Transmission Expansion Advisory Committee – PPL Supplemental Projects

June 5th, 2025

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
Callender Gap, PA

Need Number: PPL-2025-0005

Process Stage: Solution Meeting TEAC - 06/05/2025

Previously Presented: Need Meeting 05/06/2025

Project Driver: Customer Service

Specific Assumption References:

PPL 2025 Annual Assumptions

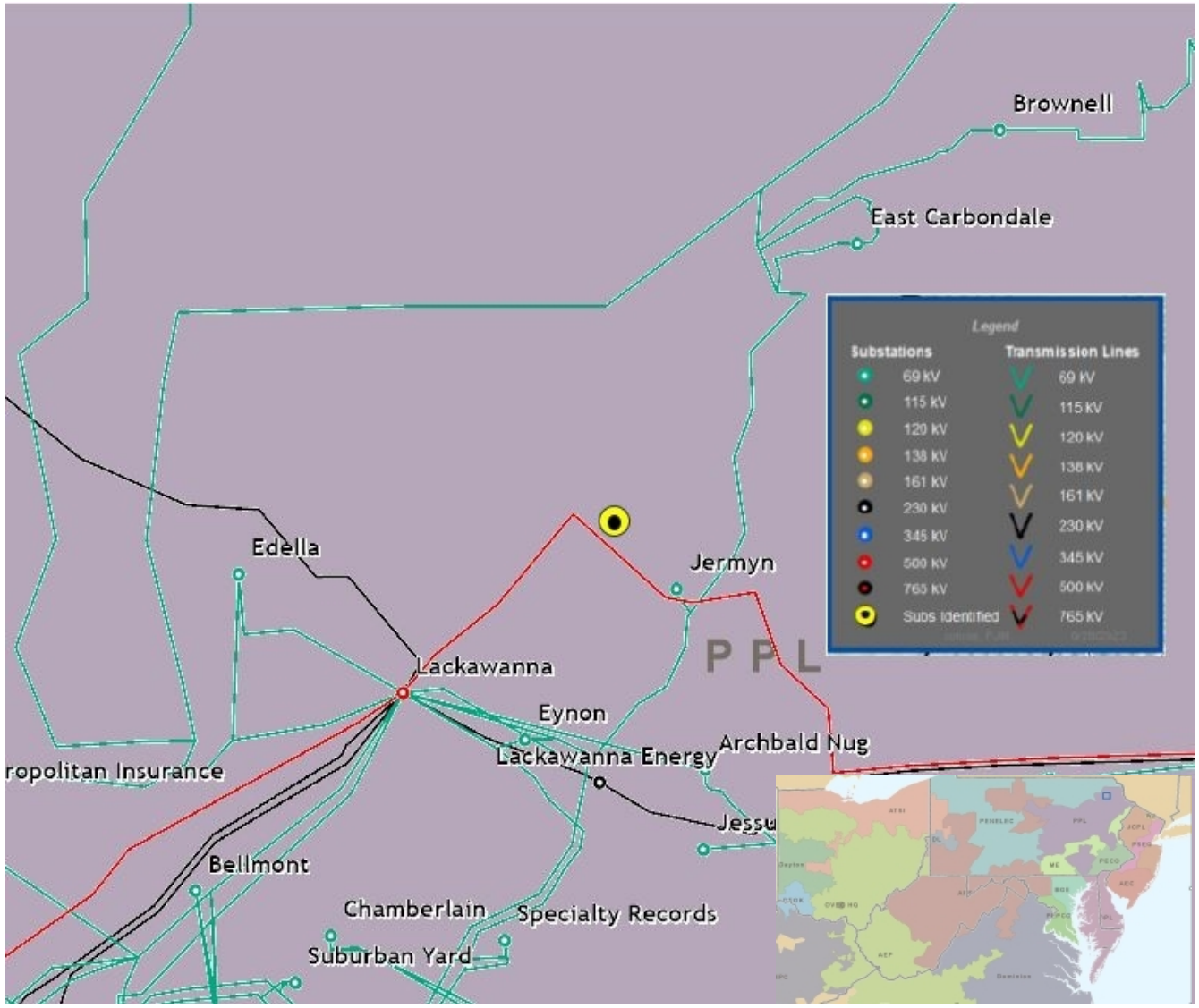
Problem Statement:

A customer has submitted a request to have their facility served from a 230kV source in Jermyn, PA. The total facility load is approximately 500 MW (2029). The requested in-service date is 05/2027.

Initial In-Service 2027 Load: 145MW

Projected 2028 Load: 430MW

Projected 2029 Load: 500MW



PPL Transmission Zone: Supplemental
Callender Gap, PA

Need number(s): PPL-2025-0005

Process Stage: Solution Meeting TEAC - 06/05/2025

Proposed Solution:

Callender Gap 230kV Switchyard: Install a four bay BAAH 230kV switchyard with a 125MVAR Capacitor bank.. Estimated Cost: $45 M

Lackawanna - Paupack 230kV Line: Bifurcate the Lackawanna - Paupack 230kV line and terminate at the new Callender Gap 230kV switchyard. Extend lines approximately 0.2 miles into the new Callender Gap 230kV switchyard.. Estimated Cost: $6 M

Lackawanna 230kV Yard: Install one new 230kV breaker, 230kV dead-end, and ancillary equipment in Bay #1 at Lackawanna 230kV Yard. Estimated Cost: $2 M

Lackawanna - Callender Gap #2 230kV line: Install a new single circuit, future double circuit, 230kV line from Lackawanna to Callender Gap (3.7 miles). Estimated Cost: $16.5 M

Callender Gap Customer 230kV Taps: Install three 230kV lead lines for approximately 0.1 miles from Callender Gap 230kV switchyard to the customer facility. Estimated Cost: $4 M

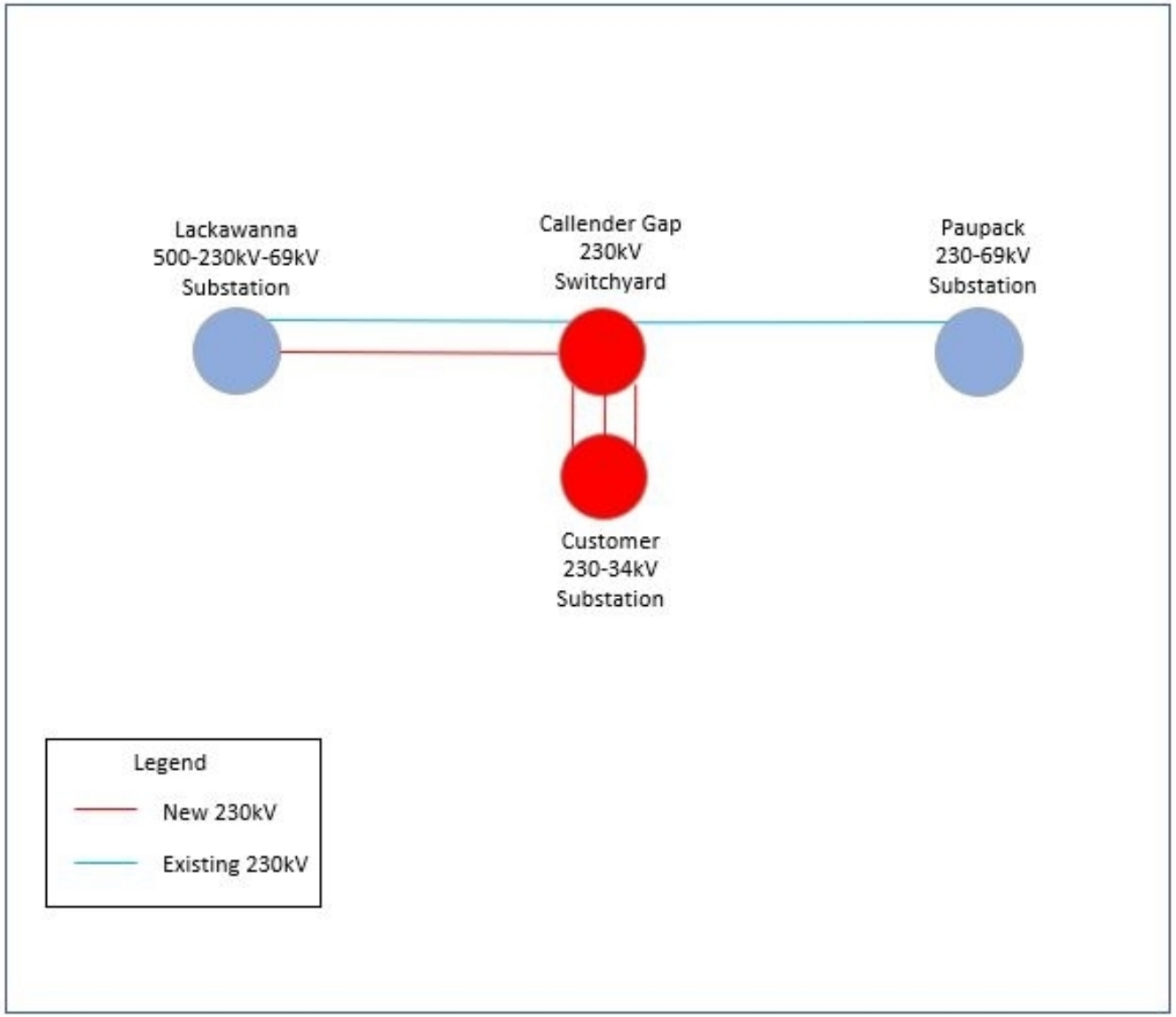
Transmission Cost Estimate: $73.5 M

Alternatives Considered:

1.Break the Lackawanna – Hopatcong 500kV and Lackawanna – Paupack 230kV Lines. Install a 500kV-230kV substation with two 500-230kV transformers. Extend three 230kV lines to the new customer substation. Estimated cost: $128 Million

Projected In-Service: 05/30/2028

Project Status: Conceptual



PPL Transmission Zone: Supplemental
Orefield, PA

Need Number: PPL-2025-0006

Process Stage: Solution Meeting TEAC - 06/05/2025

Previously Presented: Need Meeting 05/06/2025

Project Driver: Customer Service

Specific Assumption References:

PPL 2025 Annual Assumptions

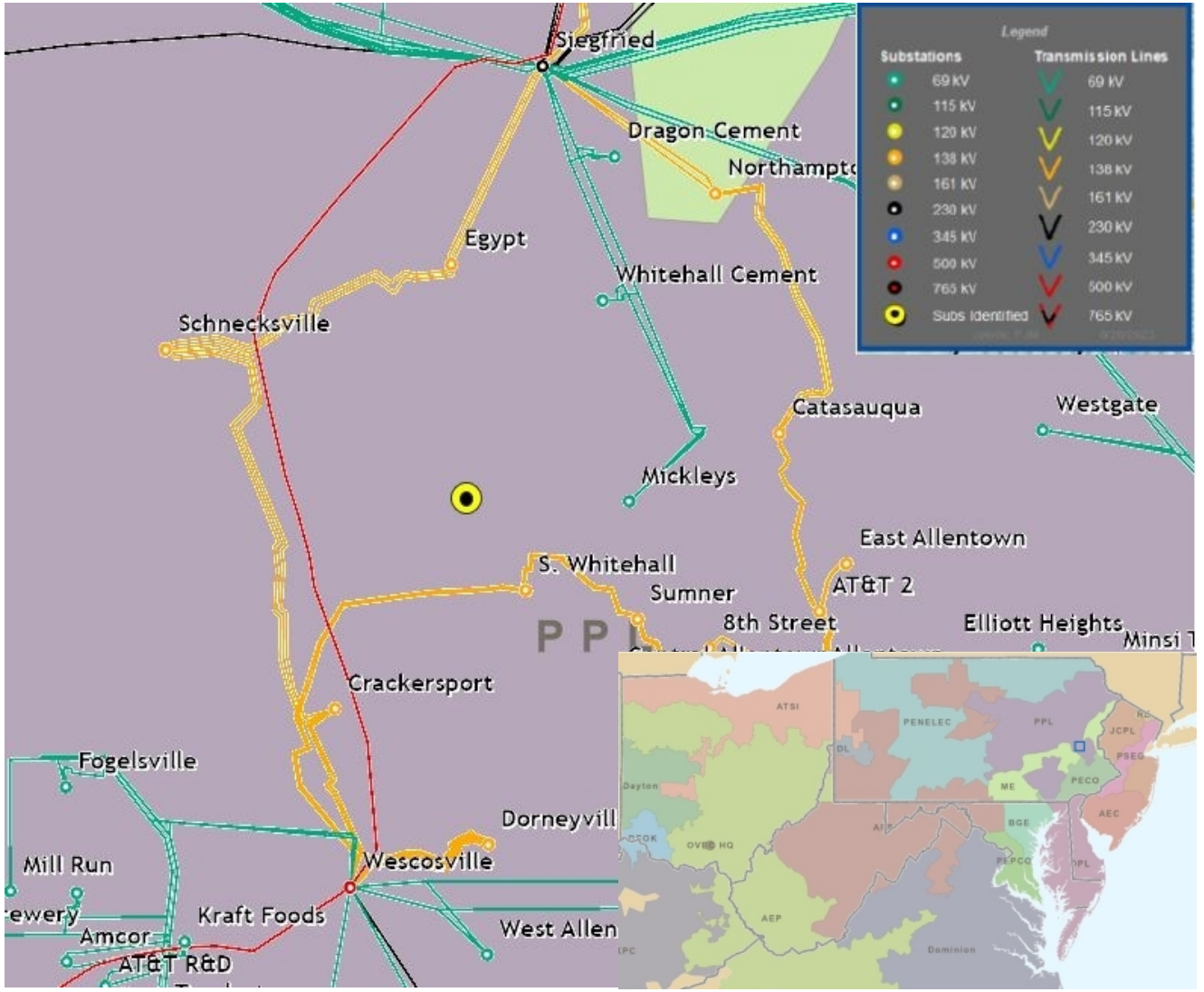
Problem Statement:

A customer has submitted a request to have their facility served from a 138kV source in Allentown, PA. The total facility load is approximately 1000 MW (2031). The requested in-service date is 10/2026.

Initial In-Service 2026 Load: 75 MW

Projected 2028 Load: 450 MW

Projected 2030 Load: 920 MW



PPL Transmission Zone: Supplemental
Orefield, PA

Need number(s): PPL-2025-0006

Process Stage: Solution Meeting TEAC - 06/05/2025

Proposed Solution:

Orefield 500-138kV Substation: Install a new three bay BAAH 500kV yard with two 500-138kV Transformers and one 144MVAR Capacitor Bank. Estimated Cost: $71 M

Orefield 138kV Yard: Install an eight bay BAAH 138kV yard with two 44MVAR capacitor banks. Estimated Cost: $40 M

Susquehanna - Wescosville 500kV line: Bifurcate the Susquehanna - Wescosville 500kV line and terminate at the new Orefield 500-138kV substation. Extend lines approximately 1.2 miles on separate pole lines to the Orefield 500kV yard. Estimated Cost: $17.2 M

Siegfried - Wescosville #1 & #2 138kV Lines: Bifurcate the Siegfried - Wescosville #1 & #2 138kV Lines and terminate at the new Orefield 500-138kV substation. Extend lines approximately 1.8 miles on separate double circuit pole lines to the Orefield 138kV yard. Estimated Cost: $14.4 M

Wescosville - Allentown #1 & #2 138kV Lines: Bifurcate the Wescosville - Allentown #1 & #2 138kV Lines and terminate at the new Orefield 500-138kV substation. Extend lines approximately 0.3 miles on separate double circuit pole lines to the Orefield 138kV yard. Estimated Cost: $2.4 M

Orefield Customer 138kV Lead Lines: Install six 138kV lead lines for approximately 0.75 miles from Orefield 138kV yard to the customer facility. Estimated Cost: $9 M

Wescosville 500-138kV Transformer #2: Connect on-site spare 500-138kV Transformer at Wescosville substation. Terminate 500kV side into a new GIS bay and install 138kV breaker and tie to 138kV bus. Estimated Cost: $5 M

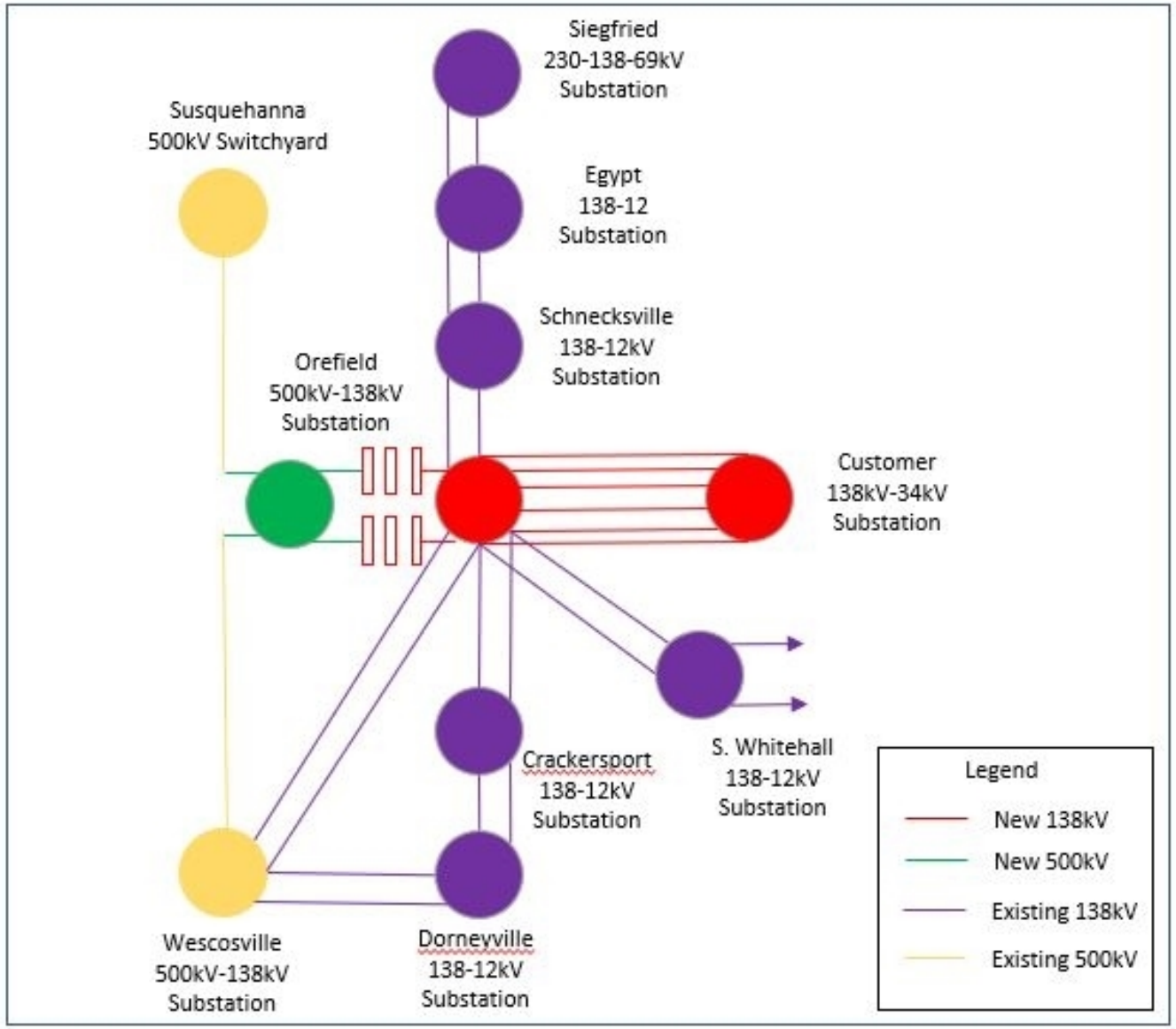
Transmission Cost Estimate: $159 M

Alternatives Considered:

Break the Susquehanna – Wescosville 500kV and install a 500kV-138kV substation with four 500-138kV transformers. Extend a new 500kV line from Alburtis 500kV yard to the new Orefield substation (~20 miles). Extend six 138kV lines to the new customer substation. Estimated cost: $359 Million

Projected In-Service: 05/30/2028

Project Status: Conceptual



PPL Transmission Zone: Supplemental
Highspire, PA

Need Number: PPL-2025-0007

Process Stage: Solution Meeting TEAC - 06/05/2025

Previously Presented: Need Meeting 05/06/2025

Project Driver: Customer Service

Specific Assumption References:

PPL 2025 Annual Assumptions

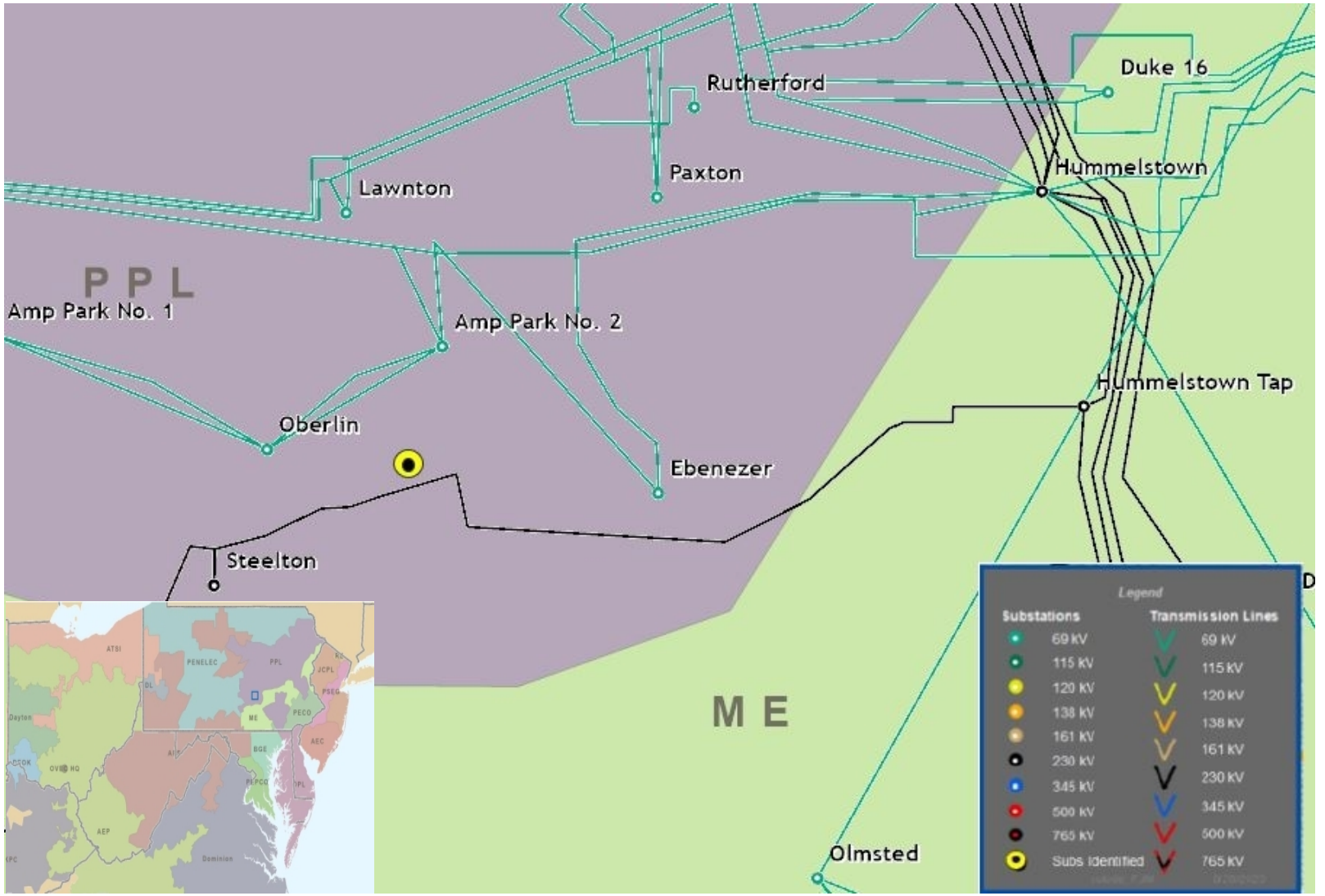
Problem Statement:

A customer has submitted a request to have their facility served from a 230kV source in Harrisburg, PA. The total facility load is approximately 450 MW (2030). The requested in-service date is 09/2027.

Initial In-Service 2027 Load: 40 MW

Projected 2028 Load: 155 MW

Projected 2030 Load: 450 MW



PPL Transmission Zone: Supplemental
Highspire, PA

Need number(s): PPL-2025-0007

Process Stage: Solution Meeting TEAC - 06/05/2025

Proposed Solution:

Highspire 230kV Switchyard: Install a four bay BAAH 230kV switchyard with an 80MVAR Capacitor bank. Estimated Cost: $45 M

Hummelstown - Steelton 230kV Line: Bifurcate the Hummelstown - Steelton 230kV line and terminate at the new Highspire 230kV switchyard. Extend lines approximately 0.2 miles into the new Highspire 230kV switchyard. Estimated Cost: $3 M

Hummelstown 230kV Yard: Expand Hummelstown 230kV yard and install two new DBDB 230kV bays. Re-terminate the Steelton 230kV tap into a new bay position. Install one new breaker in Bay 6 to make HUMM-MIDD #2 DBDB. Estimated Cost: $8 M

Highspire Customer 230kV Lead Lines: Install three 230kV lead lines for approximately 0.1 miles from Highspire 230kV switchyard to the customer facility. Estimated Cost: $4 M

Hummelstown - Steelton 230kV Line Rebuild (HUMM to HIGH): Rebuild the existing Hummelstown - Steelton 230kV Line to double circuit 230kV from Hummelstown to Highspire (5.1 miles). Estimated Cost: $23 M

Hummelstown - Steelton 230kV Line Rebuild (HIGH to STEE): Rebuild the existing Hummelstown - Steelton 230kV Line to single circuit, future double circuit 230kV from Steelton to Highspire (1.5 miles). Estimated Cost: $6 M

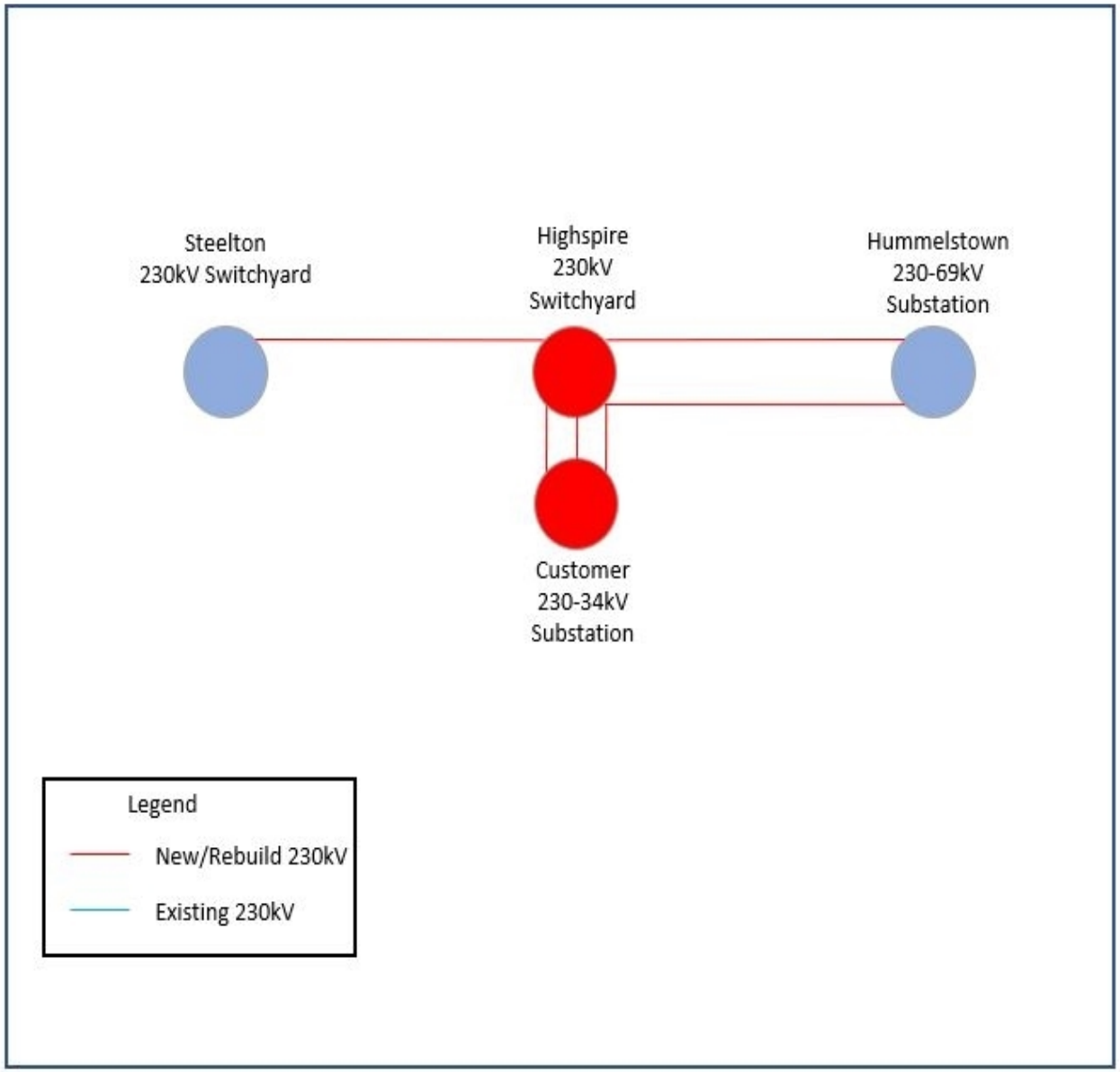
Transmission Cost Estimate: $89 M

Alternatives Considered:

No functional alternatives as the customer site is immediately adjacent to the HUMM-STEE 230kV line.

Projected In-Service: 05/30/2028

Project Status: Conceptual



PPL Transmission Zone: Supplemental
Black Creek, PA

Need Number: PPL-2025-0009

Process Stage: Solution Meeting TEAC - 06/05/2025

Previously Presented: Need Meeting 05/06/2025

Project Driver: Customer Service

Specific Assumption References:

PPL 2025 Annual Assumptions

Problem Statement:

A customer has submitted a request to have their facility served from a 230kV source in Hazleton, PA. The total facility load is approximately 500 MW (2029). The requested in-service date is 05/2027.

Initial In-Service 2027 Load: 250 MW

Projected 2028 Load: 375 MW

Projected 2029 Load: 500 MW

PPL Transmission Zone: Supplemental
Black Creek, PA

Need number(s): PPL-2025-0009

Process Stage: Solution Meeting TEAC - 06/05/2025

Proposed Solution:

Tomhicken 230kV Yard: Expand Tomhicken 230kV Yard and install three new line terminals by building out one bay BAAH and one bay in DBDB future BAAH arrangement. Install total of five 230kV breakers. Estimated Cost: $8 M

Tomhicken 230kV Customer Lead Lines: Install three 230kV lead lines for approximately 0.7 miles from Tomhicken 230kV switchyard to the customer facility. Estimated Cost: $5.5 M

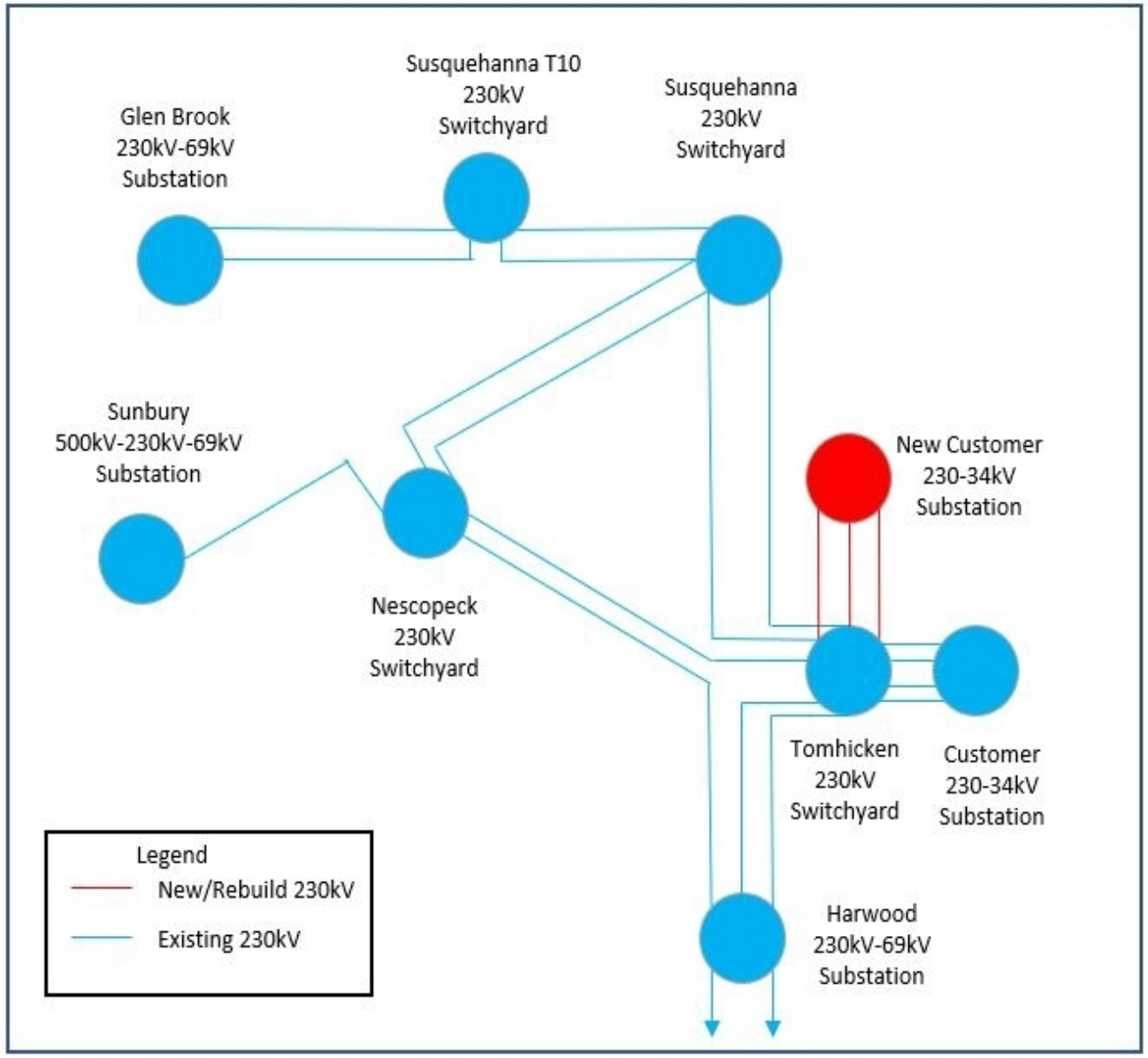
Transmission Cost Estimate: $13.5 M

Alternatives Considered:

Install a new four bay BAAH 230kV Switchyard at the customer's location. Break the SUSQ-TOMH 230kV lines and extend three 230kV lines to customer sub. Rebuild SUSQ-TOMH 230kV from SUSQ to new sub. Estimated cost: $96 Million

Projected In-Service: 05/30/2027

Project Status: Conceptual



Questions?

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

05/xx/2025 - V1 – Original version posted to pjm.com