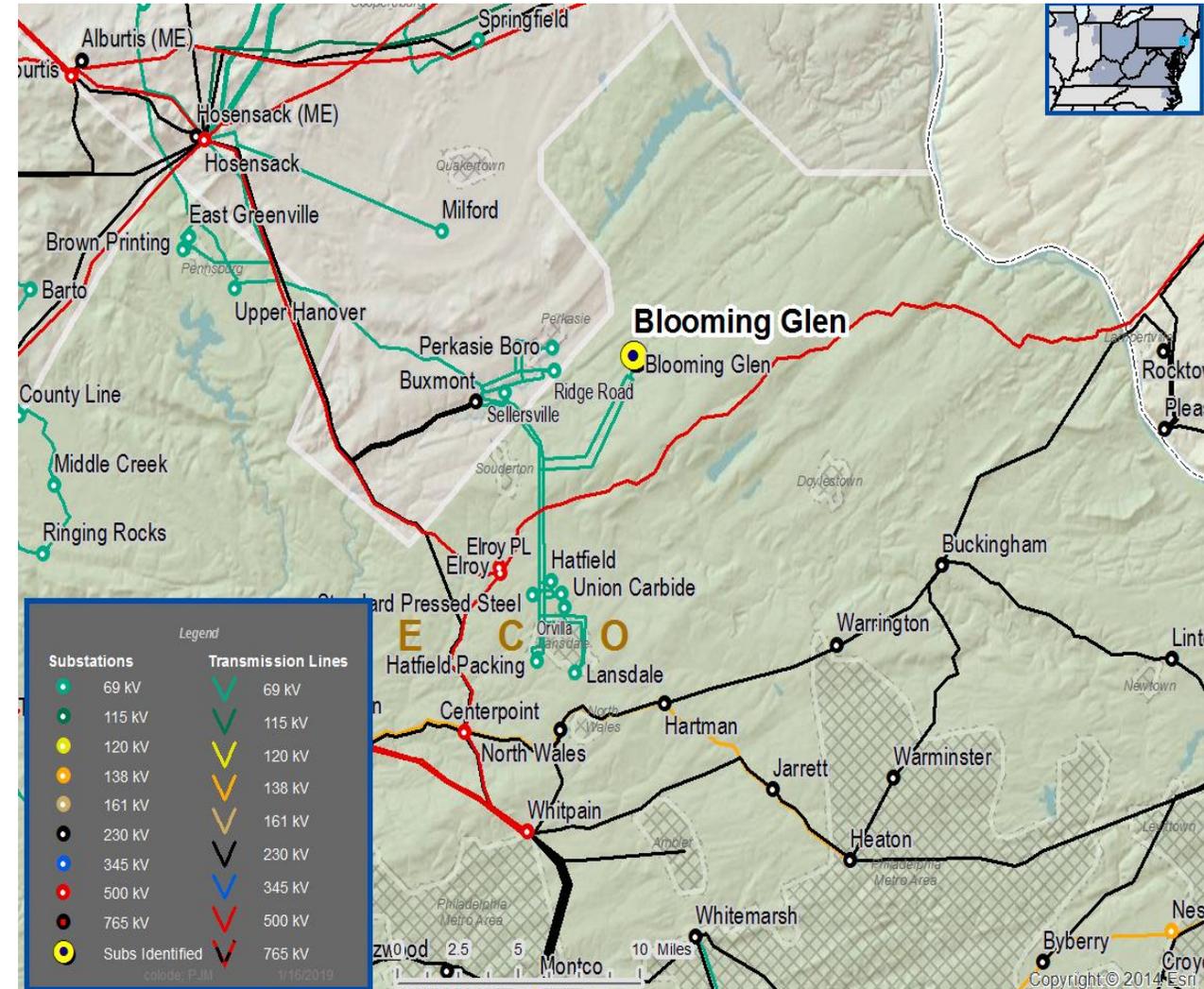
Customer Service

Specific Assumption References:

[PPL 2019 Annual Assumptions](#)

Problem Statement:

PPL Distribution has submitted a request for a second 69kV transmission source to their Blooming Glen 69/12kV substation due to an expected load increase of 3 MVA at its Blooming Glen 69/12kV substation. Currently there is only one transmission source. The substation currently serves a total 19.3 MVA of load. This load increase will result in dropping customer load to perform maintenance outages. This load increase is driven by commercial development in the area.



PPL Transmission Zone M-3 Process Blooming Glen 69/12kV Substation

Need Number: PPL-2019-0010

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Selected Solution:

Expand and reconfigure the existing Blooming Glen substation to a higher capacity design requiring a second 69kV transmission source. Interconnect the distribution substation with a second line from the existing Buxmont-Blooming Glen #2 69kV line.

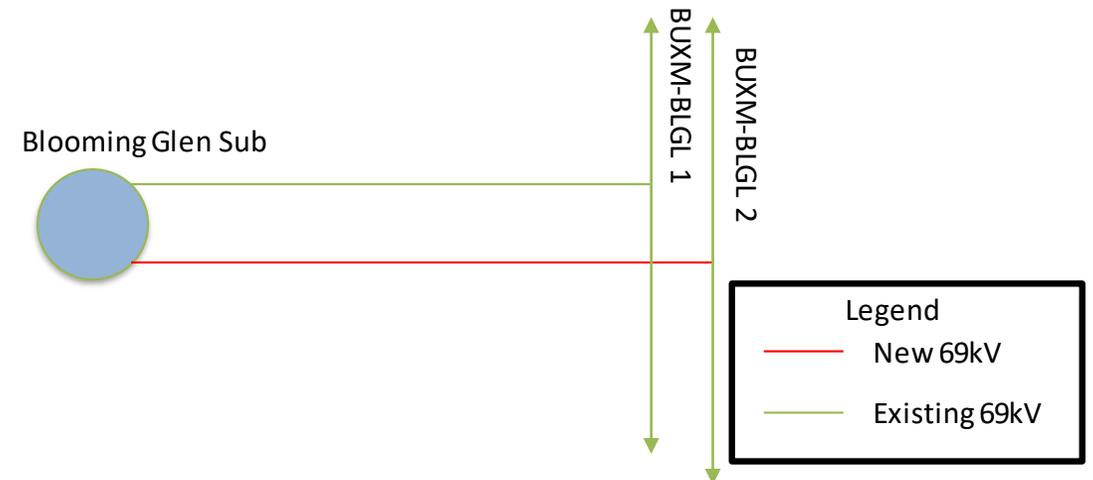
Estimated Cost: \$3.5M

Projected In-Service: 11/30/2020

Supplemental Project ID: S2029

Project Status: Engineering and Planning

Model: 2020



PPL Transmission Zone M-3 Process

South Farmersville 69/12kV Substation

Need Number: PPL-2019-0011

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Previously Presented:

Needs Meeting 2/22/2019

Solution Meeting 4/26/2019

Project Driver:

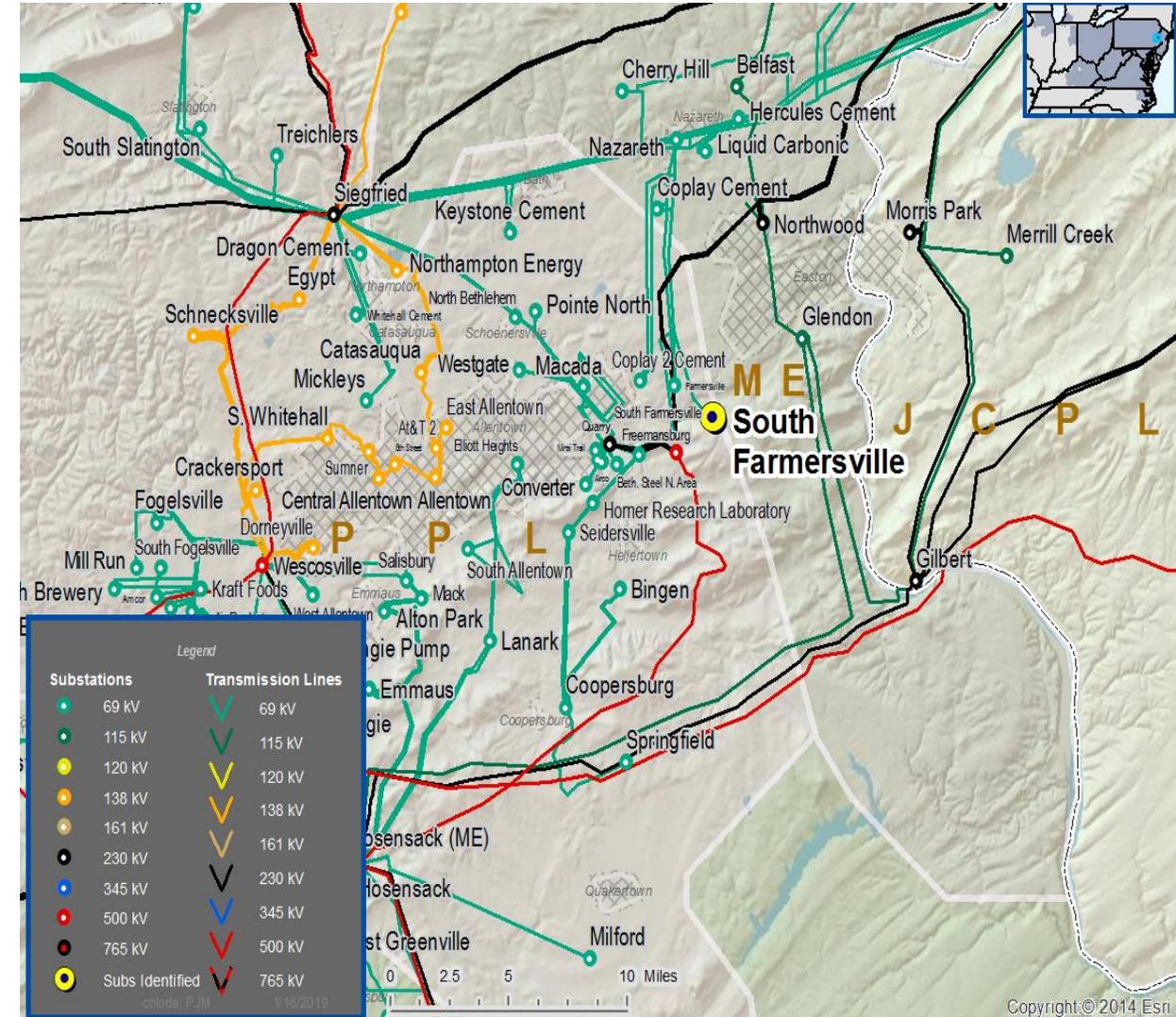
Customer Service

Specific Assumption References:

[PPL 2019 Annual Assumptions](#)

Problem Statement:

PPL Distribution has submitted a request for a second 69kV transmission source to their S. Farmersville 69/12kV substation due to an expected load increase of 3 MVA for a total load of 19.4 MVA in 2019 at their South Farmersville 69/12kV substation. Currently there is only one transmission source. The load increase is driven by commercial development in the area. This load increase will result in dropping customer load to perform maintenance outages.



PPL Transmission Zone M-3 Process South Farmersville 69/12kV Substation

Need Number: PPL-2019-0011

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Selected Solution:

Expand and reconfigure the existing South Farmersville substation to a higher capacity design requiring a second 69kV transmission source. Interconnect the distribution substation with a second line from the existing Nazareth-Quarry #2 69kV line.

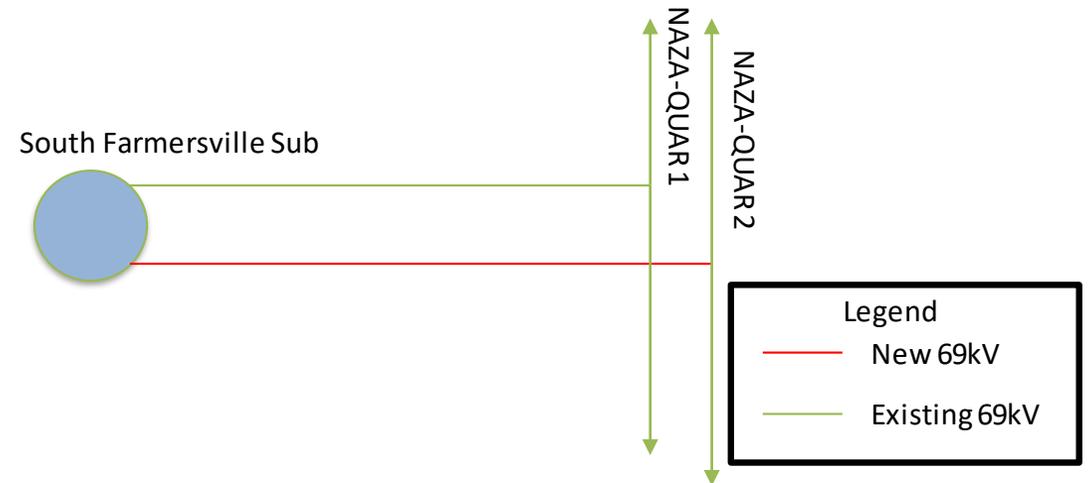
Estimated Cost: \$0.6M

Projected In-Service: 11/01/2022

Supplemental Project ID: S2030

Project Status: Engineering and Planning

Model: 2022



PPL Transmission Zone M-3 Process

Zeta 69/12kV Substation

Need Number: PPL-2019-0016

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Previously Presented:

Needs Meeting 2/22/2019

Solution Meeting 4/26/2019

Project Driver:

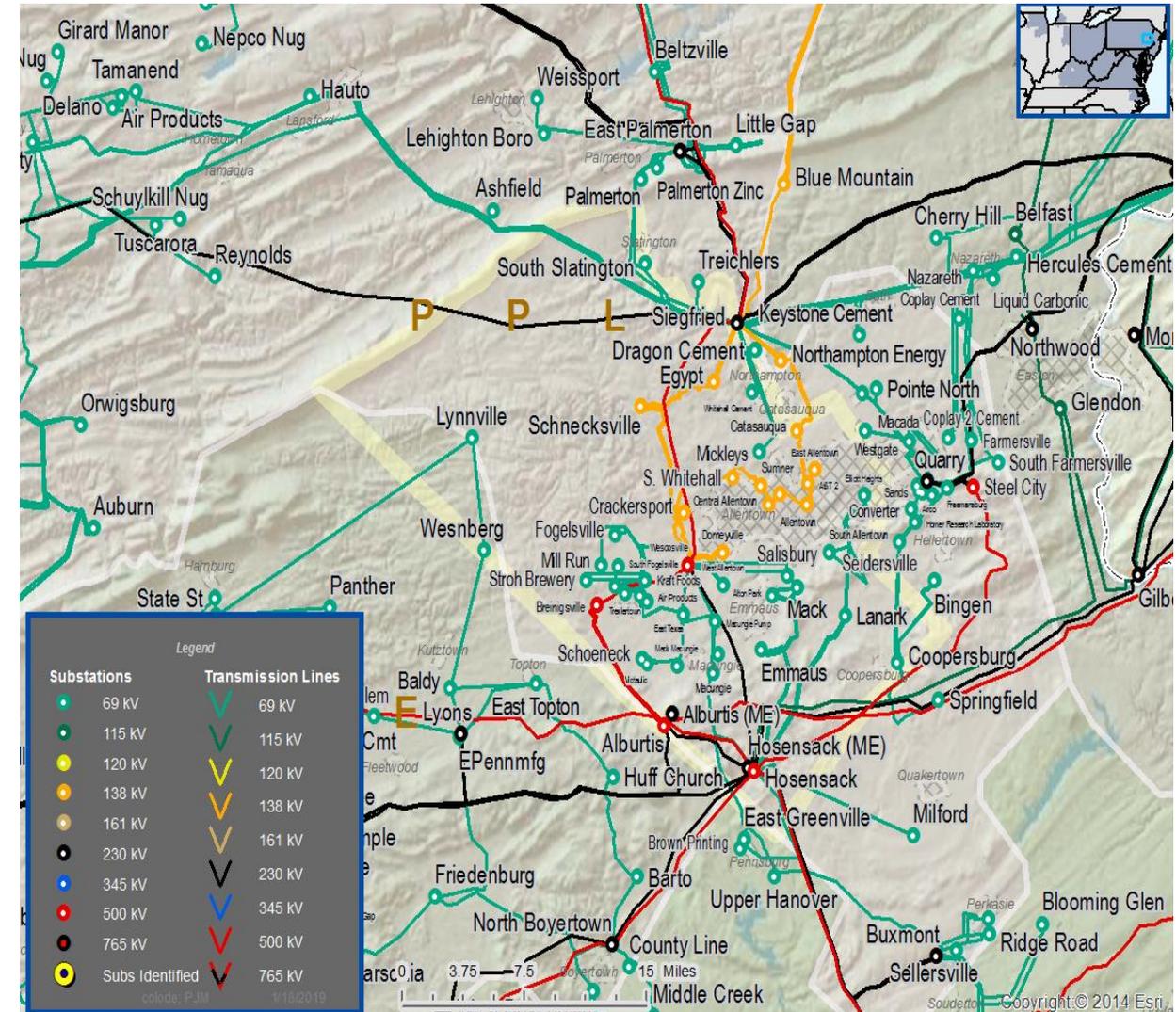
Customer Service

Specific Assumption References:

[PPL 2019 Annual Assumptions](#)

Problem Statement:

PPL Distribution has submitted a request for double circuit 69kV source to their new Zeta 69/12kV substation. PPL Distribution has received industrial load addition requests in an area where the existing facilities are at capacity. The anticipated load increase is 8 MVA.



PPL Transmission Zone M-3 Process

Zeta 69/12kV Substation

Need Number: PPL-2019-0016

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Selected Solution:

Build a new distribution substation near the location of the requested load additions. Interconnect the distribution substation with lines from the existing Wescosville-South Fogelsville #1&2 69kV lines.

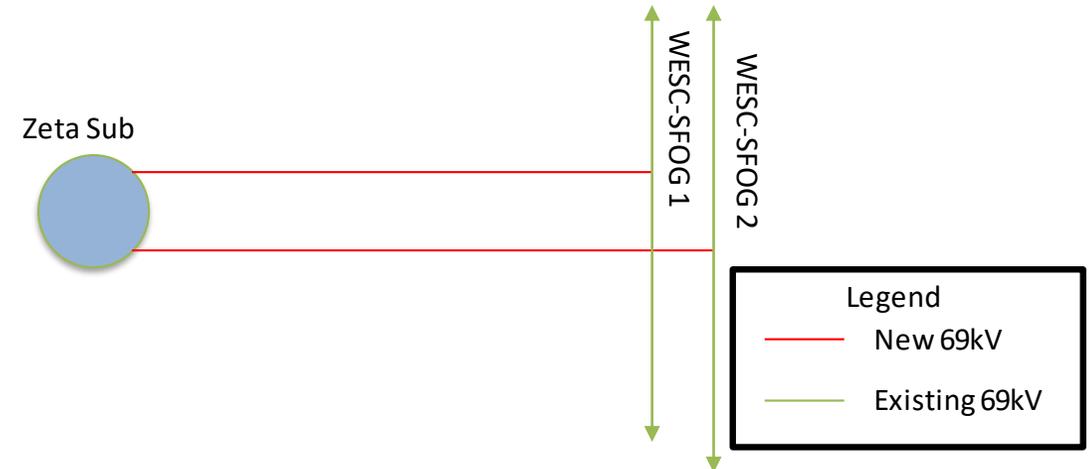
Estimated Cost: \$1.2M

Projected In-Service: 12/01/2020

Supplemental Project ID: S2031

Project Status: Planning

Model: 2020



PPL Transmission Zone M-3 Process

Eta 138/12kV Substation

Need Number: PPL-2019-0017

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Previously Presented:

Needs Meeting 2/22/2019

Solution Meeting 4/26/2019

Project Driver:

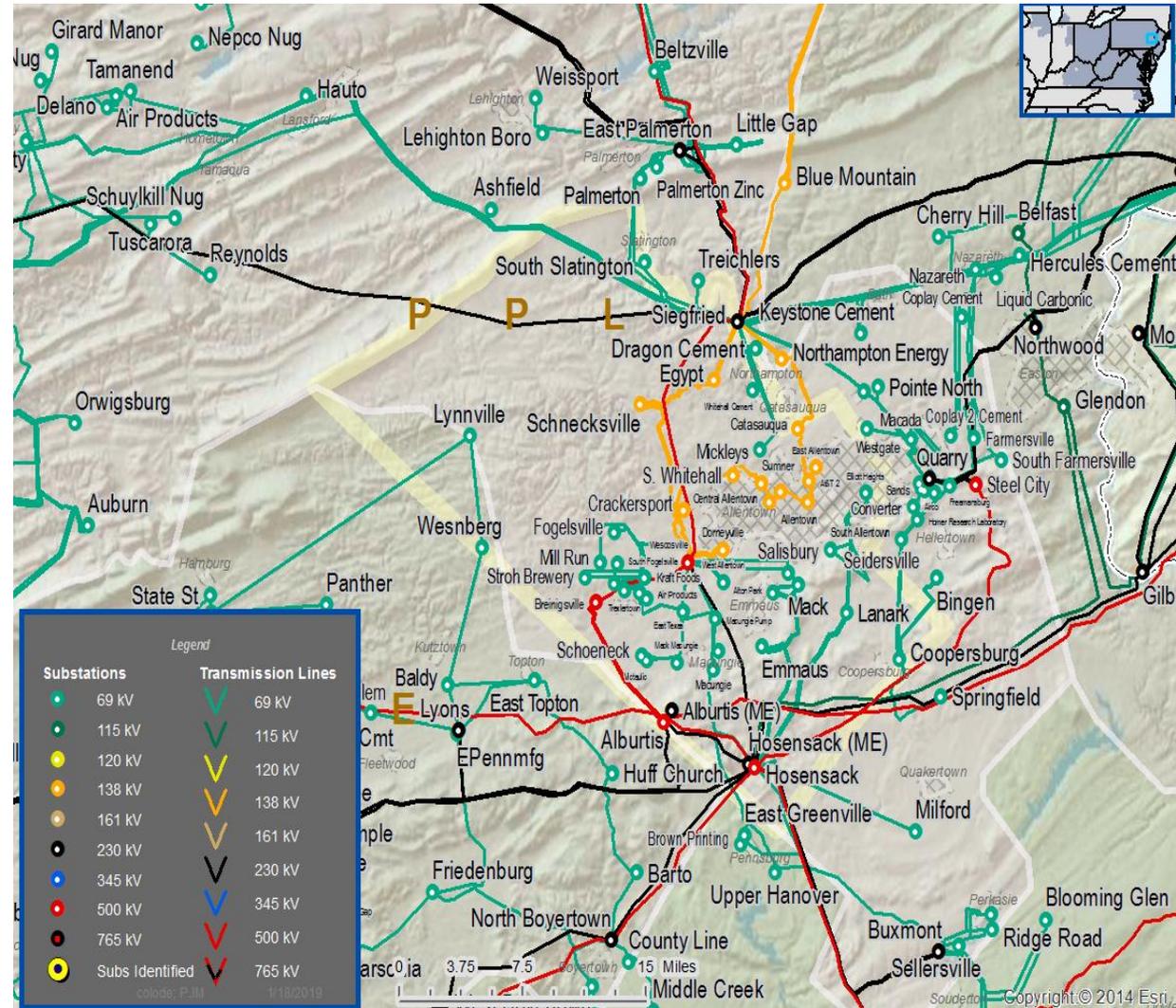
Customer Service

Specific Assumption References:

[PPL 2019 Annual Assumptions](#)

Problem Statement:

PPL Distribution has submitted a request for double circuit 138kV source to their new Eta 138/12kV substation. PPL Distribution has received commercial load addition requests in an area where the existing facilities are at capacity. The anticipated load increase is 10 MVA.



PPL Transmission Zone M-3 Process

Eta 138/12kV Substation

Need Number: PPL-2019-0017

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/14/2019

Recommended Solution:

Construct a new distribution substation near the proposed customer load increase. Interconnect the distribution substation with lines from the existing Allentown-Siegfried #1&2 138kV lines.

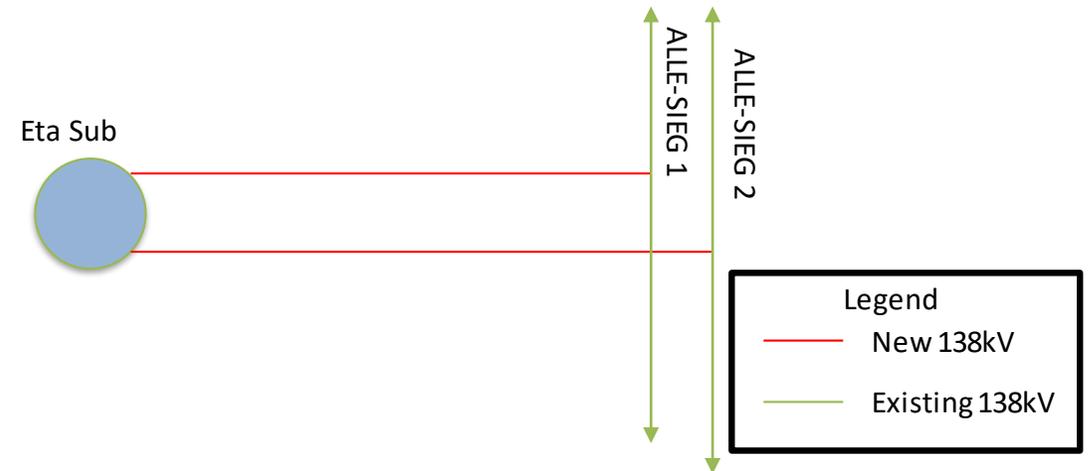
Estimated Cost: \$1.5M

Projected In-Service: 12/01/2021

Supplemental Project ID: S2032

Project Status: Planning

Model: 2021



PPL Transmission Zone M-3 Process

Macungie 69kV Tap

Need Number: PPL-2019-0001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/27/2019

Previously Presented:

Needs Meeting February 22, 2019

Solution Meeting October 21, 2019

Project Driver:

Equipment Material Condition, Performance, and Risk

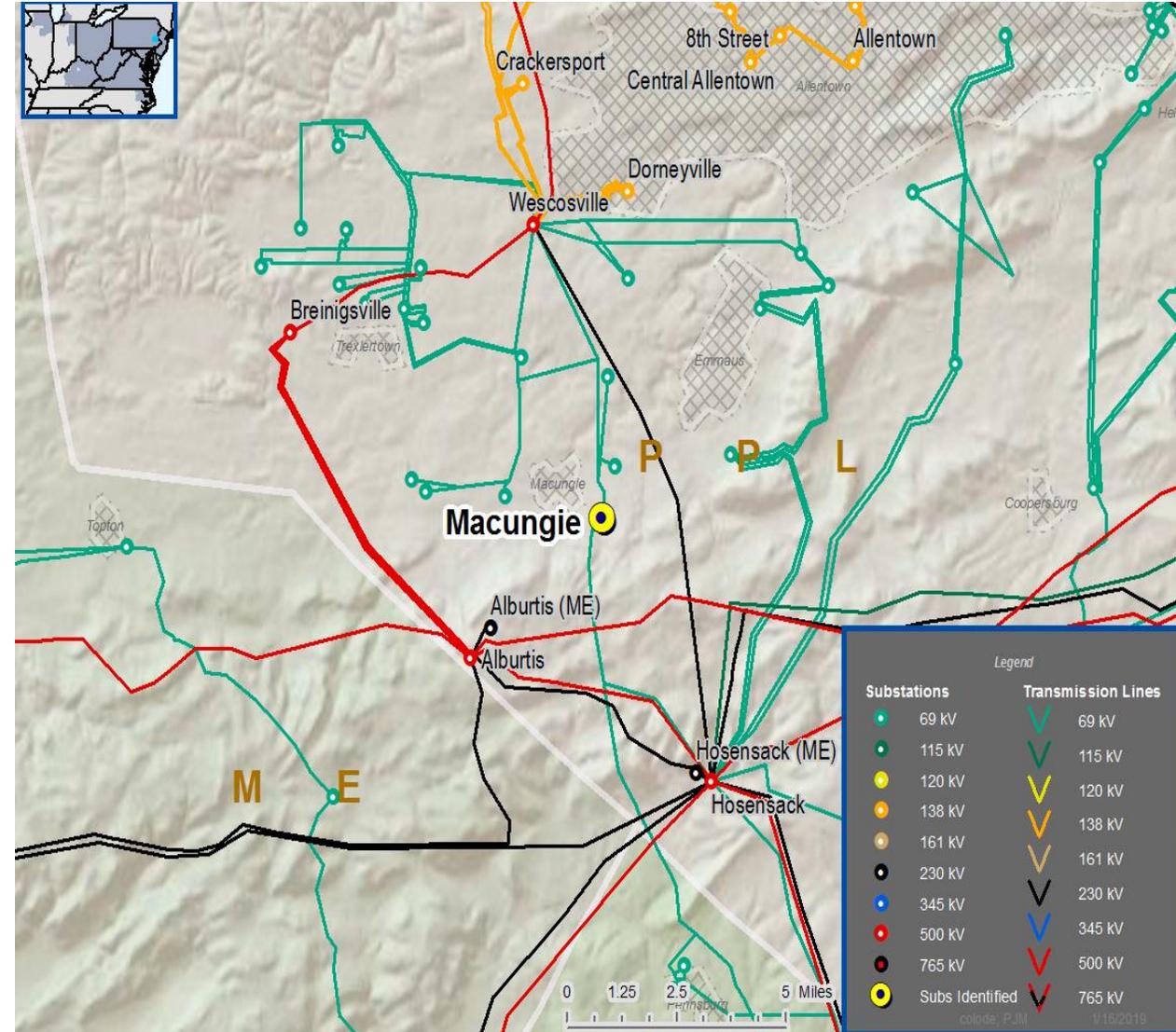
Specific Assumption Reference:

[PPL 2019 Annual Assumptions](#)

Problem Statement:

The Macungie 69kV Tap line is a reliability risk due to poor asset condition and health

- The line was originally constructed in 1951 (68 years old)
- This is a 5 mile tap, originally designed primarily with wood H-frame structures and 2/0 FCWC (Copper) conductor
 - 44 total structures
 - 38 were originally wood H-frame
 - 4 were originally wood monopole
 - 2 are steel lattice towers used on a long span
 - 67% of the line is the original wood construction
 - 31% are steel poles that replaced failed wood structures over its life
 - The conductor has a relatively high number of mid-span splices and short sections of 556 ACSR due to a history of conductor failures and repairs, primarily caused by vegetation fall-ins
- The poor condition of this line has resulted in an increase in maintenance in recent years, with 59 recorded maintenance items in the last 10 years. A majority of the recorded maintenance items were attributed to deteriorated/rotten wood and woodpecker holes.
- The line crosses two major state routes in the Lehigh Valley (Route 100 and Route 29). Failures at these critical crossings would result in a substantial public impact, including long duration outages, road closures and potential public safety hazards.
- Unplanned outages on this line affect over 9,000 PPL customers



PPL Transmission Zone M-3 Process Macungie 69kV Tap

Need Number: PPL-2019-0001

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 11/27/2019

Selected Solution:

Rebuild the existing Macungie 69kV Tap line with monopole steel structures.

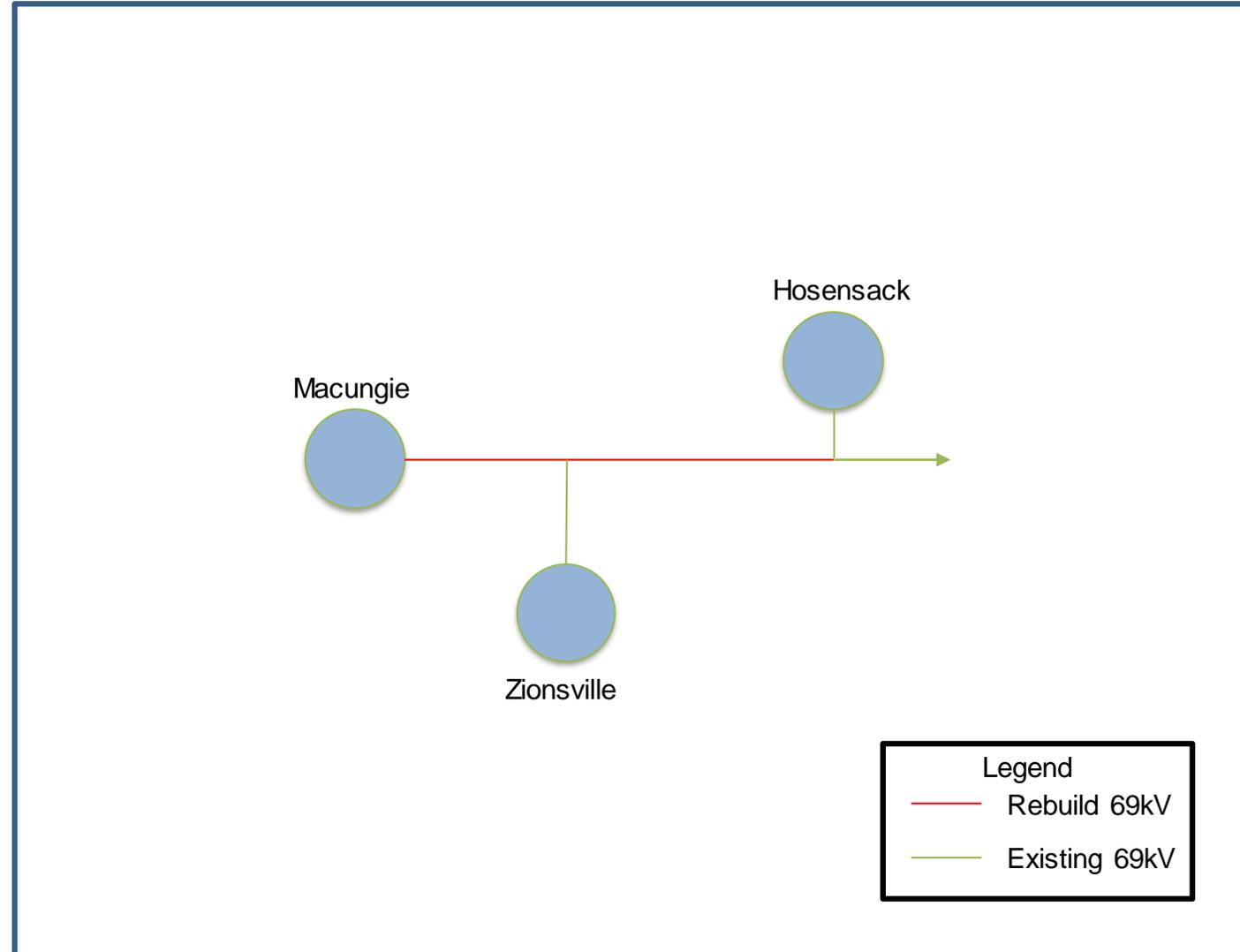
Estimated Cost: \$7.5M

Projected In-Service: 11/30/2021

Supplemental Project ID: s2074

Project Status: Planning

Model: Summer 2021



PPL Transmission Zone M-3 Process

Fairfield 69kV Tap

Need Number: PPL-2019-0002

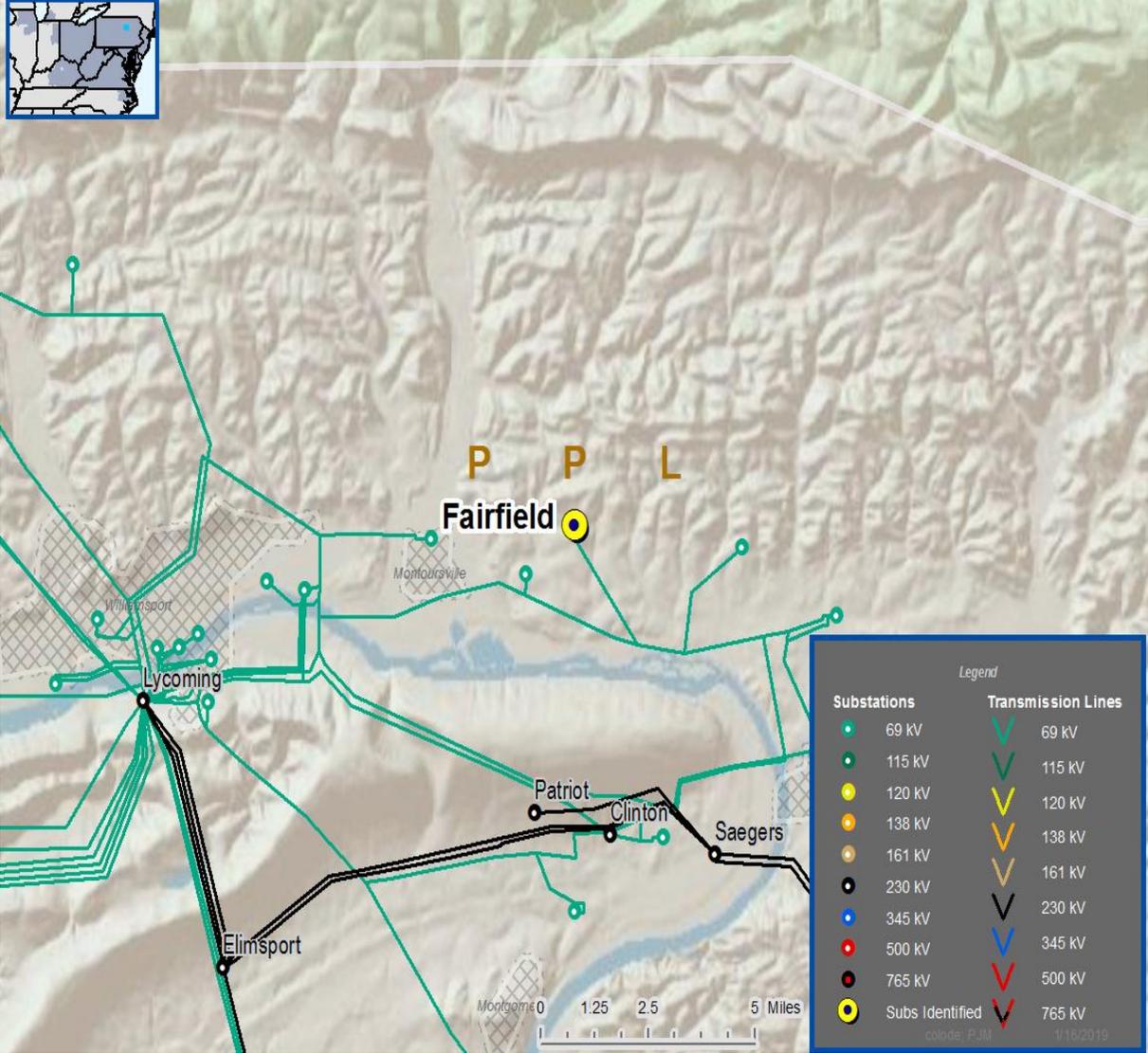
Process Stage: Submission of Supplemental Project for Inclusion in the Local Plan 11/27/2019

Previously Presented:
Needs Meeting February 22, 2019
Solutions Meeting October 21, 2019

Project Driver:
Equipment Material Condition, Performance, and Risk

Specific Assumption Reference:
[PPL 2019 Annual Assumptions](#)

- Problem Statement:**
The Fairfield 69kV Tap line is a reliability risk due to poor asset condition and health
- The line was originally constructed in 1954 (65 years old)
 - This is a 0.2 mile tap, originally designed with wood H-frame structures and 4/0 ACSR conductor
 - This short tap line consists of 6 structures, all are the original 65 year old wood construction
 - The 4/0 ACSR has reached its expected useful life and will see an increasing risk of failure, which could result in long duration outages for PPL customers
 - Unplanned outages on this line affect over 3,300 PPL customers
 - Over 600 of these customers are considered “stranded load” – in the event of an unplanned outage they could not be restored until the transmission source is back in service



PPL Transmission Zone M-3 Process Fairfield 69kV Tap

Need Number: PPL-2019-0002

Process Stage: Submission of Supplemental Project for
Inclusion in the Local Plan 11/27/2019

Selected Solution:

Rebuild the existing Fairfield 69kV Tap line with
monopole steel structures.

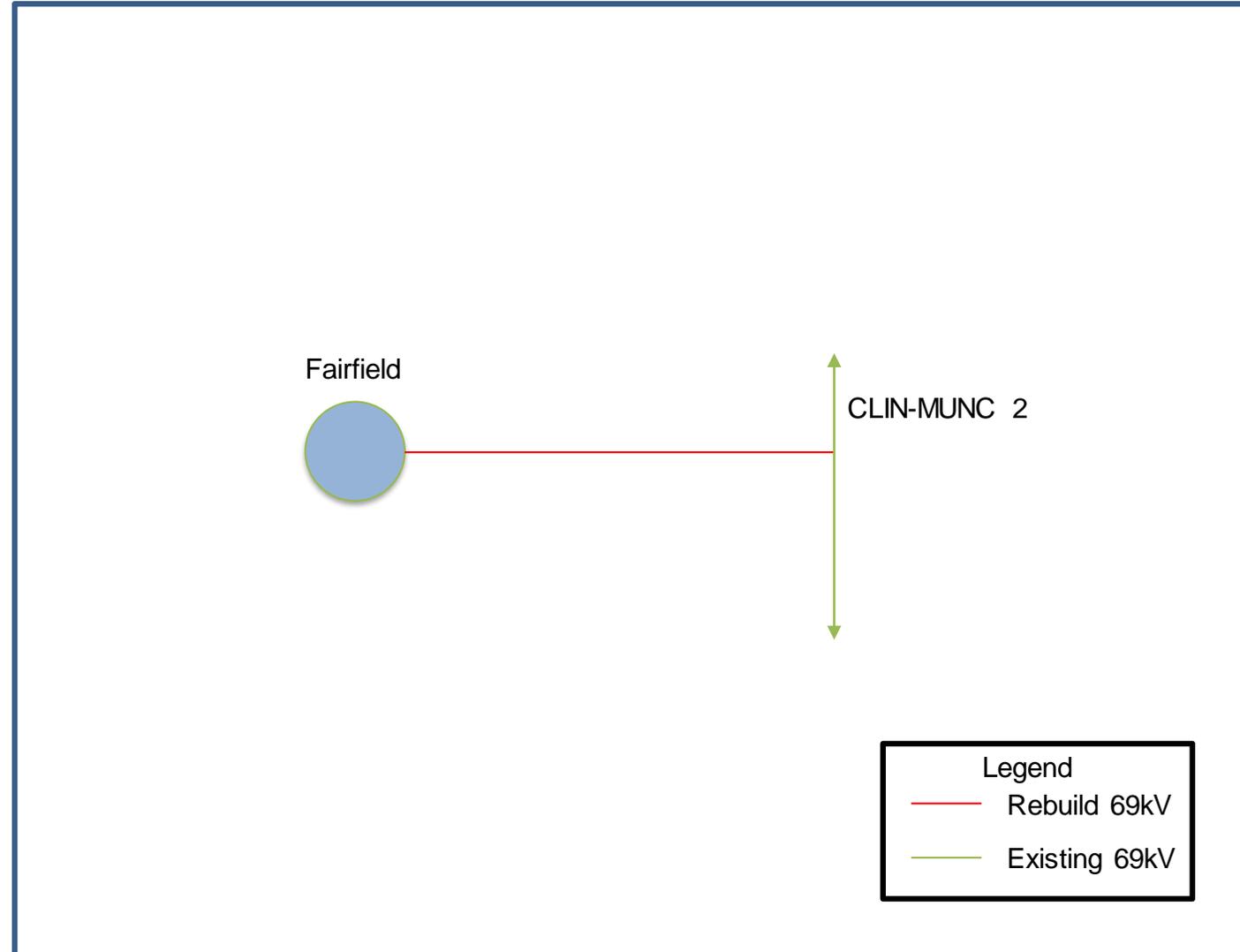
Estimate: \$0.36M

Projected In-Service: 5/31/2021

Supplemental Project ID: s2075

Project Status: Planning

Model: Summer 2021



Revision History

11/14/2019 – V1 – Local Plan for s2028, s2029, s2030, s2031 and s2032 posted to pjm.com

11/27/2019 – V2 – Added local plan for s2074 and s2075