



Dominion Supplemental Projects

Transmission Expansion Advisory
Committee

November 8, 2018



Solutions



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2018-0004

Meeting Date: 11/08/2018

Process Stage: SOLUTIONS

Need Presented: 09/13/2018

Supplemental Project Driver: Customer Service

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Opal) to accommodate two proposed datacenters in the Remington area and general load growth in the Rt. 17/Rt. 29 intersection area. The new substation will have an ultimate projected load less than 100 MVA. Requested in-service date is 07/15/2021.

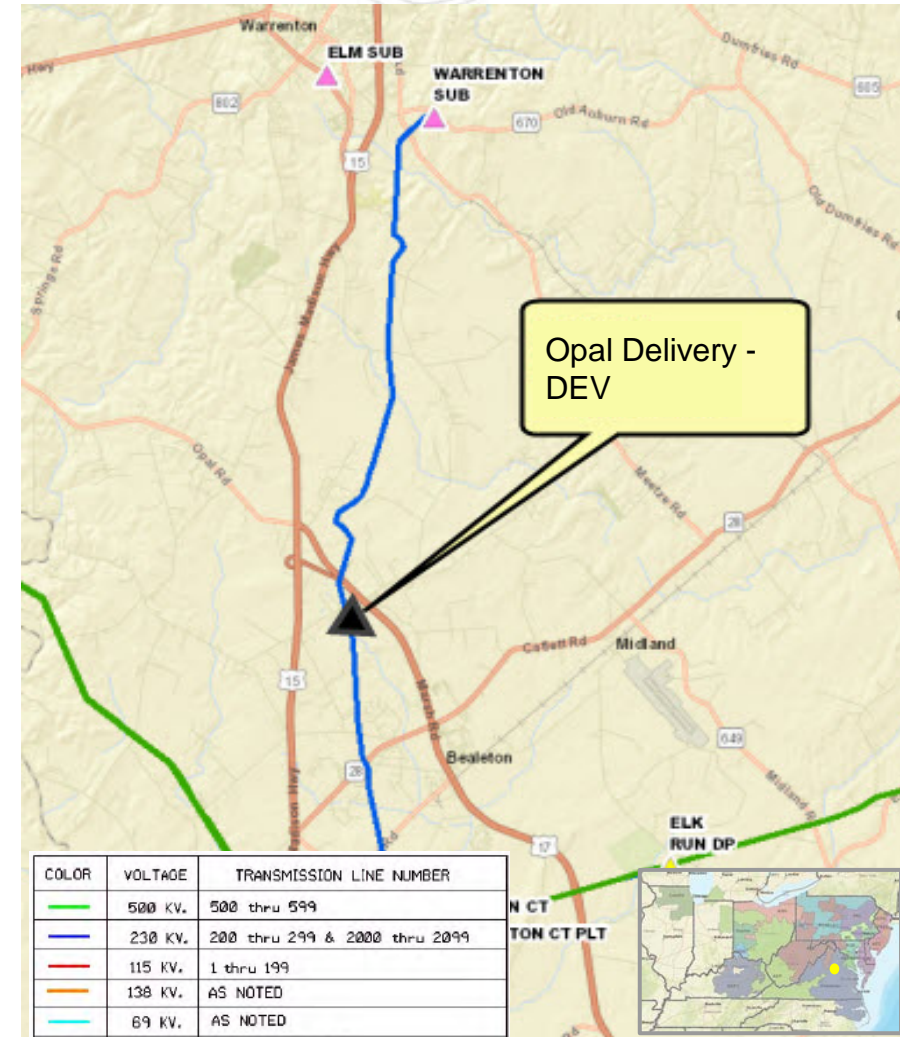
Projected 2023 Load

Summer: 48.0 MW

Winter: 49.7 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 Opal 230kV Delivery

Need Number: DOM-2018-0004

Proposed Solution :

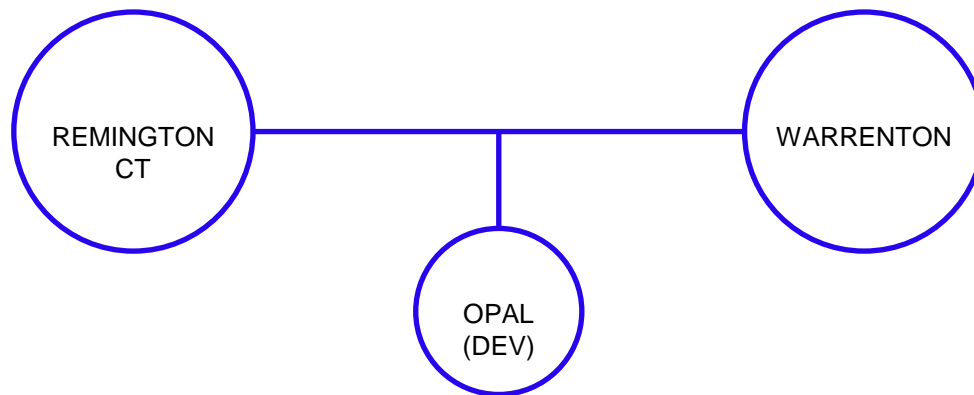
Interconnect the new substation with a single tee-tap arrangement on Line #2155 (Remington CT-Warrenton).

TO Alternatives Considered :

No feasible alternatives

Estimated cost: \$ 750k

Projected In-service Date: 07/15/2021





Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2018-0005

Meeting Date: 11/08/2018

Process Stage: SOLUTIONS

Need Presented: 09/13/2018

Supplemental Project Driver: Customer Service

Problem Statement:

DEV Distribution has submitted a DP Request to add a 2nd distribution transformer at Cannon Branch Substation in Prince William County. This transformer will support datacenter load growth in the area. Requested in-service date is 11/15/2019.

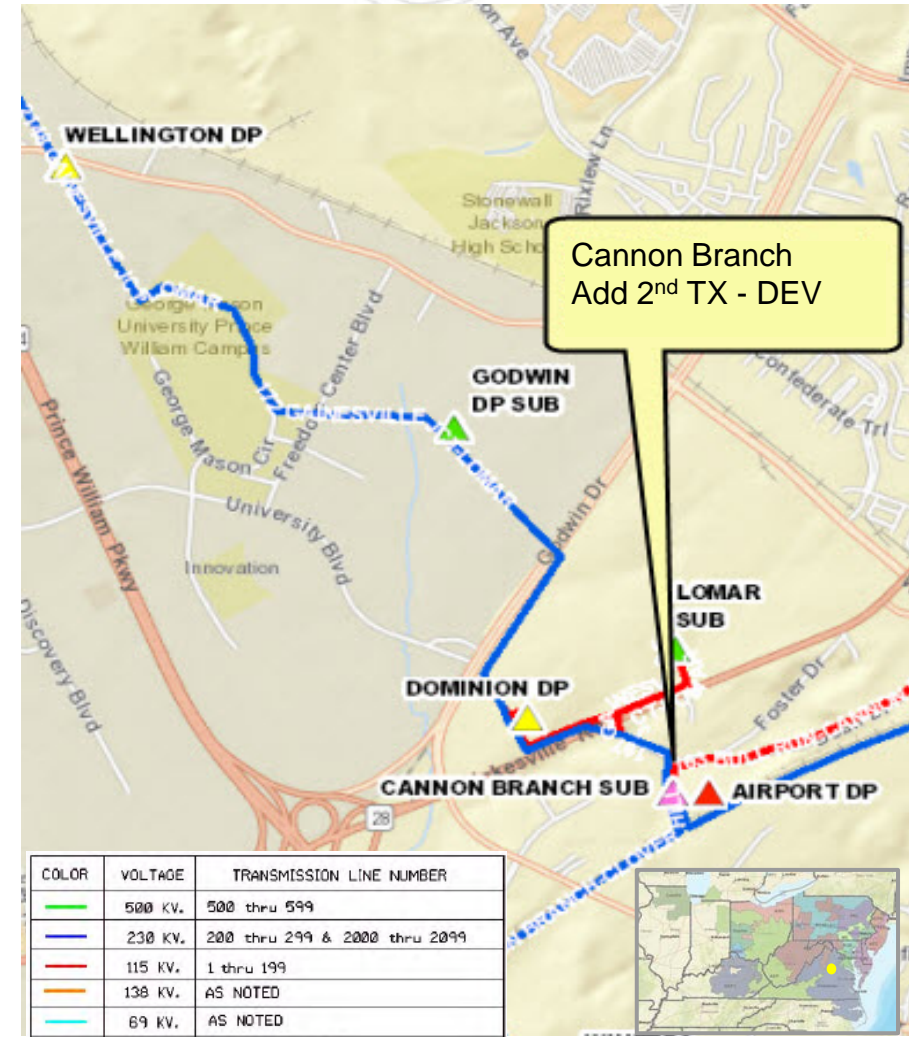
Projected 2023 Load

Summer: 66.5 MW

Winter: 61.4 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-2018-0005

Proposed Solution :

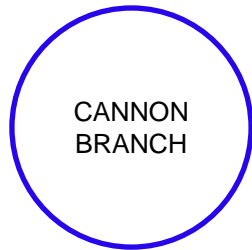
Install 1200 Amp, 40kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformer from existing 230 kV bus #1 at Cannon Branch.

TO Alternatives Considered :

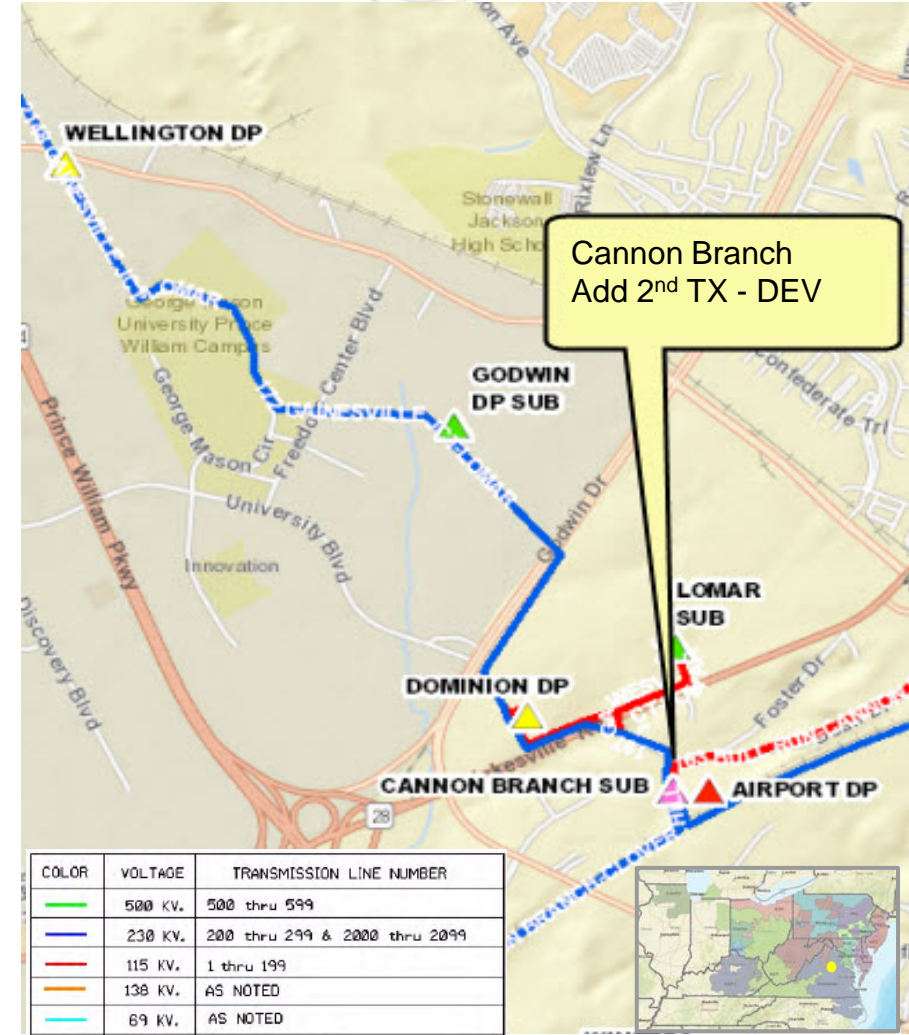
No feasible alternatives

Estimated cost: \$ 750k

Projected In-service Date: 11/15/2019



Dominion Transmission Zone: Supplemental Add 2nd TX – Cannon Branch 230 kV Delivery - DEV





Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2018-0008

Meeting Date: 11/08/2018

Process Stage: SOLUTIONS

Need Presented: 09/13/2018

Supplemental Project Driver: Customer Service

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Cumulus) to accommodate a new datacenter campus in Loudoun County with a total load in excess of 100 MW. Requested in-service date is 10/15/2019.

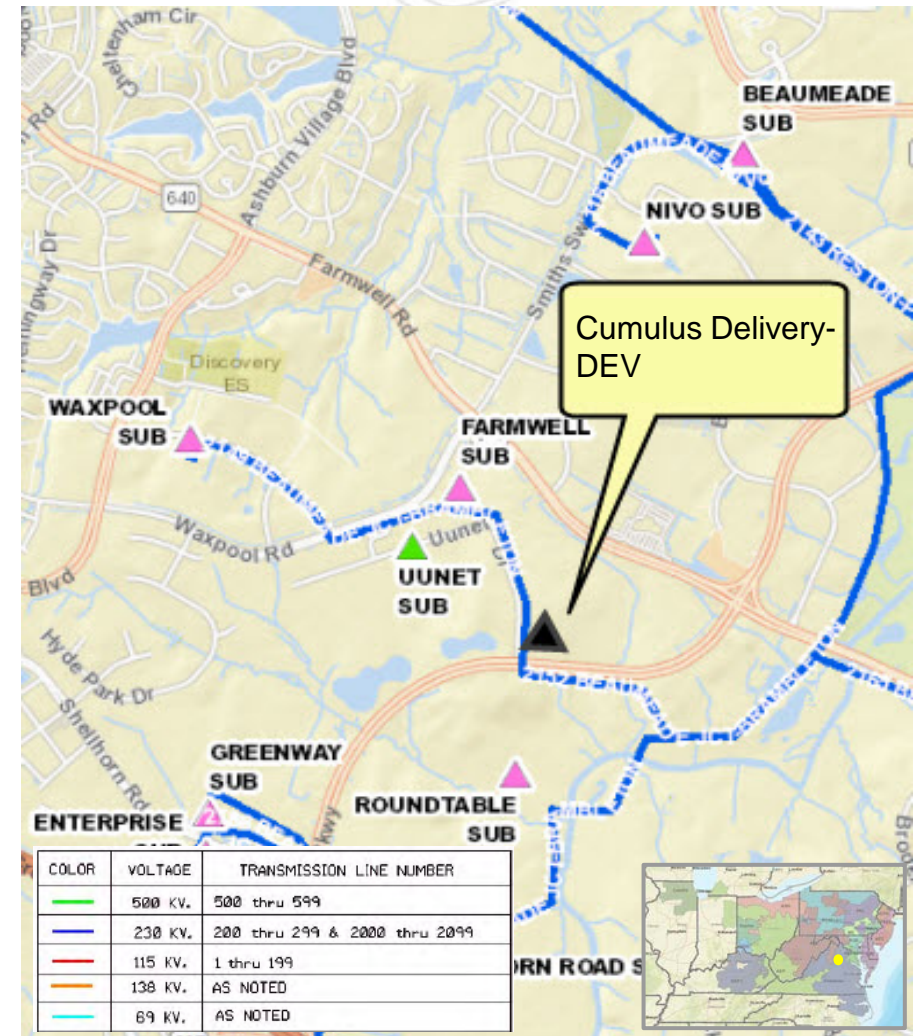
Projected 2023 Load

Summer: 120.9 MW

Winter: 108.0 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 Cumulus 230 kV Delivery - DEV

Need Number: DOM-2018-0008

Proposed Solution :

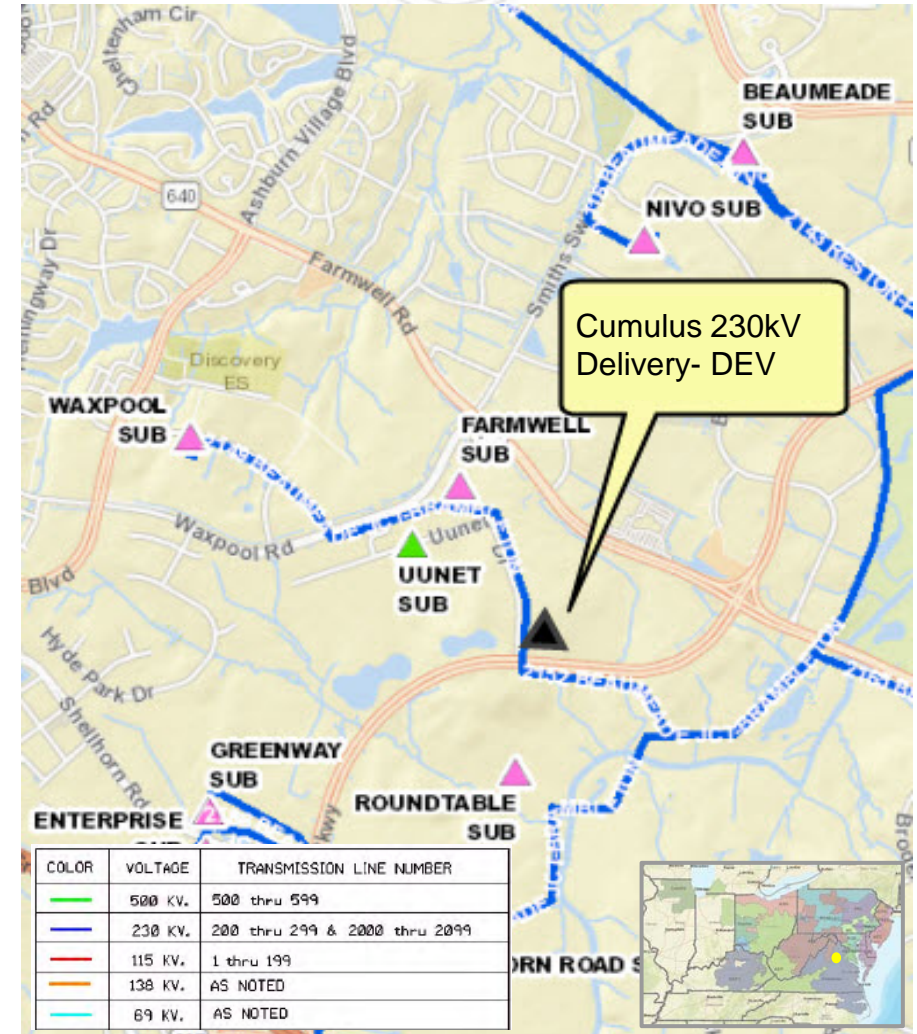
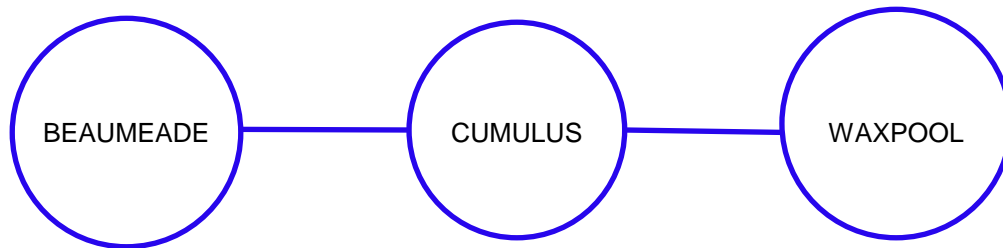
Interconnect the new substation by cutting and extending Line #2152 (Waxpool-Beaumeade) to a backbone in the new station. Terminate both ends into a four-breaker ring to create a Waxpool-Cumulus line and a Cumulus-Beaumeade line.

TO Alternatives Considered :

No feasible alternatives

Estimated cost: \$ 8.0M

Projected In-service Date: 10/15/2019



Need Number: DOM-2018-0009

Meeting Date: 11/08/2018

Process Stage: SOLUTIONS

Need Presented: 09/13/2018

Supplemental Project Driver: Customer Service

Problem Statement:

DEV Distribution has submitted a DP Request to add a 2nd distribution transformer at Davis Drive Substation in Loudoun County. The station loading is projected to exceed 100 MW by 2020. Requested in-service date is 11/15/2019.

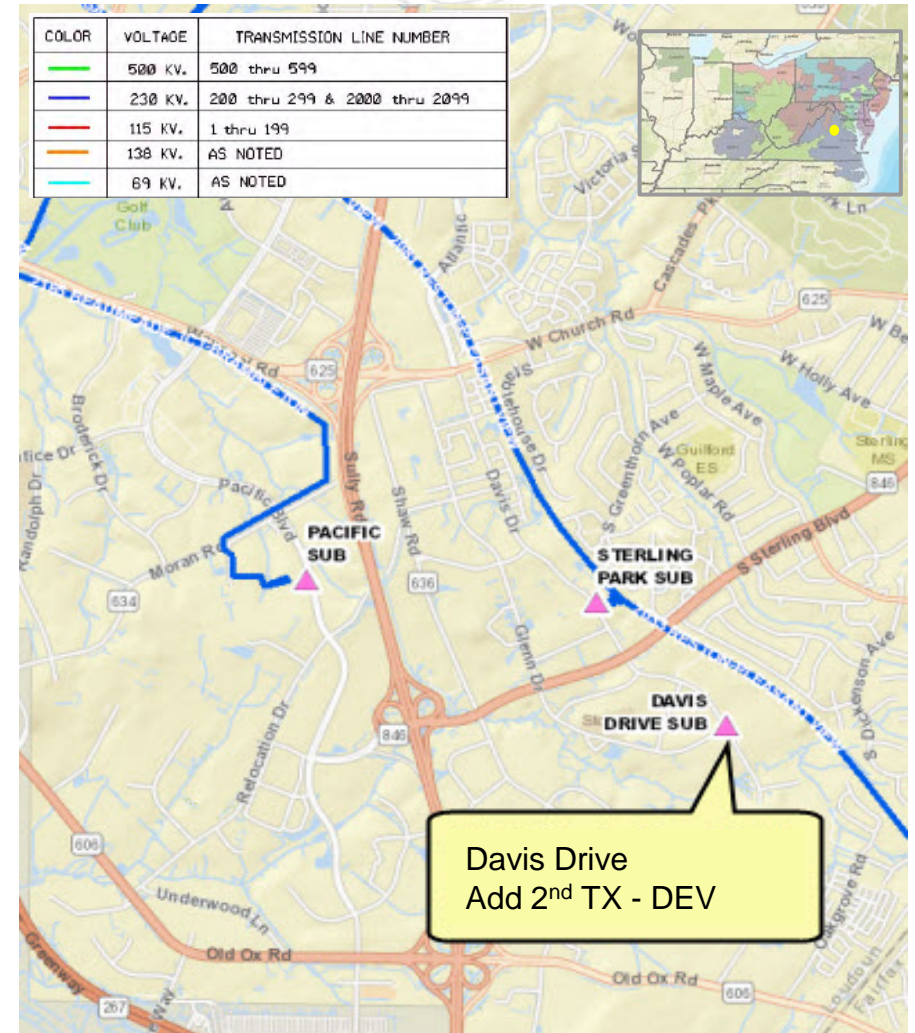
Projected 2023 Load

Summer: 182.4 MW

Winter: 159.9 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 Add 2nd TX – Davis Drive 230 kV Delivery - DEV

Need Number: DOM-2018-0009

Proposed Solution :

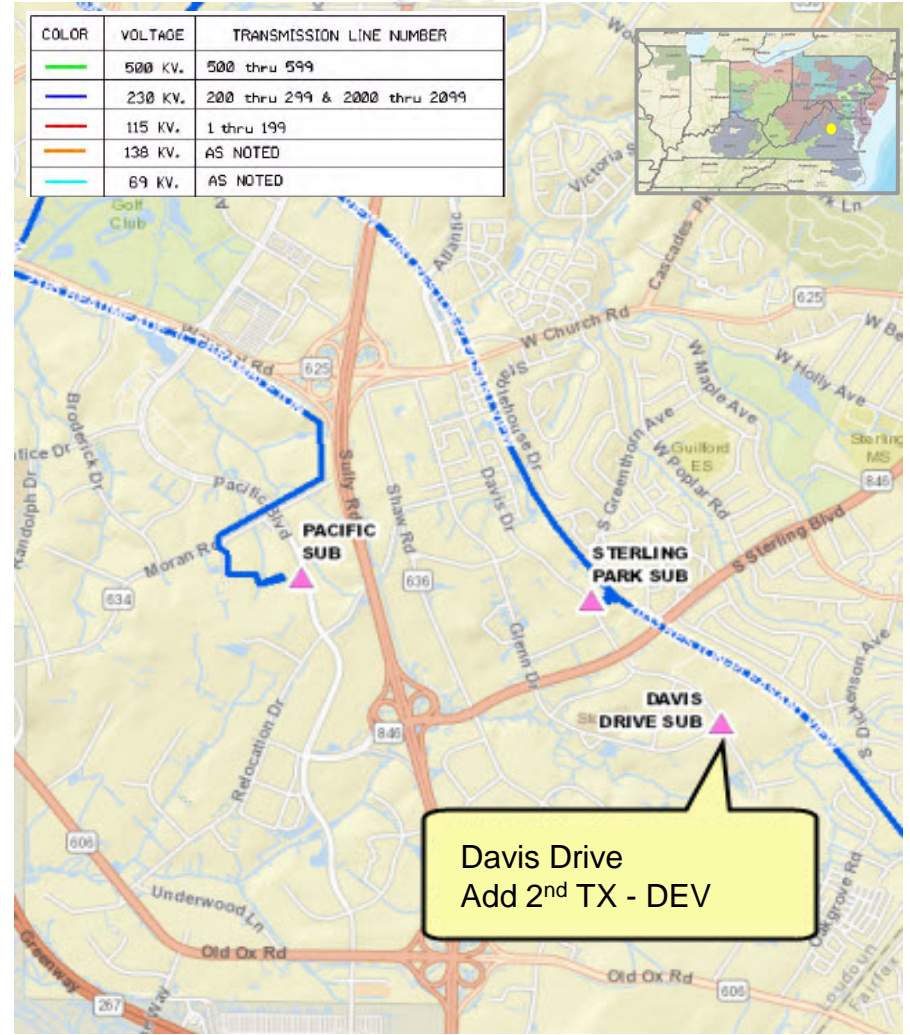
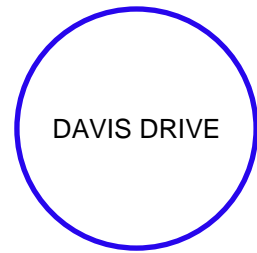
Install three 230 kV circuit breakers and associated equipment (bus, switches, relaying, etc.) to create a four-breaker ring bus. Also install a 1200 Amp, 40kAIC circuit switcher.

TO Alternatives Considered :

No feasible alternatives

Estimated cost: \$ 2.0M

Projected In-service Date: 11/15/2019





Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2018-0010

Meeting Date: 11/08/2018

Process Stage: SOLUTIONS

Need Presented: 09/13/2018

Supplemental Project Driver: Customer Service

Problem Statement:

DEV Distribution has submitted a DP Request to add a 2nd distribution transformer at Shellhorn Substation in Loudoun County. The new transformer is being driven by projections that normal load on the existing Shellhorn transformer will exceed 84 MVA in 2020. Requested in-service date is 03/31/2020.

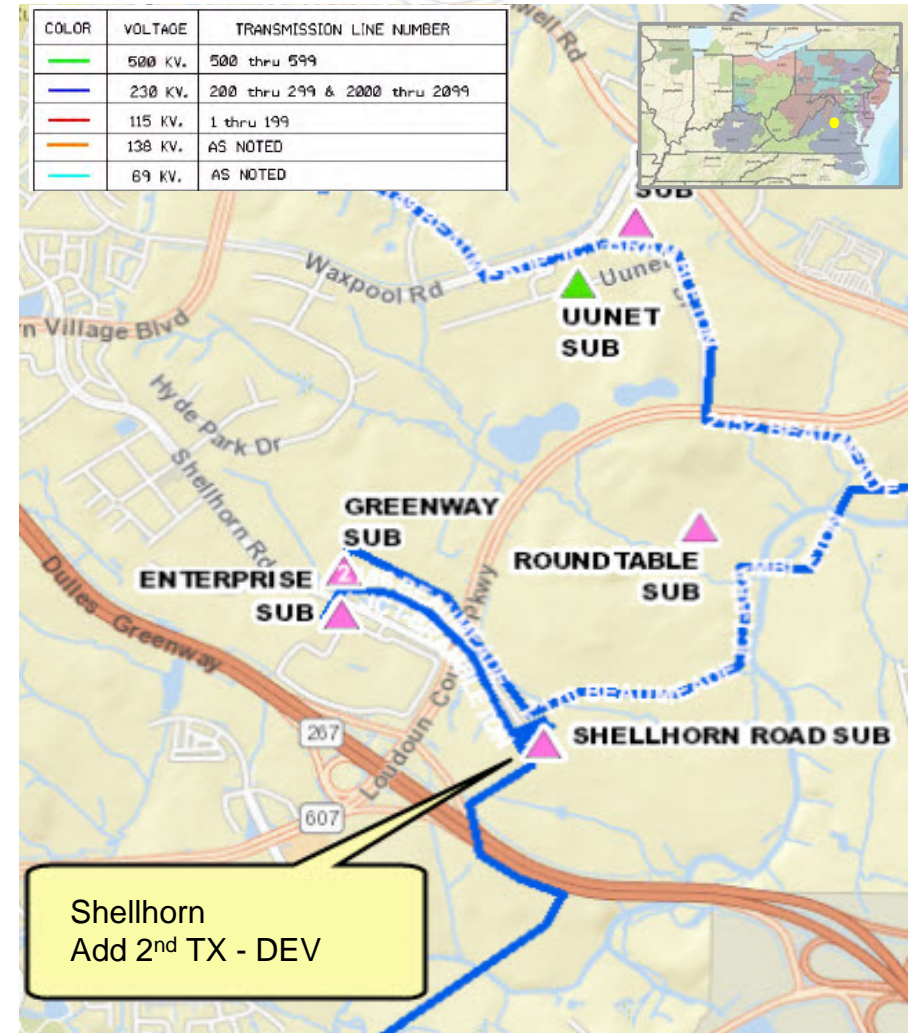
Projected 2023 Load

Summer: 133.4 MW

Winter: 133.4 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 2nd TX – Shellhorn 230 kV Delivery - DEV

Need Number: DOM-2018-0010

Proposed Solution :

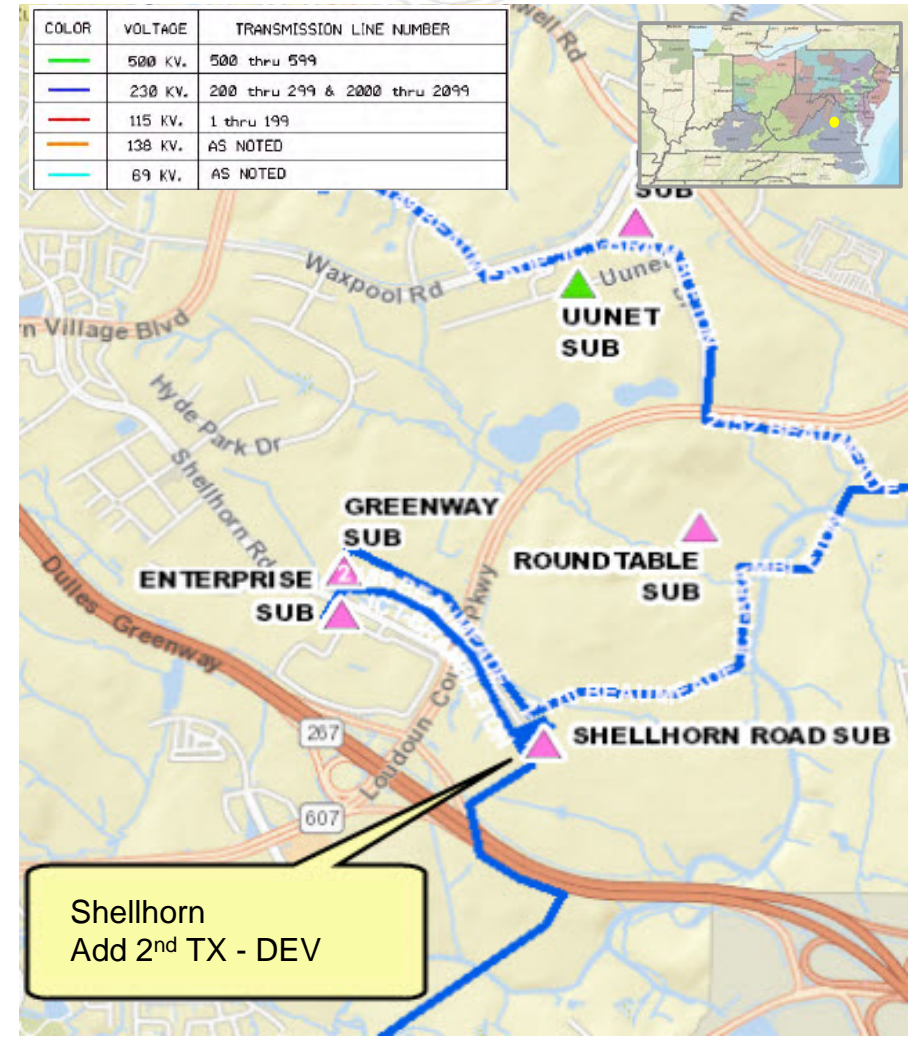
Install 1200 Amp, 40kAIC circuit switcher and associated equipment to feed the new transformer.

TO Alternatives Considered :

No feasible alternatives

Estimated cost: \$ 250k

Projected In-service Date: 03/31/2020





Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2018-0012

Meeting Date: 11/08/2018

Process Stage: SOLUTIONS

Need Presented: 09/13/2018

Supplemental Project Driver: Customer Service

Problem Statement:

DEV Distribution has submitted a DP Request to add a 5th distribution transformer at Beaumeade Substation in Loudoun County. The new transformer is being driven by projections that normal load at Beaumeade will be near 255 MW in 2020. Requested in-service date is 03/31/2020.

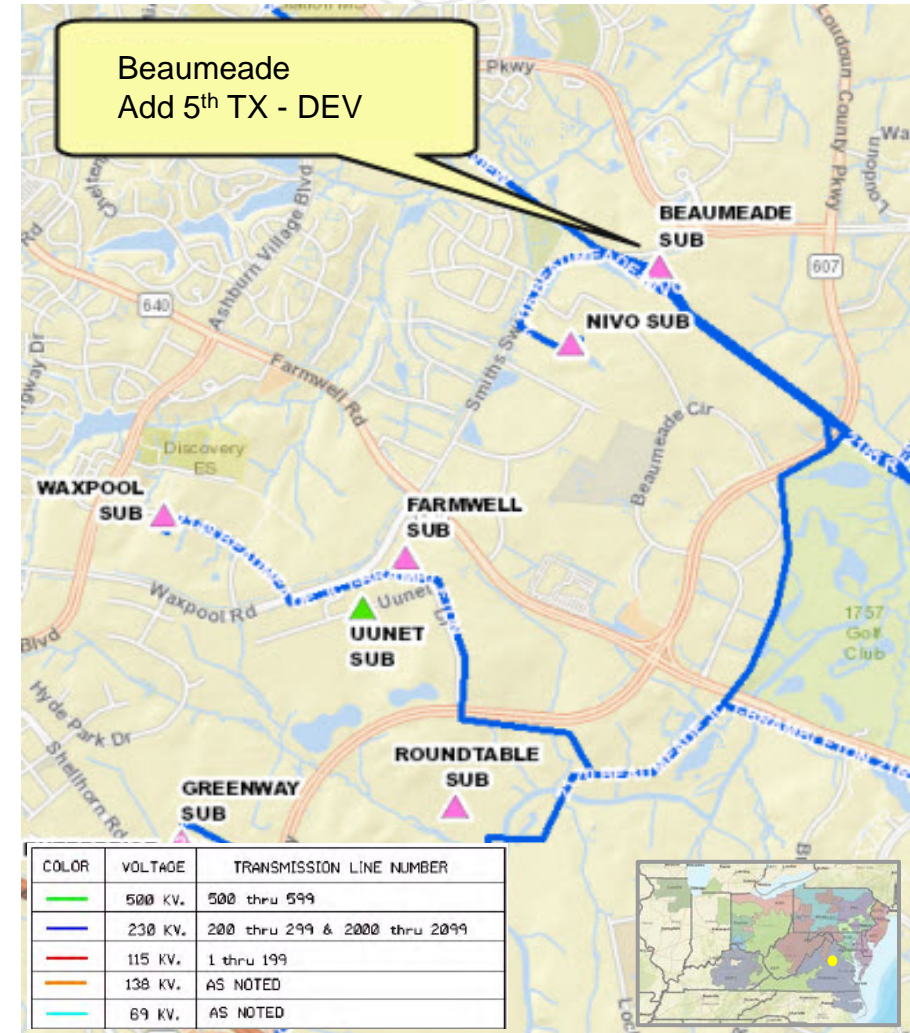
Projected 2023 Load

Summer: 271.1 MW

Winter: 262.1 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 5TH TX – Beaumeade 230 kV Delivery - DEV

Need Number: DOM-2018-0012

Proposed Solution :

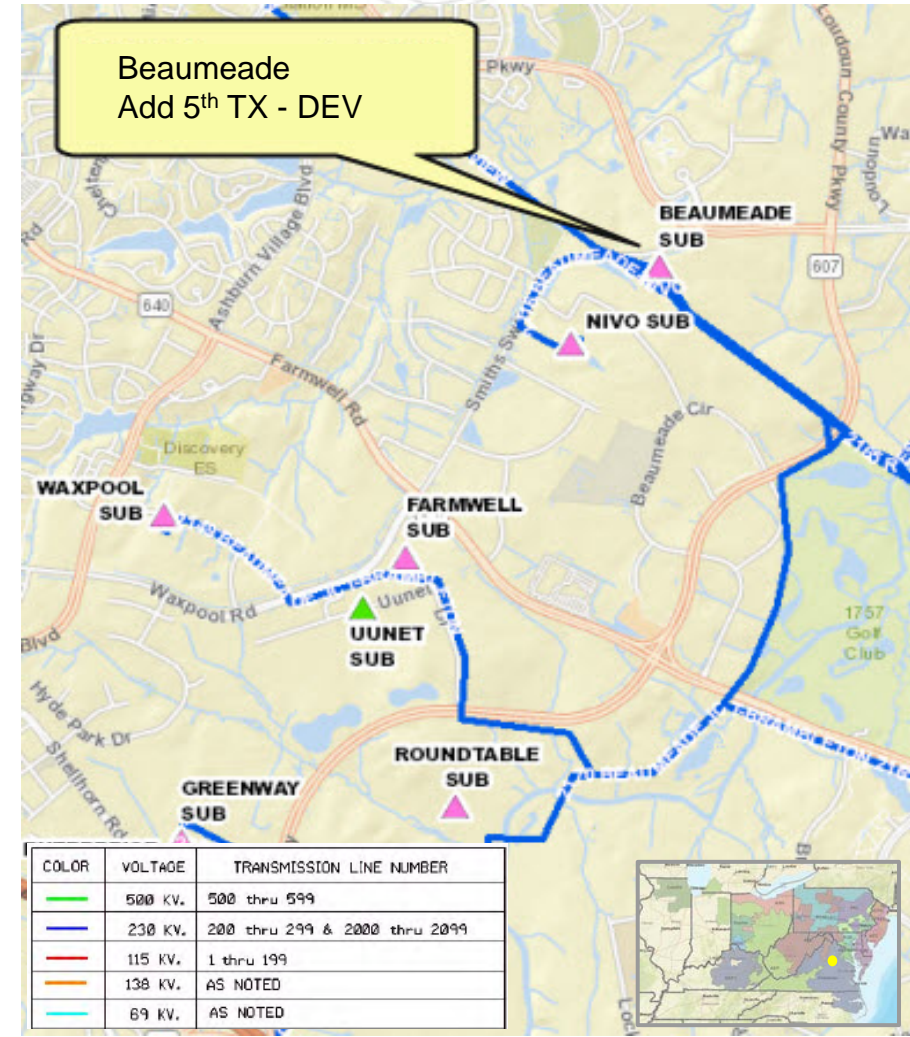
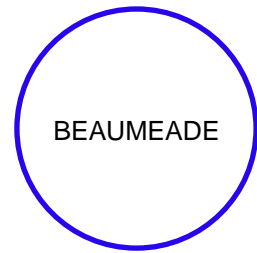
Install 1200 Amp, 50kAIC circuit switcher and associated equipment (bus, switches, relaying, etc.) to feed the new transformer from existing 230 kV bus #5 at Beaumeade.

TO Alternatives Considered :

No feasible alternatives

Estimated cost: \$ 750k

Projected In-service Date: 03/31/2020





Need Number: DOM-2018-0015

Meeting Date: 11/08/2018

Process Stage: SOLUTIONS

Supplemental Project Driver: Customer Service

Problem Statement:

DEV Distribution has identified the need to install a 3rd distribution transformer at Midlothian substation. The station load growth will call for a mobile transformer for a transformer contingency by winter 2020. By winter 2022 the transformer contingency will result in unserved load greater than the capacity of the mobile transformer. Requested in-service date is 11/15/2019.

Projected 2023 load

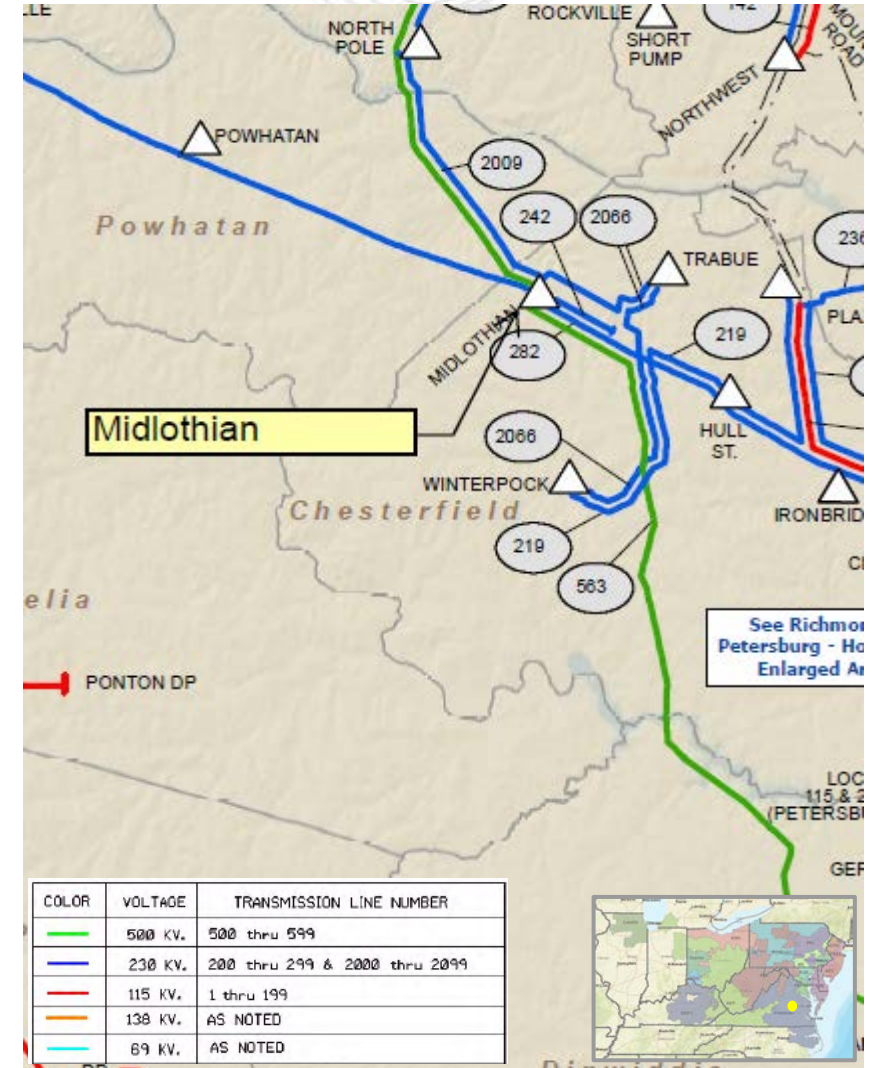
Summer: 135 MW

Winter: 169 MW

Specific Assumption References:

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

Dominion Transmission Zone: Supplemental Customer Load Request





Need Number: DOM-2018-0015

Proposed Solution:

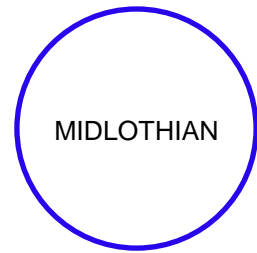
Install a 230kV circuit switcher, high side switch and perform necessary transmission work for the new transformer.

TO Alternative: No feasible alternatives.

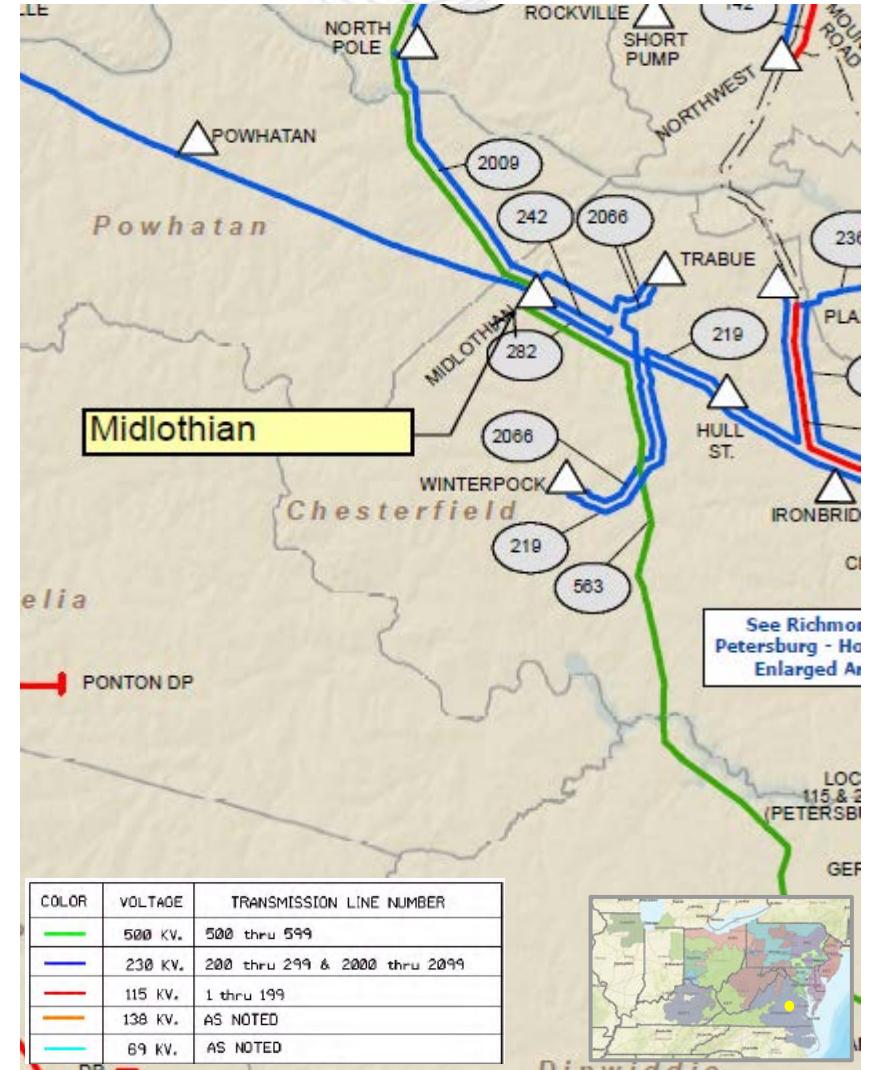
Estimated Project Cost: \$600k

Project IS Date: 11/15/2019

Project Status: Conceptual



Dominion Transmission Zone: Supplemental Customer Load Request



- V1 – 10/29/2018 – Original Slides Posted