



Dominion Supplemental Projects

Transmission Expansion Advisory
Committee

March 7, 2019

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

Need Number: DOM-2019-0011

Meeting Date: 03/07/2019

Process Stage: NEED

Supplemental Project Driver: Customer Service

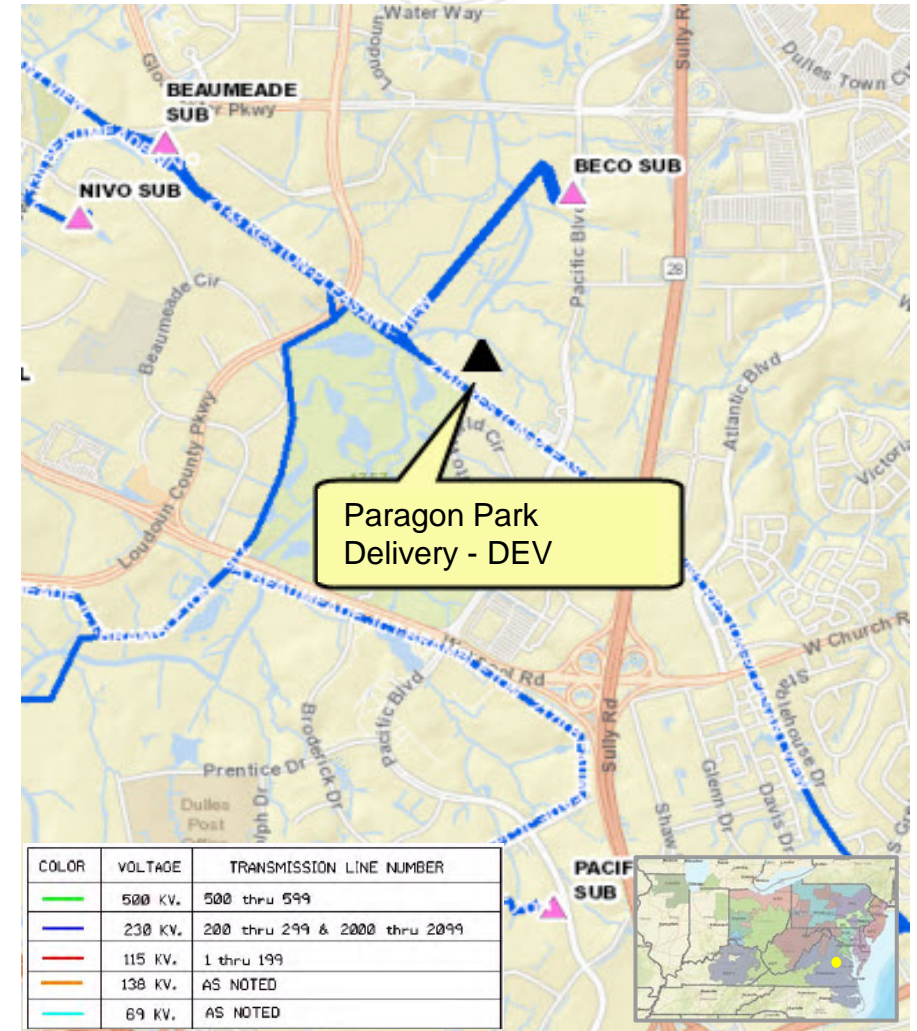
Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Paragon Park) to support a new datacenter campus in Loudoun County with a total load in excess of 100 MW. The new station will also support existing data center load in the immediate area. Requested in-service date is 04/01/2021.

Initial In-Service Load	Projected 2024 Load
Summer: 41.0 MW	Summer: 130.8 MW

Specific Assumption References:

Customer load request will be evaluated per Dominion’s Facility Interconnection Requirements Document and Dominion’s Transmission Planning Criteria



Need Number: DOM-2019-0012

Meeting Date: 03/07/2019

Process Stage: NEED

Supplemental Project Driver: Customer Service

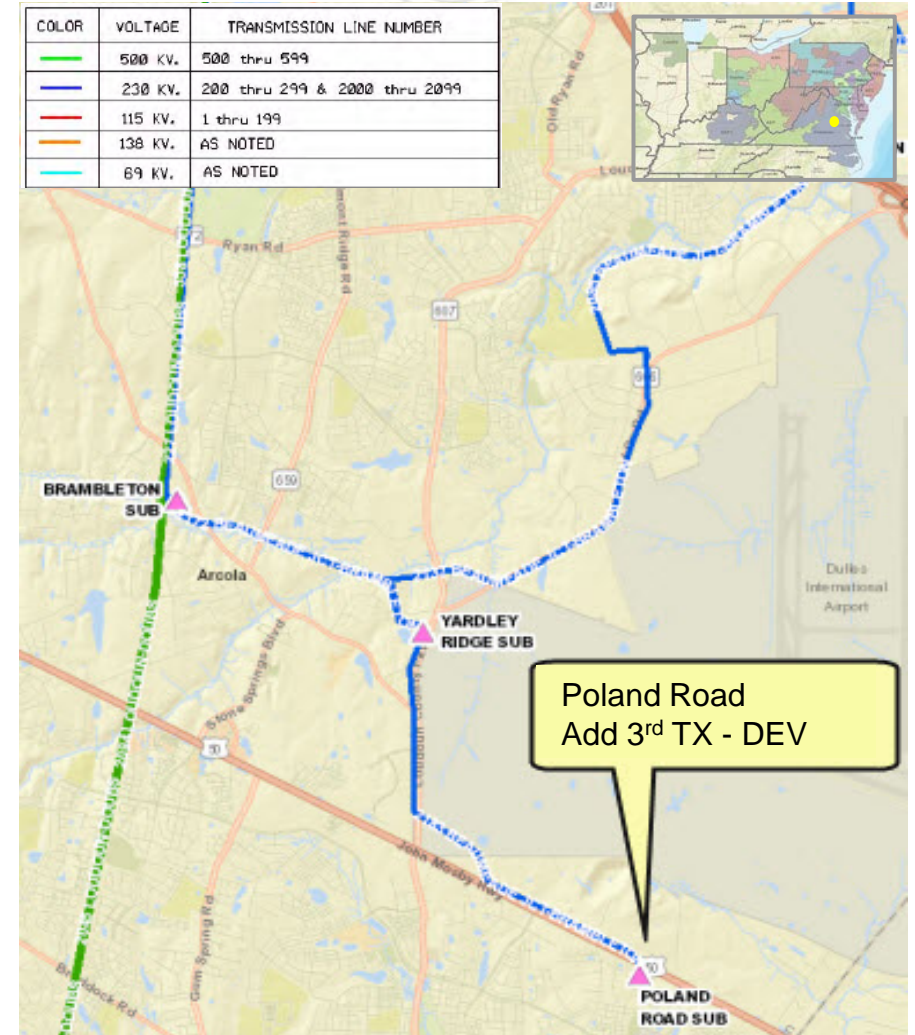
Problem Statement:

DEV Distribution has submitted a DP Request to add a 3rd, 84 MVA distribution transformer at Poland Road Substation in Loudoun County. The new transformer is being driven by continued load growth in the area and contingency loading for loss of one of the existing two transformers. Requested in-service date is 10/15/2020.

Initial In-Service Load	Projected 2024 Load
Summer: 120.5 MW	Summer: 244.9 MW

Specific Assumption References:

Customer load request will be evaluated per Dominion’s Facility Interconnection Requirements Document and Dominion’s Transmission Planning Criteria





Dominion Transmission Zone: Supplemental Equipment Condition

Need Number: DOM-2019-0014

Meeting Date: 3/07/2019

Process Stage: NEED

Supplemental Project Driver: Equipment Condition

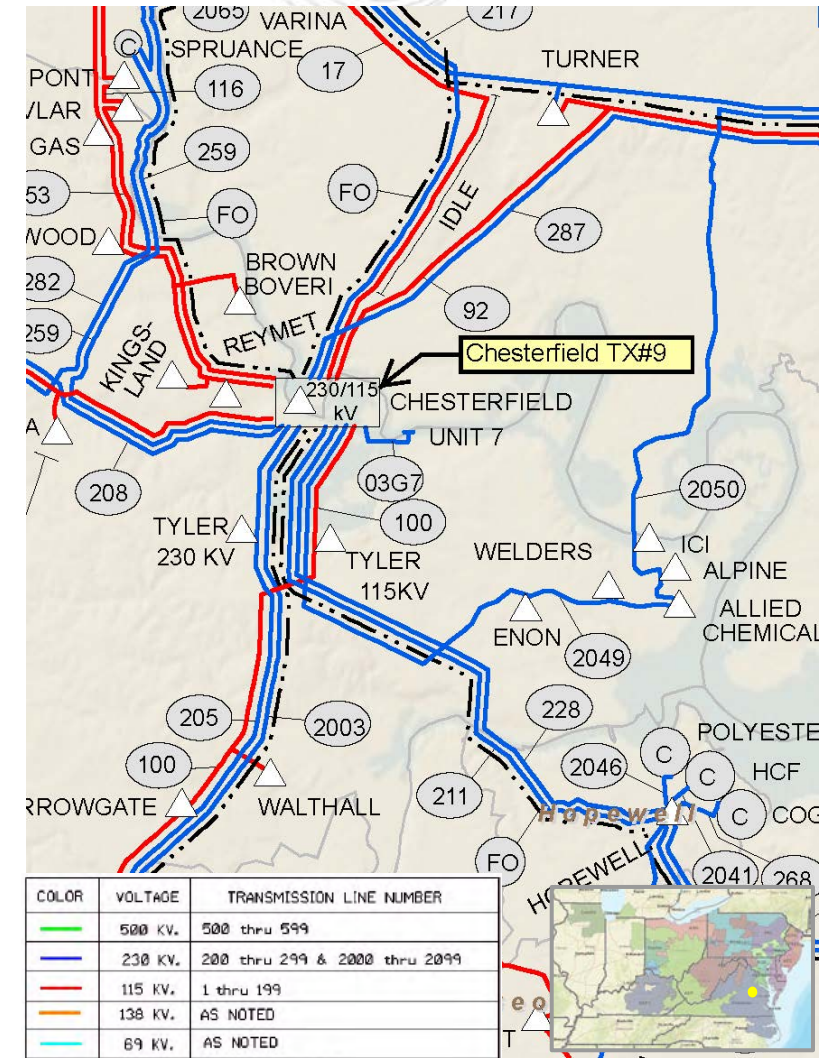
Problem Statement:

Chesterfield Tx#9 is a 224MVA 230/115kV transformer originally manufactured by North American in 1990. This transformer is being identified for replacement based on the results of Dominion’s transformer health assessment (THA) process. Detailed drivers are:

- Age
- Reduced BIL ratings (1 level)
- Transformers previously manufactured by Federal Pacific/North American are considered highly suspect due to previous transformer failures
- THA score less than 80

Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk in Dominion’s Planning Assumptions presented in December 2018.





Need Number: DOM-2019-0016

Meeting Date: 03/07/2019

Process Stage: NEED

Supplemental Project Driver: Equipment Condition and Operational Flexibility

Problem Statement

Equipment Condition:

- Peninsula Tx#4 is a 224MVA 230/115kV transformer. This transformer is being identified for replacement based on the results of Dominion's transformer health assessment (THA) process. Detailed drivers are:
 - Age
 - Reduced BIL ratings (1 level)
 - THA score less than 80

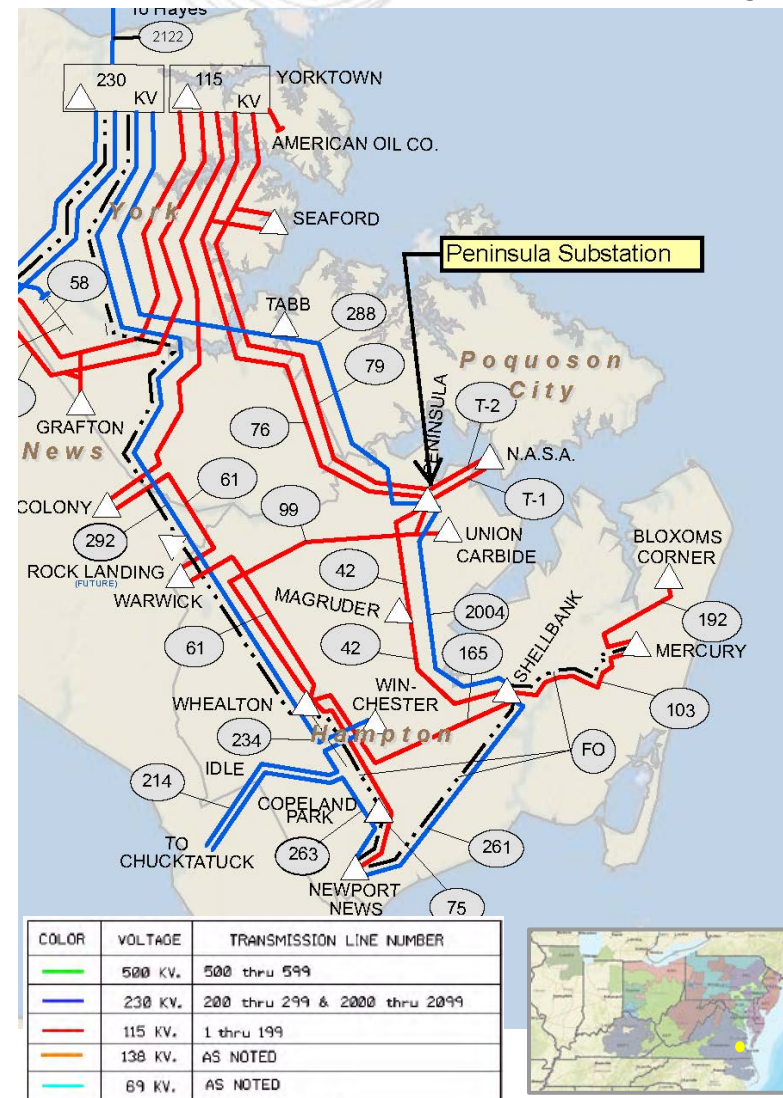
Operational Flexibility:

- Peninsula 230/115kV network Tx, a distribution 230/34.5kV Tx, 230kV Line #288 (Peninsula to Yorktown), and Line #2004 (Peninsula to Shellbank) all share a single 230kV tie breaker. Fault on Line #288 trip both transformers, and fault on either transformer trip Line #288 and interrupt network flow. Breaker Failure contingency result in loss of all the 230kV at Peninsula and the two 230kV lines.

Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk, and Operational Flexibility and Efficiency in Dominion's Planning Assumptions presented in December 2018.

Dominion Transmission Zone: Supplemental Equipment Condition and Operational Flexibility



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



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2018-0022

Meeting Date: 03/07/2019

Process Stage: SOLUTIONS

Need Presented: 12/13/2018

Supplemental Project Driver: Customer Service

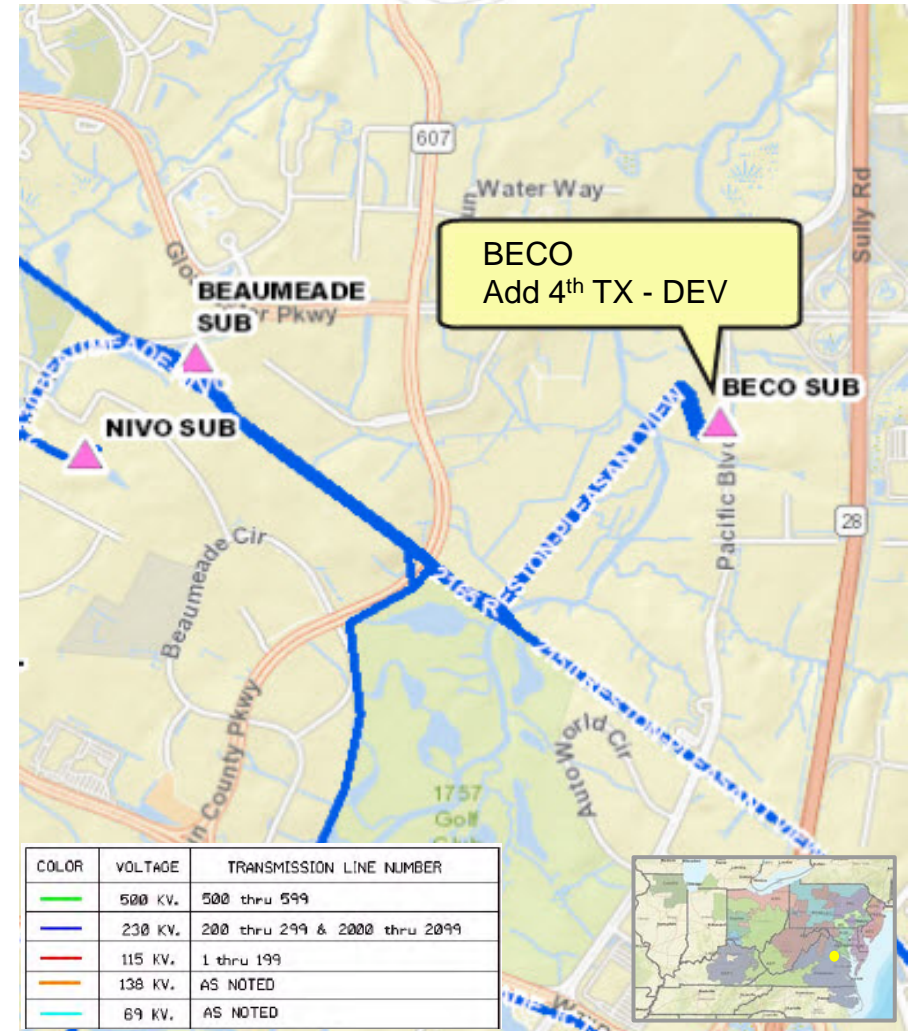
Problem Statement:

DEV Distribution has submitted a DP Request to add a 4th distribution transformer at BECO Substation in Loudoun County. The new transformer is being driven by data center growth and projections of normal summer load at BECO near 226 MW in 2020. Requested in-service date is 05/16/2020.

Initial In-Service Load	Projected 2023 Load
Summer: 226.5 MW	Summer: 259.0 MW

Specific Assumption References:

Customer load request will be evaluated per Dominion’s Facility Interconnection Requirements Document and Dominion’s Transmission Planning Criteria





Dominion Transmission Zone: Supplemental Add 4TH TX – BECO 230 kV Delivery - DEV

Need Number: DOM-2018-0022

Proposed Solution :

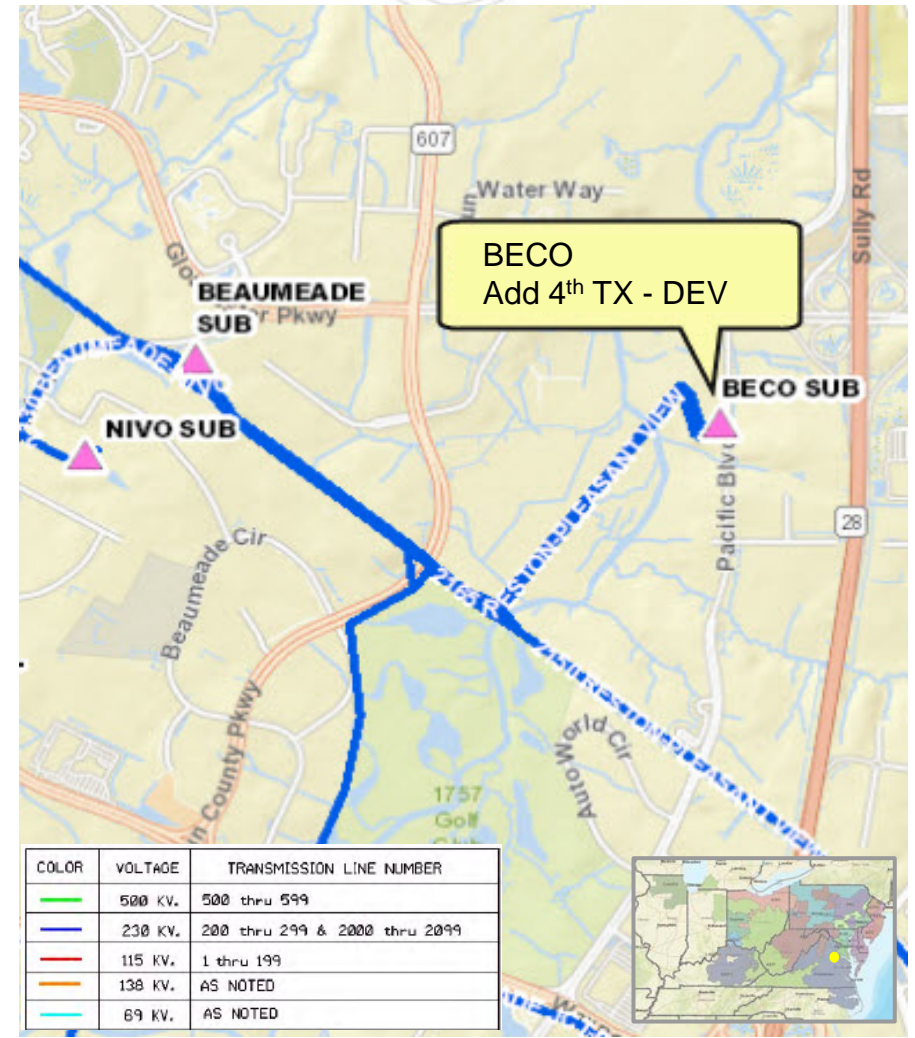
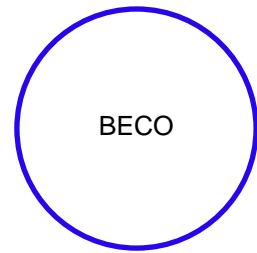
Install 1200 Amp, 40kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformer at BECO.

TO Alternatives Considered :

No feasible alternatives

Estimated cost: \$ 750k

Projected In-service Date: 05/16/2020





Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2018-0024

Meeting Date: 3/7/2019

Process Stage: SOLUTION

Supplemental Project Driver: Customer Service

Problem Statement:

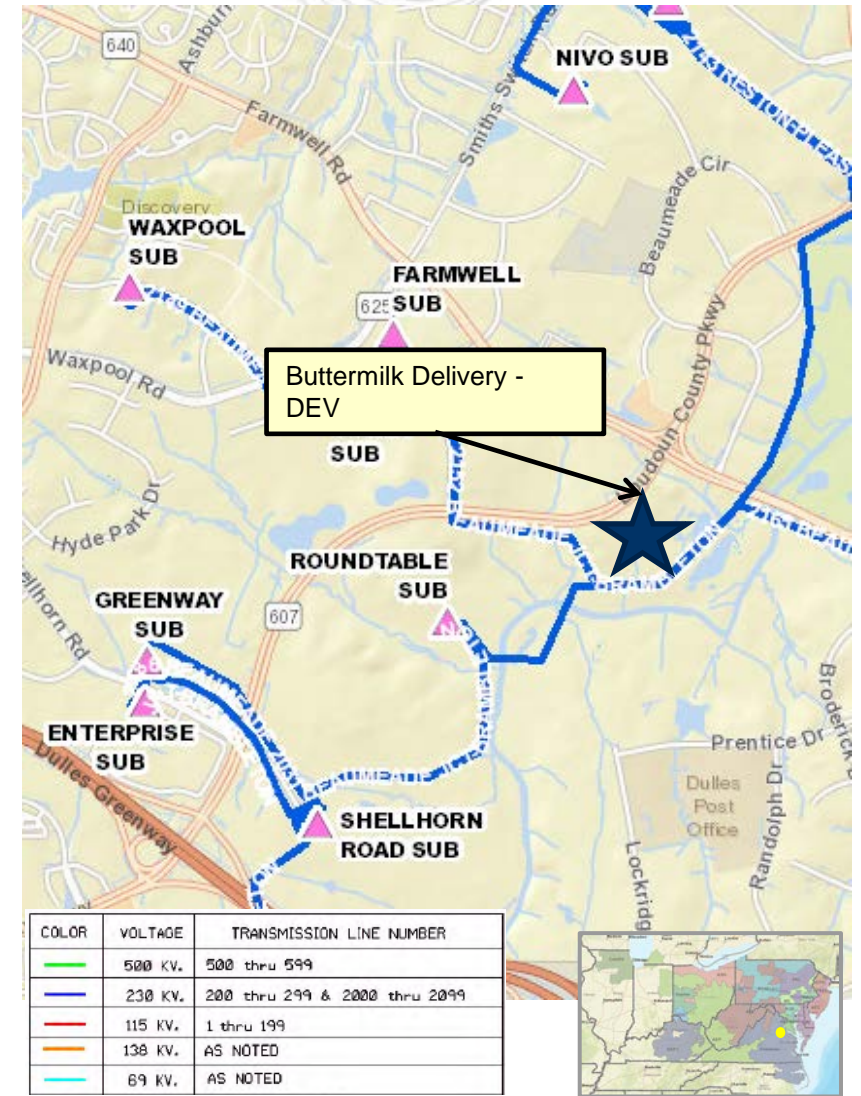
DEV Distribution has submitted a DP request to serve a new substation (Buttermilk) in Loudoun County with total load in excess of 100MW. Customer requests service by 12/30/2020.

Initial In-Service Year Load	Projected 2024 load
Summer: 56.8 MW	Summer: 110 MW

DEV Distribution does not have adequate distribution facilities to serve this customer load request.

Specific Assumption References:

Customer load request will be evaluated per Dominion’s Facility Interconnections Requirements Document and Dominion’s Transmission Planning Criteria



Need Number: DOM-2018-0024

Problem Solution:

Interconnect the new substation by cutting and looping both Line #2152 (Cumulus – Beaumeade) and Line #2170 (Roundtable – Pacific) into the proposed Buttermilk Substation. The new substation will have a six-breaker 230kV breaker and a half bus configuration. Install line switches, two 230kV circuit switchers and high side switches, and necessary bus work for the new transformers.

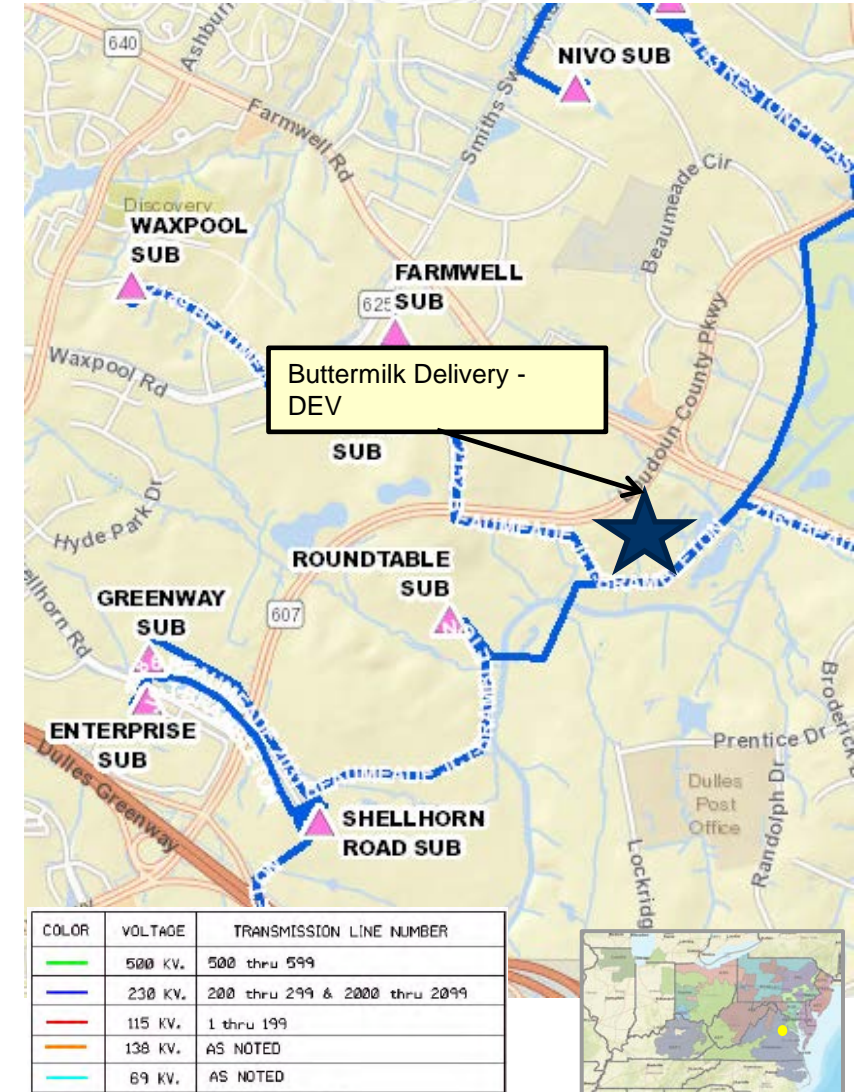
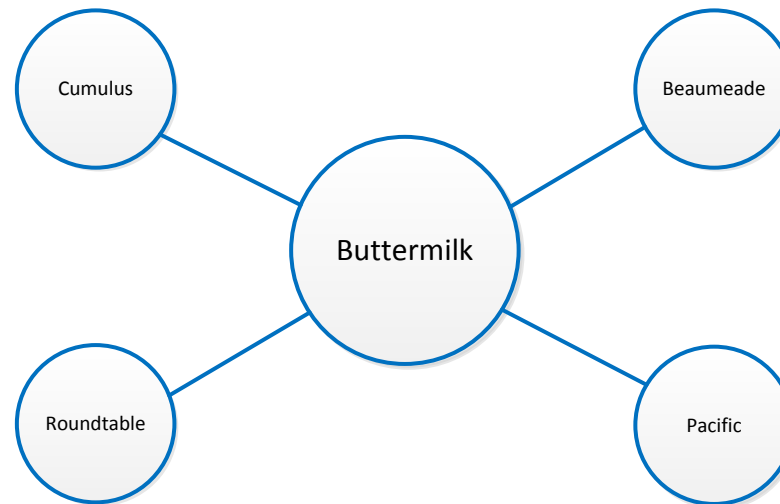
TO Alternatives Considered

No feasible alternatives

Estimated Project Cost: \$11.0 M

Projected In-service Date: 12/30/2020

Project Status: Conceptual



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



V1 – 02/25/2019 – Original Slides Posted